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Sangeo
cutting tools

2023/2024
**PRODUCT
CATALOG**

IN 2022, 17 DIFFERENT COUNTRIES WE EXPORTED



Sangeo
cutting tools

OUR DEALERS



ADANA | ANKARA | ANTALYA | AYDIN | BURSA
İSTANBUL | İZMİR | İZMİT | GAZİANTEP | KONYA



Ward cutting tools

TURNING/
GROOVING/
THREADING/
MILLING/
DRILLING/
ENDMILLS/
DRILLS/
HSS DRILLS & TAPS/
SPARE PARTS/
INDEX/

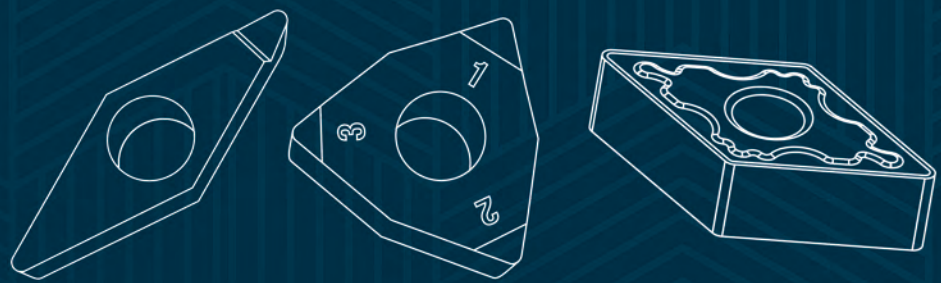




TURNING/

carbide /5
PCBN /65
diamond /85
ceramic /101
holders /125

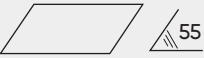
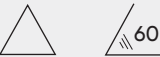


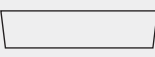
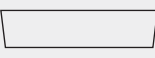


TURNING/**CARBIDE**

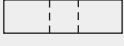
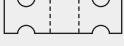
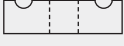
CARBIDE /TURNING

C	N	M	G	12	04	08
1	2	3	4	5	6	7

1	GEOMETRY
C	
D	
K	
S	
T	
V	
W	

2	CLEARANCE ANGLE
B	 5°
C	 7°
P	 11°
N	 0°

3	TOLERANCE
	 
G	±0,025 ±0,13
M	±0,05 ±0,15 ±0,13
U	±0,08 ±0,25 ±0,13

4	SHAPE	5	SHAPE (mm)	6	THICKNESS (mm)	7	CORNER RADIUS
A		C	06 09 12 16 19 25 	02	2,38	02	0,20 mm
G		D	07 11 15 	03	3,18	04	0,40 mm
M		K	16 	T3	3,97	08	0,80 mm
W		S	09 12 15 19 25 	04	4,76	12	1,20 mm
X	SPECIAL	T	09 11 16 22 	06	6,35	16	1,60 mm
		V	11 16 22 	09	9,52	24	2,40 mm
		W	06 08 				

U	M
8	9

CS	5	2	25
10	11	12	13

8	SERIES OF C/B
H	Huskar Series
U	Undying Series
S	Spirit Series
T	Tusk Series
A	Aluminium

9	ISO GRADE	
Heavy Machining	P	H. Roughing
	R	Roughing
	F	Functional
Turning	R	Roughing
	M	Medium
	F	Finishing
	J	Ultra Finishing
Stainless Steel	S	Standart
	K	Roughing
Aluminium	LU	Functional

10	COATING & MATERIAL
CS	CVD Coated Carbide
CD	Double CVD Coated
PS	PVD Coated Carbide
PB	New PVD Coating
KS	Ceramic
SS	Cermet
US	Uncoated

11	WORKPIECE MATERIAL
2	Non-Ferrous Material
4	Hardened Steel
5	Steel
7	Stainless Steel
8	Cast Iron
9	General Machining

12	MACHINING
1~3	Turning
4	Threading
5	Grooving
9	Milling

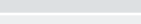
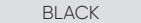
13	ISO GRADE
05	
10	
15	
20	
25	
30	
35	
40	
45	

CARBIDE /TURNING

GRADES

	K					P					M					N					S					H		
	ISO DIN 513																											
	K01	K10	K20	K30	K40	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	N01	N10	N20	N30	N40	S01	S10	S20	S30	S40	H01	H10	H20
CARBIDE CVD	CS8205					CS5205																						
	CS8115					CS5210																						
	CS8215					CS5215																						
	CS8315					CS5215S																						
						CS5220					CS7125																	
						CS5225																						
						CS5225S																						
						CD5125																						
	CS8125					CS5235																						
	CS8325					CS5235S																						
						CS5240																						
CARBIDE PVD						PS7110S					PS7110S										PS7110S					PS7110S		
						PS7220S					PS7220S										PS7220S					PS7220S		
						PS5125					PS7120																	
						PS7120																						
						PS7320S					PS7320S										PS7320S							
CARBIDE UNCOATED																												
																	US2115											
CERMET UNCOATED	SS9115					SS9115					SS9115																	
	SS9115C					SS9115C					SS9115C																	
	SS9125					SS9125					SS9125																	
	SS9125C					SS9125C					SS9125C																	

CVD TURNING GRADES

MATERIAL	GRADE	ISO	Color	Operation
P	CS5205	P05-P10	BLACK	MT-TiCN+Al ₂ O ₃ +TiN
				Wear-resistance materials coated on the gradient sintered substrate which has both good hardness and toughness. Can bear high temperatures. For steel and casting steel finishing to roughing processing. Continue cutting to light interrupted cutting.
	CS5210	P10-P20	YELLOW - BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				Stable conditions for steel finishing can obtain high metal removal rate. Excellent resistance to crater wear and plastic deformation resistance. Recommended for stable conditions. Wet and dry processing
	CS5215	P05-P25	BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				Optimization for high speed machining due to combining the substrate of superior wear resistance and toughness with the coating of excellent thermal crack/plastic deformation
	CS5215S	P05-P25	BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				Optimization for high speed machining due to combining the substrate of superior wear resistance and toughness with the coating of excellent thermal crack/plastic deformation
	CS5220	P15-P35	YELLOW - BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				stable conditions for steel semi-finishing to roughing, can obtain high metal removal rate. Excellent resistance to crater wear and plastic deformation. Recommended for stable conditions. Wet and dry processing.
	CS5225	P15-P35 M10-M20	BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				First recommended grade for general machining with the use of high toughness substrate and coating layer with improved welding/chipping resistance
M	CS5225S	P15-P35 M10-M20	BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				First recommended grade for general machining with the use of high toughness substrate and coating layer with improved welding/chipping resistance
	CD5125	P15-P35	YELLOW - BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				For medium machining of steel 1st grade recommended for general machining using a high toughness substrate and an enhanced topcoat.
	CS5235	P25-P40	YELLOW - BLACK	weld / chip resistance
				Medium to low speed machining of steel
	CS5235S	P25-P40	YELLOW - BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				High-strength alloy substrate with thick wear-resistant coating has good toughness and plastic deformation. Machining steel and cast steel in bad conditions, Edge line security for interrupted cutting and roughing operations high metal removal rate.
	CS5240	P30-P40	YELLOW - BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				Medium to high speed machining of stainless steel
	CS7125S	M20-M30	BLACK	MT-TiCN+TiC+Al ₂ O ₃
				For high speed machining of stainless steel
K	CS8205	K01-K10	BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				As adopting highly hard substrate with superior CVD coated which has excellent resistance for thermal oxidation, Excellent performance in casting iron continuous machining
	CS8115	K10-K20	BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				Medium speed machining of cast iron
	CS8215	K10-K20	BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				Medium speed machining of cast iron
	CS8315	K10-K25	YELLOW - BLACK	MT-TiCN+Al ₂ O ₃ +TiN
				The excellent combination of high wear resistance substrate and MT-TiCN, thick Al ₂ O ₃ , TiN coating is the first choice of ductile iron and gray cast iron, which allows a higher cutting speed.
	CS8125	K20-K30	BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				Interrupted cutting for gray iron and ductile cast iron
	CS8325	K20-K35	YELLOW - BLACK	MT-TiCN+Al ₂ O ₃ +TiN
				The excellent combination of good wear resistance and toughness substrate and MT-TiCN, thick Al ₂ O ₃ , TiN coating is the first choice of ductile iron and gray cast iron for roughing cutting high metal remove rate.

CS5225

Universal grade especially for machining forged automobile components and bearing steel both in continuous and interrupted cutting. Available for all kinds of steels - carbon steel, alloy steel, rolled steel, tool steel, mild steel, bearing steel and other special kinds of steel. New coating technology increases welding resistance and chipping resistance, which leads to longer tool life



TiN coating layer with superior welding resistance
TiC + Al₂O₃ coating layer with superior heat resistance
TiCN coating layer with superior chipping resistance
Exclusive substrate material for coating with improved wear resistance.

CARBIDE /TURNING

PVD TURNING GRADES

MATERIAL	GRADE	ISO	Color	Operation
P	PS5125	P05-P25	BLACK	2-4 micron Nano TiAlN PVD Coating
				Stable machinability with chipping resistance fracture resistance and welding resistance, Medium, roughing and heavy interrupted cutting for stainless steel and forged steel
M	PS7110S	M20-M30	COPPER	PVD(Cotated) - TiAlSiN, Premium grade
	PS7120	M15-M25		As adapting highly hard substrate, Excellent in medium speed machining of stainless steel. As adapting Salina coating which has excellent resistance for thermal & oxidation
			YELLOW	2-4 micron Nano AlCrN AlCrSiN Coating
	PS7220S	M10-M30		Medium, roughing and heavy interrupted cutting for st. steel and forged steel
			COPPER	PVD(Cotated) - TiAlSiN, Premium grade
	PS7320S	M10-M30		Excellent in medium speed machining of stainless steel. As adapting Salina coating which has excellent resistance for thermal & oxidation
			GRAY	PVD (Cotated)-AlTiN, Premium grade
				High Co content and fine WC grain substrate, gives wonderful cutting edge strength, combines with new AlTiN coating, it has very small coefficient of friction, high antioxidant temperature, and good nano hardness.

UNCOATED CARBIDE GRADES

MATERIAL	GRADE	ISO	Color	Operation
N	US2115	K05-K25	Silver	Ultra fine substrate
				Increased wear & chipping resistance as using a ultra fine substrate, Excellent tool life with special surface treatment & and sharp cutting edge of ALU chip breaker

CERMET CARBIDE GRADES

MATERIAL	GRADE	ISO	Color	Operation
UNI	SS9115	P05-P25	SILVER	For continuous machining of cold/hot forged steel and Sintered ferrous alloy at high speed and low depth of cut
	SS9115C	P05-P30		Superior wear and adhesion resistant TiC coating on the special reinforcement cermet Application: The 1st choice PVD coated cermet for steel machining provides high efficient machining and high quality surface finish
			YELLOW	
	SS9125	P05-P25	SILVER	For continuous machining of cold/hot forged steel and Sintered ferrous alloy at high speed and low depth of cut
	SS9125C	P05-P30	YELLOW	Superior wear and adhesion resistant TiC coating on the special reinforcement cermet Application: The 1st choice PVD coated cermet for steel machining provides high efficient machining and high quality surface finish

CHIPBREAKERS SELECTION (NEGATIVE)

	□□CN	□□DN	□□SN	□□TN	□□VN	WN
MA FLAT	21 	29 	35 	42 		53 
MG BOX	21 	29 	35 	42 	51 	53 
ALU	21 	29 	35 	42 		53 
HQ	21 	29 		43 	51 	53 
PM	22 			43 	51 	54 
ST		29 		43 		54 
TK	22 	29 	36 	43 		54 
TM		30 				54 
TS	23 	30 	36 	44 	51 	54 
UF		30 	36 	44 	51 	54 
UM	23 	30 	36 	44 	51 	55 
UR	24 	31 	37 	45 		55 
US	25 	31 	37 	45 		55 
OTHERS	22 (TF) 		35 (TF) 	42 (R/L-P) 		55 (HA) 
			37 (ZR) 	43 (R/L-C) 		55 (UT) 
			37 (HTR) 	44 (UH) 		
				45 (VQ) 		

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPSSPARE
PARTS

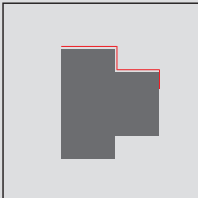
INDEX

CARBIDE /TURNING

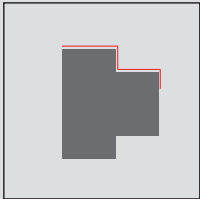
CHIPBREAKERS SELECTION (POSITIVE)

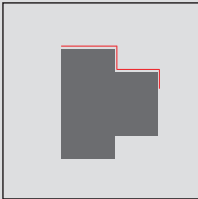
	□□CC	□□DC	□□SC	□□TC	□□VB	□□VC
ER/L-U	18 	26 				
L-F	18 					
L/R-W	18 					
L-Y					47 	
ALU	19 	26 	34 	40 	47 	49 
CG	19 	26 		40 	47 	50 
HF	19 	26 	34 	40 		
HM	19 	26 	34 	40 		
HQ	20 	27 		40 	47 	
HR					47 	
TS	20 	28 		41 	48 	
VM	20 	28 		41 	48 	
VQ	20 	28 				
VW		28 			48 	

MACHINING EXAMPLES

P	Carbon Steel (1.1040)	
• Workpiece	Hub	
• Cutting Conditions	Vc (m/min)= 250	fn (mm/rev)= 0.2
	ap (mm)= 1,5	Wet
• Designation	Insert	CNMG120408-UM CS5225
	Toolholder	DCLNR2525-M12
• Test Result	pcs/corner 120 CS5225 80 competitor 	

P	Alloy Steel (2379)	
• Workpiece	Automobile Part	
• Cutting Conditions	Vc (m/min)=250	fn (mm/rev)= 0.2
	ap (mm)= 1,5	Wet
• Designation	Insert	CNMG120408-UM CS5215S
	Toolholder	DCLNR2525-M12
• Test Result	pcs/corner 60 40 CS5215S competitor	

M	Stainless Steel (316L)	
• Workpiece	Valve	
• Cutting Conditions	Vc (m/min)=120	fn (mm/rev)= 0.2
	ap (mm)= 1,5	Wet
• Designation	Insert	CNMG120408-TS PS7220S
	Toolholder	DCLNR2525-M12
• Test Result	pcs/corner 30 PS7220S 20 competitor 	

K			Gray Cast Iron (GG25)	
• Workpiece	Disc			
• Cutting Conditions	Vc (m/min)=350	fn (mm/rev)= 0.25		
	ap (mm)= 1,5	Wet		
• Designation	Insert	CNMA120408 CS8215		
	Toolholder	DCLNR2525-M12		
• Test Result	pcs/corner 15 11 CS8215 competitor 			

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

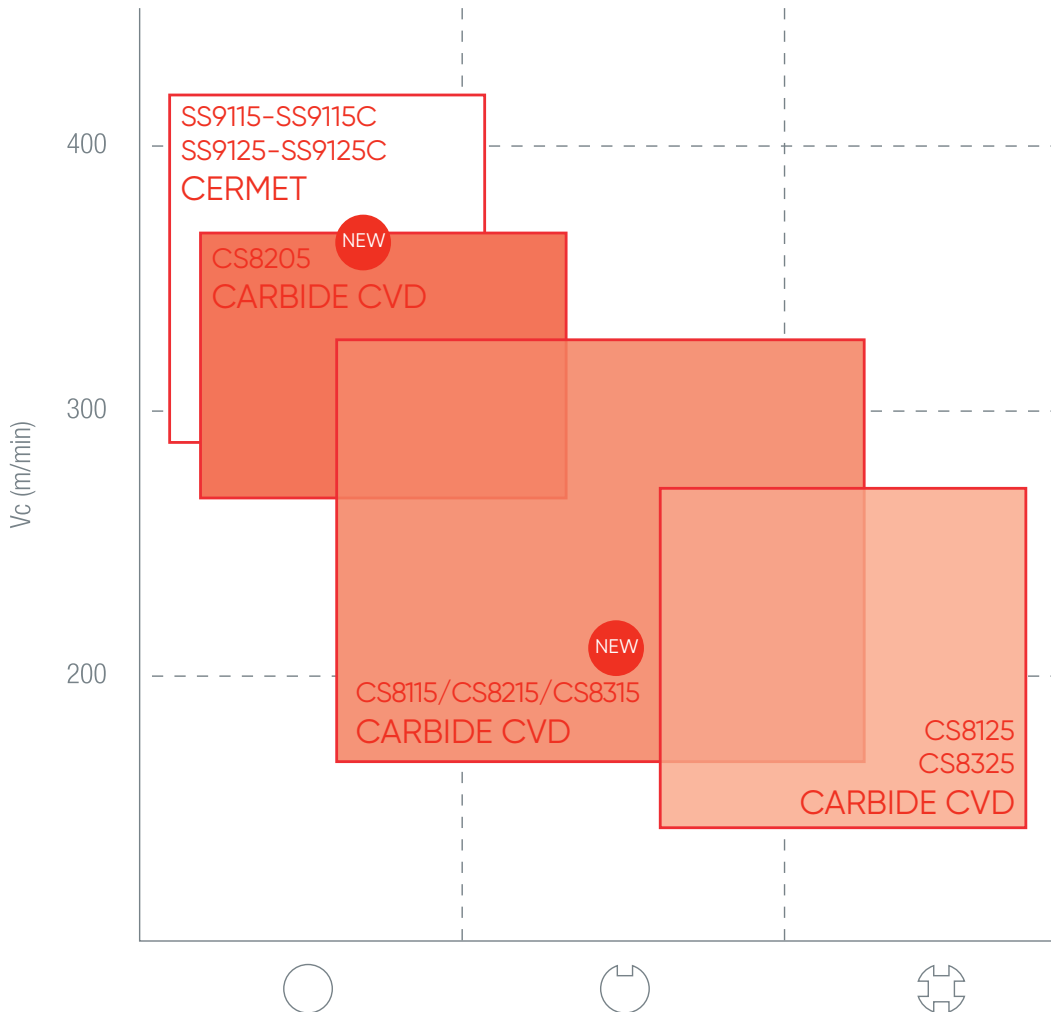
HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

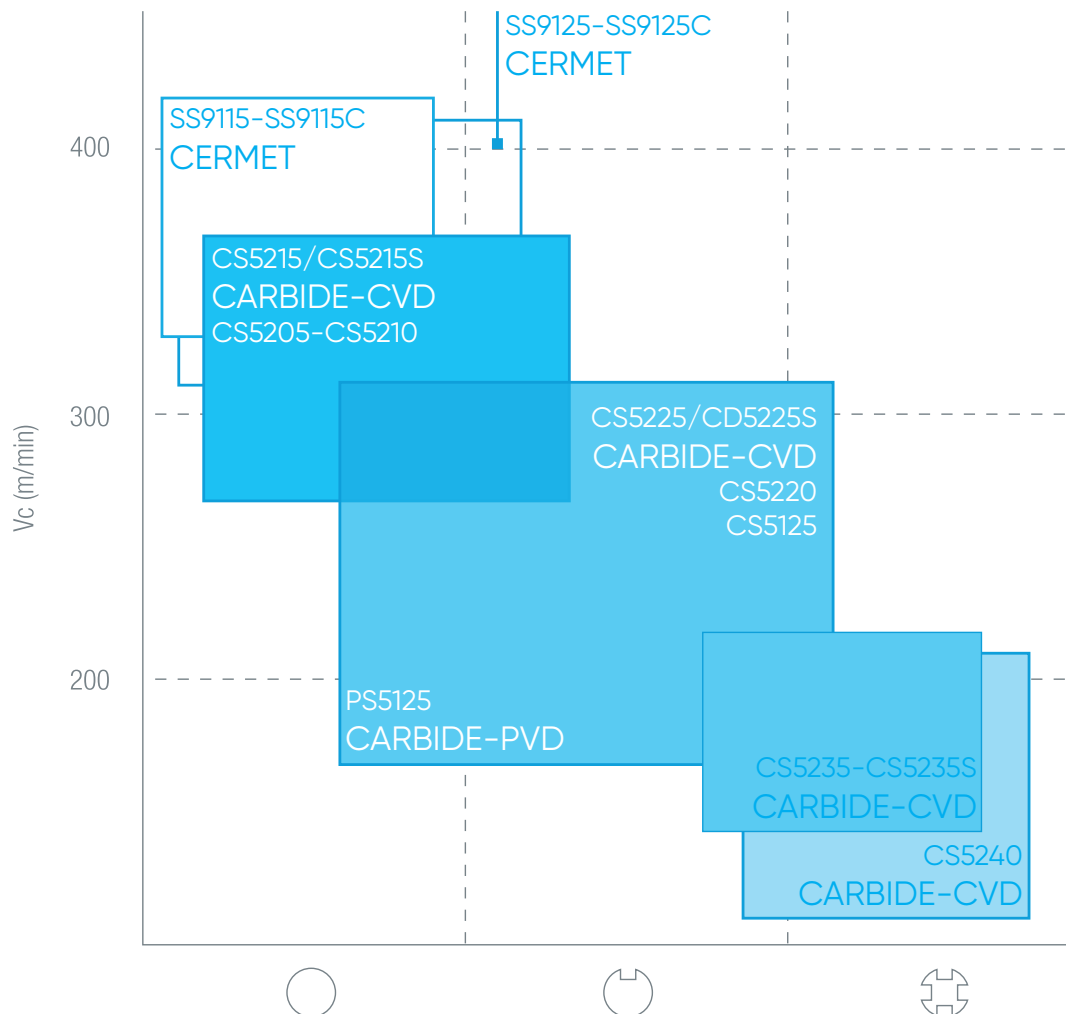
CARBIDE /TURNING

GRADES

Range ISO **K**

Range ISO **P**

GRADES



TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

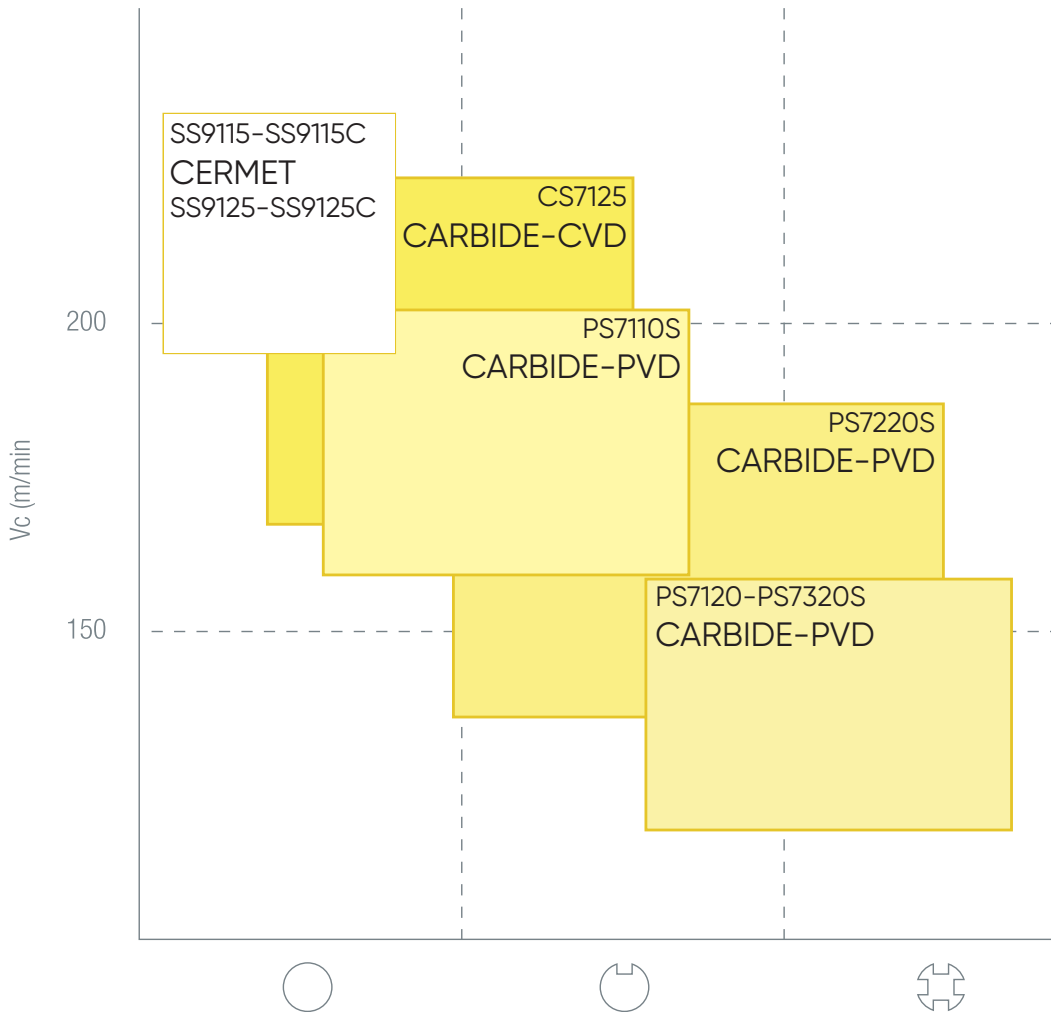
HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

CARBIDE /TURNING

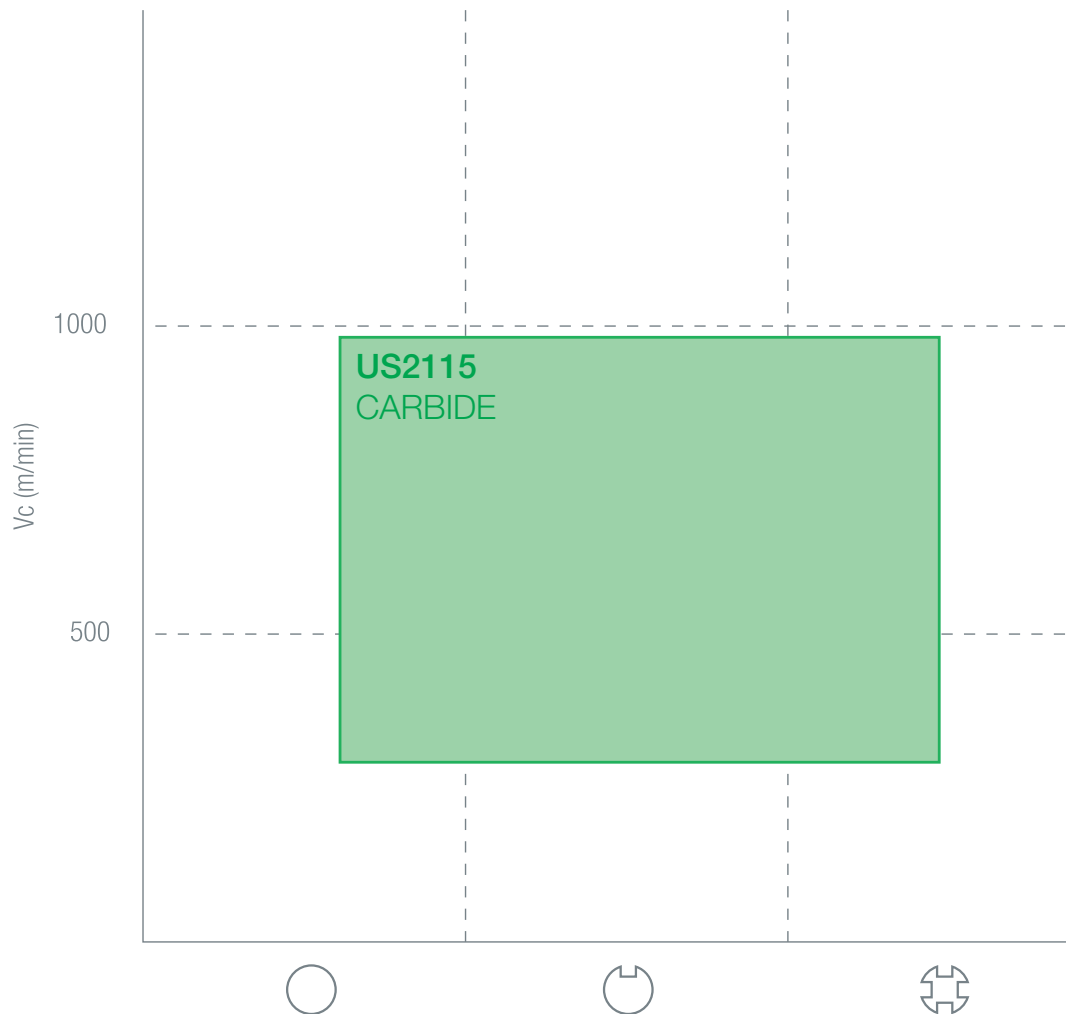
GRADES

Range ISO **M**

CARBIDE /TURNING

Range ISO **N**

GRADES



TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

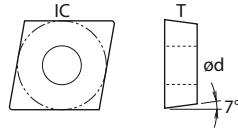
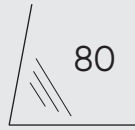
HSS
DRILLS & TAPS

SPARE
PARTS

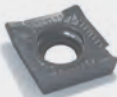
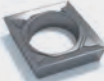
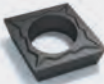
INDEX

POSITIVE 7°
with hole

CC □ □



CC □ □	0602 □ □	09T3 □ □	1204 □ □
IC	6,35	9,525	12,7
T	2,38	3,97	4,76
Ød	2,80	4,40	5,50
Holder	134	134	134

DESCRIPTION		CARBIDE-CVD												CARBIDE-PVD				CERMET		CARBIDE										
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	CCGT060202-ALU																													•
	CCGT060204-ALU																													•
	CCGT060208-ALU																													•
	CCGT09T302-ALU																													•
	CCGT09T304-ALU																													•
	CCGT09T308-ALU																													•
	CCGT09T312-ALU																													•
	CCGT120402-ALU																													•
	CCGT120404-ALU																													•
	CCGT120408-ALU																													•
CCGT120412-ALU																													•	
 	CCMT060202-CG																								•					
	CCMT060204-CG																								•	•				
	CCMT060208-CG																								•					
	CCMT09T304-CG																								•					
	CCMT09T308-CG																								•					
 	CCMT060202-HF	•																						•						
	CCMT060204-HF	•					•				•	•	•									•	•							
	CCMT09T302-HF	•																												
	CCMT09T304-HF	•					•		•																					
 	CCMT060204-HM	•					•		•		•	•	•											•						
	CCMT060208-HM	•					•		•		•	•	•											•						
	CCMT09T302-HM	•																												
	CCMT09T304-HM	•					•		•		•	•	•											•						
	CCMT09T308-HM	•					•		•		•	•	•											•						
	CCMT120404-HM	•					•		•		•	•	•										•	•						
	CCMT120408-HM	•					•		•		•	•	•										•	•						
	CCMT120412-HM											•																		



FINISHING



MEDIUM



ROUGHING

Vc • fn • ap

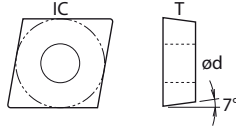
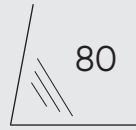


56

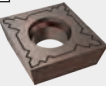
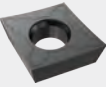
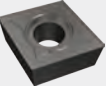
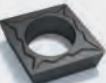
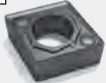
CARBIDE /TURNING

POSITIVE 7°
with hole

CC □ □



CC □ □	0602 □ □	09T3 □ □	1204 □ □
IC	6,35	9,525	12,7
T	2,38	3,97	4,76
Ød	2,80	4,40	5,50
Holder	134	134	134

DESCRIPTION		CARBIDE-CVD												CARBIDE-PVD				CERMET			CARBIDE									
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS710S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	CCMT060204-HQ																								•	•	•			
	CCMT09T304-HQ																								•					
	CCMT09T308-HQ										•															•		•		
 	CCMT060204-MF1																				•									
 	CCMT060204-MF2																				•									
 	CCMT09T304-ST																										•			
 	CCMT060204-TS																							•						
	CCMT060208-TS																							•						
	CCMT09T302-TS																							•						
	CCMT09T304-TS																							•						
	CCMT09T308-TS																							•						
 	CCMT060204-VM					•														•	•									
	CCMT060208-VM																				•	•								
	CCMT09T304-VM					•		•												•	•									
	CCMT09T308-VM					•														•	•									
 	CCMT060204-VQ					•		•	•										•	•	•									
	CCMT09T304-VQ					•		•	•										•	•	•									



FINISHING



MEDIUM



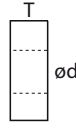
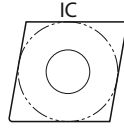
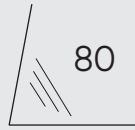
ROUGHING

Vc • fn • ap

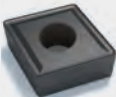
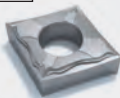
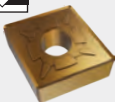
56

NEGATIVE
with hole

CN□□



CN□□	1204□□	1606□□	1906□□
IC	12,7	15,875	12,7
T	4,76	6,35	4,76
ød	5,16	6,35	5,50
Holder	137	137	137

DESCRIPTION		CARBIDE-CVD												CARBIDE-PVD				CERMET		CARBIDE										
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	CNMA120408												•	•	•	•														
	CNMA120412												•	•	•	•														
	CNMA160608												•		•	•														
	CNMA160612												•	•	•	•	•													
	CNMA160616												•	•	•	•														
	CNMA190612												•	•	•	•														
	CNMA190616												•	•	•	•														
 	CNMG120404				•			•				•	•						•	•										
	CNMG120408				•	•		•	•	•		•	•	•	•	•	•		•			•	•							
	CNMG120412				•	•		•	•	•		•	•	•	•	•	•		•	•		•	•							
	CNMG120416				•			•		•		•	•	•	•	•						•	•							
	CNMG160608				•	•		•	•	•		•	•	•	•	•			•	•		•	•							
	CNMG160612				•	•		•	•	•		•	•	•	•	•	•		•	•		•	•							
	CNMG160616					•			•					•	•	•	•		•	•										
	CNMG190608					•			•				•	•					•	•										
	CNMG190612												•		•	•														
	CNMG190616					•			•				•	•	•	•				•	•									
 	CNMG120402-ALU																													•
	CNMG120404-ALU																													•
	CNMG120408-ALU																													•
 	CNMG120404-HQ								•										•	•		•			•					
	CNMG120408-HQ																								•					
 	CNMG190612-HR				•																									



FINISHING



MEDIUM



ROUGHING

Vc • fn • ap

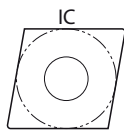


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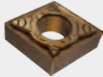
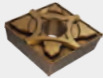
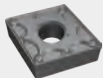
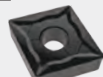
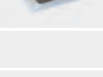
CARBIDE /TURNING

NEGATIVE
with hole

CN□□

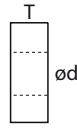
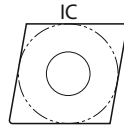
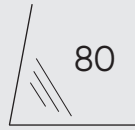


CN□□	1204□□	1606□□	1906□□
IC	12,7	15,875	12,7
T	4,76	6,35	4,76
ød	5,16	6,35	5,50
Holder	137	137	137

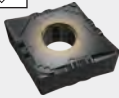
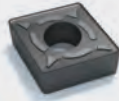
DESCRIPTION	CARBIDE-CVD												CARBIDE-PVD				CERMET		CARBIDE											
	CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115		
  CNMG120404-MF2																														
  CNMG120408-MF3																														
  CNMG120408-MM																														
  CNMG120404-PM																														
  CNMG120408-PM																														
  CNMG120404-TF																														
  CNMG120408-TF																														
  CNMG120408-TK																														
  CNMG120412-TK																														

NEGATIVE
with hole

CN□□



CN□□	1204□□	1606□□	1906□□
IC	12,7	15,875	12,7
T	4,76	6,35	4,76
ød	5,16	6,35	5,50
Holder	137	137	137

DESCRIPTION		CARBIDE-CVD													CARBIDE-PVD				CERMET			CARBIDE							
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115
 	CNMG090408-TS																		•	•									
	CNMG090412-TS																		•	•									
	CNMG120404-TS							•											•	•	•	•	•						
	CNMG120408-TS							•											•	•	•	•	•						
	CNMG120412-TS																		•	•									
	CNMG160608-TS																		•	•									
	CNMG160612-TS																		•	•									
	CNMG160616-TS																		•	•									
	CNMG190608-TS																		•	•									
	CNMG190612-TS																		•	•	•								
	CNMG190616-TS																		•	•									
 	CNMG120404-UF						•																						
 	CNMG120404-UM			•			•		•		•	•	•									•	•						
	CNMG120408-UM			•			•		•		•	•	•									•	•						
	CNMG120412-UM			•			•		•		•	•	•									•	•						
	CNMG120416-UM			•			•		•		•	•	•									•	•						
	CNMG160608-UM			•			•		•			•	•									•	•						
	CNMG160612-UM			•			•		•			•	•		•							•	•						
	CNMG160616-UM			•			•		•		•	•	•									•	•						
	CNMG190608-UM			•		•	•		•		•	•	•									•	•						
	CNMG190612-UM			•			•		•		•	•	•									•	•						
	CNMG190616-UM			•			•		•		•	•	•									•	•						



FINISHING



MEDIUM



ROUGHING

Vc • fn • ap

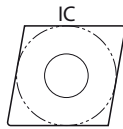


56

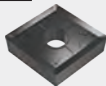
CARBIDE /TURNING

NEGATIVE
with hole

CN□□



CN□□	1204□□	1606□□	1906□□
IC	12,7	15,875	12,7
T	4,76	6,35	4,76
ød	5,16	6,35	5,50
Holder	137	137	137

DESCRIPTION		CARBIDE-CVD												CARBIDE-PVD				CERMET		CARBIDE									
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115
 	CNMG120408-UM1										●																		
 	CNMG120408-UMC					●																							
	CNMG120408-UMC					●																							
 	CNMG120408-UR			●			●		●																				
	CNMG120412-UR			●			●		●																				
	CNMG160612-UR			●			●				●																		
	CNMG160616-UR			●			●		●																				
	CNMG190612-UR			●			●		●		●		●									●	●						
	CNMG190616-UR			●			●		●		●	●	●									●							
	CNMG190624-UR						●		●																				
	CNMM190612-UR						●		●													●							
	CNMM190616-UR						●		●														●						
	CNMM190624-UR						●		●																				
	CNMM250924-UR							●		●																			



FINISHING



MEDIUM

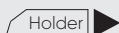


ROUGHING

Vc • fn • ap

56

INDEX

CN□□	1204□□	1606□□	1906□□
IC	12,7	15,875	12,7
T	4,76	6,35	4,76
Ød	5,16	6,35	5,50
 Holder			

[illegible]

FINISHING



MEDIUM



ROUGHING

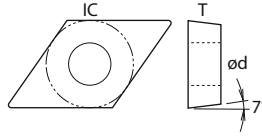
 $V_c \bullet fn \bullet ap$ 

56

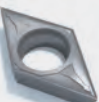
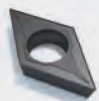
CARBIDE /TURNING

POSITIVE 7°
with hole

DC □ □



DC □ □	0702 □ □	11T3 □ □
IC	6,35	9,525
T	2,38	3,97
Ød	2,80	4,40
Holder	143	143

DESCRIPTION		CARBIDE-CVD																CARBIDE-PVD				CERMET				CARBIDE				
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS710S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	DCGT070202-ALU																													●
	DCGT070204-ALU																													●
	DCGT070208-ALU																													●
	DCGT11T302-ALU																													●
	DCGT11T304-ALU																													●
	DCGT11T308-ALU																													●
	DCGT11T312-ALU																													●
 	DCGT11T302-SF																				●									
	DCGT11T302-SF																				●									
	DCGT11T304-SF																				●									
 	DCGT11T302EL-U																								●					
	DCGT11T304EL-U																								●					
	DCGT11T302ER-U																								●					
	DCGT11T304ER-U																								●					
 	DCMT070204-CG																								●					
	DCMT070208-CG																								●					
	DCMT11T302-CG																								●	●				
	DCMT11T304-CG																								●	●				
	DCMT11T308-CG																								●					
 	DCMT070202-HF				●			●	●		●	●	●									●	●							
	DCMT070204-HF				●			●	●		●	●	●									●	●							
	DCMT11T304-HF				●			●	●		●	●	●									●	●							
 	DCMT070204-HM				●			●	●		●	●	●											●						
	DCMT070208-HM				●			●	●		●	●	●											●						
	DCMT11T302-HM				●			●	●		●	●	●											●						
	DCMT11T304-HM				●			●	●		●	●	●											●						
	DCMT11T308-HM				●			●	●		●	●	●											●						
	DCMT11T312-HM				●			●	●																					



FINISHING



MEDIUM



ROUGHING

Vc • fn • ap

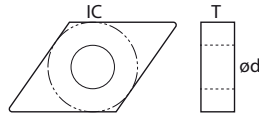


56

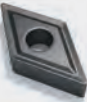
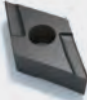
INDEX

NEGATIVE
with hole

DN□□



DN□□	1104□□	1504□□	1506□□
IC	9,525	12,7	12,7
T	4,76	4,76	6,35
ød	3,81	5,16	5,16
Holder	150	150	150

DESCRIPTION		CARBIDE-CVD										CARBIDE-PVD				CERMET			CARBIDE										
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115
 	DNMA150608											•	•	•	•	•	•												
	DNMA150612											•	•	•	•	•													
	DNMA150616											•	•	•	•														
 	DNMG110408				•			•				•	•							•	•								
	DNMG150604				•			•		•		•	•	•	•						•		•	•					
	DNMG150608				•	•		•	•	•		•	•	•	•	•	•	•		•	•		•	•					
	DNMG150612				•	•		•	•	•		•	•	•	•	•				•	•		•	•					
	DNMG150616													•	•														
 	DNMG150602-ALU																												•
	DNMG150604-ALU																												•
	DNMG150608-ALU																												•
 	DNMG150608-HA																					•							
 	DNMG150608-HQ																									•			
 	DNMG150604L-ST					•		•												•	•								
	DNMG150608L-ST					•		•													•								
	DNMG150604R-ST					•		•													•								
	DNMG150608R-ST					•		•													•								
 	DNMG110404-TK																					•	•						
	DNMG110408-TK																					•							
	DNMG150608-TK																					•							



FINISHING



MEDIUM



ROUGHING

Vc • fn • ap

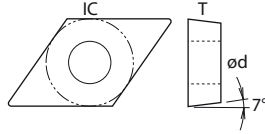


56

CARBIDE /TURNING

NEGATIVE
with hole

DN□□



DN□□	1104□□	1504□□	1506□□
IC	9,525	12,7	12,7
T	4,76	4,76	6,35
Ød	3,81	5,16	5,16
Holder	150	150	150

DESCRIPTION		CARBIDE-CVD												CARBIDE-PVD				CERMET				CARBIDE								
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS710S	PS720S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	DNMG150608-TM					•			•											•	•	•								
	DNMG150612-TM				•																									
 	DNMG110404-TS																				•		•	•						
	DNMG110408-TS																					•		•	•					
	DNMG110412-TS																			•	•									
	DNMG150604-TS																							•	•					
	DNMG150608-TS																							•	•					
	DNMG150612-TS																								•	•				
 	DNMG150612-TR							•																						
 	DNMG150408-UF					•																								
	DNMG150604-UF				•					•																				
 	DNMG110404-UM				•			•		•		•	•	•									•	•						
	DNMG110408-UM				•		•	•		•		•	•	•									•	•						
	DNMG110412-UM				•			•		•																				
	DNMG150604-UM		•		•			•		•		•	•	•										•	•					
	DNMG150608-UM				•	•		•	•	•		•	•	•										•	•					
	DNMG150612-UM				•			•		•		•	•	•										•	•					
 	DNMG110408-UM1							•																						



FINISHING



MEDIUM



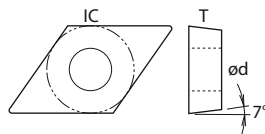
ROUGHING

Vc • fn • ap



56

INDEX



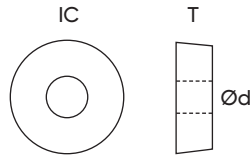
DN □□	1104 □□	1504 □□	1506 □□
IC	9,525	12,7	12,7
T	4,76	4,76	6,35
Ød	3,81	5,16	5,16
			

 $V_c \bullet fn \bullet ap$

56

POSITIVE 7°
with hole

RC□□



RC□□	0602□□	0803□□	10T3□□
IC	6,0	8,0	10,0
T	2,36	3,18	3,18
Ød	2,80	3,35	3,60
Holder	158	158	158

DESCRIPTION		CARBIDE-CVD										CARBIDE-PVD				CERMET			CARBIDE											
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	RCGT0602M0-ALU																													•
	RCGT0803M0-ALU																													•
	RCGT1003M0-ALU																													•
	RCGT10T3M0-ALU																													•
	RCGT1204M0-ALU																													•
	RCGT1605M0-ALU																													•
 	RCMX0803M0																			•	•									
	RCMX1003M0																			•	•									
	RCMX1204M0																			•	•			•						
	RCMX1606M0																			•	•	•								
	RCMX2006M0																			•	•									
	RCMX2507M0																			•	•									
	RCMX3209M0																			•	•									
	RCMX200600												•		•	•														
	RCMX250700														•	•														
																					</									



FINISHING



MEDIUM



ROUGHING

Vc • fn • ap

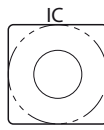


56

CARBIDE /TURNING

POSITIVE 7°
with hole

SC□□



SC□□	09T3□□	1204□□
IC	9,525	12,7
T	3,97	4,76
Ød	4,40	5,16

DESCRIPTION		CARBIDE-CVD										CARBIDE-PVD					CERMET			CARBIDE										
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	SCGT09T302-ALU																													●
	SCGT09T304-ALU																													●
	SCGT09T308-ALU																													●
	SCGT09T312-ALU																													●
	SCGT120404-ALU																													●
	SCGT120408-ALU																													●
 	SCMT09T304-HF								●														●							
 	SCMT09T304-HM																						●							
	SCMT09T308-HM				●			●		●		●	●	●									●	●						
	SCMT120404-HM				●			●		●		●	●	●									●	●						
	SCMT120408-HM				●			●		●		●	●	●									●	●						



FINISHING



MEDIUM



ROUGHING

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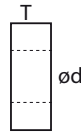
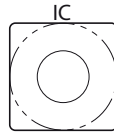


56

NEGATIVE
with hole

SN□□

90



SN□□	1204□□	1206□□	1506□□
IC	12,7	12,7	15,875
T	4,76	6,35	6,35
ød	5,16	5,16	6,35
Holder	162	162	162

DESCRIPTION		CARBIDE-CVD												CARBIDE-PVD					CERMET		CARBIDE									
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	SNMA120408												•	•	•	•								•						
	SNMA120412												•	•	•	•														
	SNMA120416												•	•	•	•														
	SNMA120424												•	•																
	SNMA150612														•	•														
	SNMA150616														•	•														
	SNMA190612														•	•														
	SNMA190616												•		•	•														
 	SNMG120404				•	•		•	•	•										•	•									
	SNMG120408				•	•		•	•	•			•	•	•	•				•	•									
	SNMG120412				•	•		•	•	•			•	•	•	•	•			•	•									
	SNMG120416														•	•														
	SNMG150612														•	•														
	SNMG190612					•									•	•				•	•									
 	SNMG120402-ALU																												•	
	SNMG120404-ALU																												•	
	SNMG120408-ALU																												•	
	SNMG120412-ALU																												•	
 	SNMG150612-PM				•																									
 	SNMG120408-TF																							•	•					
 	SNMG150612R-ST				•																									



FINISHING



MEDIUM



ROUGHING

Vc • fn • ap

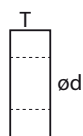
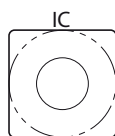


56

CARBIDE /TURNING

NEGATIVE
with hole

SN□□



SN□□	1906□□	2507□□	2509□□
IC	19,05	25,4	25,4
T	6,35	7,94	9,52
ød	7,93	9,12	9,12
Holder	162	162	162

DESCRIPTION		CARBIDE-CVD														CARBIDE-PVD				CERMET				CARBIDE						
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	SNMG120404-TK																							●	●					
	SNMG120408-TK																							●	●					
	SNMG120412-TK																							●	●					
 	SNMG120404-TS				●	●														●	●		●	●						
	SNMG120408-TS																			●	●		●	●						
	SNMG120412-TS																			●	●		●							
	SNMG150608-TS																			●	●									
	SNMG150612-TS																							●						
	SNMG190608-TS																			●	●									
	SNMG190612-TS																			●	●									
	SNMG190616-TS																			●		●								
 	SNMG120404-UF				●		●	●																						
 	SNMG120404-UM				●		●	●		●	●	●											●	●						
	SNMG120408-UM				●		●	●		●	●	●											●	●						
	SNMG120412-UM				●		●	●		●	●	●											●	●						
	SNMG150608-UM						●	●		●													●	●						
	SNMG150612-UM					●																								
	SNMG190612-UM				●		●	●		●																				
	SNMG190616-UM					●	●	●																	●					
	SNMG150612-UM1				●																									
 																														



FINISHING



MEDIUM



ROUGHING

Vc • fn • ap



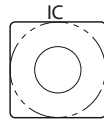
56

SN□□	1204□□	1206□□	1506□□
IC	12,7	12,7	15,875
T	4,76	6,35	6,35
Ød	5,16	5,16	6,35
Holder	162	162	162

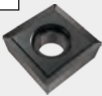
56

POSITIVE 11°
with hole

SP□□



SP□□	1203□□	1204□□
IC	12,7	12,7
T	3,18	4,76
Ød	5,16	5,16

DESCRIPTION	CARBIDE-CVD													CARBIDE-PVD				CERMET				CARBIDE							
	CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	SPMT120408																												
	SPMT120412											●	●											●	●				
	SPMT120416											●	●																
	SPMT120420											●	●																
	SPMT120430											●	●																
 	SPMT120408-HM				●																			●	●				
 	SPMT120408-MM							●																					

POSITIVE 5°
with hole

TB□□



TB□□	0601□□
IC	3,97
T	1,59
Ød	2,16

DESCRIPTION		CARBIDE-CVD													CARBIDE-PVD				CERMET				CARBIDE						
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115
 	TBGT060102L																								●				
	TBGT060104L																								●		●		



FINISHING



MEDIUM



ROUGHING

Vc • fn • ap



56

CARBIDE /TURNING

POSITIVE 7°
with hole

TC □ □



TC □ □	0902 □ □	1102 □ □	16T3 □ □
IC	5,56	6,35	9,525
T	2,38	2,38	3,97
ød	2,50	2,80	4,40
Holder	164	164	164

DESCRIPTION	CARBIDE-CVD														CARBIDE-PVD				CERMET			CARBIDE								
	CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115		
 	TCGT090202-ALU																													●
	TCGT090204-ALU																													●
	TCGT090208-ALU																													●
	TCGT110202-ALU																													●
	TCGT110204-ALU																													●
	TCGT110208-ALU																													●
	TCGT16T302-ALU																													●
	TCGT16T304-ALU																													●
	TCGT16T308-ALU																													●
	TCGT16T312-ALU																													●
 	TCMT110204-CG																								●					
 	TCMT090204-HF			●		●	●		●	●	●											●	●							
	TCMT110204-HF			●		●	●	●	●	●	●											●	●							
	TCMT16T304-HF			●		●	●	●	●	●	●											●	●							
 	TCMT090204-HM			●		●	●	●	●	●	●											●	●							
	TCMT090208-HM			●		●	●	●	●	●	●											●	●							
	TCMT110204-HM			●		●	●	●	●	●	●												●							
	TCMT110208-HM			●		●	●	●	●	●	●											●	●							
	TCMT16T304-HM			●		●	●	●	●	●	●												●							
 	TCMT16T308-HM			●		●	●	●	●	●	●												●							
	TCMT16T312-HM											●	●																	



FINISHING



MEDIUM



ROUGHING

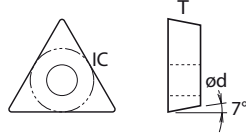
Vc • fn • ap



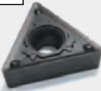
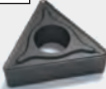
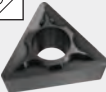
56

POSITIVE 7°
with hole

TC □□



TC□□	0902□□	1102□□	16T3□□
IC	5,56	6,35	9,525
T	2,38	2,38	3,97
Ød	2,50	2,80	4,40
Holder	164	164	164

DESCRIPTION	CARBIDE-CVD												CARBIDE-PVD				CERMET		CARBIDE										
	CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	TCMT090204-HQ																							●					
	TCMT110204-HQ																							●					
	TCMT110208-HQ																							●					
	TCMT16T304-HQ																							●					
 	TCMT110208-HR											●	●																
 	TCMT16T312-MM1																				●								
 	TCMT16T304-UM2																				●								
	TCMT16T308-UM2																				●								
 	TCMT110204-TS																						●						
	TCMT16T304-TS																						●						
	TCMT16T308-TS																						●						
 	TCMT16T304-VM							●																					
	TCMT16T308-VM																					●							



FINISHING



MEDIUM



ROUGHING

Vc • fn • ap



56

CARBIDE /TURNING

NEGATIVE
with hole

TN□□



TN□□	1604□□	2204□□	2706□□
IC	9,525	12,7	15,875
T	4,76	4,76	6,35
ød	3,81	5,16	6,35
Holder	168	168	168

DESCRIPTION	CARBIDE-CVD														CARBIDE-PVD				CERMET				CARBIDE						
	CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	TNGG160402L-P																								•				
	TNGG160404L-P																								•				
	TNGG160402R-P																								•		•		
	TNGG160404R-P																								•		•		
 	TNMA160404											•	•																
	TNMA160408											•	•	•	•		•												
	TNMA160412											•	•	•	•														
	TNMA160416											•	•	•	•														
	TNMA220404											•	•																
	TNMA220408											•	•	•	•														
	TNMA220412											•	•	•	•														
	TNMA220416											•	•	•	•														
 	TNMG160404			•	•		•	•	•		•	•	•						•	•		•	•						
	TNMG160408			•	•		•	•	•		•	•	•	•	•	•			•	•		•	•						
	TNMG160412			•	•		•	•	•		•	•	•	•	•	•			•	•		•	•						
	TNMG160416													•	•														
	TNMG220408			•			•		•		•	•	•	•	•							•	•						
	TNMG220412				•			•				•	•	•	•				•	•									
	TNMG220416				•			•				•	•						•	•									
	TNMG330704									•																			
	TNMG330724							•		•																			
	 	TNMG160402-ALU																											
TNMG160404-ALU																													•
TNMG160408-ALU																													•
TNMG160412-ALU																													•
TNMG220402-ALU																													•
TNMG220404-ALU																													•
TNMG220408-ALU																													•
TNMG220412-ALU																													•

FINISHING

MEDIUM

ROUGHING

Vc • fn • ap

56

CARBIDE /TURNING

NEGATIVE
with hole

TN□□



TN□□	1604□□	2204□□	2706□□
IC	9,525	12,7	15,875
T	4,76	4,76	6,35
ød	3,81	5,16	6,35
Holder	168	168	168

DESCRIPTION		CARBIDE-CVD												CARBIDE-PVD					CERMET				CARBIDE						
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115
 	TNMG160404-TS																		•	•	•		•	•					
	TNMG160408-TS																		•	•	•		•	•					
	TNMG160412-TS																			•	•		•	•					
	TNMG160416-TS																			•	•								
	TNMG220404-TS																					•							
	TNMG220408-TS																						•						
TNMG220412-TS																				•	•								
 	TNMG160404-UF				•			•		•																			
	TNMG160408-UF				•			•		•																			
 	TNMG220412-UH											•	•																
	TNMG220416-UH											•	•																
 	TNMG160404-UM				•			•		•		•	•	•									•	•					
	TNMG160408-UM				•			•		•		•	•	•									•	•					
	TNMG160412-UM				•			•		•		•	•	•									•	•					
	TNMG160416-UM												•	•															
	TNMG220404-UM				•			•		•		•	•	•									•	•					
	TNMG220408-UM				•		•	•		•		•	•	•									•	•					
	TNMG220412-UM				•			•		•		•	•	•									•	•					
 	TNMG160404-UMC			•			•																						
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FINISHING



MEDIUM



ROUGHING

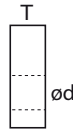
Vc • fn • ap



56

NEGATIVE
with hole

TN□□



TN□□	1604□□	2204□□	2706□□
IC	9,525	12,7	15,875
T	4,76	4,76	6,35
ød	3,81	5,16	6,35
Holder	168	168	168

DESCRIPTION		CARBIDE-CVD												CARBIDE-PVD				CERMET				CARBIDE							
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115
 	TNMG160408-UR				●		●	●		●	●	●											●	●					
	TNMG160412-UR				●		●	●		●	●	●											●	●					
	TNMG220412-UR				●		●	●		●	●	●											●	●					
	TNMG220416-UR				●		●	●		●	●	●											●	●					
 	TNMG160404-US				●		●	●																					
	TNMG160408-US				●		●	●																					
 	TNMG160404-VQ					●		●										●	●	●									
	TNMG160408-VQ					●		●										●	●	●									



FINISHING



MEDIUM



ROUGHING

Vc • fn • ap

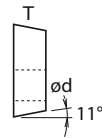


56

CARBIDE /TURNING

POSITIVE 11°
with hole

TP □ □



TP □ □	0802 □ □	0902 □ □	1103 □ □
IC	4,76	5,56	6,35
T	2,38	2,38	3,18
Ød	2,30	3,00	3,40
Holder	167	167	167

DESCRIPTION	CARBIDE-CVD												CARBIDE-PVD				CERMET			CARBIDE									
	CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS710S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	TPGH080202L																		•	•				•		•			
	TPGH080204L																		•	•				•	•				
	TPGH090202L																		•	•				•					
	TPGH090204L																		•	•				•		•			
	TPGH110302L																		•	•				•					
	TPGH110304L																		•	•				•		•			
 	TPMT110304-CG																							•					
 	TPMT110304-HQ																							•					
	TPMT110308-HQ																							•					
 	TPUN220412										•											•	•						
 	TPUN220408-FG										•											•	•						



FINISHING



MEDIUM



ROUGHING

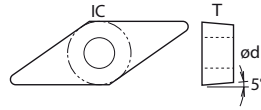
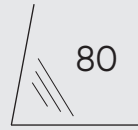
Vc • fn • ap



56

POSITIVE 5°
with hole

VB□□



VB□□	1103□□	1604□□
IC	6,35	9,525
T	3,18	4,76
Ød	2,80	4,40
Holder	172	172

DESCRIPTION		CARBIDE-CVD												CARBIDE-PVD				CERMET				CARBIDE								
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	VBGT110302-ALU																													•
	VBGT110304-ALU																													•
	VBGT110308-ALU																													•
	VBGT160402-ALU																													•
	VBGT160404-ALU																													•
	VBGT160408-ALU																													•
 	VBGT110302L-Y																									•				
	VBGT110304L-Y																									•				
	VBGT110302R-Y																									•				
	VBGT110304R-Y																									•				
 	VBMT160404				•		•		•		•	•	•										•	•						
	VBMT160408				•		•		•		•	•	•										•	•						
 	VBMT110302-CG																									•				
	VBMT110304-CG																									•				
 	VBMT110304-HQ																									•				
	VBMT110308-HQ																									•				
	VBMT160404-HQ																									•			•	
	VBMT160408-HQ																									•				
 	VBMT160408-HR																						•	•						



FINISHING



MEDIUM



ROUGHING

Vc • fn • ap



56

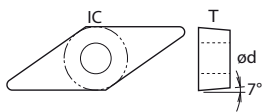
INDEX

CARBIDE /TURNING

POSITIVE 7°
with hole

VC ☐ ☐

80



VC	1103	1604	2205
IC	6,35	9,525	12,70
T	3,18	4,76	5,56
Ød	2,80	4,40	5,60
Holder	176	176	176

[illegible]

FINISHING



MEDIUM



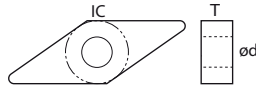
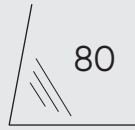
ROUGHING

 $V_c \bullet f_n \bullet a_p$ 

56

NEGATIVE
with hole

VN□□



VN□□	1604□□
IC	9,525
T	4,76
ød	3,81
Holder	177

DESCRIPTION		CARBIDE-CVD															CARBIDE-PVD				CERMET			CARBIDE						
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	VNMG160404				●		●	●	●	●	●	●	●										●	●						
	VNMG160408				●		●	●	●	●	●	●	●							●	●		●	●						
	VNMG160412				●		●	●	●	●	●	●	●										●	●						
 	VNMG12T304-EM																				●									
 	VNMG160404-HQ																								●					
	VNMG160408-HQ																								●					
 	VNMG160404-PM				●		●													●	●									
	VNMG160408-PM				●		●													●	●									
 	VNMG160404-TS				●		●													●	●									
 	VNMG160404-UF				●		●	●																						
	VNMG160408-UF				●		●	●																						
 	VNMG160404-UM				●		●	●		●	●	●											●	●						
	VNMG160408-UM				●		●	●		●	●	●											●	●						
	VNMG160412-UM				●		●	●		●	●	●											●	●						



FINISHING



MEDIUM



ROUGHING

Vc • fn • ap



56

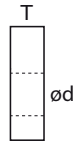
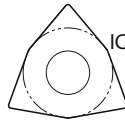
WB□□	0601□□
IC	4,76
T	1,59
Ød	2,20

[illegible]

NEGATIVE
with hole

WN

80



WN	0604	0804
IC	9,525	12,7
T	4,76	4,76
Ød	3,81	5,16
 Holder	 178	 178

DESCRIPTION		CARBIDE-CVD										CARBIDE-PVD				CERMET		CARBIDE												
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	WNMA080404											•	•			•	•													
	WNMA080408											•	•	•	•	•	•				•									
	WNMA080412											•	•	•	•			•												
	WNMA080416											•	•																	
 	WNMG080404				•		•		•		•	•	•									•	•							
	WNMG080408				•		•		•		•	•	•	•	•							•	•							
	WNMG080412				•		•		•		•	•	•	•	•							•	•							
	WNMG080416											•	•																	
 	WNMG080404-ALU																												•	
	WNMG080408-ALU																												•	
 	WNMG060404-HA																					•								
	WNMG080408-HA																					•								
 	WNMG080404-HQ																								•					
	WNMG080408-HQ					•			•												•	•				•			•	
	WNMG080412-HQ																								•					
 	WNMG060404-MF2																					•								
	WNMG080404-MF2																					•								
																											</			



FINISHING



MEDIUM



ROUGHING

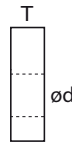
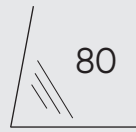
 $V_c \bullet fn \bullet ap$ 

56

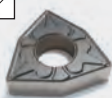
CARBIDE /TURNING

NEGATIVE
with hole

WN□□



WN□□	0604□□	0804□□
IC	9,525	12,7
T	4,76	4,76
ød	3,81	5,16
Holder	178	178

DESCRIPTION		CARBIDE-CVD										CARBIDE-PVD				CERMET			CARBIDE											
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 	WNMG080404-PM				•			•												•										
	WNMG080408-PM	•			•			•												•	•									
	WNMG080412-PM				•			•												•	•									
 	WNMG080404-ST																											•		
	WNMG080408-ST																									•	•			
	WNMG080404L-ST				•																									
	WNMG080408L-ST				•																									
	WNMG080404R-ST				•	•			•											•	•									
	WNMG080408R-ST					•			•											•	•									
 	WNMG080408-TM				•			•		•										•	•	•								
	WNMG080412-TM																													
 	WNMG080404-TK																						•	•						
	WNMG080408-TK																						•	•						
	WNMG080412-TK																						•							
 	WNMG080404-TS					•			•											•	•	•	•	•						
	WNMG080408-TS				•	•			•											•	•	•	•	•						
 	WNMG060404-UF								•																					
	WNMG080404-UF				•			•		•																				
	WNMG080408-UF				•			•		•																				



FINISHING



MEDIUM



ROUGHING

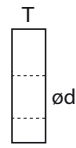
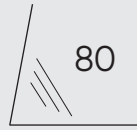
Vc • fn • ap



56

NEGATIVE
with hole

WN□□



WN□□	0604□□	0804□□
IC	9,525	12,7
T	4,76	4,76
ød	3,81	5,16
Holder	178	178

DESCRIPTION	CARBIDE-CVD												CARBIDE-PVD				CERMET				CARBIDE								
	CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8115	CS8125	CS8205	CS8215	CS8315	CS8325	CS7125S	PS7110S	PS7220S	PS7320S	PS7120	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115	
 				•			•		•		•	•	•										•	•					
				•			•		•		•	•	•										•	•					
				•			•		•		•	•	•										•	•					
				•			•		•		•	•	•										•	•					
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 				•			•		•																				
				•			•		•																				
 																							•						



FINISHING



MEDIUM



ROUGHING

Vc • fn • ap



56

CARBIDE /TURNING

CUTTING PARAMETERS Vc (m/min)

KG	GREY CAST IRON
KN	NODULAR CAST IRON
PL	LOCARBON AND FREE CUTTING STEEL
PM	MEDIUM CARBON STEEL
PH	HIGH CARBON STEEL
PA	ALLOY STEEL

MM	MARTENSITIC AND FERRITIC STAINLESS STEEL
MA	AUSTENITIC STAINLESS STEEL
NA	ALUMINIUM ALLOYS
NH	ALUMINIUM ALLOYS AGED AND HARDENED
NB	BRASS
NC	BRONZE AND ELECTROLYTIC COPPER

MATERIAL		CARBIDE-CVD																	
		CD5125	CS5205	CS5210	CS5215	CS5215S	CS5220	CS5225	CS5225S	CS5235	CS5235S	CS5240	CS8205	CS8215	CS8115	CS8125	CS8315	CS8325	CS7125S
K	KG											250~450	200~360	200~360	160~300	200~360	160~300		
	KN											180~300	150~280	150~280	120~250	150~280	120~250		
P	PL	250~350	200~320	200~320	250~350	200~320	250~350	200~320	200~320	160~250	160~250								
	PM	220~300	180~260	180~260	220~300	180~260	220~300	180~260	180~260	140~200	140~200								
	PH	200~280	160~250	160~250	200~280	160~250	200~280	160~250	160~250	120~180	120~180	100~160							
	PA	180~250	150~220	150~220	180~250	150~220	180~250	150~220	150~220	100~170	100~170	90~160							
M	MM																	160~260	
	MA																	140~220	

MATERIAL		CARBIDE-PVD					CERMET				CARBIDE		
		PS7110S	PS7220S	PS7120	PS7320S	PS5125	SS9115	SS9115C	SS9125	SS9125C	US2115		
K	KG						250~400	250~400	250~400	250~400			
	KN						180~300	180~300	180~300	180~300			
P	PL					100~180	280~380	280~380	280~380	280~380			
	PM					80~160	240~330	240~330	240~330	240~330			
	PH					80~140	220~300	220~300	220~300	220~300			
	PA					60~120	200~280	200~280	200~280	200~280			
M	MM	120~220	100~150	100~150	120~220		180~250	180~250	180~250	180~250			
	MA	100~180	80~120	80~120	100~180		160~220	160~220	160~220	160~220			
N	NA										600~1500		
	NH										300~700		
	NB										250~400		
	NC										150~250		

CUTTING PARAMETERS a_p (mm) & f_n (mm/rev)

NEGATIVE



NEGATIVE INSERT SIZE		CN□□	-	1204..	1606..	1906..	2507.. 2509..
		DN□□	1104..	1504.. 1506..	-	-	-
		SN□□	0903..	1204..	-	1906..	2507.. 2509..
		TN□□	-	1604..	2204..	-	-
		VN□□	-	1604..	-	-	-
		WN□□	0604..	0804..	-	-	-

Chip Breaker Form	Corner Radius	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
MA FLAT	R02										
	R04			2,00-4,00	0,20-0,35						
	R08			2,00-6,00	0,25-0,50	4,00-8,00	0,34-0,60				
	R12			2,00-6,00	0,33-0,58	4,00-10,0	0,40-0,70	5,00-11,0	0,43-0,76	8,00-16,0	0,45-1,00
	R16 / R24			2,00-7,00	0,37-0,65	4,00-10,0	0,45-0,78	5,00-13,0	0,49-0,8	8,00-18,0	0,50-1,10
MG BOX	R02										
	R04			1,00-4,00	0,16-0,25					8,00-16,0	0,45-0,89
	R08	1,00-4,00	0,23-0,40	1,00-4,00	0,22-0,38	4,00-7,00	0,34-0,58	5,00-10,0	0,42-0,76		
	R12			1,00-5,00	0,26-0,44	4,00-8,00	0,40-0,68	5,00-11,0	0,43-0,76		
	R16 / R24			1,00-5,00	0,29-0,50	4,00-8,00	0,45-0,76	5,00-11,0	0,49,0,85	8,00-18,0	0,50-1,10
ALU	R02			0,10-3,00	0,05-0,30						
	R04			0,80-3,50	0,10-0,40						
	R08			0,80-3,50	0,10-0,40						
	R12			0,80-3,50	0,10-0,42						
	R16 / R24										
HA	R02										
	R04										
	R08										
	R12			0,80-3,50	0,05-0,30						
	R16 / R24										
HQ	R02										
	R04			0,50-2,50	0,05-0,25						
	R08			0,50-4,00	0,10-0,50						
	R12			0,50-4,00	0,13-0,60						
	R16 / R24										
HTR	R02										
	R04										
	R08										
	R12										
	R16 / R24									1,80-10,00	0,30-0,80
PM	R02										
	R04										
	R08			1,00-5,00	0,10-0,50						
	R12										
	R16 / R24										

CARBIDE /TURNING

CUTTING PARAMETERS a_p (mm) & f_n (mm/rev)

NEGATIVE



NEGATIVE INSERT SIZE		CN□□	-	1204..	1606..	1906..	2507.. 2509..
		DN□□	1104..	1504.. 1506..	-	-	-
		SN□□	0903..	1204..	-	1906..	2507.. 2509..
		TN□□	-	1604..	2204..	-	-
		VN□□	-	1604..	-	-	-
		WN□□	0604..	0804..	-	-	-

Chip Breaker Form	Corner Radius	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
ST	R02										
	R04			1,00-3,50	0,12-0,30						
	R08			1,80-7,00	0,15-0,50						
	R12										
	R16 / R24										
TF	R02										
	R04			0,05-1,00	0,04-0,28						
	R08			0,07-1,00	0,05-0,03						
	R12										
	R16 / R24										
TK	R02										
	R04	0,50-1,00	0,10-0,25	0,50-1,20	0,10-0,28						
	R08	0,50-1,20	0,10-0,28	0,50-1,50	0,10-0,30	0,80-2,00	0,10-0,35				
	R12			0,50-1,60	0,10-0,30						
	R16 / R24										
TM	R02										
	R04										
	R08			0,50-3,00	0,05-0,40						
	R12										
	R16 / R24										
TS	R02										
	R04	1,00-3,00	0,13-0,23	0,80-4,00	0,05-0,30						
	R08			0,80-4,00	0,10-0,40						
	R12			0,80-4,00	0,10-0,40						
	R16 / R24										
UF	R02										
	R04			0,30-1,80	0,05-0,35						
	R08			0,30-2,00	0,05-0,35						
	R12										
	R16 / R24										
UH	R02										
	R04										
	R08										
	R12					1,30-8,00	0,25-0,70				
	R16 / R24					1,80-8,00	0,30-0,80				

CUTTING PARAMETERS a_p (mm) & f_n (mm/rev)

NEGATIVE



NEGATIVE INSERT SIZE		CN□□	-	1204..	1606..	1906..	2507.. 2509..
		DN□□	1104..	1504.. 1506..	-	-	-
		SN□□	0903..	1204..	-	1906..	2507.. 2509..
		TN□□	-	1604..	2204..	-	-
		VN□□	-	1604..	-	-	-
		WN□□	0604..	0804..	-	-	-

Chip Breaker Form	Corner Radius	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
UM	R02										
	R04			1,00-4,50	0,10-0,33	2,00-7,50	0,13-0,33				
	R08			1,50-5,00	0,15-0,45	2,00-8,00	0,18-0,45	3,00-9,00	0,20-0,46		
	R12			1,50-5,50	0,15-0,50	2,00-8,00	0,22-0,50	3,00-10,0	0,24-0,50		
	R16 / R24			1,50-5,50	0,15-0,60	2,00-8,00	0,25-0,60	3,00-10,0	0,32-0,50		
UT	R02										
	R04										
	R08										
	R12					1,30-7,00	0,25-0,65				
	R16 / R24										
UR	R02										
	R04										
	R08			3,00-10,0	0,30-0,72	3,00-15,0	0,27-0,48	3,00-17,0	0,34-0,60		
	R12			3,00-15,00	0,30-0,80	3,00-15,5	0,32-0,50	3,00-18,0	0,38-0,68		
	R16 / R24					3,00-16,00	0,35-0,63	3,00-18,0	0,38-0,68	5,00-17,0	0,45-0,90
US	R02										
	R04			1,50-4,50	0,15-0,45						
	R08			1,50-5,00	0,15-0,5						
	R12			1,50-5,00	0,15-0,50						
	R16 / R24										
VQ	R02										
	R04										
	R08										
	R12										
	R16 / R24										
ZR	R02										
	R04										
	R08										
	R12			1,00-7,00	0,20-0,50						
	R16 / R24			1,80-7,00	0,32-0,75						
R/L-P R/L-C	R02			0,50-3,50	0,08-0,30						
	R04			1,00-3,50	0,12-0,30						
	R08			1,30-3,50	0,15-0,35						
	R12										
	R16 / R24										

CARBIDE /TURNING

CUTTING PARAMETERS a_p (mm) & f_n (mm/rev)

POSITIVE



NEGATIVE INSERT SIZE		CC/CP□□	0602..	09T3.. 0903..	1204..	-	-
		DC□□	0702..	11T3..	..	-	-
		SC/SP□□	-	09T3..	1204..	-	-
		TC/TP□□	0902..	1102..	16T3..	2204..	-
		VB/VC□□	-	1103..	1604..	2205..	-
		WB□□	0601..	-	-	-	-

Chip Breaker Form	Corner Radius	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
ER/L-U	R02	0,10-0,50	0,01-0,10	0,02-2,00	0,04-0,15						
	R04	0,10-0,50	0,01-0,10	0,50-3,00	0,08-0,30						
	R08										
	R12										
	R16 / R24										
L-F	R02	0,30-1,00	0,10-0,20	0,50-1,20	0,10-0,25						
	R04	0,50-1,00	0,10-0,25	0,70-1,50	0,12-0,30	0,20-4,00	0,02-0,30				
	R08					0,30-5,00	0,03-0,50				
	R12										
	R16 / R24										
L/R-W	R02	0,07-1,80	0,03-0,15	0,08-2,00	0,04-0,15						
	R04	0,1-2,00	0,05-0,2	0,1-2,20	0,08-0,2						
	R08										
	R12										
	R16 / R24										
L-Y	R02			0,06-1,70	0,03-0,13						
	R04			0,09-2,00	0,06-0,22						
	R08										
	R12										
	R16 / R24										
ALU	R02	0,03-3,00	0,01-0,12	0,05-4,00	0,02-0,30	0,05-4,00	0,02-0,30				
	R04	0,10-3,00	0,02-0,13	0,10-5,00	0,03-0,50	0,10-5,00	0,03-0,50				
	R08	0,10-4,00	0,02-0,20	0,10-5,00	0,03-0,50	0,10-5,50	0,04-0,80				
	R12			0,15-5,00	0,04-0,60	0,50-6,50	0,08-0,70	0,10-7,00	0,03-0,60		
	R16 / R24										
CG	R02	0,30-1,00	0,05-0,20								
	R04	0,30-1,00	0,10-0,25	0,30-1,5	0,10-0,25						
	R08	0,40-2,40	0,80-0,25	0,30-1,5	0,10-0,28						
	R12										
	R16 / R24										
HF	R02										
	R04										
	R08										
	R12										
	R16 / R24										

CUTTING PARAMETERS a_p (mm) & f_n (mm/rev)

POSITIVE



NEGATIVE INSERT SIZE		CC/CP□□	0602..	09T3.. 0903..	1204..	-	-
		DC□□	0702..	11T3..	..	-	-
		SC/SP□□	-	09T3..	1204..	-	-
		TC/TP□□	0902..	1102..	16T3..	2204..	-
		VB/VC□□	-	1103..	1604..	2205..	-
		WB□□	0601..	-	-	-	-

Chip Breaker Form	Corner Radius	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
HM	R02	1.0~6.0	0.10~0.70								
	R04										
	R08										
	R12										
	R16 / R24										
HQ	R02	0,06~1,70	0,06~0,19	0,10~2,00	0,07~0,22						
	R04	0,10~2,00	0,11~0,25	0,80~3,00	0,08~0,30	0,80~3,00	0,08~0,28				
	R08	0,20~2,00	0,08~0,30	1,00~3,00	0,10~0,30	1,00~3,00	0,10~0,33				
	R12										
	R16 / R24										
HR	R02										
	R04										
	R08										
	R12										
	R16 / R24										
TS	R02										
	R04										
	R08										
	R12										
	R16 / R24										
VM	R02										
	R04										
	R08										
	R12										
	R16 / R24										
VQ	R02										
	R04										
	R08										
	R12										
	R16 / R24										
VW	R02										
	R04										
	R08										
	R12										
	R16 / R24										

TURNING PVD COMPARISON TABLE

MATERIAL	SANGEO	ISCAR	SECO	TEAGUTEC	KYOCERA	SANDVIK	KENAMETAL	MITSUBISHI	WALTER	KORLOY
P	PS7110S	IC507	CP200		PR1005					
		IC808			PR915		KU10T			PC8110
					PR1115		KU25T			PC230
	PS7220S		CP250		PR930					
	PS7320S									
	PS7120					GC1025		VP15TF	WTA43	PC5300
		IC3028		TT5030	PR1025			VP20MF	WTA41	PC8115
		IC908			PR630	GC4125				
		IC830			PR660					PC3545
M	PS5125		CP500							
	PS7110S	IC808	CP200			GC1005		MP9005	WSM10S	PC8110
		IC907			PR915	GC1105	KC5010	VP19RT	WSM20S	PC8115
	PS7220S		CP250				KC5510			
		IC3028			PR930	GC1020	KC5025	VP15TF	WSM30S	PC5300
	PS7120	IC830		TT5030	PR1125	GC1025	KC5525	VP20MF	WSM40S	
S					PR630	GC4125				PC9030
					PR660	GC2035				
	PS5125		CP500	TT8020						PC5400
	PS7110S	IC808	TS2000					VP05RT	WSM10	PC8105
		IC907	CP500		PR915	GC1105				
	PS7120						KC5010			
	PS7220S	IC328	TS2500	TT5030	PR660	GC1025		VP10RT	WSM20S	PC8110
	PS7320S				PR1325	GC2035	KC5025	VP15TF	WSM30S	PC8115
										PC5300
										PC5400

TURNING CVD COMPARISON TABLE

MATERIAL	SANGE	ISCAR	SECO	TEAGUTEC	KYOCERA	SANDVIK	KENAMETAL	MITSUBISHI	WALTER	KORLOY
P	CS5205			TT8105	CA5505	GC4305	KCP05(B)	UE6105	WPP10S	NC3010
	CS5210	IC8150		TT8110	CA510	GC4205		UE6110	WKP13S	
	CS5215		TP0500	TT8115	CA515	GC4315	KCP10(B)	MY5015		NC3215
	CS5215S		TP0501	TT8120		GC4215		MC6015		
	CS5220		TP1500			GC4325	KCP30(B)	UE6020		NC3220
	CS5225		TP2500		CA525	GC4225			WPP20S	
	CS5225S	IC8250	TP2501	LC025P	CA5525	GC4235	KCP40(B)		WKP23S	
	CD5125		T350M	TT8125						NC3225
	CS5235	IC8350	TP3500	TT5100	CA5535			UE6035	WPP30S	NC3030
	CS5235S			TT8135					WKP33S	NC500H
	CS5240		TGP45	TT7100						NC5330
M	CS7125S	IC6015	TM2000	TT9215	CA6515	GC2015	KCM15(M)	MC7015	WAM10	NC9020
			TM4000	TT9225	CA6525	GC2025	KCM25(B)	US7020	WAM20	NC9025
								US735	WAM30	
K	CS8205	IC5005	TK1001	TT7005	CA4505	GC3205	KCK05(B)	MC5005	WKK10S	
	CS8115	IC5015		TT7310	CA4510	GC3210		MC5015		
	CS8125		TK2001	TT7015					WKK20S	
	CS8215		TGK1500		CA4515	GC3215	KCK15(B)	UC5105		NC6210
	CS8315			TT7015	CA4115	GC3225		UC5115		NC6215
	CS8325								WKK20S	

TURNING CERMET

MATERIAL	SANGE	ISCAR	SECO	TEAGUTEC	KYOCERA	SANDVIK	KENAMETAL	MITSUBISHI	WALTER	KORLOY
UNI	SS9115	IC20N	C15M	CT3000	TN60	CT525	KT125	NX2525		CC1500
	SS9115C			CT3000						
	SS9125	IC520N					HT5	NX3035		CN1500
	SS9125C									



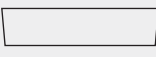
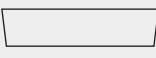
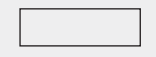


TURNING/**PCBN**

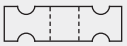
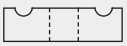
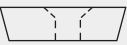
PCBN /TURNING

C	C	G	W	12	04	08
1	2	3	4	5	6	7

1	GEOMETRY
C	 80
D	 55
R	 360
S	 90
T	 60
V	 35
W	 80

2	CLEARANCE ANGLE
B	 5°
C	 7°
P	 11°
N	 0°

3	TOLERANCE
	 
G	±0,025 ±0,13
M	±0,05 ±0,15 ±0,13
U	±0,08 ±0,25 ±0,13

4	SHAPE
A	
G	
M	
W	
X	SPECIAL

5	SHAPE (mm)
C	06 09 12 16 19 25 
D	07 11 15 
R	06 09 12 15 19 25 
S	09 12 15 19 25 
T	09 11 16 22 
V	11 16 22 
W	06 08 

6	THICKNESS (mm)
02	2,38
03	3,18
T3	3,97
04	4,76
06	6,35
07	7,94
09	9,52
10	10,00

7	CORNER RADIUS
02	0,20 mm
04	0,40 mm
08	0,80 mm
12	1,20 mm
16	1,60 mm
24	2,40 mm

4C

8

BC

9

420

10

8	NUMBER OF EDGES
1C	1 CORNER
2C	2 CORNER
3C	3 CORNER
4C	4 CORNER
6C	6 CORNER
8C	8 CORNER
FF	FULL FACE
SO	SOLID PcBN

9	
BC	PCBN
SC	TIN COATING PCBN

10	APPLICATION
1□□	HARDENED STEEL
2□□	CAST IRON
3□□	SUPER ALLOY
4□□	UNIVERSAL

PCBN /TURNING

GRADES

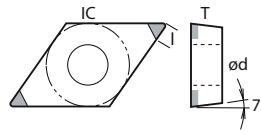
ISO DIN 513	K					H					S				
															
	K01	K10	K20	K30	K40	P01	P10	P20	P30	P40	S01	S10	S20	S30	S40
PCBN															

COATED

POSITIVE 7°
with hole

DC

55



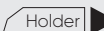
DC□□	0702□□	11T3□□
IC	6,35	9,525
T	2,38	3,97
Ød	2,80	4,40
		

[illegible]

Vc • fn • ap

84

RC 

RC□□	0603□□	0903□□	1204□□
IC	6,35	9,525	12,7
T	3,18	2,38	4,76
Ød	—	—	—
			

[illegible]
$$V_c \bullet fn \bullet ap$$

84

RC 

RC□□	0603□□	0903□□	1204□□
IC	6,35	9,525	12,7
T	3,18	3,18	4,76
Ød	-	-	-
			

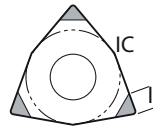
[illegible] $V_c \bullet fn \bullet ap$

84

NEGATIVE
with hole

WN

80



WN	0604	0804
IC	9,525	12,7
T	4,76	4,76
Ød	3,81	5,16

Holder	178	178
		

[illegible]

Vc • fn • ap

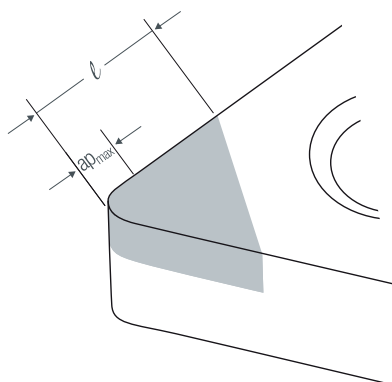
84

PCBN /TURNING

CUTTING PARAMETERS

KG	GREY CAST IRON
KN	NODULAR CAST IRON
KW	WHITE CAST IRON
KS	SINTERED MATERIAL

HH	HARDENED STEEL
HC	CASE HARDENED STEEL
HB	BEARING STEEL
SA	SUPER ALLOYS (Ni Based)



$$ap_{\max} < 20 \sim 30\% \ l$$

MATERIAL		ap (mm)	fn (mm/ rev)	CUTTING CONDITION		PCBN										
						BC150	BC170	SC150	BC250	SC250	SC250	BC350	BC420	BC4000	BCX4000	
H	HH	0,05-0,25	0,05-0,20	○	◊	✂	120-250	100-230	100-200					100-220	100-250	80-250
				⊕	◊			80-180					80-180	100-180	100-250	
	HC	0,05-0,25	0,08-0,25	○	◊	✂			100-180					100-200	100-200	100-250
				⊕	◊			80-160					80-160	80-160	80-250	
	HB	0,05-0,25	0,05-0,20	○	◊	✂	120-220	100-200	100-180					100-200	100-250	100-250
				⊕	◊			80-150					90-150	90-150	90-250	
K	KG	0,10-0,50	0,10-0,30	○	◊	✂					400-1000	350-1000		400-1200	350-1200	350-1500
				⊕	◊					400-800	350-800		400-1000	350-1200	350-1500	
	KN	0,10-0,30	0,05-0,20	○	◊				250-400		250-400		250-500	250-500	250-500	
				⊕	◊				150-300		150-300		200-400	200-400	200-400	
	KW	0,10-0,30	0,10-0,30	○	◊					60-100	100-120		60-120	100-250	100-300	
				⊕	◊					50-80	60-100		50-100	100-250	100-300	
	KS	0,05	0,05-0,25	○	◊					160-250	160-250	160-250		160-280	150-280	150-300
				⊕	◊								120-220	100-250	100-300	
S	SA	0,05-0,20	0,10-0,20	○	◊							120-300			120-300	



TURNING/**DIAMOND**

DIAMOND /TURNING

D

C

G

W

11

T3

04

1

2

3

4

5

6

7

1

GEOMETRY

C



D



R



S



T



V



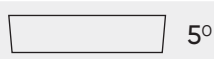
W



2

CLEARANCE ANGLE

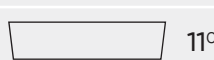
B



C



P



N



3

TOLERANCE



G

±0,025

±0,13

M

±0,05
±0,15

±0,13

U

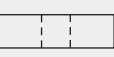
±0,08
±0,25

±0,13

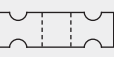
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SHAPE

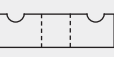
A



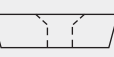
G



M



W



X

SPECIAL

5

SHAPE (mm)

C

06 09 12
16 19 25



D

07 11 15



R

06 09 12
15 19 25



S

09 12 15
19 25



T

09 11 16
22



V

11 16 22



W

06 08



6

THICKNESS (mm)

02

2,38

03

3,18

T3

3,97

04

4,76

06

6,35

07

7,94

09

9,52

10

10,00

7

CORNER RADIUS

02

0,20 mm

04

0,40 mm

08

0,80 mm

12

1,20 mm

16

1,60 mm

24

2,40 mm

1C

8

PC

9

150

10

8	NUMBER OF EDGES
1C	1 CORNER
2C	2 CORNER
3C	3 CORNER
FE	FULL EDGE

9	
PC	PCD

10	APPLICATION
1 □□ 3 □□	NON-FERROUS METAL

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

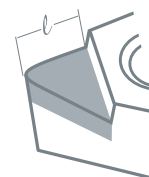
DIAMOND /TURNING

GRADES

ISO DIN 513	N				
	N01	N10	N20	N30	N40
PCD		PC100			
		PC150			
			PC200		
			PC300		

CUTTING EDGE STYLE

POSITIVE INSERTS

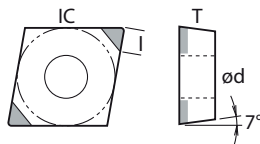


NEGATIVE INSERTS



POSITIVE 7°
with hole

CC□□



CC□□	0602□□	09T3□□	1204□□
IC	6,35	9,525	12,7
T	2,38	3,97	4,76
Ød	2,80	4,40	5,50
Holder	134	134	134

DESCRIPTION		EDGE		PCD					
				PC100	PC150	PC200	PC300		
	CCGT060202	1C			•	•	•		
	CCGT060204	1C		•	•	•	•		
	CCGT060208	1C		•	•		•		
	CCGT09T302	1C			•	•	•		
	CCGT09T304	1C		•	•	•	•		
	CCGT09T308	1C		•	•		•		
	CCGT120404	1C			•	•	•		
	CCGT120408	1C		•	•		•		
	CCGT09T302	2C			•	•	•		
	CCGT09T304	2C		•	•	•	•		
	CCGT09T308	2C		•	•		•		
	CCGT120404	2C			•	•	•		
	CCGT120408	2C		•	•		•		
	CCGW060202	1C			•	•	•		
	CCGW060204	1C		•	•	•	•		
	CCGW060208	1C		•	•		•		
	CCGW09T302	1C			•	•	•		
	CCGW09T304	1C		•	•	•	•		
	CCGW09T308	1C		•	•		•		
	CCGW120404	1C			•	•	•		
	CCGW120408	1C		•	•		•		
	CCGW09T302	2C			•	•	•		
	CCGW09T304	2C		•	•	•	•		
	CCGW09T308	2C		•	•		•		
	CCGW120404	2C			•	•	•		
	CCGW120408	2C		•	•		•		
	CCGX060204R/L	FE			•		•		
	CCGX09T304R/L	FE			•		•		

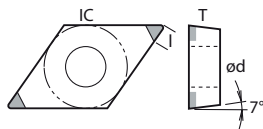
Vc • fn • ap

99

TURNING

DC

55



DC□□	0702□□	11T3□□
IC	6,35	9,525
T	2,38	3,97
Ød	2,80	4,40
 Holder	143	143

[illegible]
$$V_c \bullet fn \bullet ap$$

99

DN□□	1504□□	1506□□
IC	12,7	12,7
T	4,76	6,35
Ød	5,16	5,16
 Holder		

[illegible]

Vc • fn • ap

99

INDEX

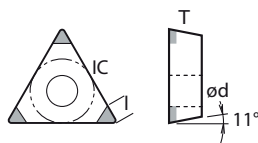
TC	0902	1102	16T3
IC	5,56	6,35	9,525
T	2,38	2,38	3,97
Ød	2,50	2,80	4,40
			

Vc • fn • ap 99

TURNING

TP□□

60



TP□□	0802□□	0902□□	1103□□
IC	4,76	5,56	6,35
T	2,38	2,38	3,18
Ød	2,30	3,00	3,40
			

[illegible]

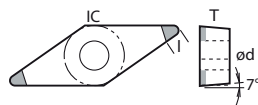
Vc • fn • ap

99

TURNING

VC ☐ ☐

80



VC	1103	1604
IC	6,35	9,525
T	3,18	4,76
Ød	2,80	4,40
Holder	176	176

[illegible]

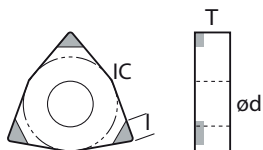
Vc • fn • ap

99

DIAMOND /TURNING

WN

80



WN□□	0604□□	0804□□
IC	9,525	12,7
T	4,76	4,76
Ød	3,81	5,16
 Holder	 178	 178

[illegible]

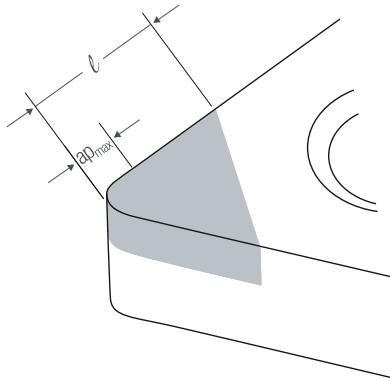
Vc • fn • ap

99

CUTTING PARAMETERS

NA	ALUMINIUM ALLOYS
NS	ALUMINIUM ALLOYS (Si≤15%)
NH	AL ALLOYS AGED AND HARDENED
NB	BRASS

NC	BRONZE AND ELECTROLYTIC COPPER
NG	GRAPHITE
HM	HARD METAL (Co≤16%)
ST	TITANIUM ALLOYS



$$ap_{\max} < 60 \sim 70\% \ell$$

MATERIAL		ap (mm)	fn (mm/rev)	CUTTING CONDITION	PCD					
					PC100	PC150	PC200	PC300		
N	NA	0,10~1,00	0,08~0,25	○ ⊕ ♀		600~2500		600~2500		
		1,00~2,50	0,15~0,50	○ ⊕ ♀		600~1600		600~1600		
	NS	0,10~1,00	0,05~0,20	○ ⊕ ♀			500~1800			
		1,00~2,50	0,08~0,35	○ ⊕ ♀			500~1200			
	NH	0,10~1,00	0,05~0,35	○ ⊕ ♀			400~1000			
		1,00~2,50	0,08~0,35	○ ⊕ ♀			400~800			
	NB	0,10~1,00	0,10~0,30	○ ⊕ ♀	400~1200	400~1200		400~1200		
		1,00~2,50	0,15~0,25	○ ⊕ ♀	400~1000	400~1000		400~1000		
	NC	0,10~1,00	0,10~0,30	○ ⊕ ♀	300~800	300~800		300~800		
		1,00~2,50	0,15~0,25	○ ⊕ ♀	300~500	300~500		300~500		
	NG	0,10~1,00	0,08~0,25	○ ⊕ ♀		300~800	300~800	300~800		
		1,00~2,50	0,15~0,50	○ ⊕ ♀		300~600	300~600	300~600		
H	HM	0,10~0,50	0,08~0,25	○ ♀			10~40			
S	ST	0,10~1,00	0,05~0,20	○ ⊕ ♀	100~200	100~200	100~220	100~200		
		1,00~2,50	0,08~0,20	○ ⊕ ♀	100~150	100~150	100~220	100~150		

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPSSPARE
PARTS

INDEX

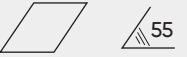
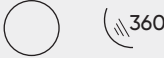
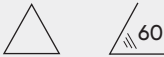
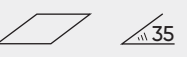


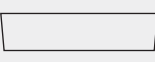
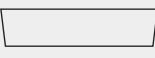
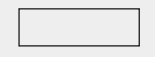


TURNING/**CERAMIC**

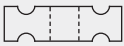
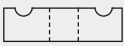
CERAMIC /TURNING

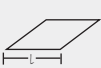
C	N	G	A	12	04	08
1	2	3	4	5	6	7

1	GEOMETRY
C	
D	
R	
S	
T	
V	
W	

2	CLEARANCE ANGLE
B	 5°
C	 7°
P	 11°
N	 0°

3	TOLERANCE
	 
G	±0,025 ±0,13
M	±0,05 ±0,13
U	±0,08 ±0,13

4	SHAPE
A	
G	
M	
T	
X	SPECIAL

5	SHAPE (mm)
C	06 09 12 16 19 25 
D	07 11 15 
R	06 09 12 15 19 25 
S	09 12 15 19 25 
T	09 11 16 22 
V	11 16 22 
W	06 08 

6	THICKNESS (mm)
02	2,38
03	3,18
T3	3,97
04	4,76
06	6,35
07	7,94
09	9,52
10	10,00

7	CORNER RADIUS
02	0,20 mm
04	0,40 mm
08	0,80 mm
12	1,20 mm
16	1,60 mm
24	2,40 mm

T	04	00	0	KS	81	50
8	9	10	11	12	13	14

8	CHAMFER
T	Mono 20° Chamfer
K	Mono 30° Chamfer
D	Double 10° Chamfer
S	Double 15° Chamfer
AD	After Double 10° Chamfer
AS	After Double 15° Chamfer

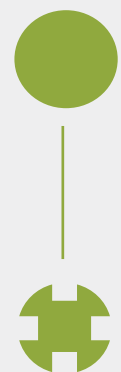
9	CHAMFER WIDTH 1
01	0,05 mm
02	0,10 mm
03	0,15 mm
04	0,20 mm
05	1,00 mm
06	2,00 mm
10	1,20 mm
20	1,50 mm
30	0,75 mm
40	1,25 mm

10	CF WIDTH 2 X DEGREE
00	Mono Type
01	0,20 x 25
02	0,10 x 30
03	0,20 x 30
04	0,15 x 30
05	0,45 x 25

11	HONING (µm)
0	No Honing
1	10
2	20
3	30
5	50

12	GRADE
KS	Al ₂ O ₃ + TiC(N)
KSC	Al ₂ O ₃ +TiC(N)+TiN
KZ	Al ₂ O ₃ + ZrO ₂
KN	Si ₃ N ₄
KA	TiC + Al ₂ O ₃
KL	SiAlON
KW	Whisker

13	WORKPIECE
41	Cast Iron
71	Inconel & High Temp. Alloy
81	Hardened Steel

14	APPLICATION
10	
20	
30	
40	
50	
60	
70	

CERAMIC /TURNING

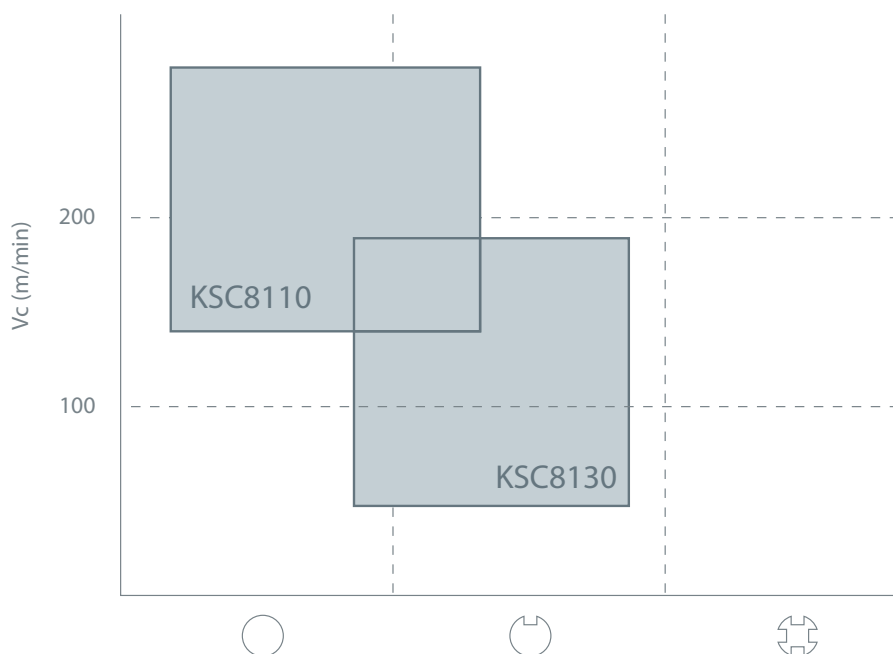
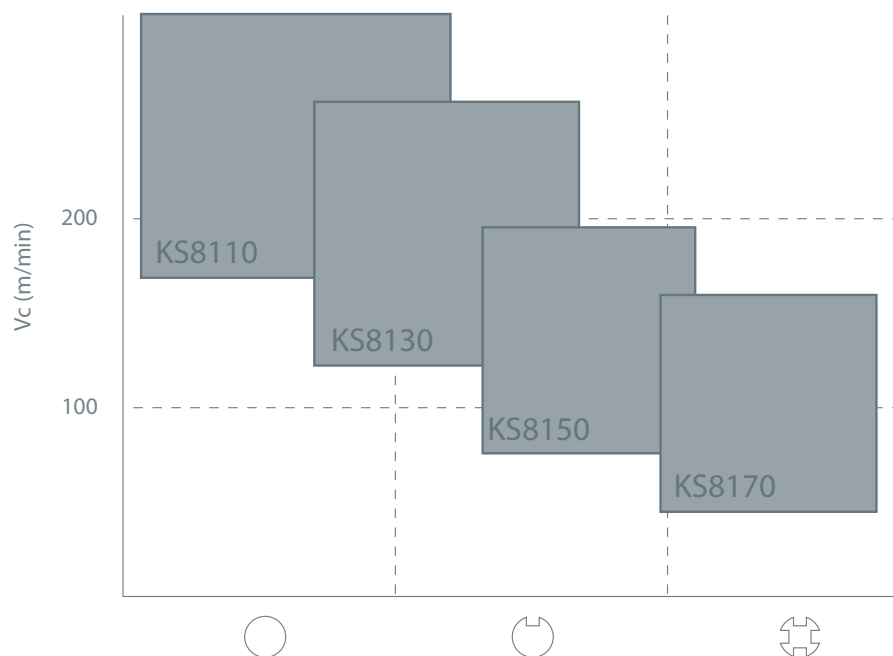
GRADES

ISO DIN 513	K					H					S				
	K01	K10	K20	K30	K40	H01	H10	H20	H30	H40	S01	S10	S20	S30	S40
$Al_2O_3 + TiC(N)$						KS8110									
							KS8130								
								KS8150							
								KS8170							
$Al_2O_3 + Ti-$ C(N) PVD						KSC8110									
							KSC8130								
$Al_2O_3 +$ ZrO ₂	KZ4120														
	KZ4130														
			KZ4180												
Si_3N_4	KN4110														
	KN4120														
		KN4130													
			KN4140												
			KN4150												
			KN1000												
			KA4110												
TiC + Al_2O_3															
SiAlON											KL7110				
											KL7120				
Whisker											KW7110				
											KW7120				

COATED

Range ISO **H**

GRADES



TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

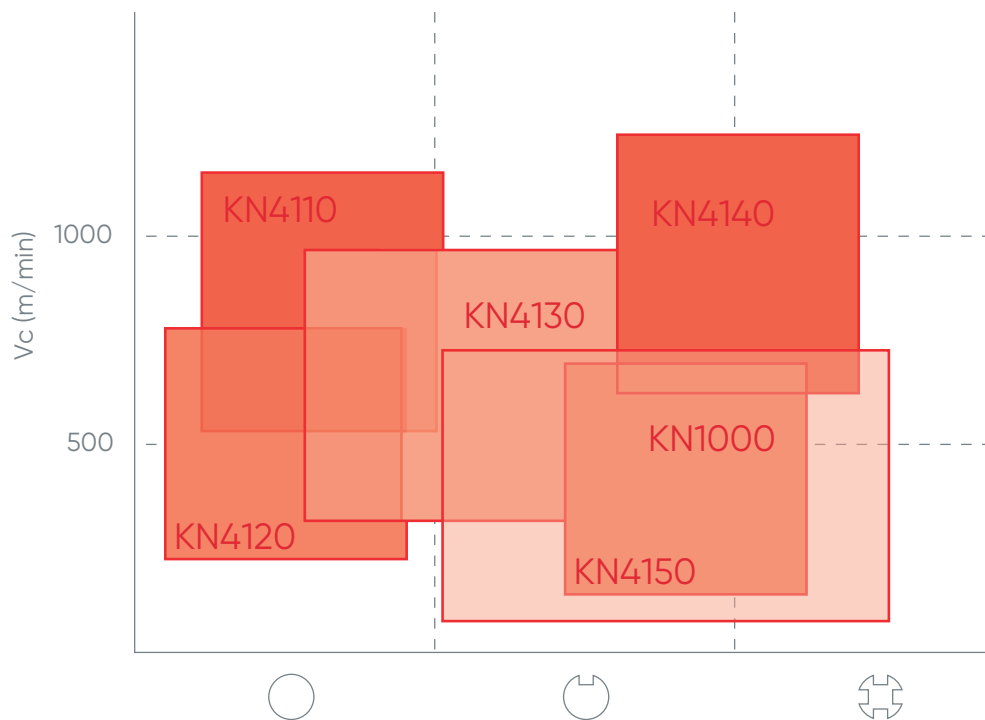
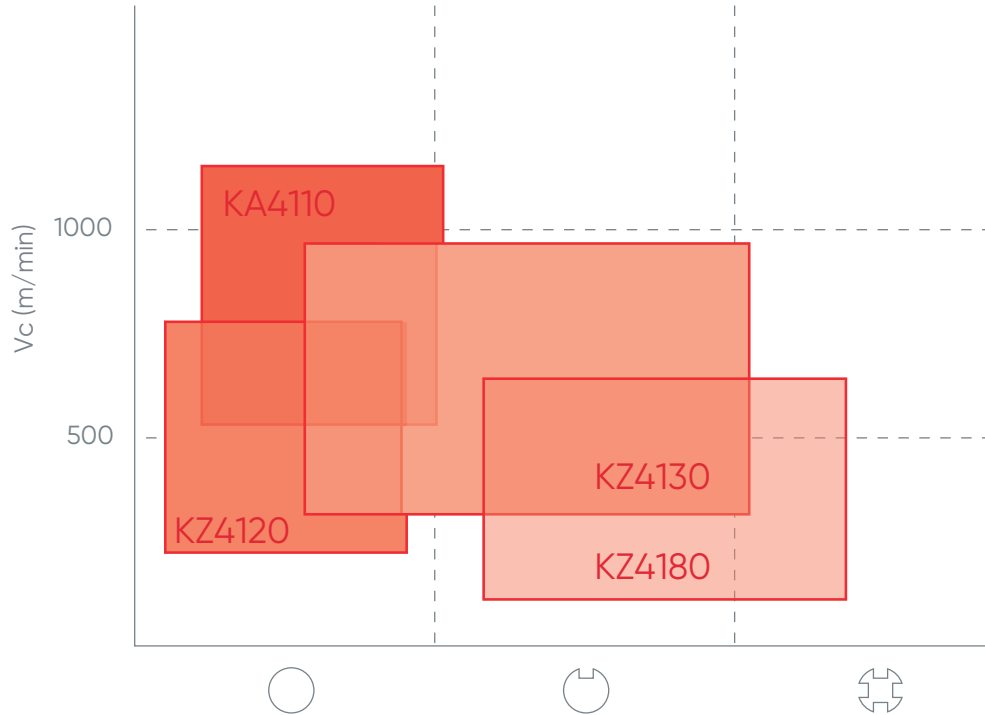
HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

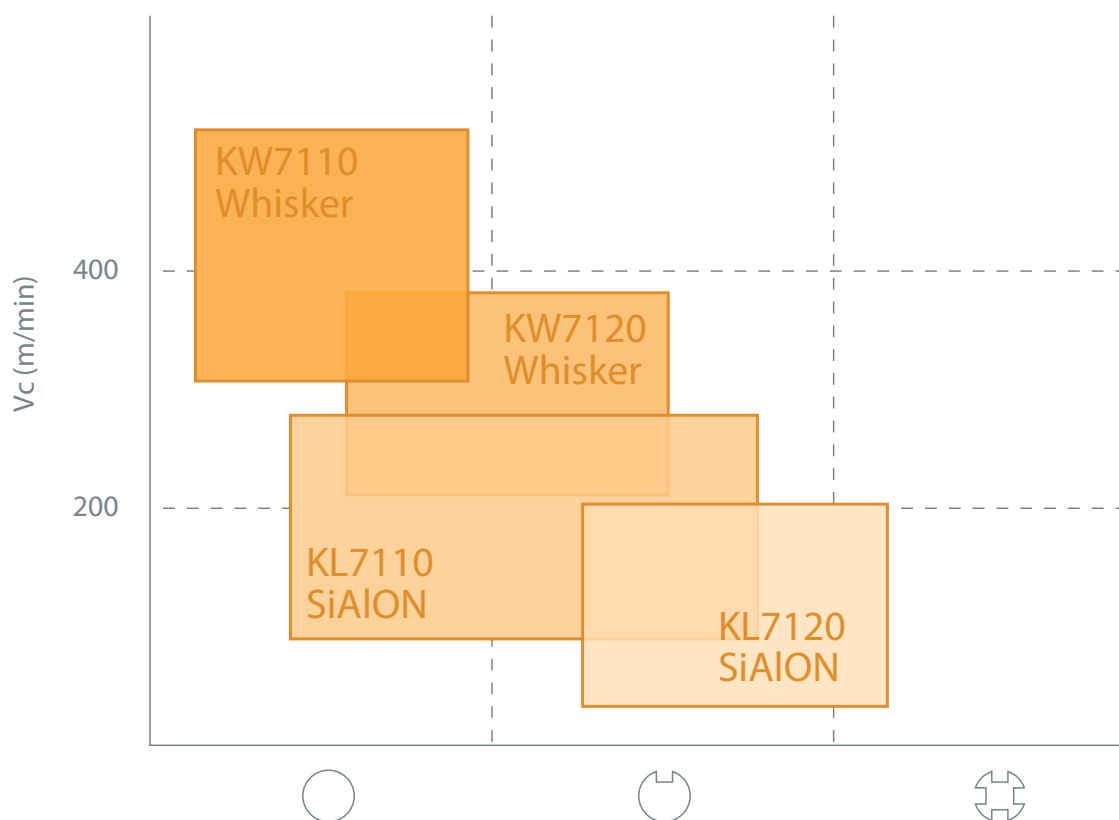
CERAMIC /TURNING

GRADES

Range ISO **K**

Range ISO **S**

GRADES



TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

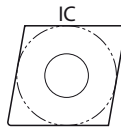
SPARE
PARTS

INDEX

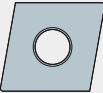
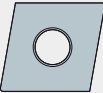
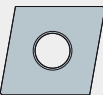
CERAMIC /TURNING

NEGATIVE
with hole

CN□□



CN□□	1204□□	1606□□	1906□□
IC	12,7	15,875	19,05
T	4,76	6,35	6,35
ød	5,16	6,35	7,93
Holder	137	137	137

DESCRIPTION			Al ₂ O ₃ + TiC(N)				+ PVD		ZrO ₂			Si ₃ N ₄							SiAlON		Whisker	
			KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KZ4180	KN4110	KN4120	KN4130	KN4140	KN4150	KN1000	KA4110	KL7110	KL7120	KW7110	KW7120
	CNGA120404	T04000	●	●	●		●	●														
	CNGA120408	T04000	●	●	●		●	●														
	CNGA120412	T04000	●	●	●		●	●														
	CNGA160612	T04000	●	●	●		●	●														
	CNGA160616	T04000	●	●	●		●	●														
	CNGA120404	T04002	●	●	●		●	●														
	CNGA120408	T04002	●	●	●		●	●														
	CNGA120412	T04002	●	●	●		●	●														
	CNGA120416	T04002	●	●	●		●	●														
	CNGA160612	T04002	●	●	●		●	●														
	CNGA160616	T04002	●	●	●		●	●														
	CNGA190616	T04002	●	●	●		●	●														
	CNGA160612	S20022	●	●	●		●	●														
	CNGA160616	S20022	●	●	●		●	●														
	CNGA190612	S20022		●																		
	CNGA190616	S20022	●	●	●		●	●														
																			</			

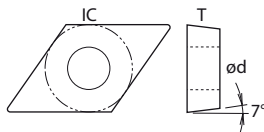
Vc • fn • ap

122

CERAMIC /TURNING

NEGATIVE
with hole

DN□□

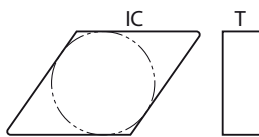


CN□□	1504□□	1506□□	1507□□
IC	12,7	12,7	12,7
T	4,76	6,35	7,94
Ød	5,16	5,16	5,16
Holder	150		

DESCRIPTION			Al ₂ O ₃ + TiC(N)				+ PVD		ZrO ₂			Si ₃ N ₄							SiAlON		Whisker	
			KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KZ4180	KN4110	KN4120	KN4130	KN4140	KN4150	KN1000	KA4110	KL7110	KL7120	KW7110	KW7120
	DNGA150404	T04000	●	●		●																
	DNGA150408	T04000	●	●	●	●		●			●	●	●								●	●
	DNGA150412	T04000	●	●	●	●							●	●	●				●	●	●	
	DNGA150604	T04000	●	●	●	●																
	DNGA150608	T04000	●	●	●	●		●			●	●	●					●				
	DNGA150612	T04000	●	●	●	●					●	●	●					●				
	DNGA150616	T04000	●	●	●						●	●	●									
	DNGA150704	T04000	●	●																		
	DNGA150708	T04000	●	●								●	●	●								
	DNGA150712	T04000	●	●									●	●				●	●			
	DNGA150404	T04002	●	●		●																
	DNGA150408	T04002	●	●	●	●		●			●	●	●								●	●
	DNGA150412	T04002	●	●	●	●							●	●	●				●	●	●	
	DNGA150604	T04002	●	●	●	●																
	DNGA150608	T04002	●	●	●	●					●	●	●					●				
	DNGA150612	T04002	●	●	●	●					●	●	●					●				
	DNGA150616	T04002	●	●	●						●	●	●									
	DNGA150704	T04002	●	●																		
	DNGA150708	T04002	●	●								●	●	●								
	DNGA150712	T04002	●	●									●	●	●		●	●	●			
					</																	

Vc • fn • ap

122

DN 

DN□□	1507□□
IC	12,70
T	7,94
Ød	-
 Holder	

Vc • fn • ap 122

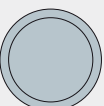
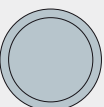
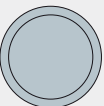
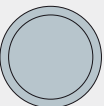
CERAMIC /TURNING

POSITIVE 7°
with hole

RC□□



RC□□	0606□□	0607□□	0907□□	1207□□	1510□□	1910□□
IC	6,35	6,35	9,525	12,70	15,87	19,05
T	6,35	7,94	7,94	7,94	10,00	10,00
Ød	-	-	-	-	-	-
Holder	158	158	158	158	158	158

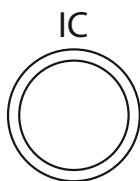
DESCRIPTION			Al ₂ O ₃ + TiC(N)				+ PVD		ZrO ₂			Si ₃ N ₄						SiAlON		Whisker		
			KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KZ4180	KN4110	KN4120	KN4130	KN4140	KN4150	KN1000	KA4110	KL7110	KL7120	KW7110	KW7120
	RCGX 060600	T04000	●	●	●		●	●													●	●
	RCGX 060700	T04000	●	●	●		●	●													●	●
	RCGX 090700	T04000	●	●	●		●	●													●	●
	RCGX 120700	T04000	●	●	●		●	●													●	●
	RCGX 151000	T04000	●	●	●		●	●													●	●
	RCGX 191000	T04000	●	●	●		●	●													●	●
	RCGX 251200	T04000	●	●	●		●	●													●	●
	RCGX 060600	S20022	●	●	●		●	●													●	●
	RCGX 060700	S20022	●	●	●		●	●													●	●
	RCGX 090700	S20022	●	●	●		●	●													●	●
	RCGX 120700	S20022	●	●	●		●	●													●	●
	RCGX 151000	S20022	●	●	●		●	●													●	●
	RCGX 191000	S20022	●	●	●		●	●													●	●
	RCGX 251200	S20022	●	●	●		●	●													●	●
	RCGX 060600	S06032	●	●	●		●	●													●	●
	RCGX 060700	S06032	●	●	●		●	●													●	●
	RCGX 090700	S06032	●	●	●		●	●													●	●
	RCGX 120700	S06032	●	●	●		●	●													●	●
	RCGX 151000	S06032	●	●	●		●	●													●	●
	RCGX 191000	S06032	●	●	●		●	●													●	●
	RCGX 251200	S06032	●	●	●		●	●													●	●
	RCGX 060600	AS06032	●	●	●		●	●													●	●
	RCGX 060700	AS06032	●	●	●		●	●													●	●
	RCGX 090700	AS06032	●	●	●		●	●													●	●
	RCGX 120700	AS06032	●	●	●		●	●													●	●
	RCGX 151000	AS06032	●	●	●		●	●													●	●
	RCGX 191000	AS06032	●	●	●		●	●													●	●
	RCGX 251200	AS06032	●	●	●		●	●													●	●
	RCGX060600	AS20022		●																		

Vc • fn • ap



122

TURNING

RN 

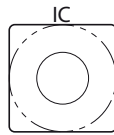
RN□□	1204 □□	1207 □□	1907□□
IC	12,70	12,70	19,05
T	4,76	7,94	7,94
Ød			

[illegible]
$$V_c \bullet fn \bullet ap$$

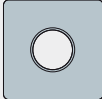
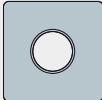
122

NEGATIVE
with hole

SN□□



SN□□	0904□□	1204□□	1207□□
IC	9,52	12,70	12,70
T	4,76	4,76	7,94
ød	3,81	5,16	5,16
Holder	162	162	

DESCRIPTION			Al ₂ O ₃ + TiC(N)				+ PVD		ZrO ₂			Si ₃ N ₄						SiAlON		Whisker		
			KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KZ4180	KN4110	KN4120	KN4130	KN4140	KN4150	KN1000	KA4110	KL7110	KL7120	KW7110	KW7120
	SNGA090304	T04000	●	●																		
	SNGA090308	T04000	●	●																		
	SNGA120404	T04000	●		●						●						●					
	SNGA120408	T04000	●	●	●	●					●	●		●			●			●	●	
	SNGA120412	T04000	●	●	●	●		●			●	●	●				●	●	●			
	SNGA120416	T04000									●						●	●	●			
	SNGA120708	T04000	●																			
	SNGA120712	T04000	●									●	●									
	SNGA120716	T04000	●					●				●	●							●		
	SNGA120412	S20022	●	●	●	●		●			●	●	●				●	●	●			
	SNGA120416	S20022									●						●	●	●			
	SNGA120708	S20022	●																			
	SNGA120712	S20022	●								●	●										
	SNGA120716	S20022	●					●			●	●							●			

Vc • fn • ap

122

SN□□	0904□□	1204□□	1207□□
IC	9,52	12,70	12,70
T	4,76	4,76	7,94
Ød	3,81	5,16	5,16
Holder	162	162	162

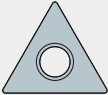
122

NEGATIVE
with hole

TN□□



TN□□	1604□□	2204□□	2706□□
IC	9,525	12,7	15,875
T	4,76	4,76	6,35
ød	3,81	5,16	6,35
Holder	168	168	168

DESCRIPTION			Al ₂ O ₃ + TiC(N)				+ PVD		ZrO ₂			Si ₃ N ₄						SiAlON		Whisker	
			KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KZ4180	KN4110	KN4120	KN4130	KN4140	KN4150	KN1000	KA4110	KL7110	KL7120	KW7110
	TNGA160404	T04000	●	●	●				●								●				
	TNGA160408	T04000	●	●	●	●		●	●				●	●		●	●				
	TNGA160412	T04000	●	●	●	●		●					●	●						●	●
	TNGA160416	T04000	●	●	●	●							●	●							
	TNGA220408	T04000		●	●								●	●				●		●	●
	TNGA220412	T04000		●	●								●	●				●		●	●
	TNGA270608	T04000	●	●																	
	TNGA270612	T04000	●	●																	
	TNGA270616	T04000		●														●			
	TNGA160404	T04002	●	●					●								●				
	TNGA160408	T04002	●	●	●	●		●	●				●	●		●	●				
	TNGA160412	T04002	●	●	●	●		●					●	●						●	●
	TNGA160416	T04002	●	●	●	●					●		●	●							
	TNGA220408	T04002		●	●								●	●				●		●	●
	TNGA220412	T04002		●	●								●	●				●		●	●
	TNGA270608	T04002	●	●																	
	TNGA270612	T04002	●	●																	
	TNGA270616	T04002		●														●			
					</																

Vc • fn • ap

122

CERAMIC /TURNING

NEGATIVE
with hole

TN□□



TN□□	1604□□	2204□□	2706□□
IC	9,525	12,7	15,875
T	4,76	4,76	6,35
Ød	-	-	-
Holder	168	168	168

DESCRIPTION				Al ₂ O ₃ + TiC(N)				+ PVD		ZrO ₂			Si ₃ N ₄						SiAlON		Whisker	
				KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KZ4180	KN4110	KN4120	KN4130	KN4140	KN4150	KN1000	KA4110	KL7110	KL7120	KW7110
	TNGN160708	T02020								●												
	TNGN160712	T02020								●												
	TNGN160404	T04000	●	●					●		●						●					
	TNGN160408	T04000	●	●	●	●		●	●		●	●	●		●		●					
	TNGN160412	T04000	●	●	●	●		●			●	●	●							●	●	
	TNGN160416	T04000	●	●	●	●					●	●	●									
	TNGN220408	T04000		●	●						●		●					●		●	●	
	TNGN220412	T04000		●	●						●		●					●		●	●	
	TNGN270608	T04000	●	●																		
	TNGN270612	T04000	●	●																		
	TNGN270616	T04000		●														●				
	TNGN160404	T04002	●	●					●		●						●					
	TNGN160408	T04002	●	●	●	●		●	●		●	●	●		●		●					
	TNGN160412	T04002	●	●	●	●		●			●	●	●							●	●	
	TNGN160416	T04002	●	●	●	●					●	●	●									
	TNGN220408	T04002		●	●						●		●					●		●	●	
	TNGN220412	T04002		●	●						●		●					●		●	●	
	TNGN270608	T04002	●	●																		
	TNGN270612	T04002	●	●																		
	TNGN270616	T04002		●														●				

Vc • fn • ap

122

POSITIVE 11°
with hole

TP□□



TP□□	1103□□	1603□□
IC	6,35	9,525
T	3,18	3,18
Ød	-	-
Holder	167	167

DESCRIPTION			Al ₂ O ₃ + TiC(N)				+ PVD		ZrO ₂			Si ₃ N ₄						SiAlON		Whisker	
			KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KZ4120	KZ4130	KZ4180	KN4110	KN4120	KN4130	KN4140	KN4150	KN1000	KA4110	KL7110	KL7120	KW7110
	TPGN110304	T04000	●	●							●		●				●				
	TPGN110308	T04000	●	●							●	●	●				●			●	●
	TPGN160304	T04000	●	●	●				●		●		●				●				
	TPGN160308	T04000	●	●					●		●	●	●	●			●			●	●
	TPGN160312	T04000	●	●									●	●						●	●
	TPGN160404	T04000	●		●																
	TPGN160408	T04000	●	●														●			
	TPGN160412	T04000	●															●			
	TPGN220404	T04000	●	●																	
	TPGN220408	T04000	●	●							●									●	●
	TPGN220412	T04000	●	●								●	●								
	TPGN220416	T04000	●	●	●																
	TPGN110304	T04002	●	●							●		●				●				
	TPGN110308	T04002	●	●							●	●	●				●			●	●
	TPGN160304	T04002	●	●	●				●		●		●				●				
	TPGN160308	T04002	●	●					●		●	●	●	●			●			●	●
	TPGN160312	T04002	●	●									●	●						●	●
	TPGN160404	T04002	●		●																
	TPGN160408	T04002	●	●														●			
	TPGN160412	T04002	●															●			
	TPGN220404	T04002	●	●																	
	TPGN220408	T04002	●	●							●									●	●
	TPGN220412	T04002	●	●								●	●								
	TPGN220416	T04002	●	●	●																

Vc • fn • ap

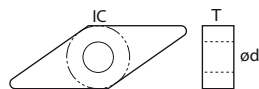
122

CERAMIC /TURNING

NEGATIVE
with hole

VN

80



VN□□	1604□□
IC	9,525
T	4,76
Ød	3,81
Holder	177

[illegible]
$$V_c \bullet fn \bullet ap$$

122

CERAMIC /TURNING

CUTTING PARAMETERS

HH	HARDENED STEEL
HC	CASE HARDENED STEEL
HB	BEARING STEEL

KG	GREY CAST IRON
KN	NOCULAR CAST IRON
SA	SUPER ALLOYS (Ni Based)

MATERIAL		ap (mm)	fn (mm/ rev)	CUTTING CONDITION		Al ₂ O ₃ + TiC(N)				+ PVD		SiAlON		Whisker	
						KS8110	KS8130	KS8150	KS8170	KSC8110	KSC8130	KL7110	KL7120	KW7110	KW7120
H	HH	0,10~0,50	0,05~0,20	○	∅	130~250	120~240	110~230	100~220	100~220	120~240				
		0,50~2,00	0,10~0,30	○	∅	110~180	100~170	90~160	80~150	80~160	100~180				
	HC	0,10~0,50	0,05~0,20	○	∅	110~210	100~200	90~190	80~180	80~180	100~200				
		0,50~2,00	0,10~0,30	○	∅	90~150	80~140	70~130	60~120	60~120	80~140				
	HB	0,10~0,50	0,05~0,20	○	∅	110~230	100~220	90~210	80~200	80~200	100~220				
		0,50~2,00	0,10~0,30	○	∅	80~160	70~150	60~140	60~140	60~140	80~160				
K	KG	0,20~0,50	0,10~0,30	○	∅			300~700							
				⊕	∅										
		1,00~4,00	0,25~0,50	⊕	∅										
	KN	0,20~0,50	0,10~0,30	○	∅			300~600							
				⊕	∅							250~500			
		1,00~4,00	0,25~0,50	⊕	∅							350~700			
S	SA	0,50~1,00	0,10~0,30	○	∅							250~500			
				⊕	∅							200~350		250~500	
		1,00~4,00	0,15~0,40	⊕	∅							180~300	150~280	200~350	200~350

CUTTING PARAMETERS

HH	HARDENED STEEL
HC	CASE HARDENED STEEL
HB	BEARING STEEL

KG	GREY CAST IRON
KN	NOCULAR CAST IRON
SA	SUPER ALLOYS (Ni Based)

MATERIAL		ap (mm)	fn (mm/ rev)	CUTTING CONDITION		ZrO ₂		Si ₃ N ₄							
						KZ4120	KZ4130	KN4110	KN4120	KN4130	KN4140	KN4150	KA4110		
H	HH	0,10~0,50	0,05~0,20	○	∅										
		0,50~2,00	0,10~0,30	○	∅										
	HC	0,10~0,50	0,05~0,20	○	∅										
		0,50~2,00	0,10~0,30	○	∅										
	HB	0,10~0,50	0,05~0,20	○	∅										
		0,50~2,00	0,10~0,30	○	∅										
K	KG	0,20~0,50	0,10~0,30	○	∅	∅	350~750	400~800	650~1200	600~1200	600~1200	500~1000			
				⊕	∅	∅			550~1100	500~1000	500~1000	450~800			
		1,00~4,00	0,25~0,50	○	∅	∅			650~1200	600~1200	600~1200	500~1000	450~800		
				⊕	∅	∅			550~1100	500~1000	500~1000	450~800	400~600		
	KN	0,20~0,50	0,10~0,30	○	∅	∅			450~800	400~800	400~800	350~700		450~800	
				⊕	∅	∅			350~650	300~600	300~600	250~500		400~600	
		1,00~4,00	0,25~0,50	○	∅	∅			450~900	400~800	400~800	350~700			
				⊕	∅	∅			300~600	300~600	300~600	250~500			
S	SA	0,50~1,00	0,10~0,30	○	∅	∅									
				⊕	∅	∅									
		1,00~4,00	0,15~0,40	○	∅	∅									
				⊕	∅	∅									

TURNING

GROOVING

THREADING

MILLING

DRILLING

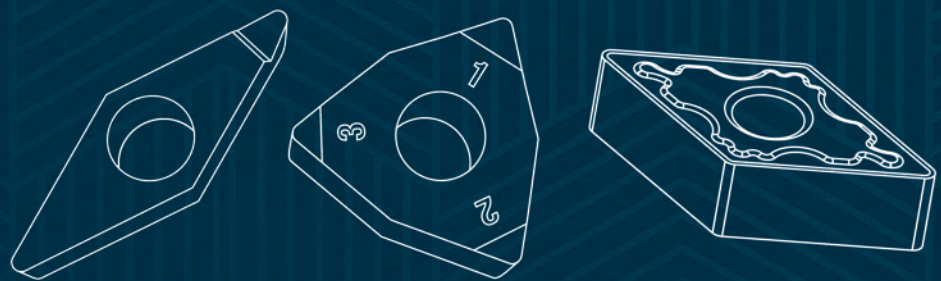
ENDMILLS

DRILLS

HSS
DRILLS & TAPSSPARE
PARTS

INDEX





TURNING/**HOLDERS**

HOLDERS /TURNING

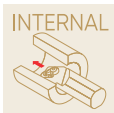


P	C	L	N	R	25	25	M	12
1	2	3	4	5	6	7	8	9

1	CLAMPING SYSTEM	2	GEOMETRY	3	LEAD ANGLE	4	CLEARANCE ANGLE
C		C		A		B	
D		D		B		C	
M		K		D		P	
P		S		F		N	
S		T		G			
		V		J			
		W		K			
				L			
				N			

5	DIRECTION	6	SHANK	7	8	TOTAL LENGHT	9	EDGE LENGHT
L		(H)		(B)			C	06 09 12 16 19 25
N					H	100	D	07 11 15
R					K	125	K	16
					M	150	S	09 12 15 19 25
					P	170	T	09 11 16 22
					S	250	V	11 16 22
							W	06 08

HOLDERS /TURNING



S 16 K – S C L C R – 06

1

2

3

4

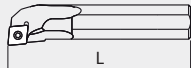
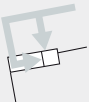
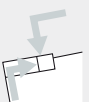
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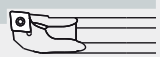
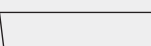
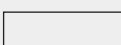
6

7

8

9

1		2	SHANK DIAMETER	3	TOTAL LENGHT	4	CLAMPING SYSTEM
A	Steel + Coolant	...				D	
C	Carbide			E	70	M	
S	Steel			F	80		
				H	100		
				K	125		
				M	150		
				Q	170		
				R	200		
S	250	P					
T	300						
U	350						
V	400	S					

5		9	6	LEAD ANGLE	7	CLEARENCE ANGLE	8	DIRECTION
C		06 09 12 16 19 25	A		B	 5°	L	
D		07 11 15	F		C	 7°		
K		16	J		P	 11°	R	
S		09 12 15 19 25	K		N	 0°		
T		09 11 16 22	L					
V		11 16 22	Q					
W		06 08	U					
			Z					

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPSSPARE
PARTS

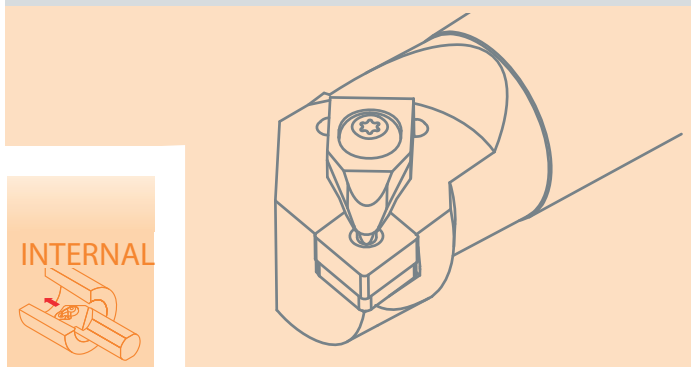
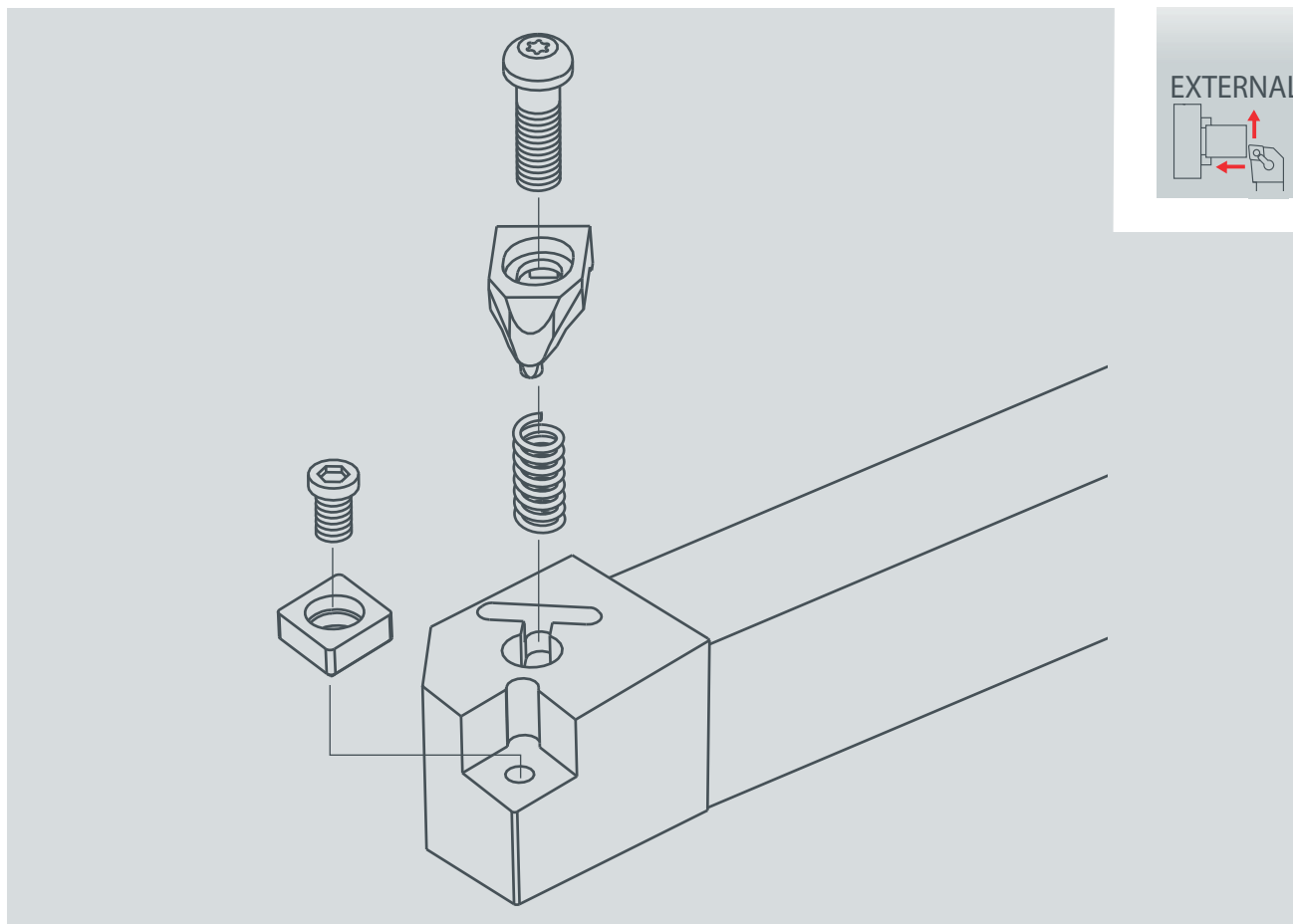
INDEX

HOLDERS /TURNING

CLAMPING SYSTEM (NEGATIVE)

Fast Clamping - Ideal for short chip materials

D



TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

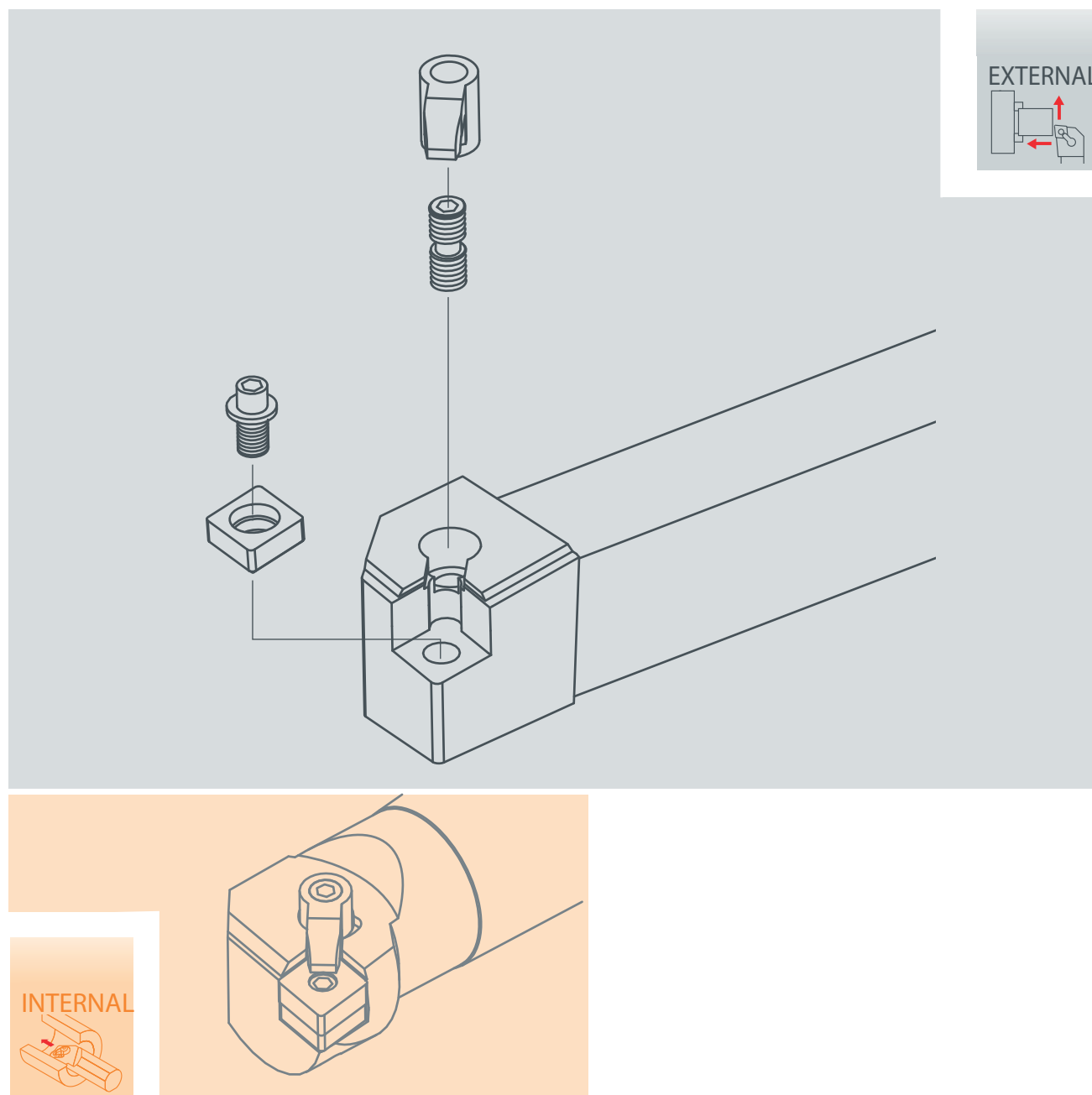
DRILLS

HSS DRILLS & TAPS

SPARE
PARTS

INDEX

M

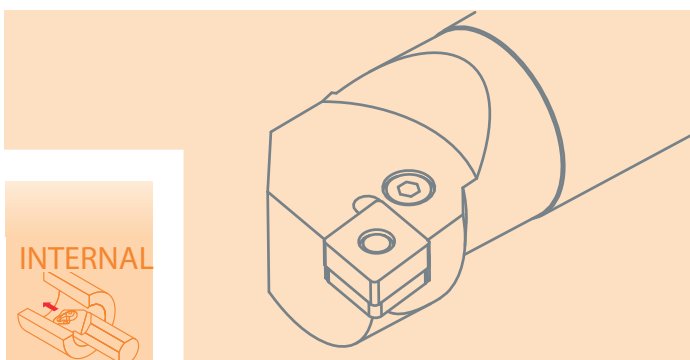
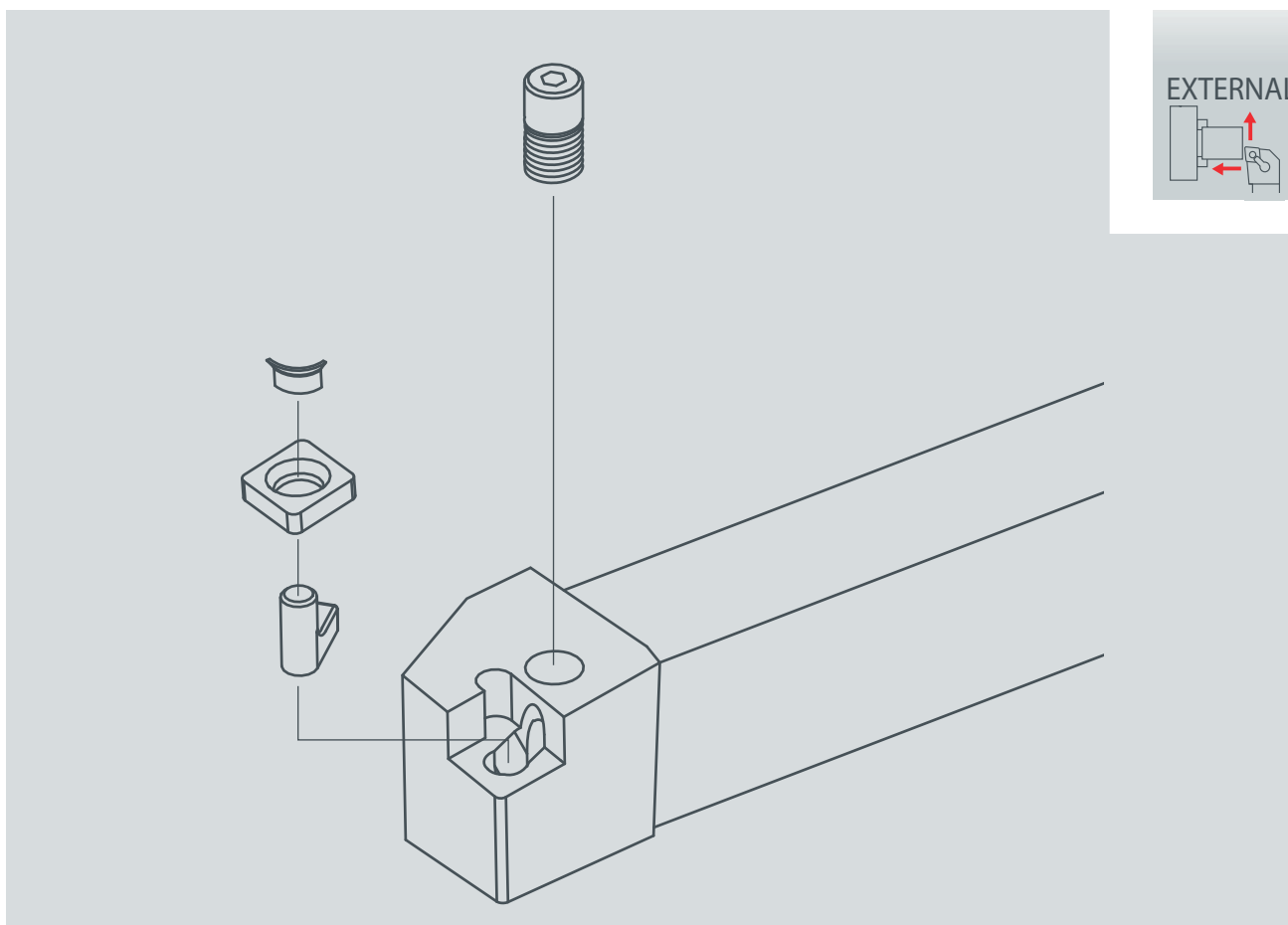


HOLDERS /TURNING

CLAMPING SYSTEM (NEGATIVE)

Easy to use - Excellent chip ejection

P





TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

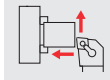
SPARE
PARTS

INDEX

HOLDERS /TURNING

SELECTION GUIDE

EXTERNAL



C	SCLC	DCLN	DCMN	DCZN	PCLN
	CC□□ 134	CN□□ 137	CN□□ 138	CN□□ 139	CN□□ 140
	SDJC	SDNC	DDJN	DDNN	PDJN
	DC□□ 143	DC□□ 144	DN□□ 151	DN□□ 152	DN□□ 153
	DSDN	DSKN	DSSN		
D	SN□□ 162	SN□□ 163	SN□□ 163		
	STFC	DTJN	MTEN	MTJN	
	TC□□ 164	TN□□ 168	TN□□ 168	TN□□ 169	
	SVHB	SVJB	SVVB	SVJC	DVJN
	VB□□ 172	VB□□ 173	VB□□ 174	VC□□ 176	VN□□ 177
S	DWLN	MWDN	MWLN	PWLN	
	WN□□ 178	WN□□ 178	WN□□ 179	WN□□ 179	
	CDJN	CRDC			
	DN□□ 150	RC□□ 158			
T	OTHERS	CKJN	SRDC	SRGC	SRHC
		KN□□ 157	RC□□ 159	RC□□ 160	RC□□ 161
V					
W					
CERAMIC					

HOLDERS /TURNING

SELECTION GUIDE



^S SCLC	^C SCLC	^S DCLN	^S PCLN
			
CC□□ 135	CC□□ 136	CN□□ 141	CN□□ 142



^S SDQC	^S SDUC	^S SD-C	^S SDXC	^C SDQC	^S DDQN	^S DDUN	^S DD-N	^S PDUN
								
DC□□ 145	DC□□ 146	DC□□ 147	DC□□ 148	DC□□ 149	DN□□ 154	DN□□ 154	DN□□ 155	DN□□ 156



^S CKUN

KN□□ 157



^S STFC	^S STUC	^C STFC	^C STFP	^S DTUN	^S MTUN	^S MTQN	^S MT-N
							
TC□□ 165	TC□□ 166	TC□□ 167	TP□□ 167	TN□□ 169	TN□□ 170	TN□□ 171	TN□□ 171



^S SVJB	^S SVUB	^S SVUC	^S DVUN
			
VB□□ 175	VB□□ 175	VC□□ 176	VN□□ 177



^S DWLN	^S MWLN	^S PWLN
		
WN□□ 180	WN□□ 180	WN□□ 181

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

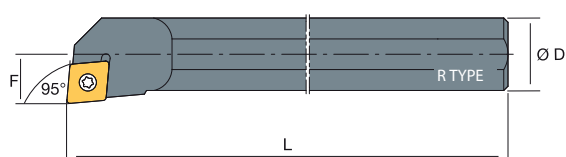
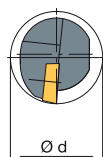
SPARE
PARTS

INDEX

^SSCLC

POSITIVE 7°
with hole

CC□□



CC□□	DESCRIPTION		STOCK	DIMENSIONS													
				R	L	ØD	Ød	L	F								
CC□□0602	S06H08	SCLCR/L	06	●	●	06	>08	100	4.5	ST-SC0257	ST-WRT08						
	S08H		06	●	●	08	>11	100	06	ST-SC0257	ST-WRT08						
	S10K		06	●	●	10	>13	125	07	ST-SC0257	ST-WRT08						
	S10K16X10		06	●	●	10	>13	125	07	ST-SC0257	ST-WRT08						
	S12K		06	●	●	12	>16	125	09	ST-SC0257	ST-WRT08						
	S12K16		06	●	●	16	>13	150	09	ST-SC0257	ST-WRT08						
	S12K16X12		06	●	●	12	>16	125	09	ST-SC0257	ST-WRT08						
	S12M		06	●		12	>16	150	09	ST-SC0257	ST-WRT08						
CC□□09T3	S12K	SCLCR/L	09	●	●	12	>16	125	09	ST-SC3511	ST-WRT15						
	S12M		09	●		12	>16	150	09	ST-SC3511	ST-WRT15						
	S16P		09	●	●	16	>21	170	11	ST-SC3511	ST-WRT15						
	S16Q		09	●		16	>20	170	11	ST-SC0407	ST-WRT15						
	S20R		09	●	●	20	>25	200	13	ST-SC3511	ST-WRT15						
	S25S		09	●	●	25	>32	250	17	ST-SC3511	ST-WRT15						
	S32T		09	●	●	32	>40	300	22	ST-SC3514	ST-WRT15	ST-SHCC09	ST-SC5011				
	S32T	SCLCR/L	12	●	●	32	>40	300	22	ST-SC0416	ST-WRT15	ST-SHCC12	ST-SC6011				
	S40T		12	●	●	40	>50	350	27	ST-SC0416	ST-WRT15	ST-SHCC12	ST-SC6011				

Carbide 18

PCBN 69

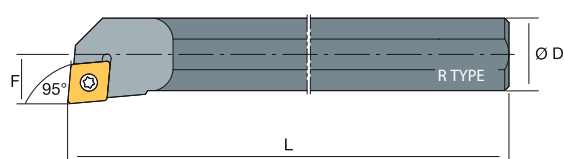
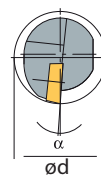
Diamond 89

HOLDERS /TURNING

°SCLC

POSITIVE 7°
with hole

CC□□



CC□□	DESCRIPTION		STOCK		DIMENSIONS									
			R	L	ØD	Ød	L	F						
CC□□0301	C04G	SCLCR/L	03	●	04	5	90	3.8	ST-SC01635	ST-WRT06				
	C05H		03	●	05	6	100	4.4	ST-SC01635	ST-WRT06				
CC□□0401	C06H	SCLCR/L	04	●	06	7	100	3,5	ST-SC0235	ST-WRT06				
	C07K		04	●	07	8	125	4	ST-SC0235	ST-WRT06				
CC□□0602	C08K	SCLCR/L	06	●	08	11	125	6	ST-SC02545	ST-WRT08				
	C10K		06	●	10	13	125	7	ST-SC02545	ST-WRT08				
	C12M		06	●	12	16	150	9	ST-SC02545	ST-WRT08				
	C12Q		06	●	12	16	170	9	ST-SC02545	ST-WRT08				
CC□□09T3	C12M	SCLCR/L	09	●	12	16	150	8	ST-SC0407	ST-WRT15				
	C16R		09	●	16	20	200	11	ST-SC0407	ST-WRT15				
	C20R		09	●	20	25	200	13	ST-SC0407	ST-WRT15				
	C25T		09	●	25	32	300	17	ST-SC0407	ST-WRT15				

Carbide 18

PCBN 69

Diamond 89

TURNING

GROOVING

CN [illegible]

21

70

90

10

**HSS
DRILLS & TAPS**

SPARE
PARTS

INDEX

TURNING

GROOVING

CN [illegible]

Carbide 21

PCBN 70

Diamond ▶ 90

Ceramic 108

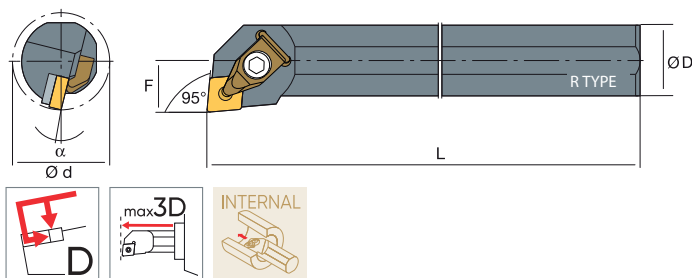
SPARE
PARTS

INDEX

TURNING

NEGATIVE
with hole

CN□□

[illegible]

21

70

90

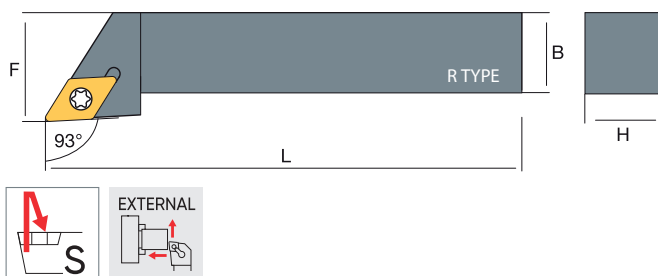
10

SPARE
PARTS

INDEX

TURNING

GROOVING

DC [illegible]

Carbide 26

PCBN 71

Diamond 91

SPARE
PARTS

INDEX

HOLDERS /TURNING

SDNCN

POSITIVE 7°
with hole

DC□□



DC□□	DESCRIPTION				STOCK	DIMENSIONS									
						H	B	L	F						
DC□□07	SDNCN	0808	E07	●		8	8	70	4	ST-SC0257	ST-WRT08	-	-		
		1010	E07	●		10	10	70	5	ST-SC0257	ST-WRT08	-	-		
		1212	F07	●		12	12	80	6	ST-SC0257	ST-WRT08	-	-		
		1616	H07	●		16	16	100	8	ST-SC0257	ST-WRT08	-	-		
DC□□11	SDNCN	1212	F11	●		12	12	80	6	ST-SC3514	ST-WRT15	ST-SHDC11	ST-SC5011		
		1616	H11	●		16	16	100	8	ST-SC3514	ST-WRT15	ST-SHDC11	ST-SC5011		
		2020	K11	●		20	20	125	10	ST-SC3514	ST-WRT15	ST-SHDC11	ST-SC5011		
		2525	M11	●		25	25	150	12.5	ST-SC3514	ST-WRT15	ST-SHDC11	ST-SC5011		
		3232	P11	●		32	32	170	16	ST-SC3514	ST-WRT15	ST-SHDC11	ST-SC5011		

Carbide ▶ 26

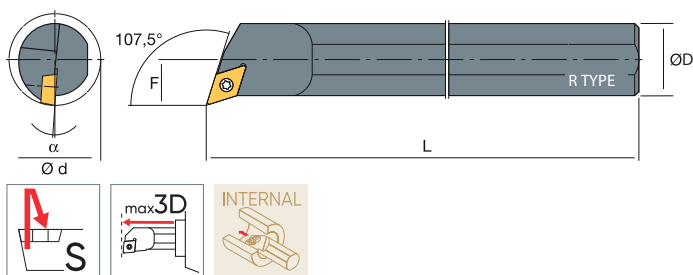
PCBN ▶ 71

Diamond ▶ 91

TURNING

POSITIVE 7°
with hole

DC

[illegible]

26

71

91

SPARE
PARTS

INDEX

TURNING

GROOVING

THREADING



DRILLING

ENDMILLS

DRILLS

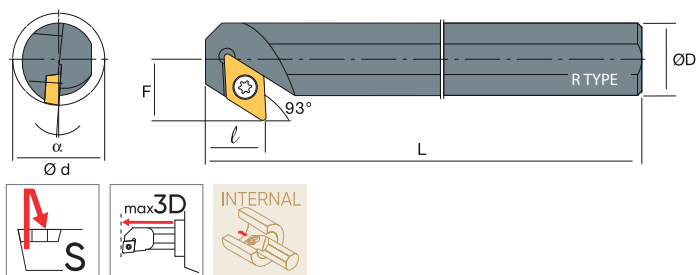
**HSS
DRILLS & TAPS**

SPARE PARTS

INDEX

Diamond 91

DC

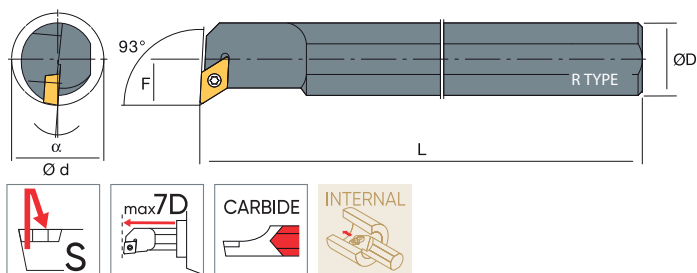
[illegible]

Diamond 91

SDUC

POSITIVE 7°
with hole

DC□□

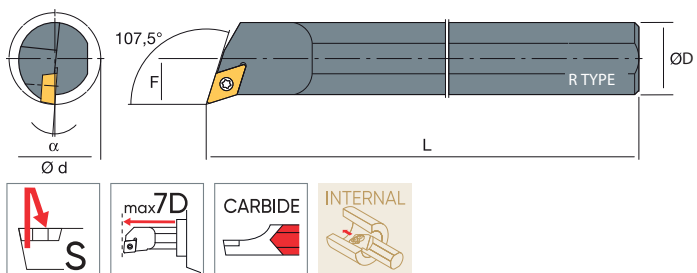


DC□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	ØD	Ød	L	F						
DC□□0702	C10K	SDUCR/L	07	●		10	>13	125	7,5	ST-SC02555	ST-WRT08	-	-		
	C12M		07	●		12	>16	150	9	ST-SC02555	ST-WRT08	-	-		
DC□□11T3	C16R	SDUCR/L	11	●		16	>20	200	11	ST-SC3508	ST-WRT15	-	-		
	C20R		11	●		20	>25	200	13	ST-SC3508	ST-WRT15	-	-		
	C25T		11	●		25	>32	300	17	ST-SC3508	ST-WRT15	-	-		

SDQC

POSITIVE 7°
with hole

DC□□



DC□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	ØD	Ød	L	F						
DC□□0702	C08K	SDQCR/L	07	●		8	>11	15	06	ST-SC02555	ST-WRT08	-	-		
	C10N		07	●		10	>14	160	09	ST-SC02555	ST-WRT08	-	-		
	C12Q		07	●		12	>18	180	11	ST-SC02555	ST-WRT08	-	-		
DC□□11T3	C16X	SDQCR/L	11	●		16	>20	220	15	ST-SC3508	ST-WRT15	-	-		
	C20S		11	●		20	>25	250	19	ST-SC3508	ST-WRT15	-	-		
	C25T		11	●		25	>32	300	24	ST-SC3508	ST-WRT15	-	-		

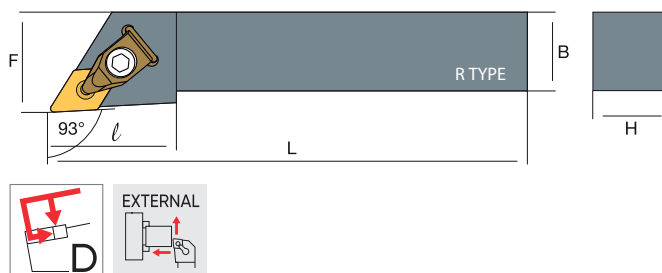
Carbide 26

PCBN 71

Diamond 91

TURNING

GROOVING

DN [illegible]

29

72

92

110

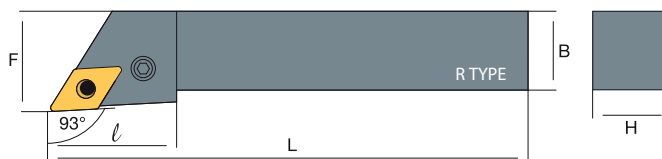
**HSS
DRILLS & TAPS**

SPARE
PARTS

INDEX

TURNING

GROOVING

DN [illegible]

Carbide 29

PCBN 72

Diamond 92

Ceramic 110

HSS DRILLS & TAPS

SPARE PARTS

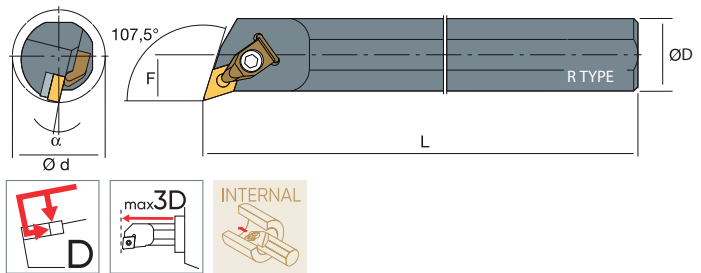
INDEX

HOLDERS /TURNING

S^{DDQN}

NEGATIVE
with hole

DN

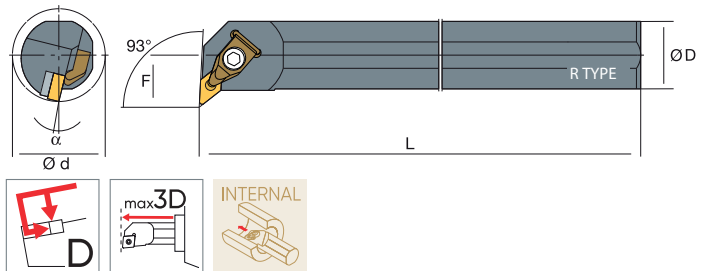


DN□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	ØD	Ød	L	F						
DN□□1506	S25S	DDQNR/L	15	●	●	25	32	250	17	ST-SHDN15	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030
	S32T		15	●	●	32	40	300	22	ST-SHDN15	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030
	S40U		15	●	●	40	50	350	27	ST-SHDN15	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030
	S50V		15	●	●	50	63	400	35	ST-SHDN15	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030

S^{DDUN}

NEGATIVE
with hole

DN



DN□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	ØD	Ød	L	F						
DN□□1104	S25S	DDUNR/L	11	●	●	25	32	250	17	ST-SHDN11	ST-SC0410	ST-CS002	ST-SPR04	ST-SC523	ST-WR0030
	S32T		11	●	●	32	40	300	22	ST-SHDN11	ST-SC0410	ST-CS002	ST-SPR04	ST-SC523	ST-WR0030
DN□□1506	S25S	DDUNR/L	15	●	●	25	32	250	17	ST-SHDN15	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030
	S32T		15	●	●	32	40	300	22	ST-SHDN15	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030
	S40U		15	●	●	40	50	350	27	ST-SHDN15	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030
	S50V		15	●	●	50	63	400	35	ST-SHDN15	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030

Carbide

29

PCBN

72

Diamond

92

Ceramic

110

TURNING

GROOVING

THREADING



DRILLING

ENDMILLS

DRILLS

**HSS
DRILLS & TAPS**

SPARE
PARTS

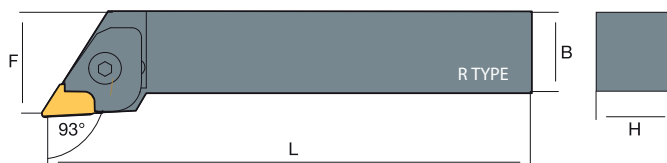
INDEX

110

CKJN

NEGATIVE
with hole

KN□□

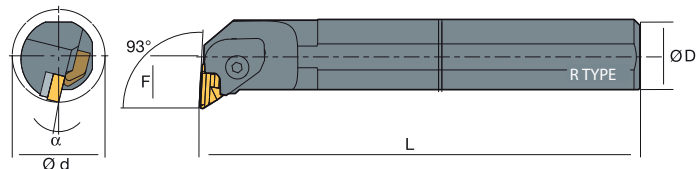


KN□□	DESCRIPTION			STOCK		DIMENSIONS				 ← 		 ←  ←  ← 			
				R	L	H	B	L	F						
KN□N1604	CKJNR/L	2020	K16	•	•	25	25	125		ST-SHKN16	ST-SC0310	ST-CS011	-	ST-SC630	ST-WR0050
		2525	M16	•	•	25	25	150		ST-SHKN16	ST-SC0310	ST-CS011	-	ST-SC630	ST-WR0050
		3232	P16	•	•	32	32	170		ST-SHKN16	ST-SC0310	ST-CS011	-	ST-SC630	ST-WR0050
		4040	S16	•	•	40	40	250		ST-SHKN16	ST-SC0310	ST-CS011	-	ST-SC630	ST-WR0050

SCKUN

NEGATIVE
with hole

KN□□



KN□□	DESCRIPTION			STOCK		DIMENSIONS				 ← 		 ←  ←  ← 			
				R	L	ØD	Ød	L	F						
KN□□1604	S25S	CKUNR/L	16	•	•	25	34	250	17	ST-SHKN16	ST-SC0310	ST-CS011	-	ST-SC630	ST-WR0050
	S32T		16	•	•	32	40	300	22	ST-SHKN16	ST-SC0310	ST-CS011	-	ST-SC630	ST-WR0050
	S40U		16	•	•	40	50	350	27	ST-SHKN16	ST-SC0310	ST-CS011	-	ST-SC630	ST-WR0050
	S50V		16	•	•	50	63	400	35	ST-SHKN16	ST-SC0310	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030

Carbide

32

HOLDERS /TURNING

CRDCN

POSITIVE
with hole

RC□□



RC□□	DESCRIPTION			STOCK	DIMENSIONS									
					H	B	L	F						
RCGX0606	CRDCN	2020	K06	●	20	20	125	10	ST-SHRC06	ST-SCRC6	ST-CSRC6	-	ST-SCRC6	ST-WR0040
		2525	M06	●	25	25	150	12.5	ST-SHRC06	ST-SCRC6	ST-CSRC6	-	ST-SCRC6	ST-WR0040
		3225	P06	●	32	25	170	12,5	ST-SHRC06	ST-SCRC6	ST-CSRC6	-	ST-SCRC6	ST-WR0040
		3232	P06	●	32	32	170	16	ST-SHRC06	ST-SCRC6	ST-CSRC6	-	ST-SCRC6	ST-WR0040
		4040	S06	●	40	40	250	20	ST-SHRC06	ST-SCRC6	ST-CSRC6	-	ST-SCRC6	ST-WR0040
RCGX0907	CRDCN	2020	K09	●	20	20	125	10	ST-SHRC06	ST-SCRC9	ST-CSRC9	-	ST-SCRC9	ST-WR0040
		2525	M09	●	25	25	150	12.5	ST-SHRC06	ST-SCRC9	ST-CSRC9	-	ST-SCRC9	ST-WR0040
		3225	P09	●	32	25	170	12,5	ST-SHRC06	ST-SCRC9	ST-CSRC9	-	ST-SCRC9	ST-WR0040
		3232	P09	●	32	32	170	16	ST-SHRC06	ST-SCRC9	ST-CSRC9	-	ST-SCRC9	ST-WR0040
		4040	S09	●	40	40	250	20	ST-SHRC06	ST-SCRC9	ST-CSRC9	-	ST-SCRC9	ST-WR0040
RCGX1207	CRDCN	2020	K12	●	20	20	125	10	ST-SHRC06	ST-SCR12	ST-CSR12	-	ST-SCR12	ST-WR0040
		2525	M12	●	25	25	150	12.5	ST-SHRC06	ST-SCR12	ST-CSR12	-	ST-SCR12	ST-WR0040
		3232	P12	●	32	32	170	16	ST-SHRC06	ST-SCR12	ST-CSR12	-	ST-SCR12	ST-WR0040
		4040	S12	●	40	40	250	20	ST-SHRC06	ST-SCR12	ST-CSR12	-	ST-SCR12	ST-WR0040
RCGX1510	CRDCN	2020	K15	●	20	20	125	10	ST-SHRC06	ST-SCR15	ST-CSR15	-	ST-SCR15	ST-WR0040
		2525	M15	●	25	25	150	12.5	ST-SHRC06	ST-SCR15	ST-CSR15	-	ST-SCR15	ST-WR0040
		3232	P15	●	32	32	170	16	ST-SHRC06	ST-SCR15	ST-CSR15	-	ST-SCR15	ST-WR0040
		4040	S15	●	40	40	250	20	ST-SHRC06	ST-SCR15	ST-CSR15	-	ST-SCR15	ST-WR0040
RCGX1910	CRDCN	2020	K19	●	20	20	125	10	ST-SHRC06	ST-SCR19	ST-CSR19	-	ST-SCR19	ST-WR0040
		2525	M19	●	25	25	150	12.5	ST-SHRC06	ST-SCR19	ST-CSR19	-	ST-SCR19	ST-WR0040
		3232	P19	●	32	32	170	16	ST-SHRC06	ST-SCR19	ST-CSR19	-	ST-SCR19	ST-WR0040
		4040	S19	●	40	40	250	20	ST-SHRC06	ST-SCR19	ST-CSR19	-	ST-SCR19	ST-WR0040
RCGX2512	CRDCN	2020	K25	●	20	20	125	10	ST-SHRC06	ST-SCR25	ST-CSR25	-	ST-SCR25	ST-WR0040
		2525	M25	●	25	25	150	12.5	ST-SHRC06	ST-SCR25	ST-CSR25	-	ST-SCR25	ST-WR0040
		3232	P25	●	32	32	170	16	ST-SHRC06	ST-SCR25	ST-CSR25	-	ST-SCR25	ST-WR0040
		4040	S25	●	40	40	250	20	ST-SHRC06	ST-SCR25	ST-CSR25	-	ST-SCR25	ST-WR0040

Carbide

33

TURNING

GROOVING

RC [illegible]

33

HOLDERS /TURNING

SRGC

POSITIVE 7°
with hole

RC□□



RC□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	H	B	L	F						
RC□□0803	SRGCR/L	1616	H08	●	●	16	16	100	20	ST-SC3009	ST-WRT08	-	-		
		2020	K08	●	●	20	20	125	25	ST-SC3009	ST-WRT08	-	-		
		2525	M08	●	●	25	25	150	32	ST-SC3009	ST-WRT08	-	-		
RC□□1003	SRGCR/L	1616	H10	●	●	16	16	100	20	ST-SC3511	ST-WRT15	-	-		
		2020	K10	●	●	20	20	125	25	ST-SC3511	ST-WRT15	-	-		
		2525	M10	●	●	25	25	150	32	ST-SC3511	ST-WRT15	-	-		
		3232	P10	●	●	32	32	170	40	ST-SC3511	ST-WRT15	-	-		
RC□□1204	SRGCR/L	2020	K12	●	●	20	20	125	25	ST-SC3511	ST-WRT15	-	-		
		2525	M12	●	●	25	25	150	32	ST-SC3511	ST-WRT15	-	-		
		3232	P12	●	●	32	32	170	40	ST-SC3511	ST-WRT15	-	-		

Carbide

33

TURNING

GROOVING

THREADING

[illegible]

33

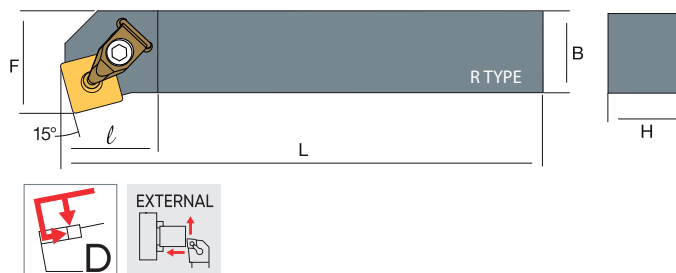
SPARE PARTS

INDEX

DSKN

NEGATIVE
with hole

SN□□

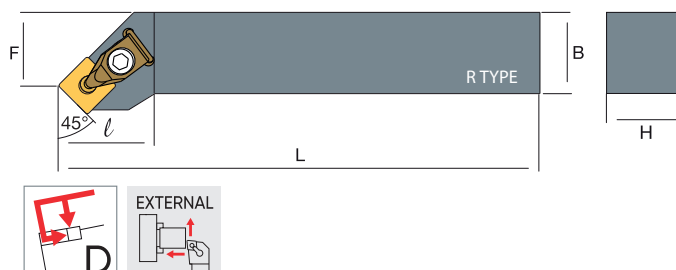


SN□□	DESCRIPTION			STOCK		DIMENSIONS				 ← 		 ←  ←  ← 			
				R	L	H	B	L	F						
SN□□1204	DSKNR/L	2020	K12	●	●	20	20	125	25	ST-SHSN12	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030
		2525	M12	●	●	25	25	150	32	ST-SHSN12	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030
SN□□1504	DSKNR/L	3232	P15	●	●	32	32	170	40	ST-SHSN15	ST-SC0616	ST-CS003	-	ST-SC6307	ST-WR0040

DSSN

NEGATIVE
with hole

SN□□



SN□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	H	B	L	F						
SN□□1204	DSSNR/L	2020	K12	●	●	20	20	125	25	ST-SHSN12	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030
		2525	M12	●	●	25	25	150	32	ST-SHSN12	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030
		3232	P12	●	●	32	32	170	40	ST-SHSN12	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030
SN□□1504	DSSNR/L	3232	P15	●	●	32	32	170	40	ST-SHSN15	ST-SC6169	ST-CS003	-	ST-SC6307	ST-WR0040

Carbide

35

PCBN

76

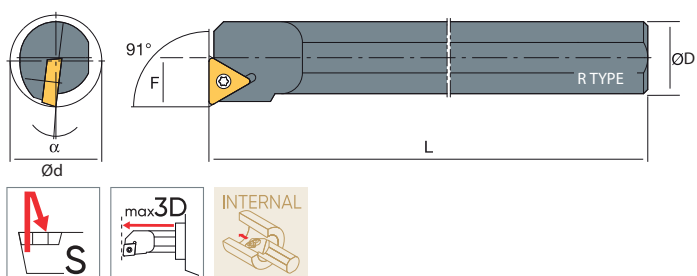
Ceramic

115

TC Diamond 93

TURNING

POSITIVE 7°
with hole

TC [illegible]

40

77

93

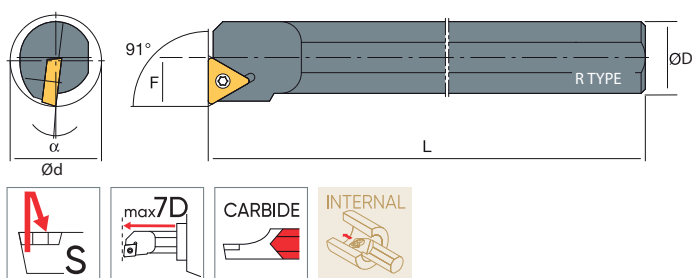
SPARE
PARTS

INDEX

CSTFC

POSITIVE 7°
with hole

TC□□

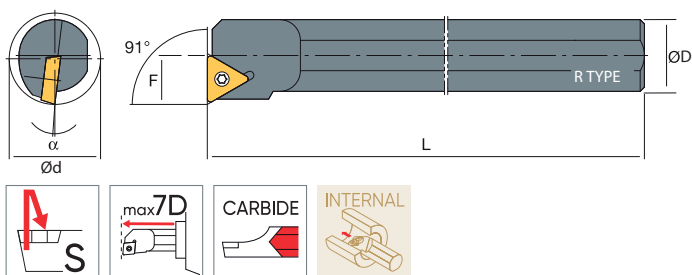


TC□□	DESCRIPTION		STOCK		DIMENSIONS									
			R	L	ØD	Ød	L	F						
TC□□1102	C25T	STFCR/L	11	●	●	25	>32	300	24	ST-SC02555	ST-WRT08	-	-	
	C10K		11	●		10	>12	125	06	ST-SC02555	ST-WRT08	-	-	
	C12M		11	●		12	>15,5	125	09	ST-SC02555	ST-WRT08	-	-	
	C16R		11	●		16	>20	200	11	ST-SC02555	ST-WRT08	-	-	
	C20R		11	●		20	>25	200	13	ST-SC02555	ST-WRT08	-	-	
	C25T		11	●		25	>32	300	17	ST-SC02555	ST-WRT08	-	-	

CSTFP

POSITIVE 11°
with hole

TP□□



TP□□	DESCRIPTION		STOCK		DIMENSIONS									
			R	L	ØD	Ød	L	F						
TP□□0804	C08K	STFPR/L	8	●		8	>10	125	5	ST-SC02245	ST-WRT06	-	-	
TP□□1103	C10K	STFPR/L	11	●		10	>12	125	6	ST-SC02555	ST-WRT08	-	-	
	C12M		11	●		12	>16	150	8	ST-SC0352	ST-WRT08	-	-	
	C16R		11	●		16	>20	200	11	ST-SC0352	ST-WRT08	-	-	
	C20R		11	●		20	>25	200	13	ST-SC0352	ST-WRT08	-	-	
	C25T		11	●		25	>32	300	24	ST-SC0352	ST-WRT08	-	-	

Carbide ▶ 46

PCBN ▶ 79

Diamond ▶ 95

Ceramic ▶ 119

HOLDERS /TURNING

DTJN

NEGATIVE
with hole

TN□□

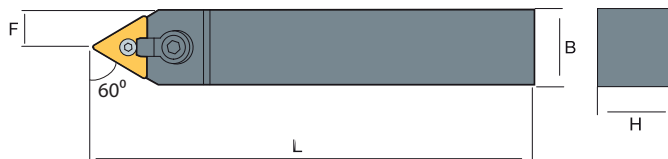


TN□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	H	B	L	F						
TN□□1604	DTJNR/L	2020	K16	●	●	20	20	125	25	ST-SHTN16	ST-SC0410	ST-CS002	ST-SPR04	ST-SC525	ST-WR0030
		2525	M16	●	●	25	25	150	32	ST-SHTN16	ST-SC0410	ST-CS002	ST-SPR04	ST-SC525	ST-WR0030
		3232	P16	●	●	32	32	170	40	ST-SHTN16	ST-SC0410	ST-CS002	ST-SPR04	ST-SC525	ST-WR0030
TN□□2204	DTJNR/L	2525	M22	●	●	25	25	150	32	ST-SHTN22	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030
		3232	P22	●	●	32	32	170	40	ST-SHTN22	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030
		4040	S22	●	●	40	40	250	50	ST-SHTN22	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030

MTENN

NEGATIVE
with hole

TN□□



TN□□	DESCRIPTION			STOCK	DIMENSIONS								
					H	B	L	F					
TN□□1604	MTENN	2020	K16	•	20	20	125	10	ST-SHTN16	ST-SP001	ST-CS006	ST-SC630	ST-WR0030
		2525	M16	•	25	25	150	12.5	ST-SHTN16	ST-SP001	ST-CS006	ST-SC630	ST-WR0030
		3232	P16	•	32	32	170	16	ST-SHTN16	ST-SP001	ST-CS006	ST-SC630	ST-WR0030
TN□□2204	MTENN	2525	M22	•	25	25	150	12.5	ST-SHTN22	ST-SP001	ST-CS006	ST-SC630	ST-WR0030
		3232	P22	•	32	32	170	16	ST-SHTN22	ST-SP001	ST-CS006	ST-SC630	ST-WR0030
		4040	S22	•	40	40	250	20	ST-SHTN22	ST-SP001	ST-CS006	ST-SC630	ST-WR0030

Carbide 42

PCBN 78

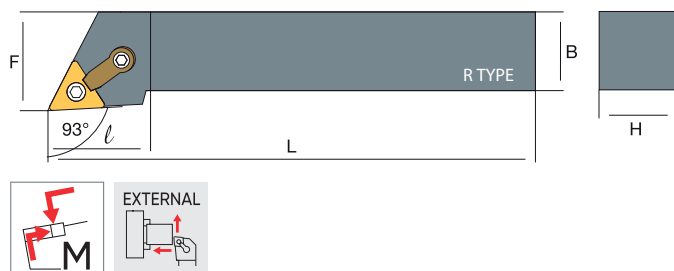
Diamond 94

Ceramic 117

MTJN

NEGATIVE
with hole

TN□□

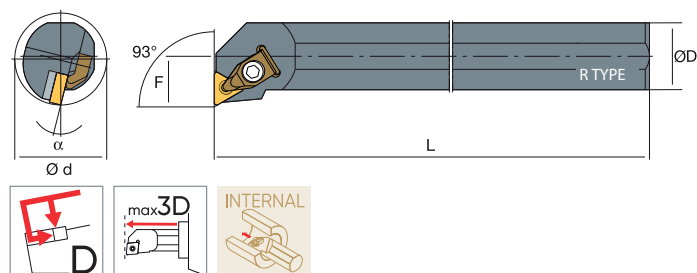


TN□□	DESCRIPTION			STOCK		DIMENSIONS								
				R	L	H	B	L	F					
TN□□1604	MTJNR/L	1616	K16	•		16	16	125	20	ST-SHTN16	ST-SP001	ST-CS006	ST-SC630	ST-WR0030
		2020	K16	•	•	20	20	125	10	ST-SHTN16	ST-SP001	ST-CS006	ST-SC630	ST-WR0030
		2525	M16	•	•	25	25	150	12.5	ST-SHTN16	ST-SP001	ST-CS006	ST-SC630	ST-WR0030
		3232	P16	•	•	32	32	170	16	ST-SHTN16	ST-SP001	ST-CS006	ST-SC630	ST-WR0030
TN□□2204	MTJNR/L	2525	M22	•	•	25	25	150	12.5	ST-SHTN22	ST-SP001	ST-CS006	ST-SC630	ST-WR0030
		3232	P22	•	•	32	32	170	16	ST-SHTN22	ST-SP001	ST-CS006	ST-SC630	ST-WR0030
		4040	S22	•	•	40	40	250	20	ST-SHTN22	ST-SP001	ST-CS006	ST-SC630	ST-WR0030

^SDTUN

NEGATIVE
with hole

TN□□



TN□□	DESCRIPTION			STOCK		DIMENSIONS								
				R	L	ØD	Ød	L	F					
TN□□1604	S32T	DTUNR/L	16	•	•	32	40	300	22	ST-SHTN16	ST-SC0410	ST-CS002	ST-SPR04	ST-SC523

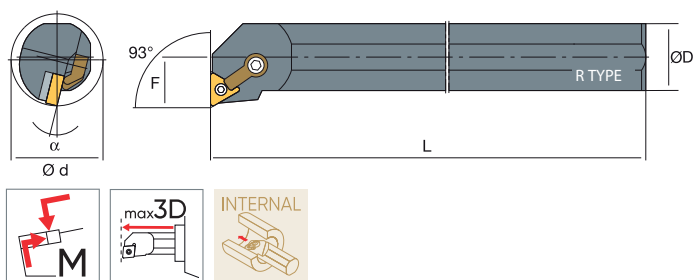
Carbide ▶ 42

PCBN ▶ 78

Diamond ▶ 94

Ceramic ▶ 117

TN□□

[illegible]

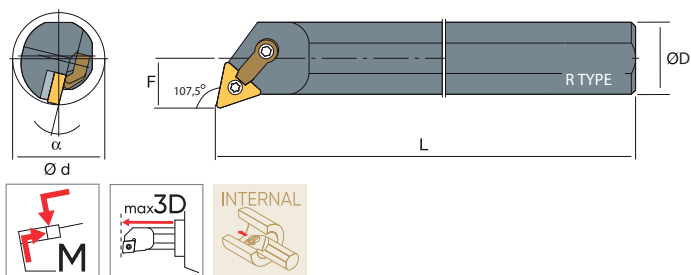
117

HOLDERS /TURNING

SMTQN

NEGATIVE
with hole

TN□□

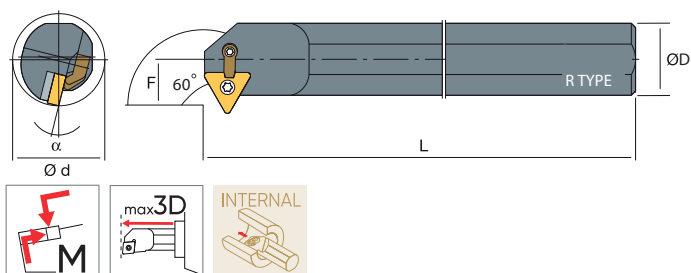


TN□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	ØD	Ød	L	F						
TN□□1604	S20R	MTQNR/L	16	●	●	20	25	200	13	-	-	ST-LV002	ST-SC523	ST-WR0030	
	S25S		16	●	●	25	32	250	17	ST-SHTN16	ST-SP001	ST-LV001	ST-SC630	ST-WR0030	
	S32T		16	●	●	32	40	300	22	ST-SHTN16	ST-SP001	ST-LV001	ST-SC630	ST-WR0030	
	S40U		16	●	●	40	50	350	27	ST-SHTN16	ST-SP001	ST-LV001	ST-SC630	ST-WR0030	
TN□□2204	S32T	MTQNR/L	22	●	●	32	40	300	22	ST-SHTN22	ST-SP001	ST-LV001	ST-SC630	ST-WR0030	
	S40U		22	●	●	40	50	350	27	ST-SHTN22	ST-SP001	ST-LV001	ST-SC630	ST-WR0030	

SMT-N

NEGATIVE
with hole

TN□□



TN□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	ØD	Ød	L	F						
TN□□1604	S25S	MT-NR/L	16	●	●	25	32	250	17	ST-SHTN16	ST-SP001	ST-LV001	ST-SC630	ST-WR0030	
	S32T		16	●	●	32	40	300	22	ST-SHTN16	ST-SP001	ST-LV001	ST-SC630	ST-WR0030	
	S40U		16	●	●	40	50	350	27	ST-SHTN16	ST-SP001	ST-LV001	ST-SC630	ST-WR0030	

Carbide 42

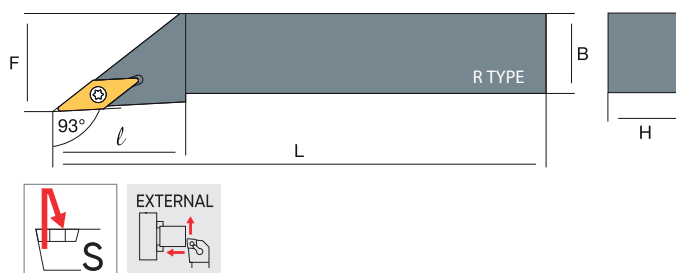
PCBN 78

Diamond 94

Ceramic 117

TURNING

GROOVING

VB [illegible]

Carbide 47

PCBN 80

Diamond 96

SPARE
PARTS

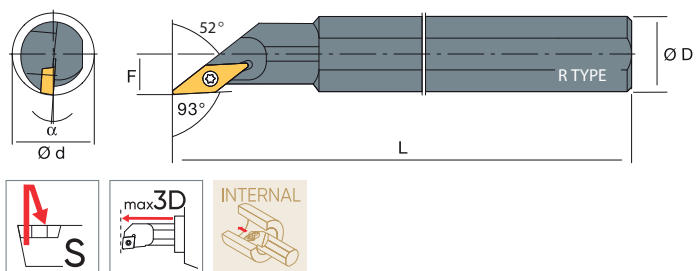
INDEX

VB Diamond 96

^SSVJB

POSITIVE 5°
with hole

VB□□

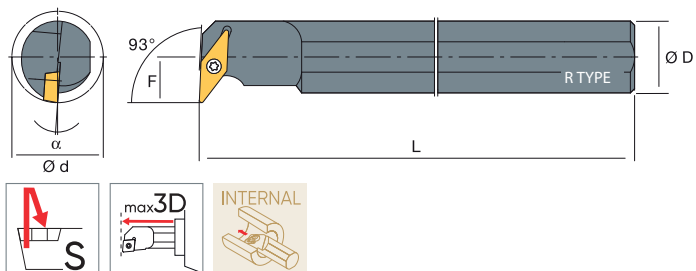


VB□□	DESCRIPTION		STOCK	DIMENSIONS										
				R	L	ØD	Ød	L	F					
VB□□1604	S25S	SVJBR/L	16	●	●	25	32	250	17	ST-SC0416	ST-WRT15	ST-SHVB	ST-SC5011	
	S32T		16	●	●	32	40	300	22	ST-SC3514	ST-WRT15	ST-SHVB	ST-SC5011	
	S40U		16	●	●	40	50	350	27	ST-SC3514	ST-WRT15	ST-SHVB	ST-SC5011	

^SSVUB

POSITIVE 5°
with hole

VB□□



VB□□	DESCRIPTION		STOCK	DIMENSIONS										
				R	L	ØD	Ød	L	F					
VB□□1103	S16P	SVUBR/L	11	●	●	16	21	170	11	ST-SC0257	ST-WRT08	-	-	
	S20R		11	●	●	20	25	200	13	ST-SC0257	ST-WRT08	-	-	
VB□□1604	S25S	SVUBR/L	16	●	●	25	32	250	17	ST-SC0416	ST-WRT15	ST-SHVB	ST-SC5011	
	S32T		16	●	●	32	40	300	22	ST-SC3514	ST-WRT15	ST-SHVB	ST-SC5011	
	S40U		16	●	●	40	50	350	27	ST-SC3514	ST-WRT15	ST-SHVB	ST-SC5011	

Carbide

47

PCBN

80

Diamond

96

HOLDERS /TURNING

SVJC

POSITIVE 7°
with hole

VC□□

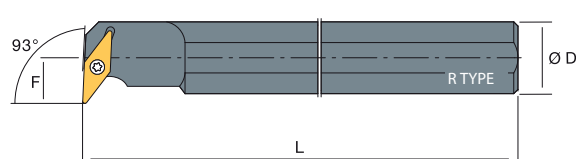
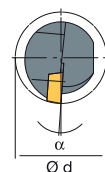


VC□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	H	B	L	F						
VC□□1103	SVJCR/L	1616	H11	●	●	16	16	100	20	ST-SC0257	ST-WRT08	-	-		
		2020	K11	●	●	20	20	125	25	ST-SC0257	ST-WRT08	-	-		
VC□□1604	SVJCR/L	2020	K16	●	●	25	25	150	32	ST-SC0257	ST-WRT15	-	-		
		2525	M16	●	●	16	16	100	20	ST-SC3514	ST-WRT15	ST-SHVC	ST-SC5011		
		3232	P16	●	●	20	20	125	25	ST-SC3514	ST-WRT15	ST-SHVC	ST-SC5011		

^sSVUC

POSITIVE 7°
with hole

VC□□



VC□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	ØD	Ød	L	F						
VC□□1103	S16P	SVUCR/L	11	●	●	16	21	170	11	ST-SC0257	ST-WRT08	-	-		
	S20R		11	●	●	20	25	200	13	ST-SC0257	ST-WRT08	-	-		
VC□□1604	S25S	SVUCR/L	16	●	●	25	32	250	17	ST-SC0416	ST-WRT15	ST-SHVC	ST-SC5011		
	S32T		16	●	●	32	40	300	22	ST-SC3514	ST-WRT15	ST-SHVC	ST-SC5011		
	S40U		16	●	●	40	50	350	27	ST-SC3514	ST-WRT15	ST-SHVC	ST-SC5011		

Carbide ▶ 49

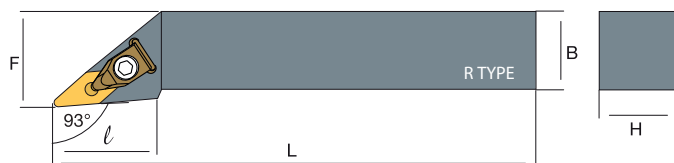
PCBN ▶ 81

Diamond ▶ 97

DVJN

NEGATIVE
with hole

VN□□

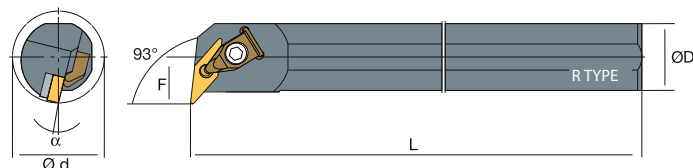


VN□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	H	B	L	F						
VN□□1604	DVJNR/L	2020	K16	●	●	20	20	125	25	ST-SHVN16	ST-SC0410	ST-CS005	ST-SPR04	ST-SC630	ST-WR0030
		2525	M16	●	●	25	25	150	32	ST-SHVN16	ST-SC0410	ST-CS005	ST-SPR04	ST-SC630	ST-WR0030
		3232	P16	●	●	32	32	170	40	ST-SHVN16	ST-SC0410	ST-CS005	ST-SPR04	ST-SC630	ST-WR0030

^SDVUN

NEGATIVE
with hole

VN□□



VN□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	ØD	Ød	L	F						
VN□□1604	S40U	DVUNR/L	16	●	●	50	50	400	27	ST-SHTN22	ST-SC0410	ST-CS005	ST-SPR04	ST-SC630	ST-WR0030

Carbide

51

PCBN

82

Ceramic

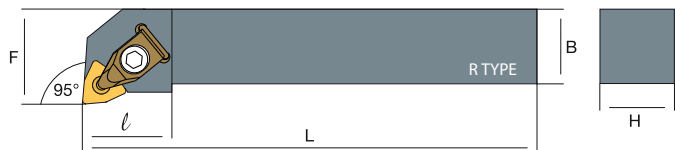
120

HOLDERS /TURNING

DWLN

NEGATIVE
with hole

WN□□

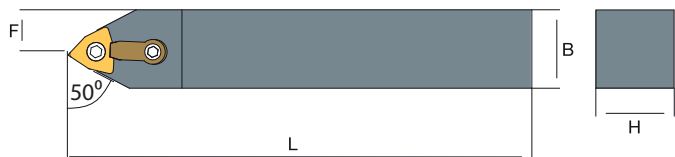


VN□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	H	B	L	F						
WN□□0604	DWLN/R/L	1616	H06	●	●	16	16	100	20	-	-	ST-CS002	ST-SPR04	ST-SC523	ST-WR0030
		2020	K06	●	●	20	20	125	25	-	-	ST-CS002	ST-SPR04	ST-SC523	ST-WR0030
		2525	M06	●	●	25	25	150	32	-	-	ST-CS002	ST-SPR04	ST-SC523	ST-WR0030
WN□□0804	DWLN/R/L	2020	K08	●	●	20	20	125	25	-	-	ST-CS001	ST-SPR04	ST-SC523	ST-WR0030
		2525	M08	●	●	25	25	150	32	ST-SHWN08	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030
		3232	P08	●	●	32	32	170	40	ST-SHWN08	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030
		4040	S08	●	●	40	40	250	50	ST-SHWN08	ST-SC0410	ST-CS001	ST-SPR04	ST-SC630	ST-WR0030

MWDN

NEGATIVE
with hole

WN□□



WN□□	DESCRIPTION			STOCK	DIMENSIONS								
					H	B	L	F					
WN□□0604	MWDNN	1616	H06	●	16	16	100	08	-	-	ST-CS009	ST-SM525	ST-WR0030
		2020	K06	●	20	20	125	10	-	-	ST-CS009	ST-SM525	ST-WR0030
WN□□0804	MWDNN	2020	K08	●	20	20	125	10	ST-SHWN08	ST-SC0410	ST-CS008	ST-SM630	ST-WR0030
		2525	M08	●	25	25	150	12.5	ST-SHWN08	ST-SC0410	ST-CS008	ST-SM630	ST-WR0030
		3232	P08	●	32	32	170	16	ST-SHWN08	ST-SC0410	ST-CS008	ST-SM630	ST-WR0030
		4040	S08	●	40	40	200	16	ST-SHWN08	ST-SC0410	ST-CS008	ST-SM630	ST-WR0030

Carbide

53

PCBN

83

Diamond

98

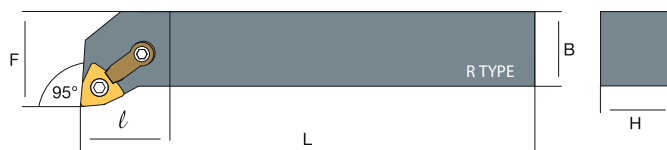
Ceramic

121

MWLN

NEGATIVE
with hole

WN□□

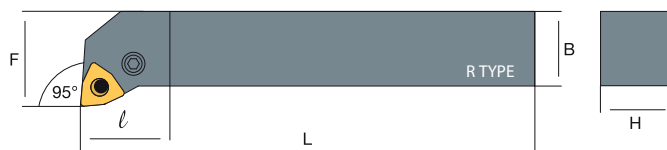


WN□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	H	B	L	F						
WN□□0604	MWLN/L	1616	H06	●	●	16	16	100	20	–	–	ST-CS009	ST-SC525	ST-WR0030	
		2020	K06	●	●	20	20	125	25	–	–	ST-CS009	ST-SC525	ST-WR0030	
		2525	M06	●	●	25	25	150	32	–	–	ST-CS009	ST-SC525	ST-WR0030	
WN□□0804	MWLN/L	2020	K08	●	●	20	20	125	25	ST-SHWN08	ST-SCV3506	ST-CS008	ST-SC630	ST-WR0030	
		2525	M08	●	●	25	25	150	32	ST-SHWN08	ST-SCV3506	ST-CS008	ST-SC630	ST-WR0030	
		3232	P08	●	●	32	32	170	40	ST-SHWN08	ST-SCV3506	ST-CS008	ST-SC630	ST-WR0030	
		4040	S08	●	●	40	40	200	40	ST-SHWN08	ST-SCV3506	ST-CS008	ST-SC630	ST-WR0030	

PWLN

NEGATIVE
with hole

WN□□



WN□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	H	B	L	F						
WN□□0804	PWLN/L	2020	K08	●	●	20	20	125	25	ST-SHWN08	ST-SPR001	ST-LV001	ST-SC820	ST-WR0030	
		2525	M08	●	●	25	25	150	32	ST-SHWN08	ST-SPR001	ST-LV001	ST-SC820	ST-WR0030	
		3232	P08	●	●	32	32	170	40	ST-SHWN08	ST-SPR001	ST-LV001	ST-SC820	ST-WR0030	
		4040	S08	●	●	40	40	250	50	ST-SHWN08	ST-SPR001	ST-LV001	ST-SC820	ST-WR0030	

Carbide 53

PCBN 83

Diamond 98

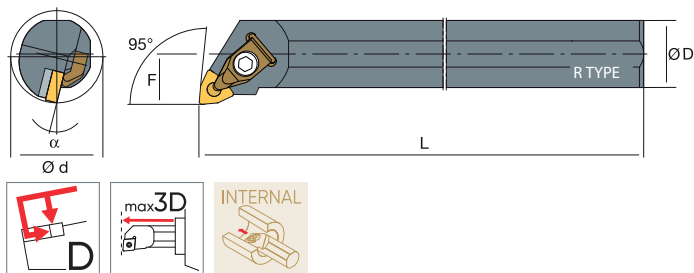
Ceramic 121

HOLDERS /TURNING

S^DWLN

NEGATIVE
with hole

WN□□

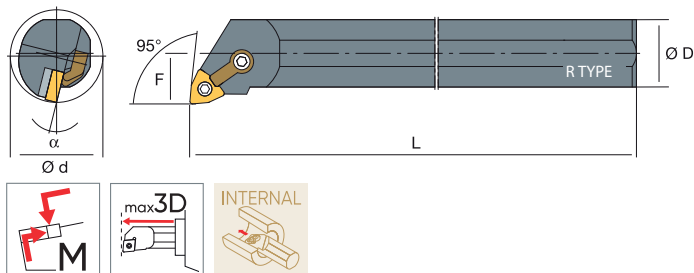


WN□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	ØD	Ød	L	F						
WN□□0804	S25S	DWLN/L	08	●	●	25	32	250	17	ST-SHWN08	ST-SC0410	ST-CS008	ST-SPR04	ST-SC630	ST-WR0030
	S32T		08	●	●	32	40	300	22	ST-SHWN08	ST-SC0410	ST-CS008	ST-SPR04	ST-SC630	ST-WR0030
	S40U		08	●	●	40	37	350	27	ST-SHWN08	ST-SC0410	ST-CS008	ST-SPR04	ST-SC630	ST-WR0030
	S50V		08	●	●	50	47	400	35	ST-SHWN08	ST-SC0410	ST-CS008	ST-SPR04	ST-SC630	ST-WR0030

S^MWLN

NEGATIVE
with hole

WN□□



WN□□	DESCRIPTION			STOCK		DIMENSIONS									
				R	L	ØD	Ød	L	F						
WN□□0604	S16P	MWLN/R/L	06	●	●	16	21	170	11			ST-CS009	ST-SM525	ST-WR0030	
	S20R		06	●	●	20	25	200	13			ST-CS009	ST-SM525	ST-WR0030	
WN□□0804	S25S	MWLN/R/L	08	●	●	25	32	250	17	ST-SHWN08	ST-SCV0410	ST-CS008	ST-SM630	ST-WR0030	
	S32T		08	●	●	32	40	300	22	ST-SHWN08	ST-SCV0410	ST-CS008	ST-SM630	ST-WR0030	
	S40U		08	●	●	40	50	350	27	ST-SHWN08	ST-SCV0410	ST-CS008	ST-SM630	ST-WR0030	
	S50V		08	●	●	50	63	400	35	ST-SHWN08	ST-SCV0410	ST-CS008	ST-SM630	ST-WR0030	

Carbide

53

PCBN

83

Diamond

98

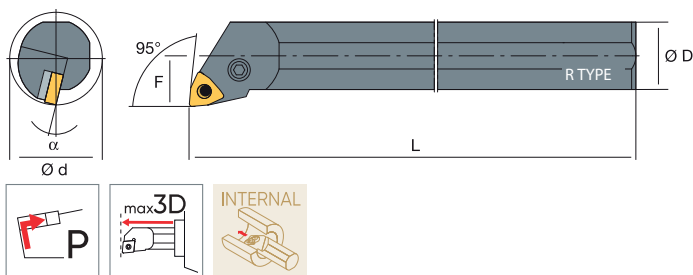
Ceramic

121

TURNING

NEGATIVE
with hole

WN□□

[illegible]

53

83

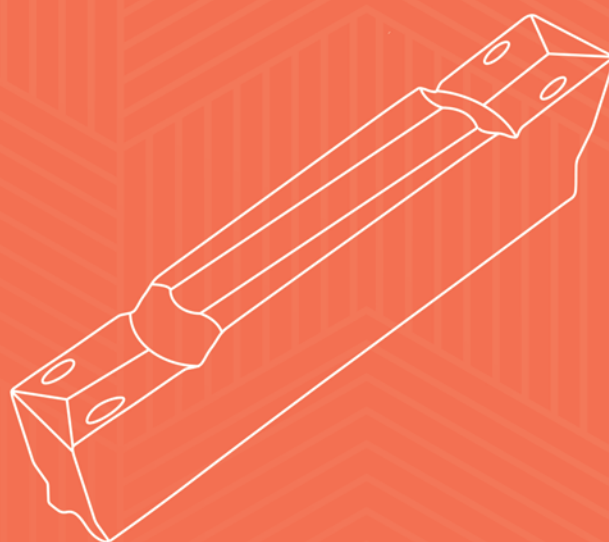
98

12

SPARE
PARTS

INDEX

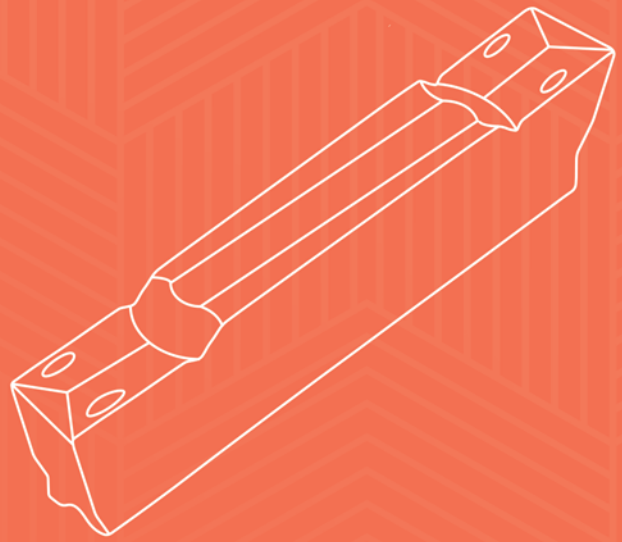




GROOVING/

carbide /185
PCBN /207
diamond /211
holders /215





GROOVING/**CARBIDE**

CARBIDE /GROOVING

GRADES

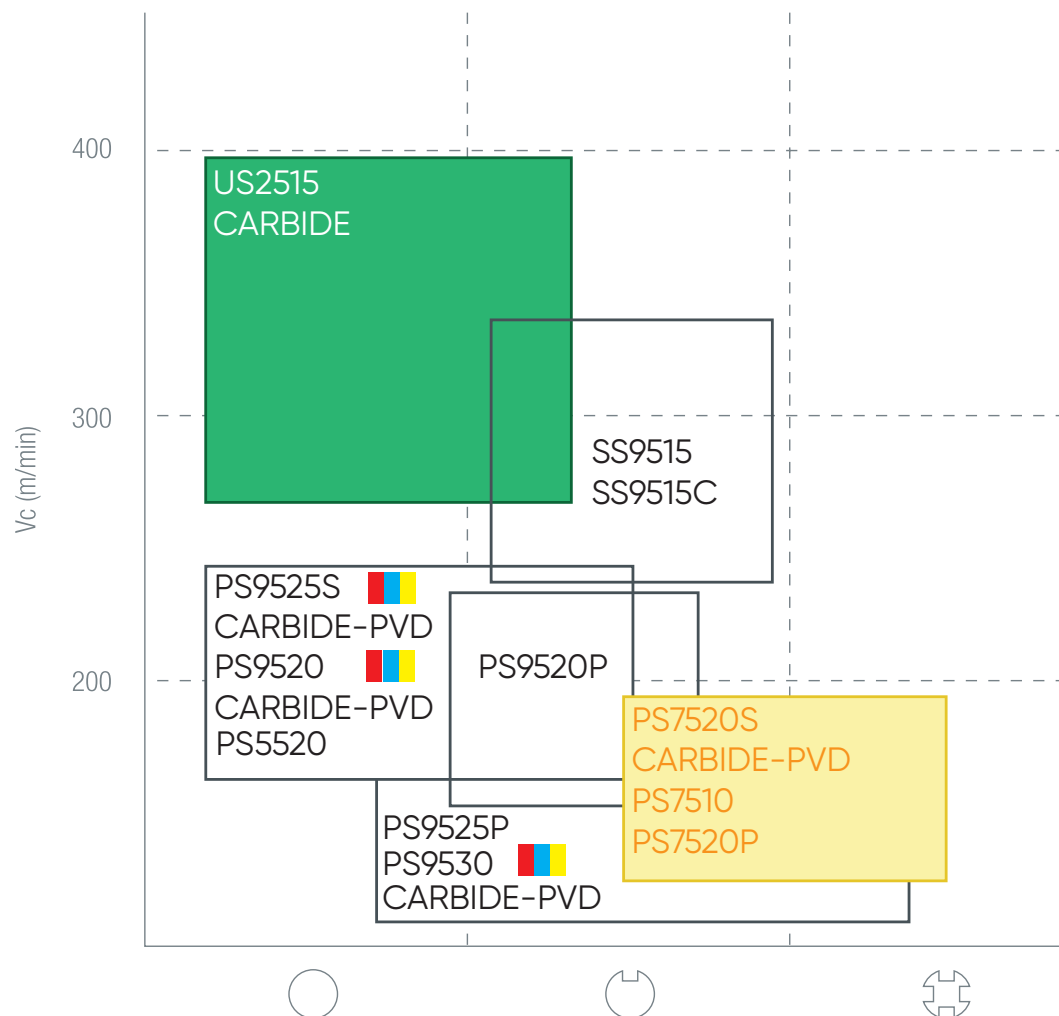
	K					P					M					N					S					H		
	ISO DIN 513																											
	K01	K10	K20	K30	K40	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	N01	N10	N20	N30	N40	S01	S10	S20	S30	S40	H01	H10	H20
CARBIDE PVD	PS9520					PS5520					PS9520																	
	PS9520P					PS9520					PS9520P																	
	PS9525S					PS9520P					PS9525S																	
	PS9525P					PS9525S					PS9525P																	
	PS9530					PS9525P					PS9530																	
CARBIDE UNCOATED											PS7510										PS7520S							
											PS7520S																	
											PS7520P										PS7520P							
CERMET UNCOATED	SS9515					SS9515					SS9515																	
	SS9515C					SS9515C					SS9515C																	

CARBIDE /GROOVING

RANGE ISO



GRADES



TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

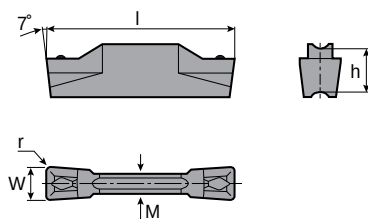
HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

MAGC

PARTING & GROOVING



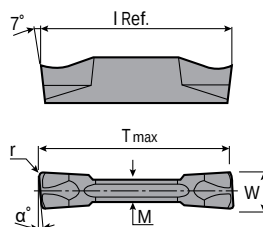
HOLDERS

222

DESCRIPTION		DIMENSIONS						CARBIDE													
								PS5520		PS9520		PS9520P		CS9525S		CS9525P		PS9530		SS9515	
		W	r	l	M	h	α														
	MAGC200	2.0	0.2	16.0	1.2	3.5	-		●		●		●						●		
	MAGC250	2.5	0.2	18.5	2.0	3.85	-		●		●		●						●		
	MAGC300	3.0	0.4	21.0	2.35	4.8	-		●		●		●						●		
	MAGC400	4.0	0.4	21.0	3.3	4.8	-		●		●	●	●						●		
	MAGC500	5.0	0.8	26.0	4.1	5.8	-		●		●	●	●						●		
	MAGC600	6.0	0.8	26.0	5.0	5.8	-		●		●	●	●						●		

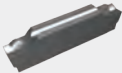
MAGD

PARTING



HOLDERS

222

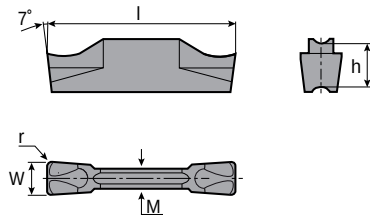
DESCRIPTION		DIMENSIONS						CARBIDE											
								PS5520	PS9520	PS9520P	CS9525S	CS9525P	PS9530	SS9515	SS9515C	PS7510	PS7520S	PS7520P	US2515
	MAGD200J-15D	2.0	0.2	16.0	1.2	3.5	15	●		●		●				●			
	MAGD300J-15D	3.0	0.4	21.0	2.35	4.8	15	●		●		●				●			

Vc • fn

205

MAGJ

PARTING & GROOVING



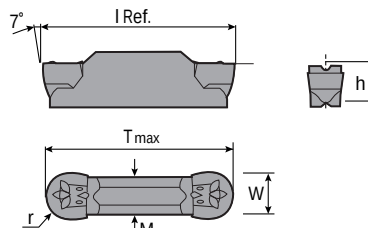
HOLDERS

222

DESCRIPTION		DIMENSIONS							CARBIDE											
									PS5520	PS9520	PS9520P	CS9525S	CS9525P	PS9530	SS9515	SS9515C	PS7510	PS7520S	PS7520P	US2515
		W	r	l	M	h	α													
	MAGJ150	1.5	0.15	16.0	1.2	3.5	-			●		●		●				●		
	MAGJ200	2.0	0.2	16.0	1.2	3.5	-			●		●		●				●		
	MAGJ250	2.5	0.2	18.5	2.0	3.85	-			●		●		●				●		
	MAGJ300	3.0	0.4	21.0	2.35	4.8	-			●		●		●				●		
	MAGJ400	4.0	0.4	21.0	3.3	4.8	-			●		●		●				●		
	MAGJ500	5.0	0.8	26.0	4.1	5.8	-			●		●		●				●		
	MAGJ600	6.0	0.8	26.0	5.0	5.8	-			●		●		●				●		
	MAGJ800	8.0	0.8	31	6	8	-							●						

MAGR

PROFILING



HOLDERS

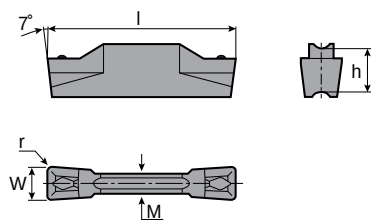
222

DESCRIPTION		DIMENSIONS							CARBIDE									
									PS5520	PS9520	PS9520P	CS9525S	CS9525P	PS9530	SS9515	SS9515C	PS7510	PS7520S
		W	r	l	M	h	α											
	MAGR200	2.0	1.0	16.0	1.5	3.5	-		●		●		●				●	
	MAGR300	3.0	1.5	21.0	2.35	4.8	-		●		●		●				●	
	MAGR400	4.0	2.0	21.0	3.3	4.8	-		●		●		●				●	
	MAGR500	5.0	2.5	26.0	4.1	5.8	-		●		●		●				●	

Vc • fn 205

MAGN

PARTING & GROOVING



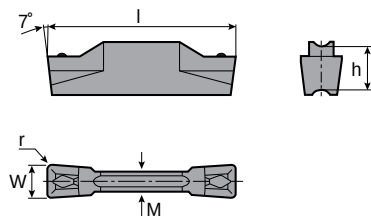
HOLDERS

222

DESCRIPTION		DIMENSIONS						CARBIDE														
								PS5520		PS9520		PS9520P		CS9525S		CS9525P		PS9530		SS9515		SS9515C
	MAGN200MA	2.0	0.2	16.0	1.2	3.5	-															●
	MAGN300MA	3.0	0.4	21.0	2.35	4.8	-															●
	MAGN200WA	2.0	0.2	16.0	1.2	3.5	-															●
	MAGN300WA	3.0	0.4	21.0	2.35	4.8	-															●
	MAGN400WA	4.0	0.4	21.0	3.3	4.8	-															●
	MAGN500WA	5.0	0.8	26.0	4.1	5.8	-															●
	MAGN600WA	6.0	0.8	26.0	5.0	5.8	-															●

MAGS

PARTING & GROOVING



HOLDERS

222

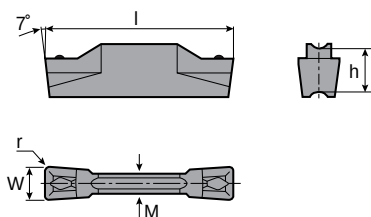
DESCRIPTION		DIMENSIONS						CARBIDE											
								PS5520	PS9520	PS9520P	CS9525S	CS9525P	PS9530	SS9515	SS9515C	PS7510	PS7520S	PS7520P	US2515
	MAGS200	2.0	0.2	16.0	1.2	3.5	-	●	●										
	MAGS250	2.5	0.2	18.5	2.0	3.85	-	●	●										
	MAGS300	3.0	0.4	21.0	2.35	4.8	-	●	●										
	MAGS400	4.0	0.4	21.0	3.3	4.8	-	●	●										
	MAGS500	5.0	0.8	26.0	4,1	5.8	-	●	●										
	MAGS600	6.0	0.8	26.0	5.0	5.8	-	●	●										

Vc • fn

205

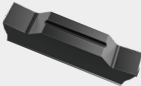
MGGN

PARTING & GROOVING



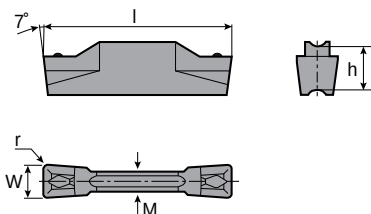
HOLDERS

222

DESCRIPTION		DIMENSIONS						CARBIDE											
								PS5520	PS9520	PS9520P	CS9525S	CS9525P	PS9530	SS9515	SS9515C	PS7510	PS7520S	PS7520P	US2515
	MGGN200	2.0	0.2	16.0	1.2	3.5	-							●	●				
	MGGN300-R0.2	3.0	0.4	21.0	2.35	4.8	-							●	●				
	MGGN400	4.0	0.4	21.0	3.3	4.8	-							●	●				

SAGC

PARTING & GROOVING



HOLDERS

226

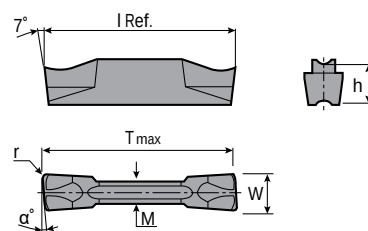
DESCRIPTION		DIMENSIONS						CARBIDE												
								PS5520	PS9520	PS9520P	CS9525S	CS9525P	PS9530	SS9515	SS9515C	PS7510	PS7520S	PS7520P	US2515	
	SAGC200-02	2.0	0.2	20.0	1.70	4.70	-													
	SAGC300-02	3.0	0.2	20.0	2.40	4.70	-													
	SAGC400-03	4.0	0.3	20.0	3.0	4.70	-													
	SAGC500-03	5.0	0.3	25.0	4.0	5.20	-													

Vc • fn

205

SAGD

PARTING



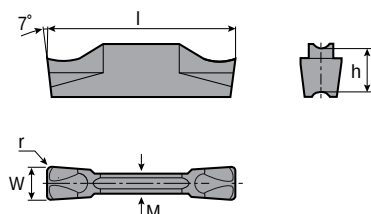
HOLDERS

226

DESCRIPTION		DIMENSIONS						CARBIDE											
								PS5520	PS9520	PS9520P	CS9525S	CS9525P	PS9530	SS9515	SS9515C	PS7510	PS7520S	PS7520P	US2515
	SAGD200J-15D	2.0	0.2	20.0	1.70	4.70	15		●	●	●	●	●				●		
	SAGD200J-6D	20	0.2	20.0	1.70	4.70	6		●	●	●	●	●				●		
	SAGD300J-15D	30	0.2	20.0	2.40	4.70	15		●	●	●	●	●				●		
	SAGD300J-6D	30	0.2	20.0	2.40	4.70	15		●	●	●	●	●				●		
	SAGD400J-6D	40	0.3	20.0	3.0	4.70	6		●	●	●	●	●				●		
	SAGD400J-4D	40	0.3	20.0	3.0	4.70	4		●	●	●	●	●				●		
	SAGD500J-4D	50	0.3	25.0	4.0	5.20	4		●	●	●	●	●				●		

SAGJ

PARTING & GROOVING



HOLDERS

226

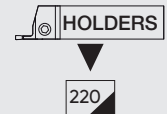
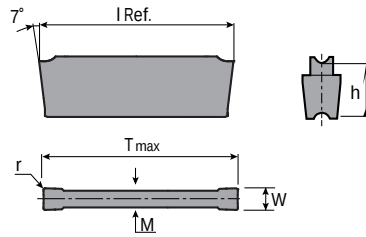
DESCRIPTION		DIMENSIONS						CARBIDE																		
								PS5520		PS9520		PS9520P		CS9525S		CS9525P		PS9530		SS9515		SS9515C		PS7510		PS7520S
	SAGJ200-02	2.0	0.2	20.0	1.70	4.70	-			●	●	●	●	●						●						
	SAGJ300-02	3.0	0.2	20.0	2.40	4.70	-			●	●	●	●	●						●		●				
	SAGJ400-03	4.0	0.3	20.0	3.0	4.70	-			●	●	●	●	●						●						
	SAGJ500-03	5.0	0.3	25.0	4.0	5.20	-			●	●	●	●	●						●						

Vc • fn

205

SDGN

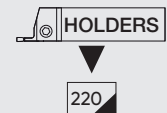
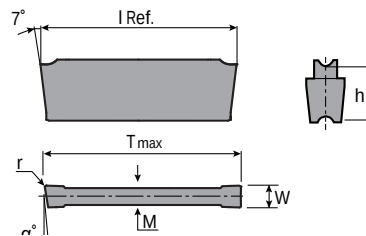
PARTING & GROOVING



DESCRIPTION		DIMENSIONS						CARBIDE							
								PS5520	PS9520	PS9520P	CS9525S	CS9525P	PS9530	SS9515	SS9515C
	SDGN2002Z	2.0	0.2	21.0	1.7	6.0	-	•	•	•	•	•	•		
	SDGN2202J	2.2	0.2	19.8	1.9	6.0	-	•	•	•	•	•	•		
	SDGN3002Z	3.0	0.2	21.0	2.4	6.1	-	•	•	•	•	•	•		
	SDGN3102C	3.1	0.2	20.1	2.4	6.1	-	•	•	•	•	•	•		

SDGR

PARTING

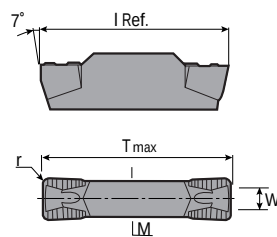


DESCRIPTION		DIMENSIONS						CARBIDE							
								PS5520	PS9520	PS9520P	CS9525S	CS9525P	PS9530	SS9515	SS9515C
	SDGR2200JS-6D	2.2	0.2	19.8	1.9	6.0	6	•	•	•	•	•	•		
	SDGR2200JS-15D	2.2	0.2	19.8	1.9	6.0	15	•	•	•	•	•	•		

Vc • fn 205

SGRIP

PARTING & GROOVING



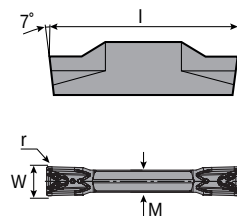
HOLDERS



DESCRIPTION		DIMENSIONS						CARBIDE							
								PS5520	PS9520	PS9520P	CS9525S	CS9525P	PS9530	SS9515	SS9515C
		W	r	l	M	h	α								
	SGRIP300-M	3.0	0.2	16.0	2.3	4.4	-	•	•	•	•	•			
	SGRIP400-M	4.0	0.4	19.0	2.8	4.9	-	•	•	•	•	•			
	SGRIP500-M	5.0	0.5	19.0	3.4	5.4	-	•	•	•	•	•			

SGDM

PARTING & GROOVING



HOLDERS



DESCRIPTION		DIMENSIONS						CARBIDE							
								PS5520	PS9520	PS9520P	CS9525S	CS9525P	PS9530	SS9515	SS9515C
		W	r	l	M	h	α								
	SGDM200	2.00	0.2	20	1.5	4.3	-	•		•		•			
	SGDM300	3.00	0.3	20	2.3	4.3	-	•		•		•			
	SGDM400	4.00	0.3	20	3.3	4.3	-	•	•	•	•	•			

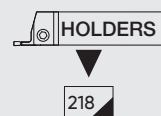
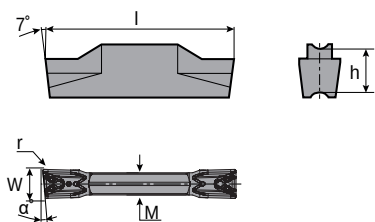
Vc • fn



205

SGDD

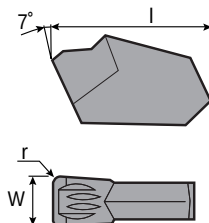
PARTING

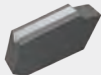


DESCRIPTION		DIMENSIONS						CARBIDE							
								PS5520	PS9520	PS9520P	CS9525S	CS9525P	PS9530	SS9515	SS9515C
	SGDD200-15D	W	r	l	M	h	α								
	SGDD300-15D	2.00	0.2	20	1.5	4.3	15	●		●		●			
		3.00	0.3	20	2.3	4.3	15	●		●		●			

SSP

PARTING



DESCRIPTION		DIMENSIONS						CARBIDE							
								PS5520	PS9520	PS9520P	CS9525S	CS9525P	PS9530	SS9515	SS9515C
	SSP200	W	r	l	M	h	α								
	SSP300	2.2	9.3	0.2	-	-	-	●		●		●			
	SSP400	3.1	3.2	3.3	-	-	-	●		●		●			
	SSP500	4.1	11.3	0.25	-	-	-	●		●		●			
	SSP600	5.1	11.4	0.3	-	-	-	●		●		●			
		6.4	11.4	0.35	-	-	-	●		●		●			

Vc • fn 205

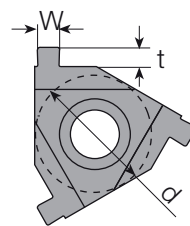
225

205

CARBIDE /GROOVING

11ER

EXTERNAL GROOVING



HOLDERS

278

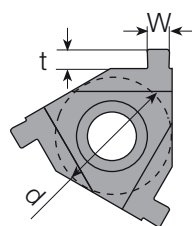
DESCRIPTION		DIMENSIONS				CARBIDE											
						PS5520	PS9520	PS9520P	CS9525S	CS9525P	PS9530	SS9515	SS9515C	PS7510	PS7520S	PS7520P	US2515
		d	l	w	T												
	11ER-W0.50-T0.70	6.35	11	0.50	0.70	●											
	11ER-W0.60-T0.70	6.35	11	0.60	0.70	●											
	11ER-W0.80-T0.70	6.35	11	0.80	0.70	●											
	11ER-W1.00-T0.70	6.35	11	1.00	0.70	●											
	11ER-W1.20-T1.50	6.35	11	1.20	1.50	●											
	11ER-W1.40-T1.50	6.35	11	1.40	1.50	●											
	11ER-W1.50-T1.50	6.35	11	1.50	1.50	●											
	11ER-W1.80-T1.80	6.35	11	1.80	1.80	●											
	16ER-W0.33-T1.30	9.525	16	0.33	1.30	●											
	16ER-W0.50-T1.30	9.525	16	0.50	1.30	●											
	16ER-W0.75-T1.30	9.525	16	0.75	1.30	●											
	16ER-W0.80-T1.30	9.525	16	0.80	1.30	●											
	16ER-W1.00-T1.30	9.525	16	1.00	1.30	●											
	16ER-W1.10-T1.30	9.525	16	1.10	1.30	●											
	16ER-W1.20-T1.60	9.525	16	1.20	1.60	●											
	16ER-W1.30-T1.60	9.525	16	1.30	1.60	●											
	16ER-W1.40-T1.60	9.525	16	1.40	1.60	●											
	16ER-W1.50-T1.60	9.525	16	1.50	1.60	●											
	16ER-W1.60-T1.60	9.525	16	1.60	1.60	●											
	16ER-W1.70-T1.85	9.525	16	1.70	1.85	●											
	16ER-W1.80-T1.85	9.525	16	1.80	1.85	●											
	16ER-W1.85-T1.85	9.525	16	1.85	1.85	●											
	16ER-W2.00-T1.85	9.525	16	2.00	1.85	●											
	16ER-W2.15-T2.00	9.525	16	2.15	2.00	●											
	16ER-W2.30-T2.00	9.525	16	2.30	2.00	●											
	16ER-W2.40-T2.20	9.525	16	2.40	2.20	●											
	16ER-W2.65-T2.20	9.525	16	2.65	2.20	●											

Vc • fn

205

IR

INTERNAL GROOVING



HOLDERS

279

DESCRIPTION		DIMENSIONS				CARBIDE									
						PS5520	PS9520	PS9520P	CS9525S	CS9525P	PS9530	SS9515	SS9515C	PS7510	PS7520S
		d	l	W	T										
	11IR-W0.50-T0.70	6.35	11	0.50	0.70	•									
	11IR-W0.60-T0.70	6.35	11	0.60	0.70	•									
	11IR-W0.80-T0.70	6.35	11	0.80	0.70	•									
	11IR-W1.00-T0.70	6.35	11	1.00	0.70	•									
	11IR-W1.20-T1.50	6.35	11	1.20	1.50	•									
	11IR-W1.40-T1.50	6.35	11	1.40	1.50	•									
	11IR-W1.50-T1.50	6.35	11	1.50	1.50	•									
	11IR-W1.80-T1.80	6.35	11	1.80	1.80	•									
	11IR-W2.20-T1.20	6.35	11	2.20	1.20	•									
	11IR-W2.20-T1.80	6.35	11	2.20	1.80	•									
	16IR-W0.33-T1.20	9.525	16	0.33	1.20	•									
	16IR-W0.50-T1.20	9.525	16	0.50	1.20	•									
	16IR-W0.75-T1.20	9.525	16	0.75	1.20	•									
	16IR-W0.80-T1.20	9.525	16	0.80	1.20	•									
	16IR-W1.00-T1.30	9.525	16	1.00	1.30	•									
	16IR-W1.10-T1.30	9.525	16	1.10	1.30	•									
	16IR-W1.20-T1.60	9.525	16	1.20	1.60	•									
	16IR-W1.30-T1.60	9.525	16	1.30	1.60	•									
	16IR-W1.40-T1.60	9.525	16	1.40	1.60	•									
	16IR-W1.50-T1.60	9.525	16	1.50	1.60	•									
	16IR-W1.60-T1.60	9.525	16	1.60	1.60	•									
	16IR-W1.70-T1.85	9.525	16	1.70	1.85	•									
	16IR-W1.80-T1.85	9.525	16	1.80	1.85	•									
	16IR-W1.85-T1.85	9.525	16	1.85	1.85	•									
	16IR-W2.00-T1.85	9.525	16	2.00	1.85	•									
	16IR-W2.15-T2.00	9.525	16	2.15	2.00	•									
	16IR-W2.30-T2.00	9.525	16	2.30	2.00	•									
	16IR-W2.50-T2.00	9.525	16	2.50	2.00	•									
	16IR-W2.65-T2.20	9.525	16	2.65	2.20	•									

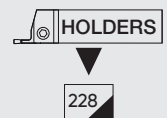
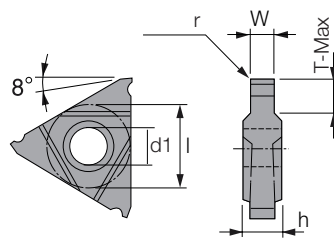
Vc • fn

205

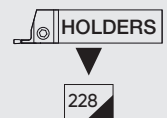
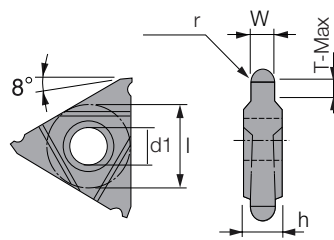
278

205

EXTERNAL GROOVING

[illegible]

EXTERNAL ROUND GROOVING

[illegible]

$$V_c \bullet f_n \rightarrow 205$$

CARBIDE /GROOVING

CUTTING PARAMETERS Vc(m/min)

KG	GREY CAST IRON
KN	NODULAR CAST IRON
PL	LOW CARBON AND FREE CUTTING STEEL
PM	MEDIUM CARBON STEEL
PH	HIGH CARBON STEEL
PA	ALLOY STEEL

MM	MARTENSITIC AND FERRITIC STAINLESS STEEL
MA	AUSTENITIC STAINLESS STEEL
NA	ALUMINIUM ALLOYS
NH	ALUMINIUM ALLOYS AGED AND HARDENED
NB	BRASS
NC	BRONZE AND ELECTROLYTIC COPPER

MATERIAL		CARBIDE-PVD									CERMET UNCOATED		CARBIDE UNCOATED
		PS5520	PS9520	PS9520P	PS9525S	PS9525P	PS9530	PS7510	PS7520S	PS7520P	SS9515	SS9515C	US2515
K	KG	120-160	200-360	250-450	250-450	250-450	200-360						
	KN	120-160	150-280	150-280	180-300	150-280	150-280						
P	PL	160-220	200-320	200-320	250-350	200-320	200-320						
	PM	140-280	180-260	220-300	220-300	220-300	180-260						
	PH	120-160	160-250	180-260	200-280	180-260	160-250						
	PA	140-200	150-220	160-250	180-250	160-250	150-220						
M	MM	90-140	160-260	160-260	90-140	160-260	160-260	140-360	160-260	140-260	150-1500	150-1500	
	MA	100-180	140-220	160-260	100-180	140-220	160-260	140-360	140-220	140-260	150-1500	150-1500	
N	NA												600-1500
	NH												300-700
	NB												250-400
	NC												150-250

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

CARBIDE /GROOVING

CUTTING PARAMETERS f_n (mm/rev)

KG	GREY CAST IRON
KN	NODULAR CAST IRON
PL	LOW CARBON AND FREE CUTTING STEEL
PM	MEDIUM CARBON STEEL
PH	HIGH CARBON STEEL
PA	ALLOY STEEL

MM	MARTENSITIC AND FERRITIC STAINLESS STEEL
MA	AUSTENITIC STAINLESS STEEL
NA	ALUMINIUM ALLOYS
NH	ALUMINIUM ALLOYS AGED AND HARDENED
NB	BRASS
NC	BRONZE AND ELECTROLYTIC COPPER

PARTING-OFF

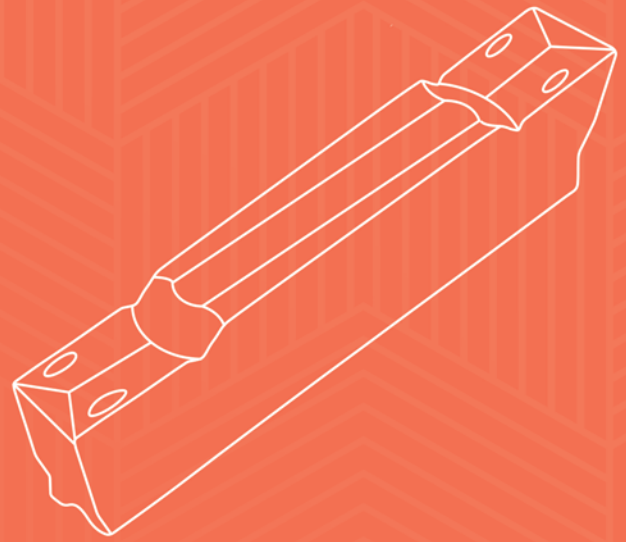
MATERIAL		CUTTING WIDTH				
		2 mm	3 mm	4 mm	5 mm	6 mm
K	KG	0.05~0.12	0.10~0.25	0.10~0.30	0.10~0.35	0.10~0.40
	KN	0.05~0.10	0.10~0.20	0.10~0.25	0.10~0.30	0.10~0.35
P	PL	0.02~0.15	0.03~0.20	0.08~0.30	0.10~0.40	0.12~0.50
	PM	0.02~0.15	0.03~0.20	0.08~0.30	0.10~0.40	0.12~0.50
	PH	0.02~0.15	0.03~0.20	0.08~0.30	0.10~0.40	0.12~0.50
	PA	0.02~0.15	0.03~0.20	0.08~0.30	0.10~0.40	0.12~0.50
M	MM	0.02~0.10	0.03~0.15	0.08~0.25	0.10~0.35	0.12~0.40
	MA	0.02~0.08	0.03~0.13	0.08~0.20	0.10~0.30	0.12~0.35
N	NA	0.05~0.10	0.05~0.20	0.05~0.25	0.05~0.30	0.05~0.35
	NH	0.05~0.10	0.05~0.20	0.05~0.25	0.05~0.30	0.05~0.35
	NB	0.05~0.10	0.05~0.20	0.05~0.25	0.05~0.30	0.05~0.35
	NC	0.05~0.10	0.05~0.20	0.05~0.25	0.05~0.30	0.05~0.35

FACING

MATERIAL		CUTTING WIDTH		
		3 mm	4 mm	5 mm
K	KG	0.05~0.10	0.05~0.12	0.05~0.15
	KN	0.05~0.10	0.05~0.12	0.05~0.15
P	PL	0.05~0.10	0.05~0.12	0.05~0.15
	PM	0.05~0.10	0.05~0.12	0.05~0.15
	PH	0.05~0.10	0.05~0.12	0.05~0.15
	PA	0.05~0.10	0.05~0.12	0.05~0.15
M	MM	0.05~0.10	0.05~0.12	0.05~0.15
	MA	0.05~0.10	0.05~0.12	0.05~0.15
N	NA	0.05~0.15	0.08~0.15	0.08~0.15
	NH	0.05~0.15	0.08~0.15	0.08~0.15
	NB	0.05~0.15	0.08~0.15	0.08~0.15
	NC	0.05~0.15	0.08~0.15	0.08~0.15

GROOVING, GROOVE TURNING

MATERIAL		CUTTING WIDTH					
		0.5 ~ 1.0 mm	1.0 ~ 2.0 mm	2.0 ~ 3.0 mm	3.0 ~ 4.0 mm	4.0 ~ 5.0 mm	6.0 ~ 8.0 mm
K	KG	0.03~0.07	0.04~0.08	0.05~0.08	0.05~0.10	0.05~0.10	0.05~0.12
	KN	0.03~0.07	0.04~0.08	0.05~0.08	0.05~0.10	0.05~0.10	0.05~0.12
P	PL	0.03~0.08	0.04~0.09	0.05~0.10	0.05~0.12	0.05~0.15	0.05~0.20
	PM	0.03~0.08	0.04~0.09	0.05~0.10	0.05~0.12	0.05~0.15	0.05~0.20
	PH	0.03~0.07	0.04~0.08	0.05~0.08	0.05~0.10	0.05~0.12	0.05~0.15
	PA	0.03~0.07	0.04~0.08	0.05~0.08	0.05~0.10	0.05~0.12	0.05~0.15
M	MM	0.03~0.08	0.04~0.09	0.05~0.10	0.05~0.12	0.05~0.12	0.05~0.15
	MA	0.03~0.08	0.04~0.09	0.05~0.10	0.05~0.12	0.05~0.12	0.05~0.15
N	NA	0.05~0.12	0.05~0.15	0.05~0.15	0.08~0.15	0.08~0.15	0.10~0.20
	NH	0.05~0.12	0.05~0.15	0.05~0.15	0.08~0.15	0.08~0.15	0.10~0.20
	NB	0.05~0.12	0.05~0.15	0.05~0.15	0.08~0.15	0.08~0.15	0.10~0.20
	NC	0.05~0.12	0.05~0.15	0.05~0.15	0.08~0.15	0.08~0.15	0.10~0.20



GROOVING/**PCBN**

PCBN /GROOVING

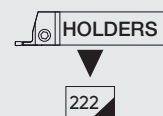
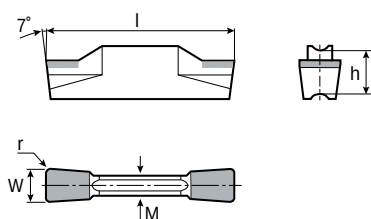
GRADES

ISO DIN 513	K					H					S				
	K01	K10	K20	K30	K40	P01	P10	P20	P30	P40	S01	S10	S20	S30	S40
PCBN															

COATED

MAGN

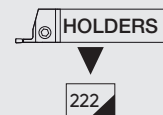
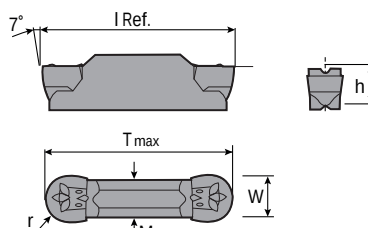
PARTING & GROOVING



DESCRIPTION		DIMENSIONS					PCBN						
							BC150	BC170	SC150	BC250	SC250	BC350	BC420
	MAGN200	2.0	0.2	16.0	1.2	3.5	●	●					●
	MAGN300	3.0	0.4	21.0	2.35	4.8	●	●					●
	MAGN400	4.0	0.4	21.0	3.3	4.8	●	●					●

MRMN

PARTING & GROOVING



DESCRIPTION		DIMENSIONS					PCBN						
							BC150	BC170	SC150	BC250	SC250	BC350	BC420
	MRMN300	3.0	1.5	21.0	2.35	4.8							●
	MRMN400	4.0	0.2	21.0	3.3	4.8							●

Vc • fn ► 210

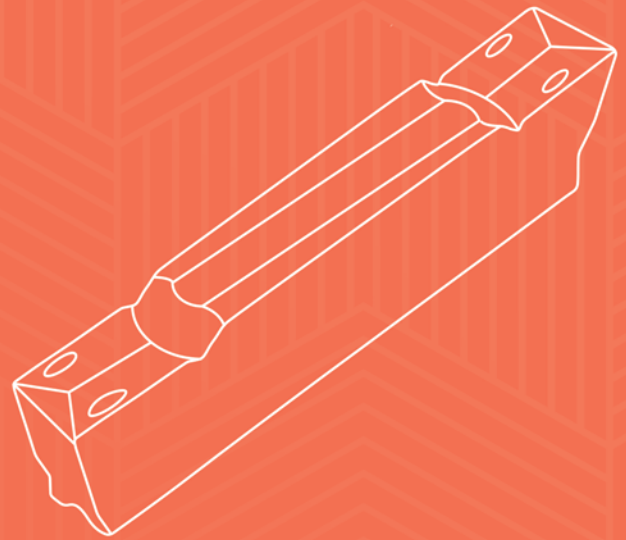
PCBN /GROOVING

CUTTING PARAMETERS

KG	GREY CAST IRON
KN	NODULAR CAST IRON
KW	WHITE CAST IRON
KS	SINTERED MATERIAL

HH	HARDENED STEEL
HC	CASE HARDENED STEEL
HB	BEARING STEEL
SA	SUPER ALLOYS (Ni Based)

MATERIAL		fn (mm/rev)	CUTTING CONDITION		PCBN						
					BC150	BC170	SC150	BC250	SC250	BC350	BC420
H	HH	0,05~0,15			80~180	80~180					80~150
					60~120	60~120					80~150
	HC	0,05~0,15			80~140	80~140					80~140
					60~100	60~100					80~140
	HB	0,05~0,15			80~120	80~120					80~120
					60~100	60~100					80~120



GROOVING/**DIAMOND**

DIAMOND /GROOVING

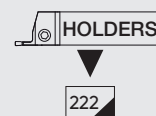
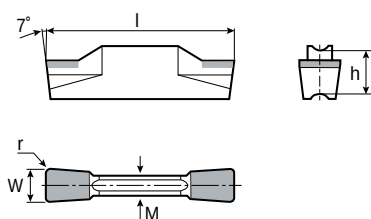
GRADES

ISO DIN 513	N				
	N01	N10	N20	N30	N40
PCD		PC100			
	PC150				
		PC200			
			PC300		

TURNING

GROOVING

THREADING

[illegible]

214

DIAMOND /GROOVING

CUTTING PARAMETERS

NA	ALUMINIUM ALLOYS
NS	ALUMINIUM ALLOYS (Si≤15%)
NH	AL ALLOYS AGED AND HARDENED
NB	BRASS

NC	BRONZE AND ELECTROLYTIC COPPER
NG	GRAPHITE
HM	HARD METAL (Co≤16%)
ST	TITANIUM ALLOYS

MATERIAL		fn (mm/rev)	CUTTING CONDITION	PCD						
				PC100	PC150	PC200	PC300			
N	NA	0,05~0,15	○ ⊞ ◊		600~2500	600~2500				
		0,05~0,15	○ ⊞ ◊		600~2500	600~2500				
	NS	0,05~0,15	○ ⊞ ◊		500~1500	500~1500				
		0,05~0,15	○ ⊞ ◊		500~1500	500~1500				
	NB	0,05~0,15	○ ⊞ ◊		400~1200	400~1200				
		0,05~0,15	○ ⊞ ◊		400~1200	400~1200				
	NG	0,05~0,15	○ ⊞ ◊		300~800	300~800				
		0,05~0,15	○ ⊞ ◊		300~800	300~800				



GROOVING/**HOLDERS**

HOLDERS /GROOVING

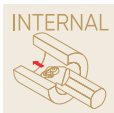


S K T E R 25 25 – 2 T6

1		2	INSERT TYPE	3	CLAMPING TYPE	4	CLEARANCE
S	Steel Body	G	SGD□	T	Top Screw	E	
C	Carbide Body	I	SDG□			I	
		K	MAG□			F	
		T	SAG□				
		S	SK□□				

5	DIRECTION	6	SHANK	7	8	GROOVING WIDTH	9	T-MAX
L		(H)		(B)	...		...	
R								

HOLDERS /GROOVING



S	K	T	I	R	25	—		2	T6
1	2	3	4	5	6			7	8

1		2	INSERT TYPE	3	CLAMPING TYPE	4	CLEARANCE
S	Steel Body	G	SGD□	T	Top Screw 	E	
C	Carbide Body	I	SDG□			I	
		K	MAG□			F	
		T	SAG□				
		S	SK□□				

5	DIRECTION	6	SHANK DIAMETER	7	GROOVING WIDTH	8	T-MAX
L		...		...		...	
R							

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPSSPARE
PARTS

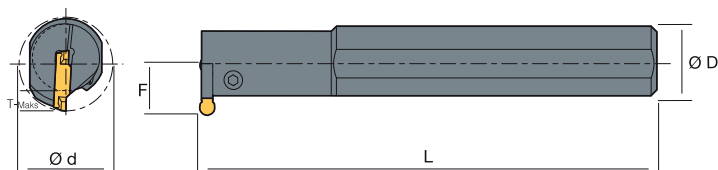
INDEX

Technical drawing of a rectangular plate. The top view shows a plate with length L and width B . A circular feature is located at the left end, with a diameter of T . The distance from the left edge to the center of the circle is $T/2$. The side view shows a plate with height H and thickness F . The circular feature is shown in cross-section, with a diameter of T .

194

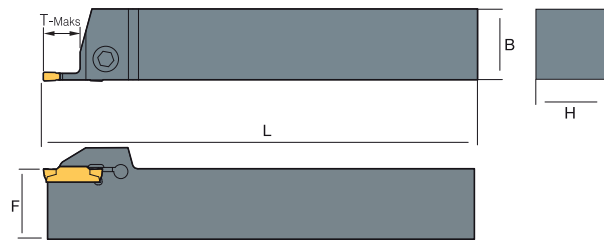
SGTI

Screw On

SGD ☐[illegible]

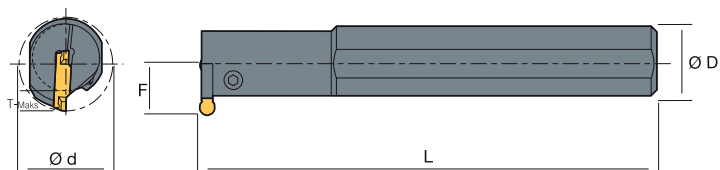
Carbide

194

[illegible]

TURNING

Screw On

SDG 

GROOVING

THREADING

[illegible]

Carbide

193

SPARE PARTS

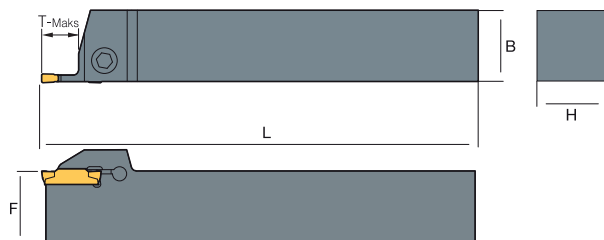
INDEX

HOLDERS /GROOVING

SKTE

Screw On

MAG



MAG	DESCRIPTION			STOCK		DIMENSIONS								
				R	L	H	B	L	F	tmax				
MAG-200	SKTER/L	1212	2T15	•	•	12	12	100	12.3	15	ST-SC520	ST-WRT0040		
		1616	2T18	•	•	16	16	100	16.3	18	ST-SC625	ST-WRT0050		
		2020	2T18	•	•	20	20	125	20.3	18	ST-SC625	ST-WRT0050		
		2020	2T12	•	•	25	25	150	20.3	12	ST-SC625	ST-WRT0050		
		2525	2T18	•	•	25	25	150	25.3	18	ST-SC625	ST-WRT0050		
		2525	2T20	•	•	25	25	150	25	20	ST-SC625	ST-WRT0050		
		3232	2T18	•	•	32	32	170	32.3	18	ST-SC625	ST-WRT0050		
MAG-300	SKTER/L	1212	3T15	•	•	12	12	90	12	15	ST-SC520	ST-WRT0040		
		1212	3T18	•	•	12	12	100	12.3	18	ST-SC520	ST-WRT0040		
		1616	3T18	•	•	16	16	100	16.4	18	ST-SC625	ST-WRT0050		
		2020	3T20	•	•	20	20	125	20.4	20	ST-SC625	ST-WRT0050		
		2020	3T22	•	•	20	20	125	25.4	22	ST-SC625	ST-WRT0050		
		2525	3T25	•	•	25	25	150	25.4	25	ST-SC625	ST-WRT0050		
		2525	3T40	•	•	25	25	150	25.4	40	ST-SC625	ST-WRT0050		
MAG-400		3232	3T22	•	•	32	32	170	32.4	22	ST-SC625	ST-WRT0050		
	SKTER/L	2020	4T20	•	•	20	20	125	20.4	20	ST-SC625	ST-WRT0050		
		2020	4T25	•	•	20	20	125	20.4	25	ST-SC625	ST-WRT0050		
		2525	4T22	•	•	25	25	150	25.4	22	ST-SC625	ST-WRT0050		
		2525	4T25	•	•	25	25	150	25.4	25	ST-SC625	ST-WRT0050		
		2525	4T40	•	•	25	25	150	25.4	40	ST-SC625	ST-WRT0050		
MAG-500		3232	4T22	•	•	32	32	170	32.4	22	ST-SC625	ST-WRT0050		
	SKTER/L	2020	5T20	•	•	20	20	125	20.5	20	ST-SC625	ST-WRT0050		
		2525	5T25	•	•	25	25	150	25.5	25	ST-SC625	ST-WRT0050		
MAG-600		3232	5T25	•	•	32	32	170	32.5	25	ST-SC625	ST-WRT0050		
	SKTER/L	2525	6T25	•	•	25	25	150	25.6	25	ST-SC625	ST-WRT0050		
		3232	6T25	•	•	32	32	170	32.6	25	ST-SC625	ST-WRT0050		

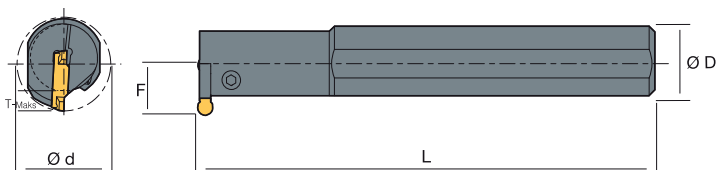
Carbide 188

PCBN 209

Diamond 213

SKTI

Screw On

MAG [illegible]

Carbide

188

PCBN

209

Diamond

213

SPARE
PARTS

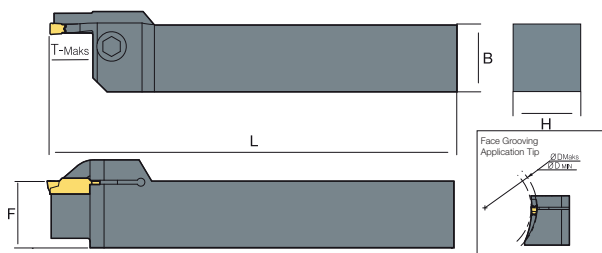
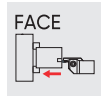
INDEX

HOLDERS /GROOVING

SKTF

Screw On

MAG



MAG	DESCRIPTION				STOCK		DIMENSIONS							 ← 	
					R	L	h	B	L	S	tmax	Dmin	Dmax		
MAG-300	SKTFR	2525	3T17	24/36	•		25	25	150	26.5	17	24	36	ST-SC625	ST-WRT0050
		2525	3T17	30/40	•		25	25	150	26.5	17	30	40	ST-SC625	ST-WRT0050
		2525	3T17	35/50	•		25	25	150	26.5	17	35	50	ST-SC625	ST-WRT0050
		2525	3T17	36/48	•		25	25	150	26.5	17	36	48	ST-SC625	ST-WRT0050
		2525	3T17	45/70	•		25	25	150	26.5	17	45	70	ST-SC625	ST-WRT0050
		2525	3T17	48/70	•		25	25	150	26.5	17	48	70	ST-SC625	ST-WRT0050
		2525	3T17	65/105	•		25	25	150	26.5	17	65	105	ST-SC625	ST-WRT0050
		2525	3T17	70/110	•		25	25	150	26.5	17	70	100	ST-SC625	ST-WRT0050
		2525	3T17	100/150	•		25	25	150	26.5	17	100	150	ST-SC625	ST-WRT0050
MAG-400	SKTFR	2525	4T22	30/40	•		25	25	150	26.5	22	30	40	ST-SC625	ST-WRT0050
		2525	4T22	35/50	•		25	25	150	26.5	22	35	50	ST-SC625	ST-WRT0050
		2525	4T22	36/48	•		25	25	150	26,5	22	36	48	ST-SC625	ST-WRT0050
		2525	4T22	45/70	•		25	25	150	26.5	22	45	70	ST-SC625	ST-WRT0050
		2525	4T22	48/70	•		25	25	150	26,5	22	48	70	ST-SC625	ST-WRT0050
		2525	4T22	65/105	•		25	25	150	26.5	22	65	105	ST-SC625	ST-WRT0050
		2525	4T22	70/110	•		25	25	150	26,5	22	70	110	ST-SC625	ST-WRT0050
		2525	4T22	100/150	•		25	25	150	26.5	22	100	150	ST-SC625	ST-WRT0050
		SKTFR	2525	5T25	48/70	•		25	25	150	26.5	25	48	70	ST-SC625
MAG-500		2525	5T25	70/110	•		25	25	150	26.5	25	70	110	ST-SC625	ST-WRT0050
		2525	5T25	75/110	•		25	25	150	26.5	25	75	110	ST-SC625	ST-WRT0050
		2525	5T25	100/150	•		25	25	150	26.5	25	100	150	ST-SC625	ST-WRT0050
		2525	5T25	105/150	•		25	25	150	26.5	25	105	150	ST-SC625	ST-WRT0050
		2525	5T25	145/200	•		25	25	150	26.5	25	145	200	ST-SC625	ST-WRT0050
		2525	5T25	150/200	•		25	25	150	26.5	25	150	200	ST-SC625	ST-WRT0050

Carbide 188

PCBN 209

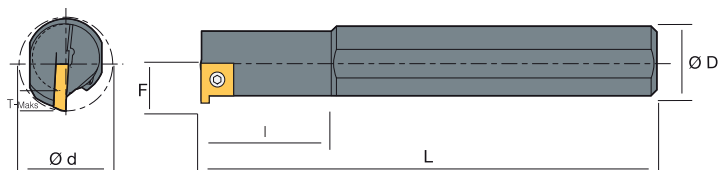
Diamond 213

TURNING

SNGR

Screw On

GR

[illegible]

Carbide

196

SPARE PARTS

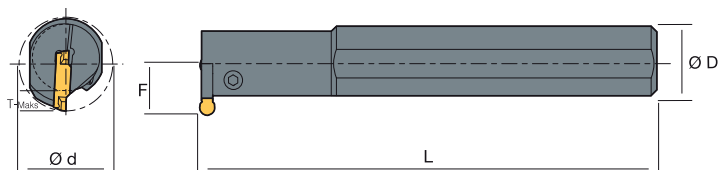
INDEX

Carbide

TURNING

STTI

Screw On

SAG [illegible]

Carbide

191

**HSS
DRILLS & TAPS**

SPARE PARTS

INDEX

Technical drawings of the R Type product. The top drawing is a side view showing a dark grey rectangular body with a yellow and black striped cap on the left. Dimensions are labeled: L for the length, B for the width, and I for the cap's width. The text "R TYPE" is printed on the side. The bottom drawing is a front view showing the same body with a yellow and black striped cap on the left. Dimensions are labeled: F for the height of the body and H for the height of the cap.

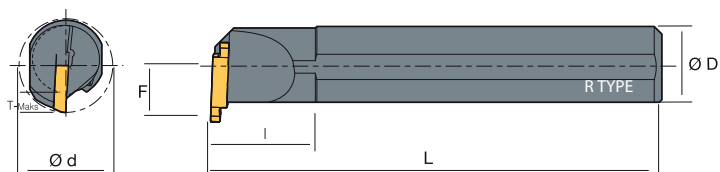
204

TURNING

^sSSTG

Screw On

STGR



GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS DRILLS & TAPS

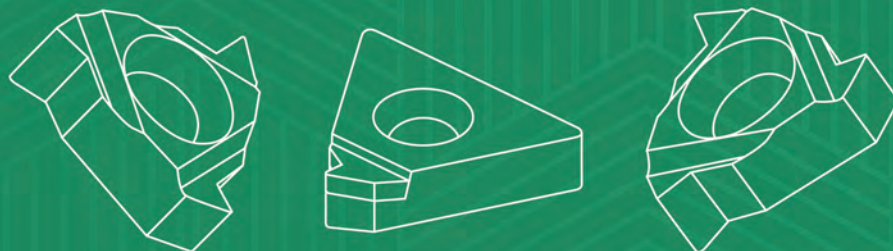
SPARE
PARTS

INDEX

[illegible]

Carbide

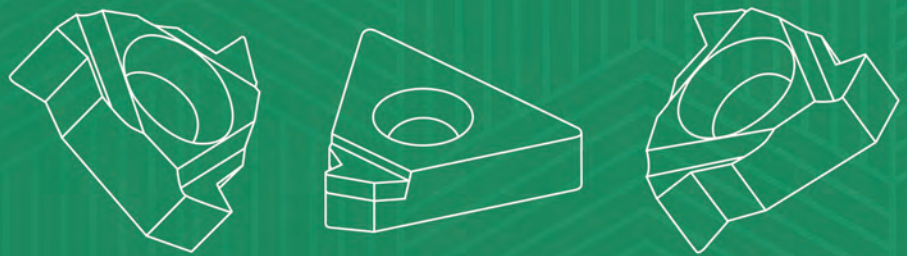
204



THREADING/

carbide /233
holders /277

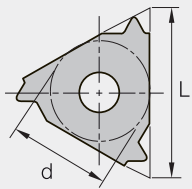


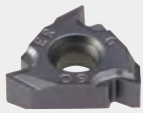
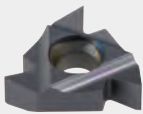


THREADING/**CARBIDE**

CARBIDE /THREADING

16	E	R	M	–	1.50
1	2	3	4		5

1	INSERT SIZE (d)		2	INSERT TYPE	3	HAND OF INSERT
08	4,76 mm		E	External	R	Right
11	6,35 mm		I	Internal	L	Left
16	9,525 mm					
22	12,70 mm					
27	15,875 mm					

4	CHIP BREAKER		5*	PITCH (Full Profile)	5*	PITCH (Partial Profile)
M		Chip Breaker Type	0.35~6.0	mm	A	0.50~1.50
			3~72	TPI	AG	0.50~3.00
Non		Regular Type	* Should use only one table based on profile type		G	1.75~3.00
					N	3.50~5.00
					Q	5.50~6.00

* Should use only one table based on profile type

ISO

–

PS

7

4

30

6

7

8

9

10

6

THREAD STANDARD

60

Partial Profile 60°

55

Partial Profile 55°

STACME

Stub ACME

UN

American UN

W

Whitworth for BSW, BSP

BSPT

British Standard Pipe Thread

ABUT

American Buttress

BBUT

British Buttress

SAGE

Metric Buttress DIN513

BUT

API Buttress Casing

APIRD

API Round Casing & Tubing

EL

Extreme Line Casing

NPT

NPT

NPTF

NPTF

NPS

NPS

PG

Pg DIN 40430

API

API

ISO

ISO Metric

UNJ

UNJ

MJ

ISO 5855

TR

Trapez DIN103

ACME

ACME

RD

Round DIN405

7

COATING & MATERIAL

CS

CVD Coated Carbide

PS

PVD Coated Carbide

PB

New PVD Coating

KS

Ceramic

SS

Cermet

US

Uncoated

8

WORKPIECE MATERIAL

2

Non-Ferrous Material

4

Hardened Steel

5

Steel

7

Stainless Steel

8

Cast Iron

9

General Machining

9

MACHINING

4

Threading

10

ISO GRADE

05

10

15

20

25

30

35

40

45



TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

CARBIDE /THREADING

GRADES

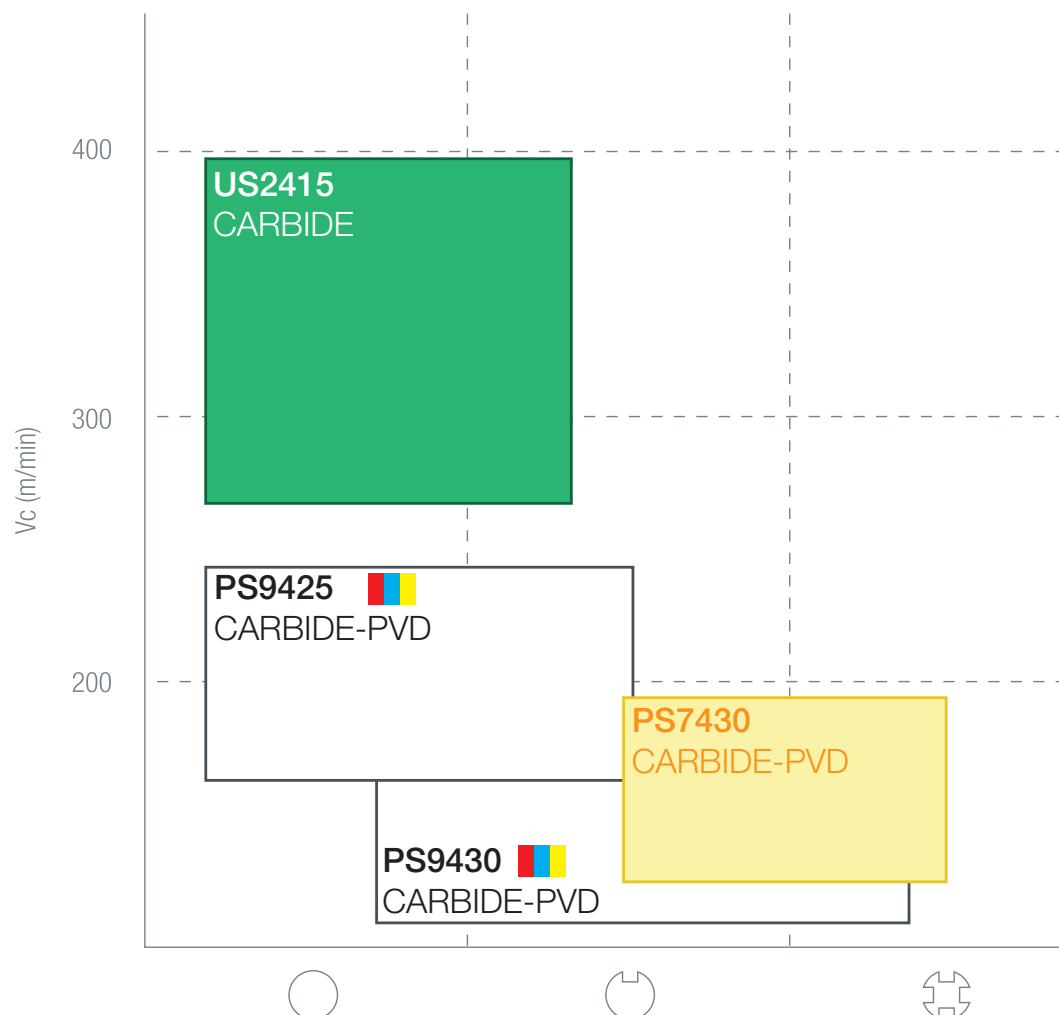
ISO DIN 513	K					P					M					N					
																					
	K01	K10	K20	K30	K40	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	N01	N10	N20	N30	N40	
CARBIDE CVD																					
CARBIDE PVD	PS9425					PS9425					PS9425										
	PS9430						PS7430					PS7430									
							PS9430					PS9430									
CARBIDE UNCOATED																					
CERMET UNCOATED																	US2415				

CARBIDE /THREADING

RANGE ISO



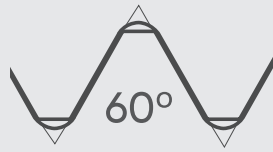
GRADES



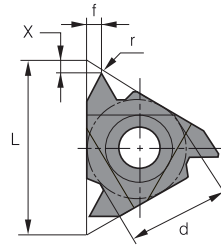
278

238 | **Sangeo**  cutting tools

□□IR



INTERNAL PARTIAL PROFILE



DESCRIPTION		DIMENSIONS							CARBIDE			
									PS9425	PS9430	PS7430	US2415
				d	l	hmin	x	f				
	06IR-A60	1.5~1.25	48~20	3.97	6	0.04	0.6	0.6	●			
	08IR-A60	0.5~1.5	48~16	4.76	8	0.05	0.6	0.7	●			
	11IR-A60	0.5~1.5	48~16	6.35	11	0.05	0.8	0.9	●	●	●	●
	16IR-A60	0.5~1.5	48~16	9.525	16	0.05	0.8	0.9	●			
	16IR-G60	1.75~3.0	14~8	9.525	16	0.27	1.2	1.7	●	●		●
	16IR-AG60	0.5~3.0	48~8	9.525	16	0.08	1.2	1.7	●	●	●	
	22IR-N60	3.5~5.0	7~5	12.7	22	0.53	1.7	2.5	●	●	●	
	27IR-Q60	5.5~6.0	4.5~4	15.875	27	0.64	2.1	3.1	●			
	16IRM-AG60	0.5~3.0	48~8	9.525	16	0.08	1.2	1.7	●			

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

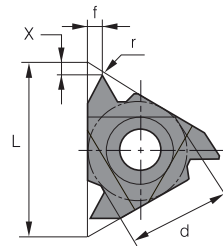
INDEX

CARBIDE /THREADING

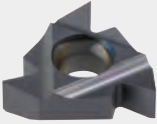
□□ER



EXTERNAL PARTIAL PROFILE



278

DESCRIPTION		DIMENSIONS								CARBIDE			
										PS9425	PS9430	PS7430	US2415
				d	l	hmin	x	f					
	11ER-A55	0.5~1.5	48~16	6.35	11	0.05	0.8	0.9	●	●	●	●	
	16ER-A55	0.5~1.5	48~16	9.525	16	0.05	0.8	0.9	●			●	
	16ER-G55	1.75~3.0	14~8	9.525	16	0.27	1.2	1.7	●	●			
	16ER-AG55	0.5~3.0	48~8	9.525	16	0.08	1.2	1.7	●	●	●	●	
	22ER-N55	3.5~5.0	7~5	12.7	22	0.53	1.7	2.5	●	●	●		
	27ER-Q55	5.5~6.0	4.5~4	15.875	27	0.64	2.1	3.1	●				
	16ERM-AG55	0.5~3.0	48~8	9.525	16	0.08	1.2	1.7	●				

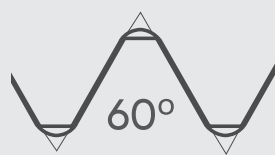
INDEX

HOLDERS ▶ **279**

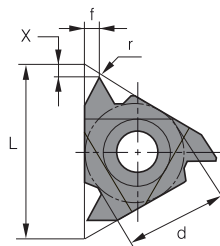
241

CARBIDE /THREADING

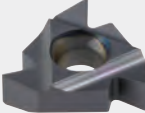
11ER



EXTERNAL METRIC



278

DESCRIPTION		DIMENSIONS							CARBIDE			
									PS9425	PS9430	PS7430	US2415
				d	l	hmin	x	f				
	11ER-0.35ISO	0.35		6.35	11	0.21	0.8	0.4	●			
	11ER-0.40ISO	0.40		6.35	11	0.25	0.7	0.4	●			
	11ER-0.45ISO	0.45		6.35	11	0.28	0.7	0.4	●			
	11ER-0.50ISO	0.50		6.35	11	0.31	0.6	0.4	●			
	11ER-0.60ISO	0.60		6.35	11	0.37	0.6	0.6	●			
	11ER-0.70ISO	0.70		6.35	11	0.43	0.6	0.6	●			
	11ER-0.75ISO	0.75		6.35	11	0.46	0.6	0.6	●			
	11ER-0.80ISO	0.80		6.35	11	0.49	0.6	0.6	●			
	11ER-1.00ISO	1.00		6.35	11	0.61	0.7	0.7	●	●	●	
	11ER-1.25ISO	1.25		6.35	11	0.77	0.8	0.9	●	●	●	
	11ER-1.50ISO	1.50		6.35	11	0.92	0.8	1.0	●	●	●	
	11ER-1.75ISO	1.75		6.35	11	1.07	0.8	1.1	●	●	●	
	11ER-2.00ISO	2.00		6.35	11	1.15	0.9	1.1	●			
	16ER-0.35ISO	0.35		9.525	16	0.21	0.8	0.4	●			
	16ER-0.40ISO	0.40		9.525	16	0.25	0.7	0.4	●			
	16ER-0.45ISO	0.45		9.525	16	0.28	0.7	0.4	●			
	16ER-0.50ISO	0.50		9.525	16	0.31	0.6	0.4	●			
	16ER-0.60ISO	0.60		9.525	16	0.37	0.6	0.6	●			
	16ER-0.70ISO	0.70		9.525	16	0.43	0.6	0.6	●			
	16ER-0.75ISO	0.75		9.525	16	0.46	0.6	0.6	●	●	●	
	16ER-0.80ISO	0.80		9.525	16	0.49	0.6	0.6	●			
	16ER-1.00ISO	1.00		9.525	16	0.61	0.7	0.7	●	●	●	
	16ER-1.25ISO	1.25		9.525	16	0.77	0.8	0.9	●	●	●	
	16ER-1.50ISO	1.50		9.525	16	0.92	0.8	1.0	●	●	●	
	16ER-1.75ISO	1.75		9.525	16	1.07	0.9	1.2	●	●	●	
	16ER-2.00ISO	2.00		9.525	16	1.23	1.0	1.3	●	●	●	
	16ER-2.50ISO	2.50		9.525	16	1.53	1.1	1.5	●	●	●	
	16ER-3.00ISO	3.00		9.525	16	1.84	1.2	1.6	●	●	●	

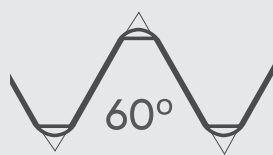
INDEX

HOLDERS 278

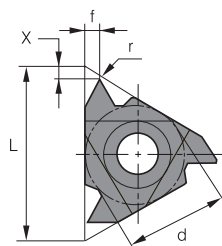
243

CARBIDE /THREADING

IR



INTERNAL METRIC



279

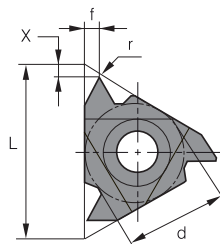
DESCRIPTION		DIMENSIONS							CARBIDE			
									PS9425	PS9430	PS7430	US2415
			d	l	hmin	x	f					
	11IR-0.35ISO	0.35	6.35	11	0.21	0.8	0.4	●				
	11IR-0.40ISO	0.40	6.35	11	0.25	0.7	0.4	●				
	11IR-0.45ISO	0.45	6.35	11	0.28	0.7	0.4	●				
	11IR-0.50ISO	0.50	6.35	11	0.31	0.6	0.4	●	●	●		
	11IR-0.60ISO	0.60	6.35	11	0.37	0.6	0.6	●				
	11IR-0.70ISO	0.70	6.35	11	0.43	0.6	0.6	●				
	11IR-0.75ISO	0.75	6.35	11	0.46	0.6	0.6	●	●	●		
	11IR-0.80ISO	0.80	6.35	11	0.49	0.6	0.6	●				
	11IR-1.00ISO	1.00	6.35	11	0.61	0.7	0.7	●	●	●		
	11IR-1.25ISO	1.25	6.35	11	0.77	0.8	0.9	●	●	●		
	11IR-1.50ISO	1.50	6.35	11	0.92	0.8	1.0	●	●	●		
	11IR-1.75ISO	1.75	6.35	11	1.07	0.8	1.1	●	●	●		
	11IR-2.00ISO	2.00	6.35	11	1.15	0.9	1.1	●	●	●		
	11IR-2.50ISO	2.5	6.35	11	1.44	0.8	1.1	●				
	16IR-0.35ISO	0.35	9.525	16	0.21	0.8	0.4	●				
	16IR-0.40ISO	0.40	9.525	16	0.25	0.7	0.4	●				
	16IR-0.45ISO	0.45	9.525	16	0.28	0.7	0.4	●				
	16IR-0.50ISO	0.50	9.525	16	0.31	0.6	0.4	●				
	16IR-0.60ISO	0.60	9.525	16	0.37	0.6	0.6	●				
	16IR-0.70ISO	0.70	9.525	16	0.43	0.6	0.6	●				
	16IR-0.75ISO	0.75	9.525	16	0.46	0.6	0.6	●	●	●		
	16IR-0.80ISO	0.80	9.525	16	0.49	0.6	0.6	●				
	16IR-1.00ISO	1.00	9.525	16	0.61	0.7	0.7	●	●	●		
	16IR-1.25ISO	1.25	9.525	16	0.77	0.8	0.9	●	●	●		
	16IR-1.50ISO	1.50	9.525	16	0.92	0.8	1.0	●	●	●		
	16IR-1.75ISO	1.75	9.525	16	1.07	0.9	1.2	●	●	●		
	16IR-2.00ISO	2.00	9.525	16	1.23	1.0	1.3	●	●	●		
	16IR-2.50ISO	2.50	9.525	16	1.53	1.1	1.5	●	●	●		
	16IR-3.00ISO	3.00	9.525	16	1.84	1.2	1.6	●	●	●		

CARBIDE /THREADING

11ER



EXTERNAL WHITWORTH



278

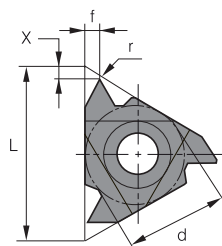
DESCRIPTION		DIMENSIONS							CARBIDE			
									PS9425	PS9430	PS7430	US2415
				d	l	hmin	x	f				
	11ER-14W		14	6,35	11	1,16	0,9	1,1	●	●	●	
	11ER-16W		16	6,35	11	1,02	0,9	1,1	●	●	●	
	11ER-18W		18	6,35	11	0,9	0,8	1	●			
	11ER-19W		19	6,35	11	0,86	0,8	1	●	●	●	
	11ER-20W		20	6,35	11	0,81	0,8	0,9	●			
	11ER-22W		22	6,35	11	0,74	0,8	0,9	●			
	11ER-24W		24	6,35	11	0,68	0,7	0,8	●			
	11ER-26W		26	6,35	11	0,63	0,7	0,7	●			
	11ER-28W		28	6,35	11	0,58	0,6	0,7	●			
	11ER-32W		32	6,35	11	0,51	0,6	0,6	●			
	11ER-36W		36	6,35	11	0,45	0,6	0,6	●			
	11ER-40W		40	6,35	11	0,41	0,6	0,6	●			
	11ER-48W		48	6,35	11	0,34	0,6	0,6	●			
	11ER-56W		56	6,35	11	0,29	0,7	0,4	●			
	11ER-60W		60	6,35	11	0,27	0,7	0,4	●			
	11ER-72W		72	6,35	11	0,23	0,7	0,4	●			
	16ER-8W		8	9,52	16	2,03	1,2	1,5	●			
	16ER-9W		9	9,52	16	1,81	1,2	1,7	●			
	16ER-10W		10	9,52	16	1,63	1,1	1,5	●			
	16ER-11W		11	9,52	16	1,48	1,1	1,5	●	●	●	
	16ER-12W		12	9,52	16	1,36	1,1	1,4	●			
	16ER-14W		14	9,52	16	1,16	1	1,2	●	●	●	
	16ER-16W		16	9,52	16	1,02	0,9	1,1	●		●	
	16ER-18W		18	9,52	16	0,9	0,8	1	●			
	16ER-19W		19	9,52	16	0,86	0,8	1	●	●	●	
	16ER-20W		20	9,52	16	0,81	0,8	0,9	●			
	16ER-22W		22	9,52	16	0,74	0,8	0,9	●			
	16ER-24W		24	9,52	16	0,68	0,7	0,8	●			

CARBIDE /THREADING

□□IR



INTERNAL WHITWORTH

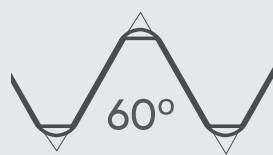


279

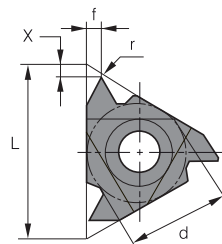
DESCRIPTION		DIMENSIONS							CARBIDE			
									PS9425	PS9430	PS7430	US2415
				d	l	hmin	x	f				
	11IR-11W		11	6,35	11	1,43	0,9	1,2	●			
	11IR-14W		14	6,35	11	1,16	0,9	1,1	●			
	11IR-16W		16	6,35	11	1,02	0,9	1,1	●		●	
	11IR-18W		18	6,35	11	0,9	0,8	1	●			
	11IR-19W		19	6,35	11	0,86	0,8	1	●		●	
	11IR-20W		20	6,35	11	0,81	0,8	0,9	●			
	11IR-22W		22	6,35	11	0,74	0,8	0,9	●			
	11IR-24W		24	6,35	11	0,68	0,7	0,8	●			
	11IR-26W		26	6,35	11	0,63	0,7	0,7	●			
	11IR-28W		28	6,35	11	0,58	0,6	0,7	●			
	11IR-32W		32	6,35	11	0,51	0,6	0,6	●			
	11IR-36W		36	6,35	11	0,45	0,6	0,6	●			
	11IR-40W		40	6,35	11	0,41	0,6	0,6	●			
	11IR-48W		48	6,35	11	0,34	0,6	0,6	●			
	11IR-56W		56	6,35	11	0,29	0,7	0,4	●			
	11IR-60W		60	6,35	11	0,27	0,7	0,4	●			
	11IR-72W		72	6,35	11	0,23	0,7	0,4	●			
	16IR-8W		8	9,52	16	2,03	1,2	1,5	●			
	16IR-9W		9	9,52	16	1,81	1,2	1,7	●			
	16IR-10W		10	9,52	16	1,63	1,1	1,5	●			
	16IR-11W		11	9,52	16	1,48	1,1	1,5	●	●	●	
	16IR-12W		12	9,52	16	1,36	1,1	1,4	●			
	16IR-14W		14	9,52	16	1,16	1	1,2	●	●	●	
	16IR-16W		16	9,52	16	1,02	0,9	1,1	●			
	16IR-18W		18	9,52	16	0,9	0,8	1	●			
	16IR-19W		19	9,52	16	0,86	0,8	1	●			
	16IR-20W		20	9,52	16	0,81	0,8	0,9	●			
	16IR-22W		22	9,52	16	0,74	0,8	0,9	●			
	16IR-24W		24	9,52	16	0,68	0,7	0,8	●			

CARBIDE /THREADING

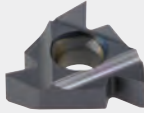
11ER



EXTERNAL UN

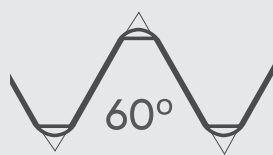


278

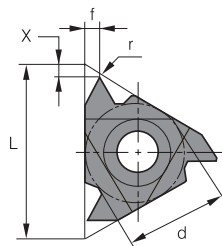
DESCRIPTION		DIMENSIONS							CARBIDE			
									PS9425	PS9430	PS7430	US2415
				d	l	hmin	x	f				
	11ER-14UN		14	6,35	11	1,11	0,9	1,1	●			
	11ER-16UN		16	6,35	11	0,97	0,9	1,1	●			
	11ER-18UN		18	6,35	11	0,87	0,8	1	●			
	11ER-20UN		20	6,35	11	0,78	0,8	0,9	●			
	11ER-24UN		24	6,35	11	0,65	0,7	0,8	●			
	11ER-27UN		27	6,35	11	0,58	0,7	0,8	●			
	11ER-28UN		28	6,35	11	0,56	0,6	0,7	●			
	11ER-32UN		32	6,35	11	0,49	0,6	0,6	●			
	11ER-36UN		36	6,35	11	0,43	0,6	0,6	●			
	11ER-40UN		40	6,35	11	0,39	0,6	0,6	●			
	11ER-44UN		44	6,35	11	0,35	0,6	0,6	●			
	11ER-48UN		48	6,35	11	0,32	0,6	0,6	●			
	11ER-56UN		56	6,35	11	0,28	0,7	0,4	●			
	11ER-64UN		64	6,35	11	0,24	0,8	0,4	●			
	11ER-72UN		72	6,35	11	0,22	0,8	0,4	●			
	16ER-8UN		8	9,52	16	1,95	1,2	1,6	●			
	16ER-9UN		9	9,52	16	1,73	1,2	1,7	●			
	16ER-10UN		10	9,52	16	1,56	1,1	1,5	●			
	16ER-11UN		11	9,52	16	1,42	1,1	1,5	●			
	16ER-11.5UN		11,5	9,52	16	1,35	1,1	1,5	●			
	16ER-12UN		12	9,52	16	1,3	1,1	1,4	●			
	16ER-13UN		13	9,52	16	1,2	1	1,3	●			
	16ER-14UN		14	9,52	16	1,11	0,9	1,2	●			
	16ER-16UN		16	9,52	16	0,97	0,9	1,1	●			
	16ER-18UN		18	9,52	16	0,87	0,8	1	●	●	●	
	16ER-20UN		20	9,52	16	0,78	0,8	0,9	●	●	●	
	16ER-24UN		24	9,52	16	0,65	0,7	0,8	●	●	●	
	16ER-27UN		27	9,52	16	0,58	0,7	0,8	●			

CARBIDE /THREADING

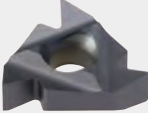
IR



INTERNAL UN



279

DESCRIPTION		DIMENSIONS							CARBIDE			
									PS9425	PS9430	PS7430	US2415
				d	l	hmin	x	f				
	11IR-14UN		14	6,35	11	1,11	0,9	1,1	●			
	11IR-16UN		16	6,35	11	0,97	0,9	1,1	●			
	11IR-18UN		18	6,35	11	0,87	0,8	1	●			
	11IR-20UN		20	6,35	11	0,78	0,8	0,9	●			
	11IR-24UN		24	6,35	11	0,65	0,7	0,8	●			
	11IR-27UN		27	6,35	11	0,58	0,7	0,8	●			
	11IR-28UN		28	6,35	11	0,56	0,6	0,7	●			
	11IR-32UN		32	6,35	11	0,49	0,6	0,6	●			
	11IR-36UN		36	6,35	11	0,43	0,6	0,6	●			
	11IR-40UN		40	6,35	11	0,39	0,6	0,6	●			
	11IR-44UN		44	6,35	11	0,35	0,6	0,6	●			
	11IR-48UN		48	6,35	11	0,32	0,6	0,6	●			
	11IR-56UN		56	6,35	11	0,28	0,7	0,4	●			
	11IR-64UN		64	6,35	11	0,24	0,8	0,4	●			
	11IR-72UN		72	6,35	11	0,22	0,8	0,4	●			
	16IR-8UN		8	9,52	16	1,95	1,2	1,6	●			
	16IR-9UN		9	9,52	16	1,73	1,2	1,7	●			
	16IR-10UN		10	9,52	16	1,56	1,1	1,5	●	●	●	
	16IR-11UN		11	9,52	16	1,42	1,1	1,5	●			
	16IR-11.5UN		11,5	9,52	16	1,35	1,1	1,5	●			
	16IR-12UN		12	9,52	16	1,3	1,1	1,4	●			
	16IR-13UN		13	9,52	16	1,2	1	1,3	●			
	16IR-14UN		14	9,52	16	1,11	0,9	1,2	●			
	16IR-16UN		16	9,52	16	0,97	0,9	1,1	●			
	16IR-18UN		18	9,52	16	0,87	0,8	1	●	●	●	
	16IR-20UN		20	9,52	16	0,78	0,8	0,9	●	●	●	
	16IR-24UN		24	9,52	16	0,65	0,7	0,8	●	●	●	
	16IR-27UN		27	9,52	16	0,58	0,7	0,8	●			

INDEX

278

254 | **Sangeo**  cutting tools

278

278



258 | **Sangeo**  cutting tools

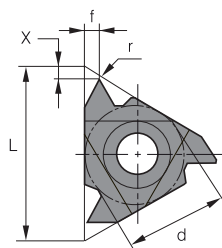
INDEX

HOLDERS ▶ 279

259

CARBIDE /THREADING

EXTERNAL TRAPEZ



278

[illegible]

INDEX



EXTERNAL TRAPEZ

[illegible]

280

262 | **Sangeo** 
cutting tools

280

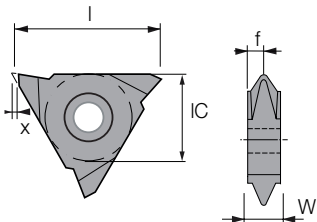
264 | Sangeo  cutting tools

280

266 | **Sangeo**  cutting tools

CARBIDE /THREADING

VER



EXTERNAL BSPT

[illegible]

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS DRILLS & TAPS

SPARE
PARTS

INDEX

280

268 | Sangeo  cutting tools

CARBIDE /THREADING

SR 14 I - 11 W PS 9 4 25

1

2

3

4

5

6

7

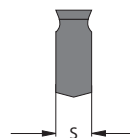
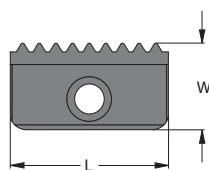
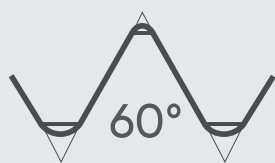
8

9

1		3	INSERT TYPE		5	THREAD STANDARD	
SL	Screw on Left	E	External		ISO	Metric	
SR	Screw on Right	I	Internal		W	Whitworth for BSW, BSP	
2	INSERT LENGTH	4	PITCH (FULL PROFILE)		BSPT	British Standard Pipe Thread	
			0.35~6.0	mm	UN	American UN	
			3~72	TPI	NPT	NPT	
					NPTF	NPTF	
					PG	Pg DIN40430	
12	12 mm						
14	14 mm						
21	21 mm						
30	30 mm						
40	40 mm						

6	COATING & MATERIAL	7	WORKPIECE MATERIAL	8	MACHINING	9	ISO GRADE
CS	CVD Coated Carbide	2	Non-Ferrous Material	1	Turning	05	
PS	PVD Coated Carbide	4	Hardened Steel	2	Turning New	10	
PB	New PVD Coating	5	Steel	4	Threading	15	
KS	Ceramic	7	Stainless Steel	9	Milling	20	
SS	Cermet	8	Cast Iron			25	
US	Uncoated	9	General Machining			30	
						35	
						40	
						45	

TURNING

SR 

INTERNAL METRIC

[illegible]

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

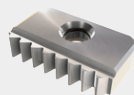
**HSS
DRILLS & TAPS**

SPARE
PARTS

INDEX

281





CARBIDE /THREADING

E ST B 06 04 C 5 – 11 W

1 2 3 4 5 6 7 8 9

1	
E	External
NON	Internal

2	TYPE
ST	Solide Thread Mill

3	ENDMILL TYPE
NON	Without Coolant
B	With Coolant

4	SHANK DIAMETER
06	6 mm
08	8 mm
10	10 mm
12	12 mm
14	14 mm
16	16 mm
20	20 mm
25	25 mm

5	CUTTING DIAMETER
06	6 mm
08	8 mm
10	10 mm
12	12 mm
14	14 mm
16	16 mm
20	20 mm
25	25 mm

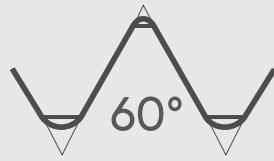
6	NUMBER OF FLUTES
C	3
D	4
E	5
F	6

7	CUTTING LENGTH
☐ ☐	mm

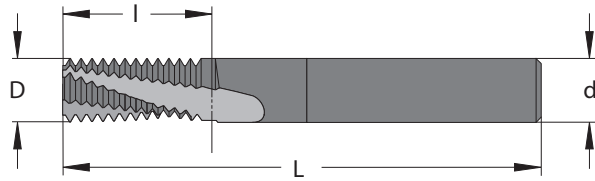
8	PITCH (FULL PROFILE)
0.35~6.0	mm
3~72	TPI

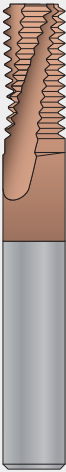
9	THREAD STANDARD
ISO	PG
W	Whitworth for BSW, BSP
BSPT	British Standard Pipe Thread
UN	American UN
NPT	NPT
NPTF	NPTF
PG	Pg DIN40430

ST



INTERNAL METRIC



DESCRIPTION		DIMENSIONS							
								Z	Carbide
				D	d	l	L		
	ST06022C5-0.50ISO	0,50		6	2,2	5,3	58	3	●
	ST06031C7-0.70ISO	0,70		6	3,1	7,4	58	3	●
	ST06036C9-0.80ISO	0,80		6	3,6	9,2	58	3	●
	ST0604C10-1.00ISO	1,00		6	4,0	10,5	58	3	●
	ST0604C14-1.00ISO	1,00		6	4,0	14,5	58	3	●
	ST0605C14-1.25ISO	1,25		6	5,0	14,4	58	3	●
	ST0605C19-1.25ISO	1,25		6	5,0	17,3	58	3	●
	ST0807C17-1.50ISO	1,50		8	7,0	17,3	64	3	●
	ST0807C24-1.50ISO	1,50		8	7,0	24,8	76	3	●
	ST0808C20-1.75ISO	1,75		8	8,0	20,1	64	3	●
	ST0808C28-1.75ISO	1,75		8	8,0	28,9	76	3	●
	ST1010C27-2.00ISO	2,00		10	10	27,0	73	3	●
	ST1010C39-2.00ISO	2,00		10	10	39,0	105	3	●
	ST1414D33-2.50ISO	2,50		14	14	33,8	84	4	●
	ST1414D48-2.50ISO	2,50		14	14	48,8	105	4	●
	ST1616C40-3.00ISO	3,00		16	16	40,5	105	3	●
	ST1616C58-3.00ISO	3,00		16	16	58,5	120	3	●
	ST2020D43-3.00ISO	3,00		20	20	43,5	105	4	●

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

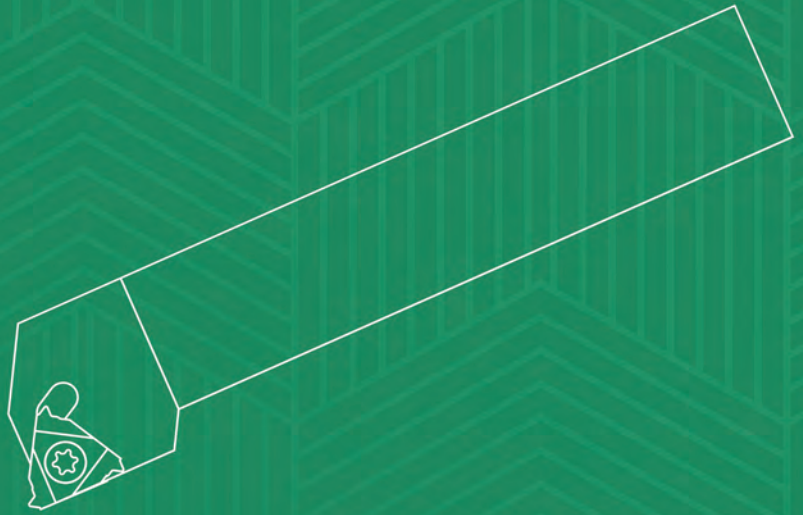
DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

INDEX





THREADING/**HOLDERS**

HOLDERS /THREADING

SSER/SSEL

□□ER

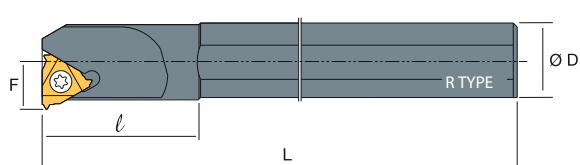
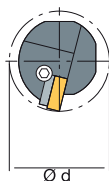


						STOCK			DIMENSIONS				R				
						R	L	H	B	L	F						
11ER-□□	SSER/L	0808	E11	•	•	08	08	70	11	-	-	-	-	-	-	ST-SC0257	ST-WRT07
		1010	E11	•	•	10	10	70	11	-	-	-	-	-	-	ST-SC0257	ST-WRT07
		1212	F11	•	•	12	12	80	12	-	-	-	-	-	-	ST-SC0257	ST-WRT07
		1616	H11	•	•	16	16	100	16	-	-	-	-	-	-	ST-SC0257	ST-WRT07
16ER-□□	SSER/L	1616	H16	•	•	16	16	100	16	ST-SHE16	ST-SC5011	ST-WR0030	ST-SC3514	ST-WRT15			
		1616	K16	•	•	16	16	125	16	ST-SHE16	ST-SC5011	ST-WR0030	ST-SC3514	ST-WRT15			
		2020	K16	•	•	20	20	125	20	ST-SHE16	ST-SC5011	ST-WR0030	ST-SC3514	ST-WRT15			
		2525	M16	•	•	25	25	150	25	ST-SHE16	ST-SC5011	ST-WR0030	ST-SC3514	ST-WRT15			
		3232	P16	•	•	32	32	170	32	ST-SHE16	ST-SC5011	ST-WR0030	ST-SC3514	ST-WRT15			
22ER-□□	SSER/L	2020	M22	•	•	20	20	125	20	ST-SHE22	ST-SC6011	ST-WR0040	ST-SC0416	ST-WRT15			
		2525	M22	•	•	25	25	150	25	ST-SHE22	ST-SC6011	ST-WR0040	ST-SC0416	ST-WRT15			
		3232	P22	•	•	32	32	170	32	ST-SHE22	ST-SC6011	ST-WR0040	ST-SC0416	ST-WRT15			
		4040	S22	•	•	40	40	250	40	ST-SHE22	ST-SC6011	ST-WR0040	ST-SC0416	ST-WRT15			

SSIR/SSIL

Screw On

□□IR



	DESCRIPTION			STOCK		DIMENSIONS				R				
				R	L	D	d	L	F					
08IR-□□	S16M07	SSIR/L	08	●	●	16	7,8	150	5,3	-	-	-	ST-SC0226	ST-WRT07
11IR-□□	S10K	SSIR/L	11	●	●	10	12	125	7,4	-	-	-	ST-SC0257	ST-WRT08
	S12K		11	●	●	12	16	125	8,4	-	-	-	ST-SC0257	ST-WRT08
	S12M		11	●	●	12	15	150	8,5	-	-	-	ST-SC0257	ST-WRT08
	S16M10		11	●	●	16	12	150	7,4	-	-	-	ST-SC0257	ST-WRT08
	S16Q		11	●	●	16	20	180	8,9	-	-	-	ST-SC0257	ST-WRT08
	S16x10Q		11	●	●	16	13	180	7,5	-	-	-	ST-SC0257	ST-WRT08
16IR-□□	S16Q	SSIR/L	16	●	●	16	16	180	10,2	-	-	-	ST-SC3511	ST-WRT15
	S20P		16	●		25	32	250	17	ST-SHE116	ST-SC5011	ST-WR0030	ST-SC3514	ST-WRT15
	S20R		16	●	●	20	24	200	13,7	-	-	-	ST-SC3511	ST-WRT15
	S25S		16	●	●	25	29	250	16,2	ST-SHE116	ST-SC5011	ST-WR0030	ST-SC3514	ST-WRT15
	S32T		16	●	●	32	36	300	19,7	ST-SHE116	ST-SC5011	ST-WR0030	ST-SC3514	ST-WRT15
	S40V		16	●	●	40	44	350	23,7	ST-SHE116	ST-SC5011	ST-WR0030	ST-SC3514	ST-WRT15
22IR-□□	S20P	SSIR/L	22	●		20	25	200	13	ST-SHE122	ST-SC6011	ST-WR0040	ST-SC0411	ST-WRT15
	S20R		22	●	●	20	24	200	14	ST-SHE122	ST-SC6011	ST-WR0040	ST-SC0411	ST-WRT15
	S25S		22	●	●	25	29	250	18,1	ST-SHE122	ST-SC6011	ST-WR0040	ST-SC0411	ST-WRT15
	S32T		22	●	●	32	38	300	21,6	ST-SHE122	ST-SC6011	ST-WR0040	ST-SC0411	ST-WRT15
	S40V		22	●	●	40	46	350	25,6	ST-SHE122	ST-SC6011	ST-WR0040	ST-SC0411	ST-WRT15
	S50W		22	●	●	50	63	400	35,6	ST-SHE122	ST-SC6011	ST-WR0040	ST-SC0411	ST-WRT15

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

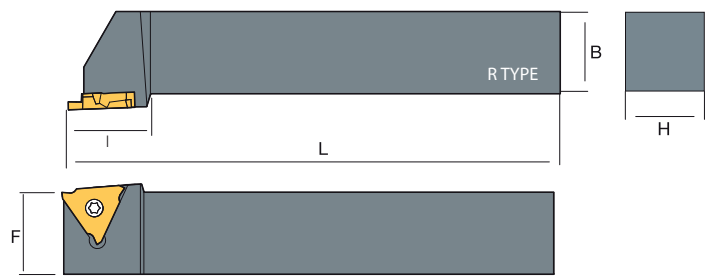
DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

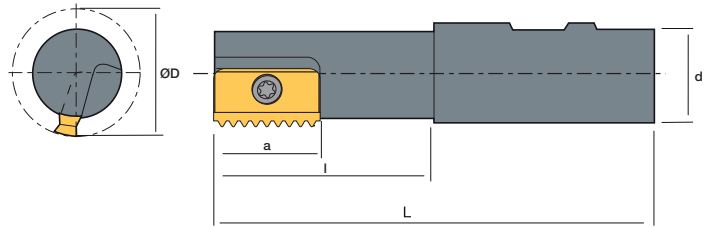
INDEX

OVER

280

TURNING

MSSR

SR [illegible]

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

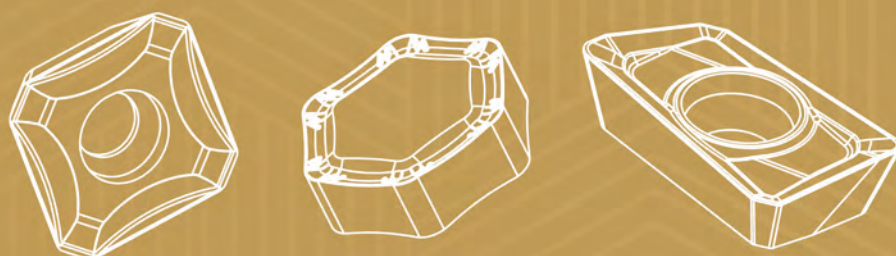
DRILLS

HSS DRILLS & TAPS

SPARE PARTS

INDEX

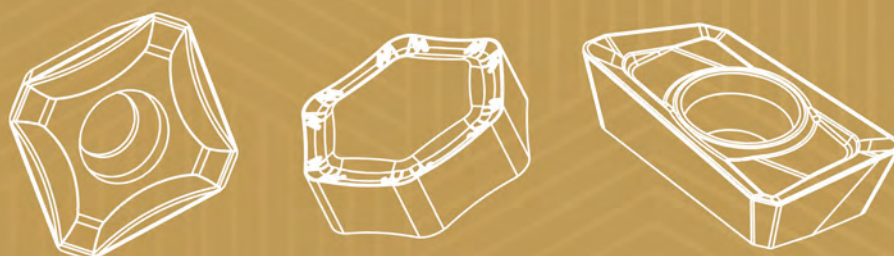




MILLING/

carbide /285
holders /323





MILLING/**CARBIDE**

CARBIDE /MILLING

GRADES

ISO DIN 513	K					P					M					N				
	K01	K10	K20	K30	K40	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	N01	N10	N20	N30	N40
CARBIDE CVD	CS8915		CS8925																	
CARBIDE PVD						PS5915							PS7920							
							PS5925						PS7925							
								PS5960												
	PS8915						PS5915S						PS7925S							
							PS5925S													
CARBIDE UNCOATED																	US2915			
CERMET UNCOATED																				

CVD MILLING GRADES

MATERIAL	GRADE	ISO	Color	Operation
K	CS8915	K05-K10	BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				As adapting highly hard substrate with superior PVD coated which has excellent resistance for thermal & oxidation, Excellent performance in casting iron continuous machining
	CS8925	K20-K30	BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				General cutting for gray cast iron and ductile cast iron

PVD MILLING GRADES

MATERIAL	GRADE	ISO	Color	Operation
P	PS5915	P05-P15	BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				Milling grade for medium and roughing of steel New coating layer with superior wear resistance with high toughness substrate
	PS5915S	P05-P20	BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				1. 2-4um TiAlN PVD coating combined with ultra fine grain substrate with high toughness suitable for finishing to semi-finishing. 2. Basic material grade for milling steel parts and easy to cut/medium difficulty to process stainless steel 3. High thermal shock resistance is suitable for light interrupted cut
	PS5925	P10-P20	BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				Universal grade for interrupted machining of steel, cast-iron, hard to cut materials and stainless steel with stable machinability
	PS5925S	P10-P20	BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				1. 2-4um AlCrN + AlCrSiN PVD coating combined with ultra fine grain substrates with high-toughness suitable for martensitic stainless steel and austenitic stainless steel under difficult working conditions and high temperature. 2. Used as the preferred material grade for machining high temperature alloys under unstable working conditions. 3. It is recommended to process tempered steel and nickel-based material
	PS5960	P20-P40	YELLOW	MT-TiCN+Al ₂ O ₃ +TiN
				General machining of steel
M	PS7920	M10-M20	YELLOW	MT-TiCN+TiC+α-Al ₂ O ₃
				2-4um AlCrN + AlCrSiN PVD coating combined with ultra fine grain substrates with high-toughness suitable for martensitic stainless steel and austenitic stainless steel under difficult working conditions and high temperature. 2. Used as the preferred material grade for machining high temperature alloys under unstable working conditions. 3. It is recommended to process tempered steel and nickel-based material
	PS7925	M10-M20	YELLOW	MT-TiCN+TiC+α-Al ₂ O ₃
				Medium to roughing of hard to cut materials and stainless steel 2-4 micron Nano AlCrN AlCrSiN coating
	PS7925	M20-M30	BRONZ	MT-TiCN+TiC+α-Al ₂ O ₃
				PVD coating combined with high-resistant substrates, suitable for stainless steel & low carbon steel in roughing to semi-finishing
K	PS8915	K10-K30	BLACK	MT-TiCN+TiC+Al ₂ O ₃ +TiN
				Thigh wear resistant substrates perfect combine with MT-TiCN, thick Al ₂ O ₃ coating. Ideal for ductile cast iron & grey cast iron at high cutting speed.

UNCOATED MILLING GRADES

MATERIAL	GRADE	ISO	Color	Operation
N	US2915	K05-K25	SILVER	Ultra fine substrate
				Increased wear & chipping resistance as using a ultra fine substrate, Excellent tool life with special surface treatment & and sharp cutting edge of ALU chip breaker

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

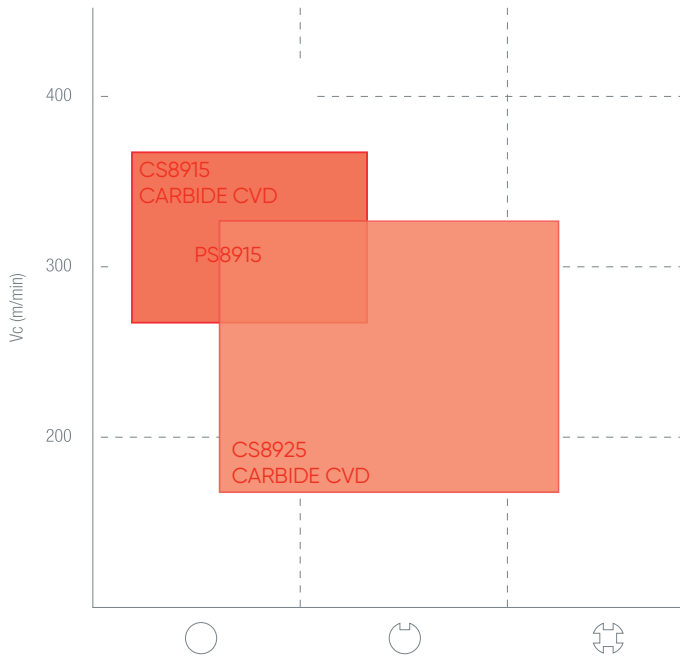
HSS
DRILLS & TAPSSPARE
PARTS

INDEX

CARBIDE /MILLING

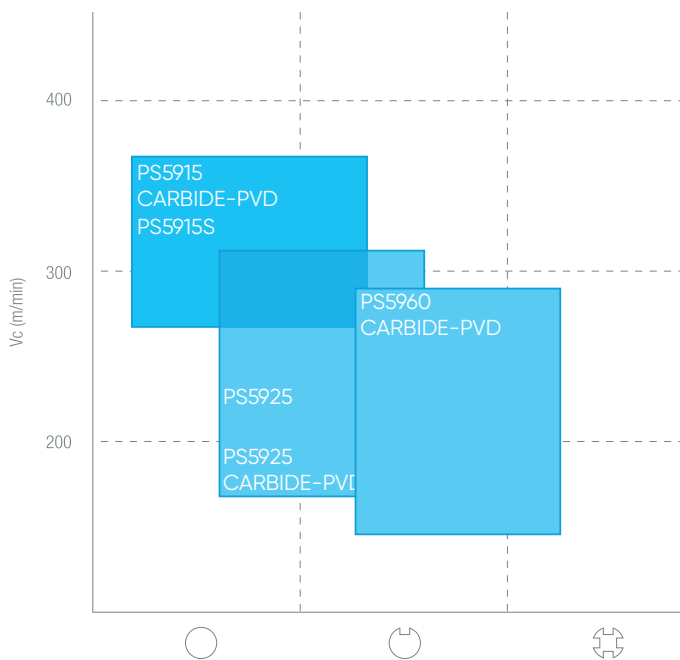
RANGE ISO

K



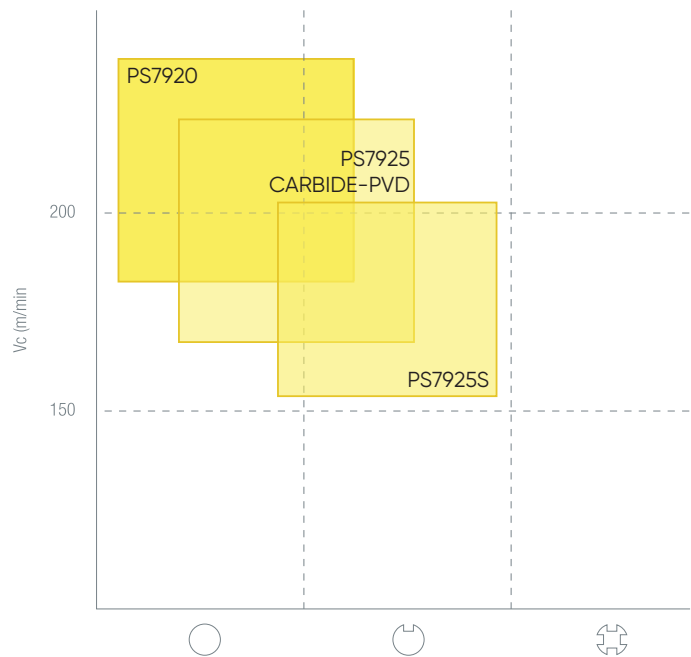
RANGE ISO

P

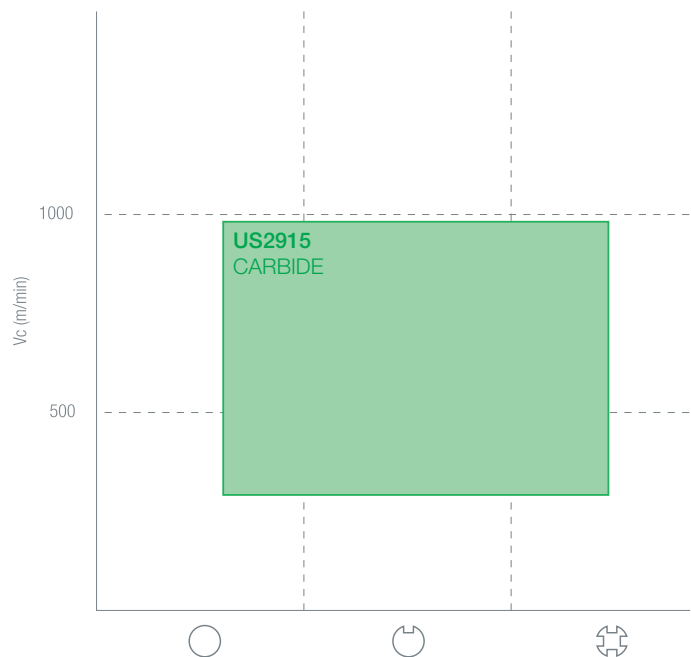


CARBIDE /MILLING

RANGE ISO **M**



RANGE ISO **N**



TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

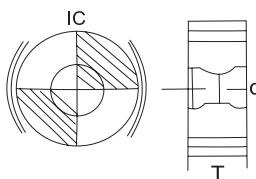
INDEX

INDEX

AP□□	1035□□	1135□□
IC	6,35	6,35
T	3,50	3,50
Ød	2,80	2,80
		

CARBIDE /MILLING

LNGX

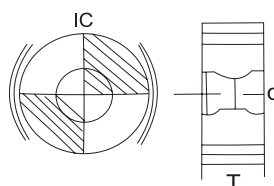


LN□□	1104□□	15T6□□
IC	6,39	6,39
T	3,73	3,73
Ød	3,0	3,0
Holder	344	347

DESCRIPTION			CARBIDE											
			PS5915	PS5915S	PS5925	PS5925S	PS5960	CS8915	CS8925	PS8915	PS7920	PS7925	PS7925S	US2915
	LNGX	110408RSE	●									●		
		15T608RSE	●									●		

LNMX

HighFeed

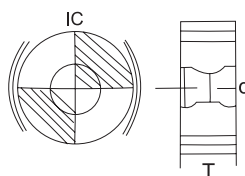


LN□□	0303□□
IC	6,39
T	3,73
Ød	4,0
Holder	340

DESCRIPTION			CARBIDE											
			PS5915	PS5915S	PS5925	PS5925S	PS5960	CS8915	CS8925	PS8915	PS7920	PS7925	PS7925S	US2915
	LNMX	0303SER-M												
		0303SER-MJ	•									•		

Vc • fn • ap 314

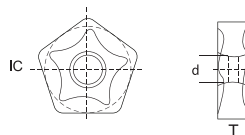
LNKT



LN□□	1306□□
IC	6,39
T	3,73
Ød	4,0
Holder	346

DESCRIPTION			CARBIDE											
			PS5915	PS5915S	PS5925	PS5925S	PS5960	CS8915	CS8925	PS8915	PS7920	PS7925	PS7925S	US2915
	LNKT	130608R-GM	●											

PNMU



PN□□	0905□□
IC	12,2
T	5,56
Ød	4,70
Holder	353

DESCRIPTION			CARBIDE											
			PS5915	PS5915S	PS5925	PS5925S	PS5960	CS8915	CS8925	PS8915	PS7920	PS7925	PS7925S	US2915
	PNMU	0905XNER-MM	●									●		

Vc • fn • ap 314

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

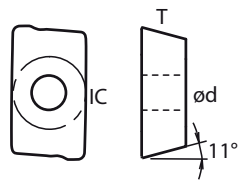
DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

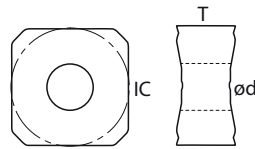
INDEX

CARBIDE /MILLING



SD □□	1204 □□	0802 □□	11T3 □□
IC	12,7	12,7	12,7
T	4,76	4,76	4,76
Ød	4,40	4,40	4,40
			

$$V_c \bullet fn \bullet ap$$

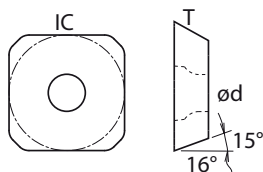


SN □□	1205 □□
IC	12,7
T	5,75
Ød	6,00
	

[illegible]
$$V_c \bullet fn \bullet ap$$

314

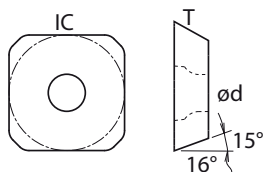
SO □□



SO □□	0803 □□
IC	12,7
T	3,97
Ød	5,16
Holder	367

DESCRIPTION			CARBIDE											
			PS5915	PS5915S	PS5925	PS5925S	PS5960	CS8915	CS8925	PS8915	PS7920	PS7925	PS7925S	US2915
	SOMW	080315-FH			•									

SP □□



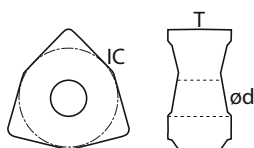
SP □□	1204 □□
IC	12,7
T	4,18
Ød	5,16
Holder	367

DESCRIPTION			CARBIDE											
			PS5915	PS5915S	PS5925	PS5925S	PS5960	CS8915	CS8925	PS8915	PS7920	PS7925	PS7925S	US2915
	SPMW	120420-FH			•									

Vc • fn • ap 314

TP□□	1603□□	2204□□
IC	9,525	12,7
T	3,18	4,76
Ød	-	-
		

WNMU

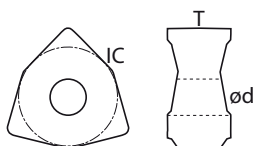


WN□□	0806□□
IC	12,7
T	6,40
Ød	4,40
Holder	373

DESCRIPTION			CARBIDE											
			PS5915	PS5915S	PS5925	PS5925S	PS5960	CS8915	CS8925	PS8915	PS7920	PS7925	PS7925S	US2915
	WNMU	040304-GM	•		•									
	WNMU	080608EN-ALU												•
	WNMU	080608EN-GM			•			•			•	•	•	

WNMX

HighFeed



WN□□	0806□□
IC	9,52
T	3,97
Ød	3,6
Holder	373

DESCRIPTION			CARBIDE											
			PS5915	PS5915S	PS5925	PS5925S	PS5960	CS8915	CS8925	PS8915	PS7920	PS7925	PS7925S	US2915
	WNMX	09T316ZNN-SS									•			

Vc • fn • ap 314

XD □□	0602 □□	10T3 □□
IC	6,5	10,0
T	2,38	3,97
Ød	2,98	3,95
		

[illegible] $V_c \bullet f_n \bullet a_p$

314

XN□□	0806□□
IC	12,48
T	6,45
Ød	2,80
	

 $V_c \bullet fn \bullet ap$

CUTTING PARAMETERS Vc (m/min)

KG	GREY CAST IRON
KN	NODULAR CAST IRON
PL	LOW CARBON AND FREE CUTTING STEEL
PM	MEDIUM CARBON STEEL
PH	HIGH CARBON STEEL
PA	ALLOY STEEL

MM	MARTENSITIC AND FERRITIC STAINLESS STEEL
MA	AUSTENITIC STAINLESS STEEL
NA	ALUMINIUM ALLOYS
NH	ALUMINIUM ALLOYS AGED AND HARDENED
NB	BRASS
NC	BRONZE AND ELECTROLYTIC COPPER

MATERIAL		CARBIDE						CARBIDE				
		PS5915	PS5925	PS5960	CS8915	CS8925	PS7925	US2915				
K	KG				220~350	120~250						
	KN				180~280	100~200						
P	PL	200~280	220~300	240~320								
	PM	200~280	220~300	240~320								
	PH	180~260	200~280	220~300								
	PA	160~230	180~250	200~270								
M	MM						160~280					
	MA						140~260					
N	NA							400~1000				
	NH							300~800				
	NB							300~600				
	NC							200~500				

CUTTING PARAMETERS a_p (mm) & f_n (mm/rev)

AP□□		1035		1135		1204		1604		1705	
Material	Chip Breaker	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
K	RM	0,8~8,0	0,1~0,25								
P	ST/RM	0,8~8,0	0,08~0,2	1,0~9,0	0,1~0,2	1,0~11,0	0,1~0,25	1,0~14,0	0,1~0,25	1,0~15,0	0,1~0,25
P	QM/QX			0,7~3,0	0,5~1,2						
M	RM	0,8~8,0	0,05~0,15					1,0~14,0	0,1~0,2		
N	ALU	0,8~8,0	0,15~0,3	1,0~9,0	0,15~0,3			1,0~14,0	0,15~0,3		

AXMX		O702		-		-		-		-	
Material	Chip Breaker	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
K	R	0.40-2.00	0,10-0,45								
P	R	0.40-2.00	0,10-0,45								
M	R	0.40-2.00	0,10-0,25								
N	ALU	0.40-2.00	0,10-0,50								

BLGX		0603		-		-		-		-	
Material	Chip Breaker	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
K	M	0,7-900	0,30-0,50								
P	M	0,7-900	0,30-0,50								
M	M	0,7-150	0,50-0,80								
N											

EPGX		0602		-		-		-		-	
Material	Chip Breaker	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
K	SM	0.15-0.55	0,20-0,60								
P	SM	0.15-0.55	0,20-0,60								
M	SM	0.15-0.55	0,20-0,60								
N											

HNGX		0906		-		-		-		-	
Material	Chip Breaker	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
K	R-M	0.8-4.5	0.06-0.20								
P	R-M	0.8-4.5	0.06-0.20								
M	R-M	0.8-4.5	0.06-0.20								
N											

CUTTING PARAMETERS a_p (mm) & f_n (mm/rev)

LNGX		1104		15T608		-		-		-	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K	RSE	1.0-11.00	0,10-0,50	1.0-15.00	0,10-0,50						
P	RSE	1.0-11.00	0,10-0,50	1.0-15.00	0,10-0,50						
M	RSE	1.0-11.00	0,10-0,50	1.0-15.00	0,10-0,50						
N											

LNKT		1306		-		-		-		-	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K	GM	3.0-12.0	0,10-0,35								
P	GM	3.0-12.0	0,10-0,35								
M	GM	3.0-12.0	0,10-0,35								
N											

LNMX		0303		-		-		-		-	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K	M-MJ	0,7-900	0,30-0,50								
P	M-MJ	0,7-900	0,30-0,50								
M	M-MJ	0,7-900	0,30-0,50								
N											

PNMU		0905		-		-		-		-	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K	MM	0.80-4.5	0.06-0.20								
P	MM	0.80-4.5	0.06-0.20								
M	MM	0.80-4.5	0.06-0.20								
N											

RD□□		0501		0802		1003		12T3		1604	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K	-					0,5~4,0	0,08~0,4	0,5~5,0	0,08~0,6	0,6~7,0	0,1~0,6
P	-	0,25~2,5	0,1~0,25	0,4~3,5	0,07~0,35	0,5~4,0	0,08~0,3	0,5~5,0	0,08~0,4	0,6~7,0	0,1~0,5
M	-					0,5~4,0	0,08~0,25	0,5~5,0	0,08~0,25	0,6~7,0	0,1~0,4
N	-										

CUTTING PARAMETERS a_p (mm) & f_n (mm/rev)

RT		0702		1003		-		-		-	
Material	Chip Breaker	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
K											
P	R-81	0,5~5,0	0,05~0,3	0,5~7,0	0,08~0,3						
M	R-81	0,5~5,0	0,05~0,25	0,5~7,0	0,05~0,25						
N											

SDHT		1204		-		-		-		-	
Material	Chip Breaker	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
K											
P											
M											
N	ALU	0,1-2,0	0,10-0,35								

SDMT		0802		11T3		-		-		-	
Material	Chip Breaker	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
K	AX	0.05-0.30	0.05-0.30		0.5-1.4						
P	AX	0.05-0.30	0.05-0.30		0.5-1.4						
M	AX	0.05-0.30	0.05-0.30		0.5-1.4						
N											

SEMT		13T308		140408		-		-		-	
Material	Chip Breaker	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
K	SM-PM	0.8-4.50	0,10-0,40	0.8-6.0	0,10-0,40						
P	SM-PM	0.8-4.50	0,10-0,40	0.8-6.0	0,10-0,40						
M	SM-PM	0.8-4.50	0,10-0,40	0.8-6.0	0,10-0,40						
N											

SE□□		12T3		-		-		-		-	
Material	Chip Breaker	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
K											
P	FM/SM	1,0~10,0	0,1~0,3								
M	FM/SM	1,0~10,0	0,1~0,25								
N	CM	1,0~10,0	0,1~0,35								

CUTTING PARAMETERS a_p (mm) & f_n (mm/rev)

SNMX		1205		120512		1206		1907		1206QNN	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K	QM-GM-GR	1,0~7,0	0,1-0,4	1,0-8,0	0,1-0,4	1,0~7,0	0,1-0,4	1,0~2,0	0,1-0,4	1,0-8,0	0,1-0,4
P	QM-GM-GR	1,0~7,0	0,1-0,35	1,0-8,0	0,1-0,35	1,0~7,0	0,1-0,35	1,0~7,0	0,1-0,35	1,0-8,0	0,1-0,35
M	QM-GM-GR	1,0~7,0	0,1-0,35	1,0-8,0	0,1-0,35	1,0~7,0	0,1-0,35	1,0~7,0	0,1-0,35	1,0-8,0	0,1-0,35
N											

SOMW		0803		-		-		-		-	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K	FH	0,5~1,0	0,5~2,0								
P	FH	0,5~1,0	0,5~2,0								
M	FH	0,5~1,0	0,4~1,0								
N											

SPKN		1203		1504		-		-		-	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K	SU	0,8~8,0	0,05~0,3	1,0~10,0	0,05~0,3						
P	SU	0,8~8,0	0,05~0,2	1,0~10,0	0,05~0,2						
M	SU	0,8~8,0	0,05~0,2	1,0~10,0	0,05~0,2						
N											

SPKR		1203		-		-		-		-	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K	SU	0,8~8,0	0,05~0,20								
P	SU	0,8~8,0	0,05~0,20								
M	SU	0,8~8,0	0,05~0,20								
N											

SPMW		1204		-		-		-		-	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K	FH	0,8~1,5	0,5~1,8								
P	FH	0,8~1,5	0,8~2,0								
M	FH	0,8~1,5	0,4~1,0								
N											

CUTTING PARAMETERS a_p (mm) & f_n (mm/rev)

TPKN		1603		2204		-		-		-	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K	SU	1,0~12,0	0,05~0,3	1,0~15,0	0,1~8,0						
P	SU	1,0~12,0	0,05~0,25	1,0~15,0	0,8~8,0						
M	SU	1,0~12,0	0,05~0,2	1,0~15,0	0,8~8,0						
N											

TW		08020		10025		12025		16030		20030	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K		0,2~0,4	0,1~0,3	0,2~0,7	0,1~0,3	0,5~0,84	0,1~0,3	0,5~1,12	0,1~0,3	0,8~1,4	0,1~0,3
P		0,25~0,5	0,1~0,25	0,3~0,7	0,1~0,25	0,36~0,84	0,1~0,25	0,48~1,12	0,1~0,25	0,6~1,4	0,1~0,25
M		0,2~0,4	0,1~0,2	0,2~0,5	0,1~0,2	0,3~0,6	0,1~0,2	0,4~0,8	0,1~0,2	0,5~1,0	0,1~0,2
N											

TW		25040		30050		32050		-		-	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K		0,8~1,75	0,1~0,3	0,7~2,00	0,1~0,30	0,7~2,20	0,1~0,30				
P		0,75~1,75	0,1~0,25	0,7~2,00	0,1~0,30	0,7~2,20	0,1~0,30				
M		0,7~1,25	0,1~0,2	0,7~2,00	0,1~0,30	0,7~2,20	0,1~0,30				
N											

WNMU		040304		080608		-		-		-	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K	GM	0,5~4,00	0,05~0,15	1,0~8,0	0,1~0,30						
P	GM	0,5~4,00	0,05~0,15	1,0~8,0	0,1~0,25						
M	GM	0,5~4,00	0,05~0,15	1,0~8,0	0,1~0,20						
N	ALU			1,0~8,0	0,15~0,30						

WNMX		09T316		-		-		-		-	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K	SS	0,5~2,0	1,0~2,5								
P	SS	0,5~2,0	1,0~2,5								
M	SS	0,5~2,0	1,0~2,5								
N											

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPSSPARE
PARTS

INDEX

CUTTING PARAMETERS a_p (mm) & f_n (mm/rev)

XDHX		60210		10T310		-		-		-	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K	SS	0.5-2.0	1.0-2.5	0.5-1.50	0.10-0.35						
P	SS	0.5-2.0	1.0-2.5	0.5-1.50	0.10-0.35						
M	SS	0.5-2.0	1.0-2.5	0.5-1.50	0.10-0.35						
N											

XNEX		80612		-		-		-		-	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K		0.8-4.5	0.06-0.20								
P		0.8-4.5	0.06-0.20								
M		0.8-4.5	0.06-0.20								
N											

XNGU		0906ANTR		-		-		-		-	
Material	Chip Breaker	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)	a_p (mm)	f_n (mm/rev)
K	GM	0.8-4.5	0.06-0.20								
P	GM	0.8-4.5	0.06-0.20								
M	GM	0.8-4.5	0.06-0.20								
N											

CUTTING PARAMETERS a_p (mm) & f_n (mm/rev)

XOMT		100420R		140520R		-		-		-	
Material	Chip Breaker	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
K	GM	0,8-1,5	0,4-2,00	0,8-2,0	0,4-2,00						
P	GM	0,8-1,5	0,4-2,00	0,8-2,0	0,4-2,00						
M	GM	0,8-1,5	0,4-2,00	0,8-2,0	0,4-2,00						
N											

YNGX		060308R		-		-		-		-	
Material	Chip Breaker	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
K	SM	0.8-4.50	0,10-0,40								
P	SM	0.8-4.50	0,10-0,40								
M	SM	0.8-4.50	0,10-0,40								
N											

3PGX		1004		1505		-		-		-	
Material	Chip Breaker	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
K	M	1,0~7,0	0,09~0,2	1,0~11,0	0,1~0,2						
P	M	1,0~7,0	0,07~0,15	1,0~11,0	0,12~0,25						
M	M	1,0~7,0	0,07~0,15	1,0~11,0	0,1~0,17						
N											

TURNING

GROOVING

THREADING

MILLING

DRILLING

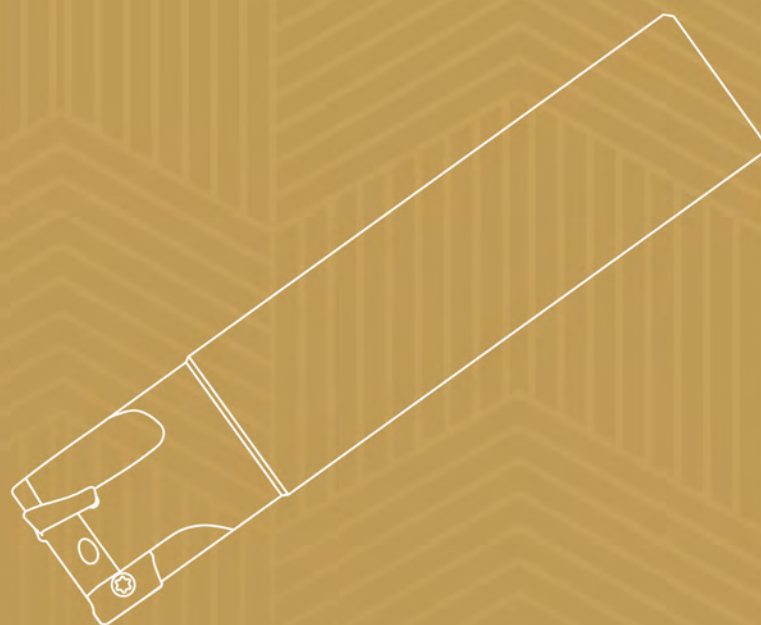
ENDMILLS

DRILLS

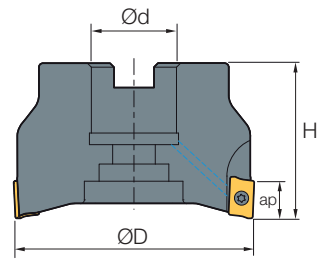
HSS
DRILLS & TAPSSPARE
PARTS

INDEX





MILLING/**HOLDERS**

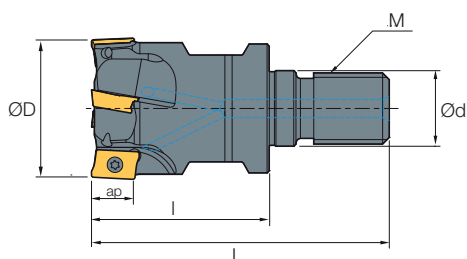
AP 10[illegible]

290

TURNING

MMAP

AP 10

[illegible]

Carbide

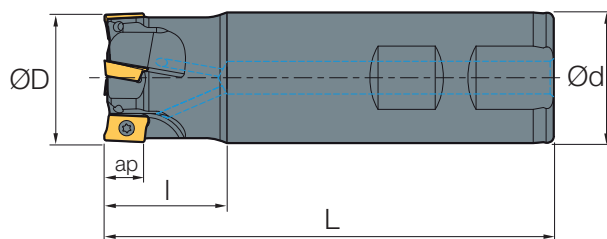
290

INDEX

HOLDERS /MILLING

MSAP

AP□□10

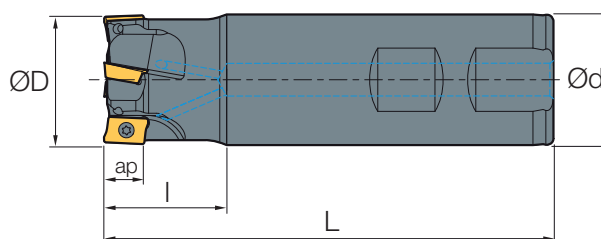


AP□□	DESCRIPTION		STOCK	DIMENSIONS									
				D	L	I	d	Z	ap				
AP□□10	MSAP	12-120-10-12-1T	●	12	120	30	12	1T	10	ST-SC0256	ST-WRT08		
		14-120-10-12-1T	●	14	120	30	12	1T	10	ST-SC0256	ST-WRT08		
		16-100-10-16-2T-C	●	16	100	30	16	2T	10	ST-SC0256	ST-WRT08		
		16-120-10-16-2T-C	●	16	120	30	16	2T	10	ST-SC0256	ST-WRT08		
		16-150-10-16-2T-C	●	16	150	40	16	2T	10	ST-SC0256	ST-WRT08		
		16-150-10-16-2T	●	16	150	40	16	2T	10	ST-SC0256	ST-WRT08		
		16-200-10-16-2T	●	16	200	50	16	2T	10	ST-SC0256	ST-WRT08		
		18-120-10-16-3T	●	18	120	30	16	3T	10	ST-SC0256	ST-WRT08		
		18-150-10-16-2T	●	18	150	40	16	2T	10	ST-SC0256	ST-WRT08		
		20-120-10-20-3T	●	20	120	30	20	3T	10	ST-SC0256	ST-WRT08		
		20-120-10-20-3T-C	●	20	120	50	20	3T	10	ST-SC0256	ST-WRT08		
		20-150-10-20-3T-C	●	20	150	30	20	3T	10	ST-SC0256	ST-WRT08		
		20-100-10-20-3T-C	●	20	120	30	20	3T	10	ST-SC0256	ST-WRT08		
		22-120-10-20-3T	●	22	120	30	20	3T	10	ST-SC0256	ST-WRT08		
		22-150-10-20-3T	●	22	150	40	20	3T	10	ST-SC0256	ST-WRT08		
		22-200-10-20-3T	●	22	200	50	20	3T	10	ST-SC0256	ST-WRT08		

Carbide

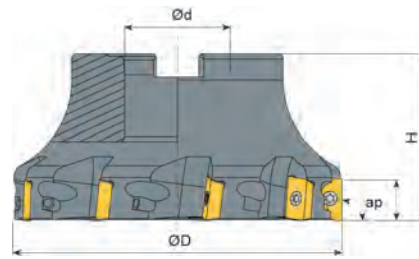
290

MSAP

AP 10[illegible]

Carbide

290

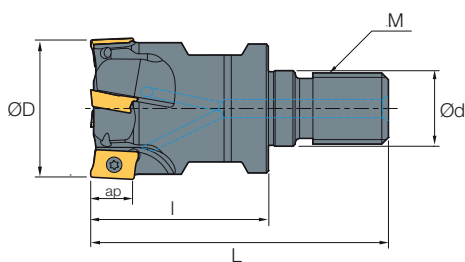
AP 11[illegible]

290

TURNING

MMAP

AP 11

[illegible]

Carbide

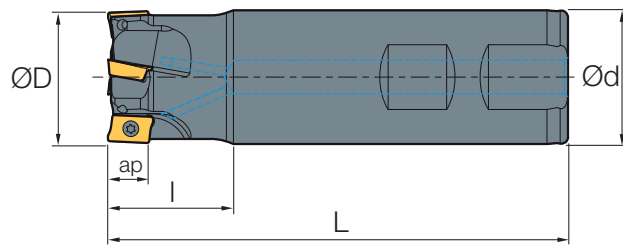
290

INDEX

HOLDERS /MILLING

MSAP

AP□□11

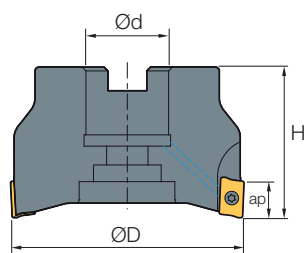


AP□□	DESCRIPTION		STOCK	DIMENSIONS									
				D	L	I	d	Z	ap				
AP□□11	MSAP	16-120-11-16-2T-C	●	16	120	40	16	2T	11	ST-SC0256	ST-WRT08		
		16-160-11-16-2T	●	16	160	40	16	2T	11	ST-SC0256	ST-WRT08		
		16-160-11-15-2T-C	●	16	160	40	15	2T	11	ST-SC0256	ST-WRT08		
		16-160-11-16-2T-C	●	16	160	40	16	2T	11	ST-SC0256	ST-WRT08		
		16-200-11-16-2T-C	●	16	200	50	16	2T	11	ST-SC0256	ST-WRT08		
		17-160-11-16-2T-C	●	17	160	40	16	2T	11	ST-SC0256	ST-WRT08		
		17-200-11-16-2T-C	●	17	200	50	16	2T	11	ST-SC0256	ST-WRT08		
		20-120-11-20-3T-C	●	20	120	40	20	3T	11	ST-SC0256	ST-WRT08		
		20-160-11-20-3T-C	●	20	160	40	20	3T	11	ST-SC0256	ST-WRT08		
		20-200-11-20-3T-C	●	20	200	50	20	3T	11	ST-SC0256	ST-WRT08		
		20-200-11-16-2T	●	20	200	50	16	2T	11	ST-SC0256	ST-WRT08		
		21-160-11-20-3T-C	●	21	160	40	20	3T	11	ST-SC0256	ST-WRT08		
		21-200-11-20-3T-C	●	21	200	50	20	3T	11	ST-SC0256	ST-WRT08		
		25-160-11-25-3T-C	●	25	160	40	25	3T	11	ST-SC0256	ST-WRT08		
		25-200-11-25-3T-C	●	25	200	50	25	3T	11	ST-SC0256	ST-WRT08		
		26-160-11-25-3T-C	●	26	160	40	25	3T	11	ST-SC0256	ST-WRT08		
		26-200-11-25-3T-C	●	26	200	50	25	3T	11	ST-SC0256	ST-WRT08		
		26-200-11-25-3T	●	26	200	50	25	3T	11	ST-SC0256	ST-WRT08		
		32-160-11-32-4T	●	32	160	40	32	4T	11	ST-SC0256	ST-WRT08		
		33-160-11-32-4T-C	●	33	160	40	32	4T	11	ST-SC0256	ST-WRT08		
		33-200-11-32-4T-C	●	33	200	50	32	4T	11	ST-SC0256	ST-WRT08		
		33-160-11-32-4T	●	32	160	40	32	4T	11	ST-SC0256	ST-WRT08		
		33-200-11-32-4T	●	33	200	50	32	4T	11	ST-SC0256	ST-WRT08		

Carbide

290

MFAP

AP 12[illegible]

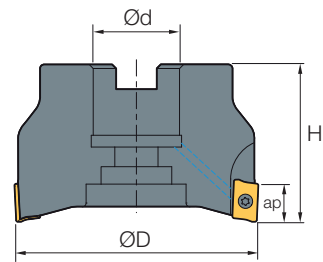
Carbide

290

HOLDERS /MILLING

MFAP

AP□□16



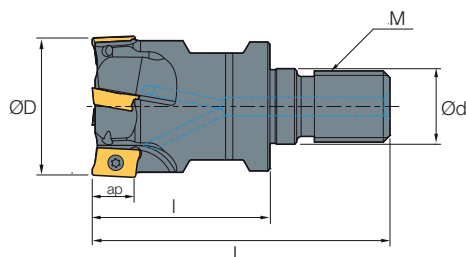
AP□□	DESCRIPTION		STOCK	DIMENSIONS								
				D	H	d	ap	Z				
AP□□16	MFAP	90040R-16-4T	●	40	40	16	16	4T	ST-SC0257	ST-WRT08		
		90040R-16-4T-C	●	40	40	22	16	4T	ST-SC0257	ST-WRT08		
		90050R-16-5T-C	●	50	40	22	16	5T	ST-SC0257	ST-WRT08		
		90050R-16-4T	●	50	40	22	16	5T	ST-SC0257	ST-WRT08		
		90063R-16-6T-C	●	63	40	22	16	6T	ST-SC0257	ST-WRT08		
		90063R-16-5T-C	●	63	40	22	16	5T	ST-SC0257	ST-WRT08		
		90063R-16-5T	●	63	40	22	16	5T	ST-SC0257	ST-WRT08		
		90080R-16-7T	●	80	50	22	16	7T	ST-SC0257	ST-WRT08		
		90080R-16-7T-C	●	80	50	22	16	7T	ST-SC0257	ST-WRT08		
		90080R-16-6T	●	80	50	22	16	7T	ST-SC0257	ST-WRT08		
		90100R-16-8T	●	100	50	32	16	8T	ST-SC0257	ST-WRT08		
		90125R-16-9T	●	125	63	40	16	9T	ST-SC0257	ST-WRT08		
		90160R-16-10T	●	160	63	40	16	10T	ST-SC0257	ST-WRT08		
		90200R-16-12T	●	200	63	60	16	12T	ST-SC0257	ST-WRT08		

Carbide

290

M MAP

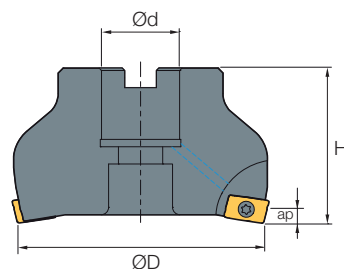
AP□□16



AP□□	DESCRIPTION		STOCK	DIMENSIONS									
				D	L	I	d	Z	ap	M			
AP□□16	M MAP	25-M12-16-2T-C	●	25	60	43	12	2T	16	12	ST-SC0257	ST-WRT08	
		32-M16-16-3T-C	●	32	60	43	16	3T	16	16	ST-SC0257	ST-WRT08	
		40-M16-16-4T-C	●	40	60	43	16	4T	16	16	ST-SC0257	ST-WRT08	

M FAP

AP□□16



AP□□	DESCRIPTION		STOCK	DIMENSIONS								
				D	H	d	ap	Z				
AP□□16	M FAP	75063R-16-4T	●	63	40	22	16	4T	ST-SC0257	ST-WRT08		
		75080R-16-6T	●	80	40	27	16	6T	ST-SC0257	ST-WRT08		
		75100R-16-7T	●	100	50	32	16	7T	ST-SC0257	ST-WRT08		

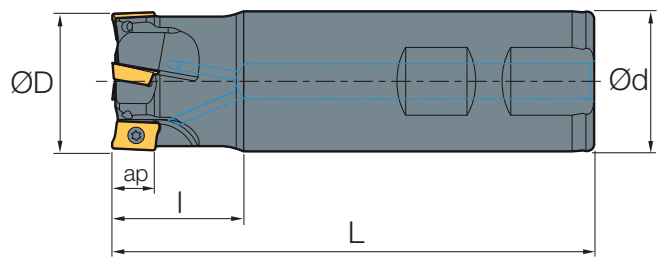
Carbide

290

HOLDERS /MILLING

MSAP

AP□□16



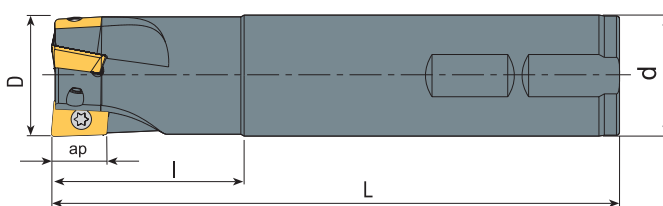
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				D	L	l	d	Z	ap				
AP□□16	MSAP	25-120-16-25-2T	●	25	120	30	25	2T	16	ST-SC0256	ST-WRT08		
		25-150-16-25-2T	●	25	150	40	25	2T	16	ST-SC0256	ST-WRT08		
		25-200-16-25-2T	●	25	200	50	25	2T	16	ST-SC0256	ST-WRT08		
		25-250-16-25-2T	●	25	250	70	25	2T	16	ST-SC0256	ST-WRT08		
		26-120-16-25-2T	●	26	120	30	25	2T	16	ST-SC0256	ST-WRT08		
		26-150-16-25-2T	●	26	150	40	25	2T	16	ST-SC0256	ST-WRT08		
		26-200-16-25-2T	●	26	200	50	25	2T	16	ST-SC0256	ST-WRT08		
		30-150-16-25-3T	●	30	150	40	25	3T	16	ST-SC0256	ST-WRT08		
		30-200-16-25-3T	●	30	200	50	25	3T	16	ST-SC0256	ST-WRT08		
		32-120-16-25-3T	●	32	120	30	25	3T	16	ST-SC0256	ST-WRT08		
		32-120-16-32-3T	●	32	120	30	32	3T	16	ST-SC0256	ST-WRT08		
		32-150-16-25-3T	●	32	150	50	25	3T	16	ST-SC0256	ST-WRT08		
		32-200-16-32-3T	●	32	200	50	32	3T	16	ST-SC0256	ST-WRT08		
		32-250-16-32-3T	●	32	250	70	32	3T	16	ST-SC0256	ST-WRT08		
		32-300-16-32-3T	●	32	300	70	32	3T	16	ST-SC0256	ST-WRT08		
		32-350-16-32-3T	●	32	350	70	32	3T	16	ST-SC0256	ST-WRT08		
		34-120-16-32-3T	●	34	120	30	32	3T	16	ST-SC0256	ST-WRT08		
		34-150-16-32-3T	●	34	150	50	32	3T	16	ST-SC0256	ST-WRT08		
		35-120-16-32-3T	●	35	120	30	32	3T	16	ST-SC0256	ST-WRT08		
		35-150-16-32-3T	●	35	150	50	32	3T	16	ST-SC0256	ST-WRT08		
		35-200-16-32-3T	●	35	200	50	32	3T	16	ST-SC0256	ST-WRT08		
		35-250-16-32-3T	●	35	250	50	32	3T	16	ST-SC0256	ST-WRT08		
		36-120-16-32-3T	●	36	120	30	32	3T	16	ST-SC0256	ST-WRT08		
		40-120-16-32-4T	●	40	120	30	32	4T	16	ST-SC0256	ST-WRT08		
		40-150-16-25-4T	●	40	150	50	25	4T	16	ST-SC0256	ST-WRT08		
		40-150-16-32-4T	●	40	150	50	32	4T	16	ST-SC0256	ST-WRT08		
		40-200-16-32-4T	●	40	200	50	32	4T	16	ST-SC0256	ST-WRT08		

Carbide

290

MSAX

AX□□07

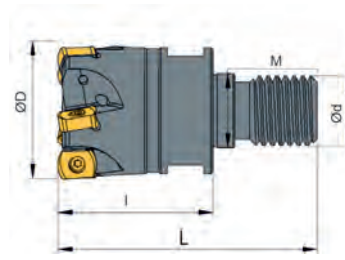
[illegible]

Carbide

292

MMBL

BL□□06



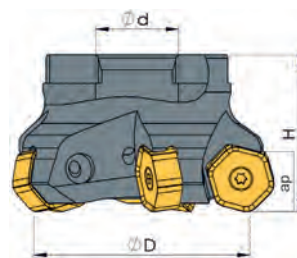
BL□□	DESCRIPTION		STOCK	DIMENSIONS									
				D	L	I	d	Z	ap	M			
BL□□06	MMBL	32-M16-06-5T-C	●	32	60	36	17	5	06	16	ST-SC0257	ST-WRT08	

Carbide

293

MFHN

HN□□09



HN□□	DESCRIPTION		STOCK	DIMENSIONS								
				D	H	d	ap	Z				
HN□□09	MFHN	45050-09-4T	●	50	40	22	5	4	ST-SC0415	ST-WRT15		
		45050R-09-4T-C	●	50	40	22	5	4	ST-SC0415	ST-WRT15		
		45063R-09-5T-C	●	63	40	22	5	5	ST-SC0415	ST-WRT15		
		45063-09-6T	●	63	40	22	5	6	ST-SC0415	ST-WRT15		
		45080-09-6T	●	80	50	27	5	6	ST-SC0415	ST-WRT15		
		45080-09-8T	●	80	50	27	5	8	ST-SC0415	ST-WRT15		
		45080-09-6T-C	●	80	50	27	5	6	ST-SC0415	ST-WRT15		
		45100-09-10T	●	100	50	32	5	10	ST-SC0415	ST-WRT15		
		45100-09-8T	●	100	50	32	5	8	ST-SC0415	ST-WRT15		
		45100R-09-8T-C	●	100	50	32	5	8	ST-SC0415	ST-WRT15		
		45125-09-10T	●	125	62	40	5	10	ST-SC0415	ST-WRT15		
		45125-09-12T	●	125	62	40	5	12	ST-SC0415	ST-WRT15		
		45125R-09-10T-C	●	125	62	40	5	10	ST-SC0415	ST-WRT15		
		45160-09-12T	●	160	62	40	5	12	ST-SC0415	ST-WRT15		
		45160-09-14T	●	160	62	40	5	14	ST-SC0415	ST-WRT15		
		45160R-09-12T	●	160	62	40	5	12	ST-SC0415	ST-WRT15		
		45200-09-12T	●	200	62	40	5	12	ST-SC0415	ST-WRT15		
		45250-09-14T	●	250	62	40	5	14	ST-SC0415	ST-WRT15		

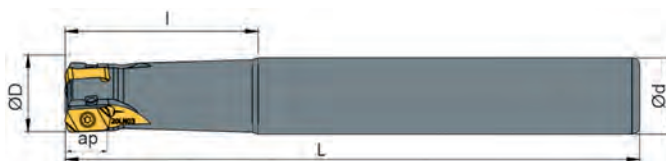
Carbide

295

TURNING

MSLN

LN 03



GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

**HSS
DRILLS & TAPS**

SPARE PARTS

INDEX

[illegible]

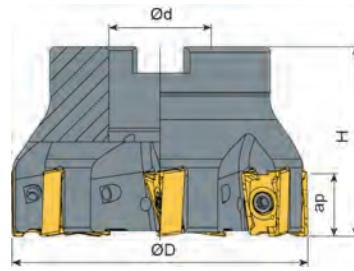
Carbide

296

HOLDERS /MILLING

MFLN

LN□□10



LN□□	DESCRIPTION		STOCK	DIMENSIONS								
				D	H	d	ap	Z				
LN□□10	MFLN	90050R-10-6T-C	●	50	40	22	10	6	ST-SC0309	ST-WRT10		

Carbide

296

TURNING

MSLN

LN 10



GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS DRILLS & TAPS

SPARE PARTS

INDEX

[illegible]

Carbide

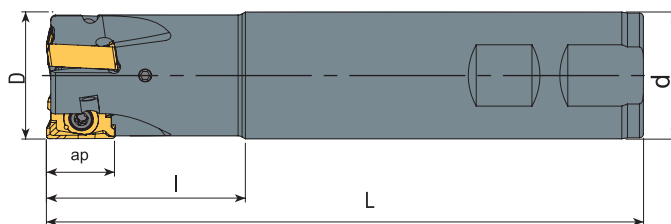
296

LN 11



MSLN

LN□□11

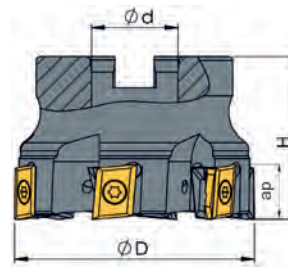


LN□□	DESCRIPTION		STOCK	DIMENSIONS									
				D	L	I	d	Z	ap				
LN□□11	MSLN	16-100-11-16-2T-C	●	16	100	25	16	2	11	ST-SC0301	ST-WRT10		
		16-150-11-16-2T-C	●	16	150	25	16	2	11	ST-SC0301	ST-WRT10		
		16-160-11-16-2T-C	●	16	160	25	16	2	11	ST-SC0301	ST-WRT10		
		17-150-11-16-2T-C	●	17	150	25	16	2	11	ST-SC0301	ST-WRT10		
		20-100-11-20-2T-C	●	20	100	28	20	2	11	ST-SC0301	ST-WRT10		
		20-150-11-20-3T-C	●	20	150	28	20	3	11	ST-SC0301	ST-WRT10		
		20-160-11-20-2T-C	●	20	160	28	20	2	11	ST-SC0301	ST-WRT10		
		21-150-11-20-3T-C	●	21	150	28	20	3	11	ST-SC0301	ST-WRT10		
		25-150-11-25-4T-C	●	25	150	43	25	4	11	ST-SC0301	ST-WRT10		
		25-160-11-25-3T-C	●	25	160	43	25	3	11	ST-SC0301	ST-WRT10		
		25-200-11-25-4T-C	●	25	200	30	25	4	11	ST-SC0301	ST-WRT10		
		32-150-11-32-5T-C	●	32	150	49	32	5	11	ST-SC0301	ST-WRT10		
		32-160-11-32-4T-C	●	32	160	49	32	4	11	ST-SC0301	ST-WRT10		
		32-200-11-32-5T-C	●	32	200	35	32	5	11	ST-SC0301	ST-WRT10		

Carbide

296

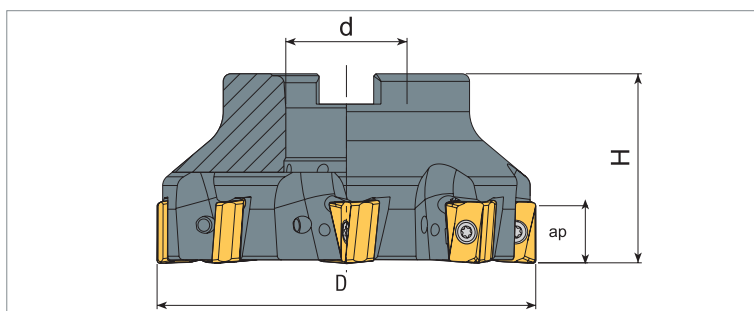
LN 13

[illegible]

296

MFLN

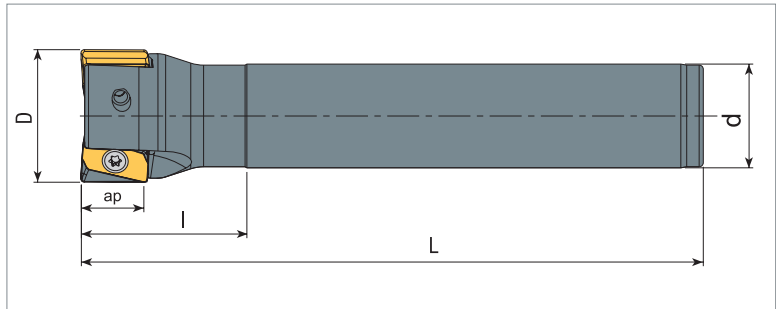
LN 15

[illegible]

Carbide

296

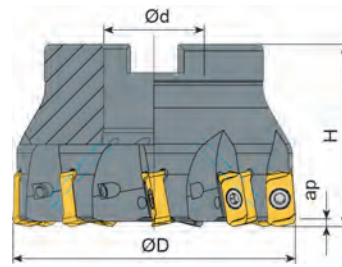
LN 15

[illegible]

296

MFLO

LO□□03

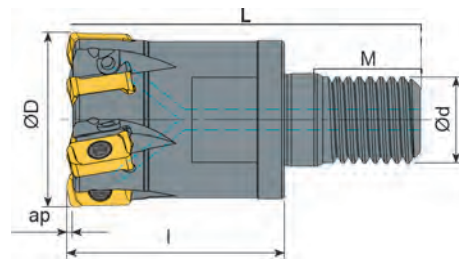


LO□□	DESCRIPTION		STOCK	DIMENSIONS								
				D	H	d	ap	Z				
LO□□03	MFLO	040R-03-6T-C	●	40	40	16	3	6	ST-SC0309	ST-WRT10		

Carbide

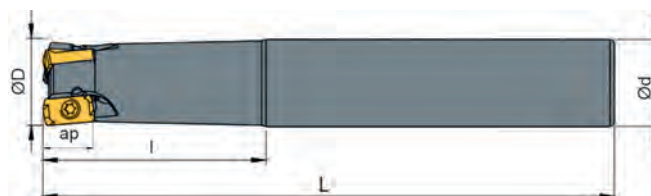


LO 0003

[illegible]

MSLO

LO□□03

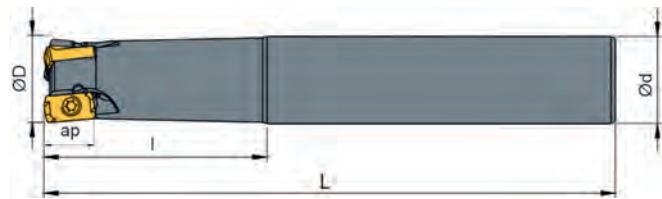


LO□□	DESCRIPTION		STOCK	DIMENSIONS									
				D	L	l	d	Z	ap				
LO□□03	MSLO	16-100-03-16-2T	●	16	100	35	16	2	-	ST-SC0309	ST-WRT10		
		16-150-03-15-2T-C	●	16	150	35	16	2	-	ST-SC0309	ST-WRT10		
		16-160-03-15-2T-C	●	16	160	35	16	2	-	ST-SC0309	ST-WRT10		
		16-160-03-16-2T	●	16	160	50	16	2	-	ST-SC0309	ST-WRT10		
		17-100-03-16-2T-C	●	17	100	30	16	2	-	ST-SC0309	ST-WRT10		
		17-150-03-16-2T-C	●	17	150	30	16	2	-	ST-SC0309	ST-WRT10		
		17-160-03-16-2T-C	●	17	160	30	16	2	-	ST-SC0309	ST-WRT10		
		17-200-03-16-2T	●	17	200	30	16	2	-	ST-SC0309	ST-WRT10		
		18-150-03-16-2T-C	●	18	150	30	16	2	-	ST-SC0309	ST-WRT10		
		18-160-03-16-2T-C	●	18	160	30	16	2	-	ST-SC0309	ST-WRT10		
		19,5-160-03-20-3T	●	19,5	160	30	20	3	-	ST-SC0309	ST-WRT10		
		20-100-03-20-2T-C	●	20	100	35	20	2	-	ST-SC0309	ST-WRT10		
		20-130-03-20-3T	●	20	130	40	20	3	-	ST-SC0309	ST-WRT10		
		20-150-03-20-3T	●	20	150	40	20	3	-	ST-SC0309	ST-WRT10		
		20-160-03-20-3T-C	●	20	160	50	20	3	-	ST-SC0309	ST-WRT10		
		21,5-160-03-20-3T	●	21,5	160	30	20	3	-	ST-SC0309	ST-WRT10		
		21-100-03-20-2T-C	●	21	100	30	20	2	-	ST-SC0309	ST-WRT10		
		21-150-03-20-3T-C	●	21	150	30	20	3	-	ST-SC0309	ST-WRT10		
		21-160-03-20-3T-C	●	21	160	30	20	3	-	ST-SC0309	ST-WRT10		
		21-200-03-20-3T	●	21	200	35	20	3	-	ST-SC0309	ST-WRT10		
		22-160-03-20-3T-C	●	22	160	30	20	3	-	ST-SC0309	ST-WRT10		
		24,5-160-03-25-4T	●	24,5	160	45	25	4	-	ST-SC0309	ST-WRT10		
		25-150-03-25-4T-C	●	25	150	50	25	4	-	ST-SC0309	ST-WRT10		
		25-160-03-25-4T-C	●	25	160	50	25	4	-	ST-SC0309	ST-WRT10		
		25-180-03-25-4T-C	●	25	180	50	25	4	-	ST-SC0309	ST-WRT10		
		26-150-03-25-4T-C	●	26	150	50	25	4	-	ST-SC0309	ST-WRT10		
		26-160-03-25-4T-C	●	26	160	30	25	4	-	ST-SC0309	ST-WRT10		

Carbide

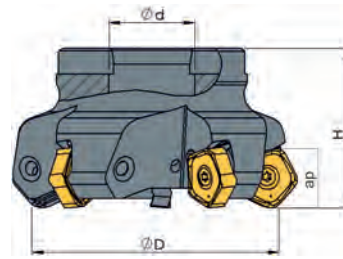
-

LO 0003

[illegible]

MFPN

PN 00 09

[illegible]

Carbide

297

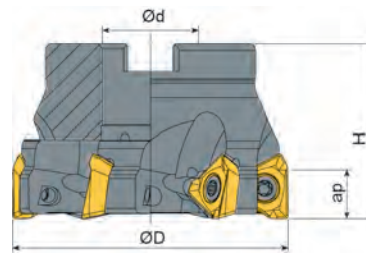
Technical drawing of a 4-point lifting beam. The drawing shows a perspective view of the beam with four lifting points. Dimensions are indicated: $\varnothing d$ for the diameter of the lifting points, H for the height, and $\varnothing D$ for the diameter of the base. The beam is shown in a perspective view, highlighting its symmetrical design and the arrangement of the lifting points.

297

TURNING

MF3P

3P□□10



GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS DRILLS & TAPS

SPARE PARTS

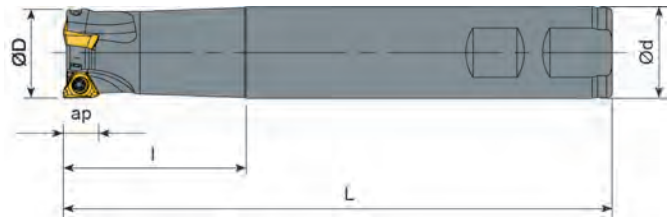
INDEX

[illegible]

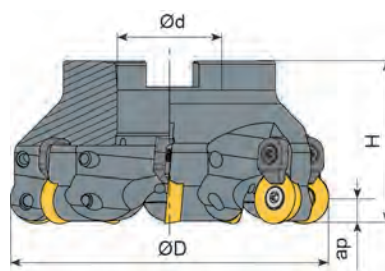
Carbide

313

3P□□10

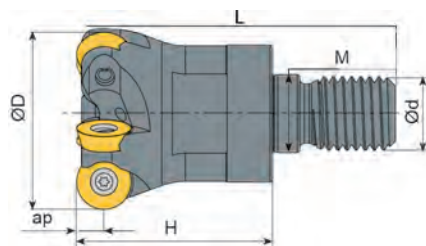
[illegible]

313

RD [illegible]

298

MMRD

RD [illegible]

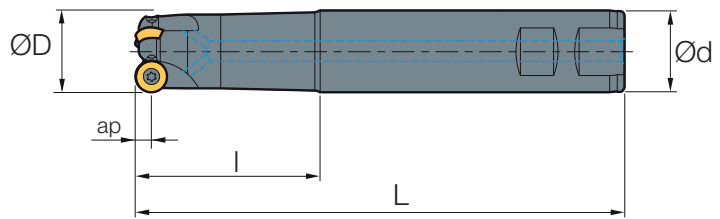
Carbide

298

HOLDERS /MILLING

MSRD

RD□□



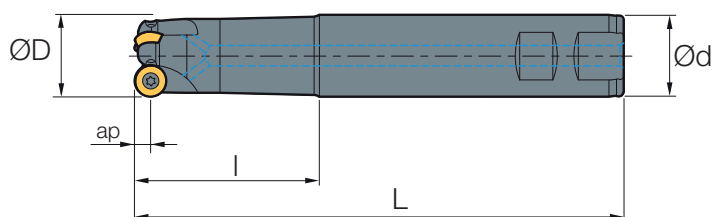
RD□□	DESCRIPTION		STOCK	DIMENSIONS									
				D	L	l	d	Z	ap				
RD□□08	MSRD	16-160-08-16-2T	●	16	160	55	25	2T	08	ST-SC0256	ST-WRT08		
		20-160-08-20-2T	●	20	160	55	25	2T	08	ST-SC0256	ST-WRT08		
		25-160-08-25-3T	●	25	160	55	25	3T	08	ST-SC0256	ST-WRT08		
RD□□10	MSRD	20-120-10-20-2T	●	20	120	55	20	2T	10	ST-SC3508	ST-WRT15		
		20-150-10-20-2T-C	●	20	150	55	20	2T	10	ST-SC3508	ST-WRT15		
		20-160-10-20-2T	●	20	160	55	20	2T	10	ST-SC3508	ST-WRT15		
		20-200-10-20-2T	●	20	200	55	20	2T	10	ST-SC3508	ST-WRT15		
		25-120-10-25-2T	●	25	120	55	25	2T	10	ST-SC3508	ST-WRT15		
		25-160-10-25-2T	●	25	160	55	25	2T	10	ST-SC3508	ST-WRT15		
		25-150-10-25-2T	●	25	150	55	25	2T	10	ST-SC3508	ST-WRT15		
		25-200-10-25-2T	●	25	200	55	25	2T	10	ST-SC3508	ST-WRT15		
		25-200-10-25-2T-C	●	25	200	55	25	2T	10	ST-SC3508	ST-WRT15		
		32-120-10-32-3T	●	32	120	55	32	3T	10	ST-SC3508	ST-WRT15		
		32-150-10-32-3T-C	●	32	150	55	32	3T	10	ST-SC3508	ST-WRT15		
		32-160-10-32-3T	●	32	160	55	32	3T	10	ST-SC3508	ST-WRT15		
		32-200-10-32-3T	●	32	200	55	32	3T	10	ST-SC3508	ST-WRT15		
		40-120-10-32-4T	●	40	120	55	32	4T	10	ST-SC3508	ST-WRT15		
		40-160-10-32-4T	●	40	160	55	32	4T	10	ST-SC3508	ST-WRT15		
		40-200-10-32-4T	●	40	200	55	32	4T	10	ST-SC3508	ST-WRT15		

Carbide

298

MSRD

RD 12

[illegible]

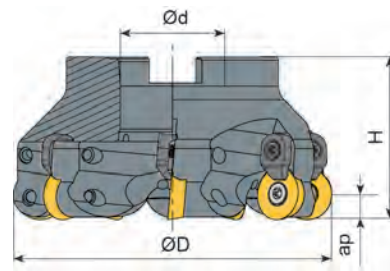
Carbide

298

HOLDERS /MILLING

MFRD

RD□□16



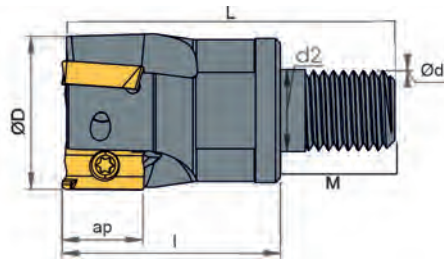
RD□□	DESCRIPTION		STOCK	DIMENSIONS					 ← 		
				D	H	d	ap	Z			
RD□□16	MFRD	080R-16-5T-C	●	80	52	27	8	5	ST-SC0512	ST-WRT20	

Carbide

298

MMRT

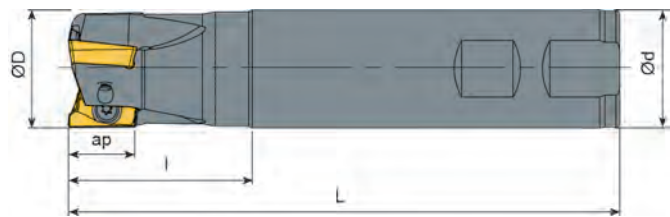
RT□□10



RT□□	DESCRIPTION		STOCK	DIMENSIONS							 ← 		
				D	L	I	d	Z	ap	M			
RT□□10	MMRT	42-M16-10-6T-C	●	42	67	35	42	6T	16	16	ST-SC0257	ST-WRT08	

Carbide

299

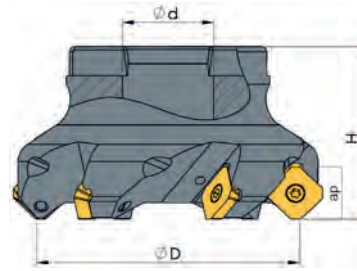
RT [illegible]

299

TURNING

MFSE

SE 12



GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS DRILLS & TAPS

SPARE PARTS

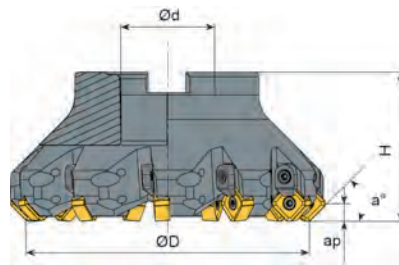
INDEX

[illegible]

Carbide

301

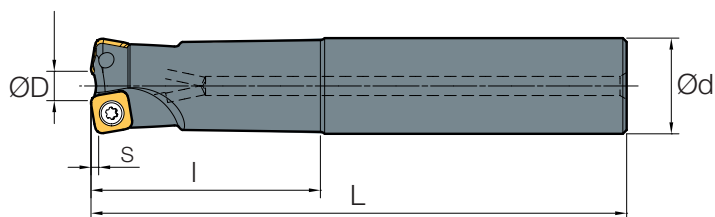
SN□□12

[illegible]

302

MSSO

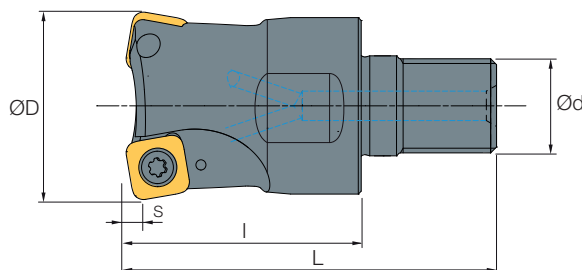
SOMW



SO □□	DESCRIPTION		STOCK	DIMENSIONS						PROGRAM RADIUS	MAX. ANGLE FOR RAMPING		
				D	L	I	d	Z	S				
SOMW08	MSSO	20-160-08-20-2T-C	●	20	160	40	20	2T	2	2,5	2.30	ST-SC0309	ST-WRT15
		20-200-08-20-2T-C	●	20	200	50	20	2T	2	2,5	2.30	ST-SC0309	ST-WRT15
		21-160-08-20-2T-C	●	21	160	40	20	2T	2	2,5	1.30	ST-SC0309	ST-WRT15
		25-160-08-25-3T-C	●	25	160	40	25	3T	2	2,5	1.30	ST-SC0309	ST-WRT15
		25-200-08-25-3T	●	25	200	50	25	3T	2	2,5	1.00	ST-SC0309	ST-WRT15
		25-200-08-25-3T-C	●	25	200	50	25	3T	2	2,5	1.00	ST-SC0309	ST-WRT15
		26-160-08-25-3T-C	●	26	160	40	25	3T	2	2,5	1.20	ST-SC0309	ST-WRT15
		26-200-08-25-2T	●	26	200	50	25	2T	2	2,5	1.20	ST-SC0309	ST-WRT15
		26-200-08-25-3T-C	●	26	200	50	25	3T	2	2,5	1.20	ST-SC0309	ST-WRT15
		32-160-08-32-4T-C	●	32	160	40	32	4T	2	3,5	2.50	ST-SC0309	ST-WRT15
		32-200-08-32-4T	●	32	200	50	32	4T	2	3,5	2.50	ST-SC0309	ST-WRT15
		35-160-08-32-4T-C	●	35	160	40	32	4T	2	3,5	2.50	ST-SC0309	ST-WRT15

MMSO

SOMW



SO□□	DESCRIPTION		STOCK	DIMENSIONS							PROGRAM RADIUS	MAX. ANGLE FOR RAMPING		
				D	L	I	d	Z	S	M				
SOMW08	MMSO	20-M10-08-2T-C	●	20	52	30	12,5	2T	2	10	2,5	2°30'	ST-SC0309	ST-WRT15
		25-M12-08-3T-C	●	25	52	35	12,5	3T	2	12	2,5	1°30'	ST-SC0309	ST-WRT15
		32-M16-08-4T-C	●	32	64	43	17	4T	2	16	2,5	1°00'	ST-SC0309	ST-WRT15
		40-M16-08-5T-C	●	40	67	43	17	5T	2	16	2,5	0°50'	ST-SC0309	ST-WRT15
		42-M16-08-5T-C	●	42	67	43	17	5T	2	16	2,5	0°40'	ST-SC0309	ST-WRT15

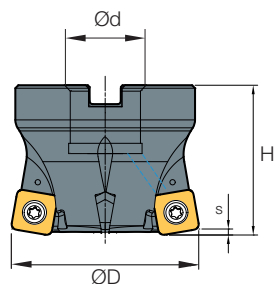
Carbide

303

HOLDERS /MILLING

MFSO

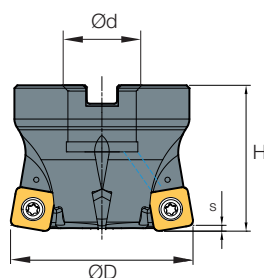
SOMW



SO □□	DESCRIPTION		STOCK	DIMENSIONS					PROGRAM RADIUS	MAX. ANGLE FOR RAMPING		
				D	H	d	S	Z				
SOMW08	MFSP	040R-08-5T-C	●	40	40	16	2	5T	2,5	0°50'	ST-SC0309	ST-WRT15
		050R-08-6T-C	●	50	40	22	2	6T	3,5	0°40'	ST-SC0309	ST-WRT15
		063R-08-7T-C	●	63	40	22	2	7T	3,5	0°30'	ST-SC0309	ST-WRT15

MFSP

SP □□12



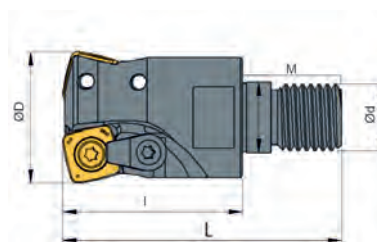
SP □□	DESCRIPTION		STOCK	DIMENSIONS					PROGRAM RADIUS	MAX. ANGLE FOR RAMPING		
				D	H	d	S	Z				
SN □□12	MFSP	050R-12-5T-C	●	50	40	22	3	5T	4,0	1.00	ST-SC0410	ST-WRT15
		052R-12-5T-C	●	52	40	22	3	5T	4,5	0.40	ST-SC0410	ST-WRT15
		063R-12-5T-C	●	63	40	22	3	5T	4	0.40	ST-SC0410	ST-WRT15
		080R-12-5T-C	●	80	40	22	3	5T	4	0.30	ST-SC0410	ST-WRT15
		080R-12-8T-C	●	80	40	22	3	8T	4	0.30	ST-SC0410	ST-WRT15
		100R-12-8T-C	●	100	40	22	3	8T	4	0.20	ST-SC0410	ST-WRT15
		125R-12-10T	●	125	40	22	3	10T	4	0.20	ST-SC0410	ST-WRT15
		160R-12-12T	●	160	40	22	3	12T	4	0.18	ST-SC0410	ST-WRT15
		2000R-12-14T	●	2000	-	-	3	14T	4	0.15	ST-SC0410	ST-WRT15
		200R-12-10T	●	200	-	-	3	10T	4	0.10	ST-SC0410	ST-WRT15

Carbide

303

MMSP

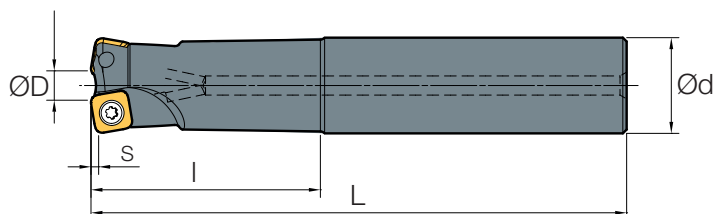
SP□□12



SP□□	DESCRIPTION		STOCK	DIMENSIONS									
				D	L	I	d	Z	ap	M			
SP□□12	MMSP	32-M16-12-2T-C	●	32	-	-	12	2	-	16	ST-SC0410	ST-WRT15	
		40-M16-12-3T-C	●	40	-	-	12	3	-	16	ST-SC0410	ST-WRT15	

MSSP

SP□□12



SP□□	DESCRIPTION		STOCK	DIMENSIONS									
				D	L	I	d	Z	ap	M			
SP□□12	MSSP	32-160-12-32-2T-C	●	32	160	-	32	2	-	-	ST-SC0410	ST-WRT15	
		40-160-12-32-3T-C	●	40	160	-	32	3	-	-	ST-SC0410	ST-WRT15	

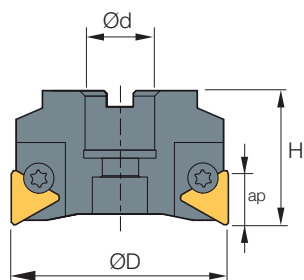
Carbide

303

[illegible]

Turning Carbide

MFTP

TP [illegible]

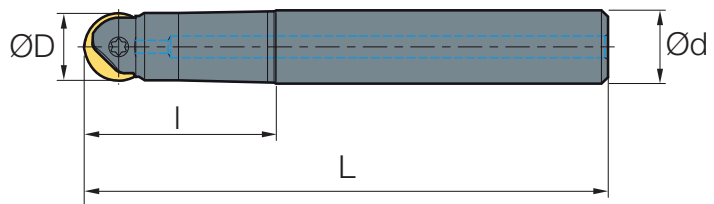
Carbide

305

HOLDERS /MILLING

MSTW

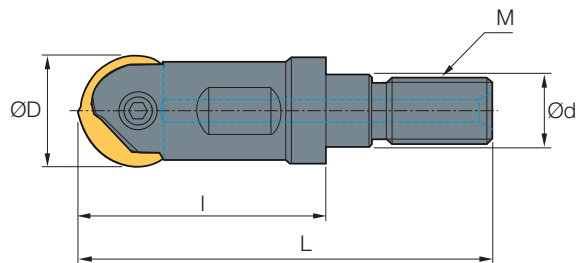
TW□□



TW□□	DESCRIPTION			STOCK	DIMENSIONS					 ← 		
					D	L	l	d	Z			
TW08	MSTW	08-110-D10	●		08	110	25	08	1T	ST-TC170	ST-WRT08	
TW10	MSTW	10-130-D12	●		10	130	30	10	1T	ST-TC172	ST-WRT15	
TW12	MSTW	12-130-D12	●		12	130	32	12	1T	ST-TC174	ST-WRT20	
TW16	MSTW	16-140-D16	●		16	140	-	16	1T	ST-TC176	ST-WRT20	
TW20	MSTW	20-160-D20	●		20	160	-	20	1T	ST-TC178	ST-WRT20	
TW25	MSTW	25-160-D25	●		25	160	-	25	1T	ST-TC181	ST-WR0030	

MMTW

TW□□

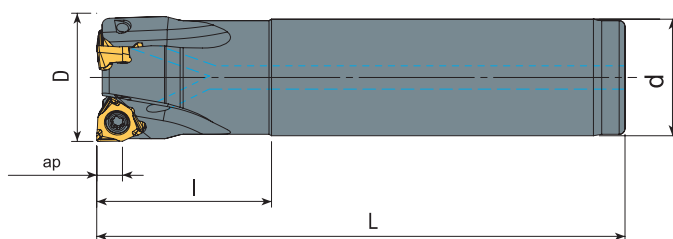


TW□□	DESCRIPTION			STOCK	DIMENSIONS						 ← 		
					D	L	l	d	Z	M			
TW16	MMTW	16-M08-16	●		16	52	30	10,5	1T	8	ST-TC176	ST-WRT20	
TW20	MMTW	20-M10-20	●		20	52	35	12,5	1T	10	ST-TC178	ST-WRT20	
TW25	MMTW	25-M12-25	●		25	64	43	17	1T	12	ST-TC181	ST-WR0030	

Carbide

306

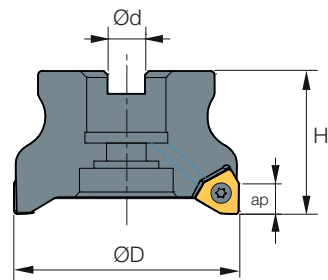
MSWN
WN 04

[illegible]

Carbide

307

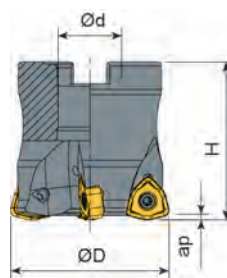
WN 08

[illegible]

307

MFWN

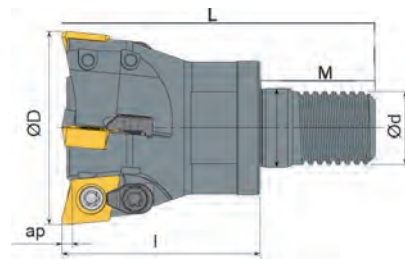
WN 00 09

[illegible]

Carbide

307

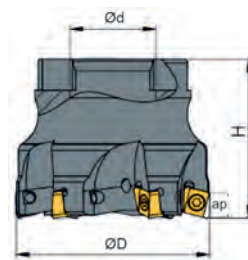
XD 10

[illegible]

308

MFYN

YN 00 06

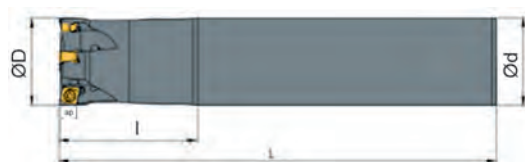
[illegible]

Carbide

312

MSYN

YN 0006

[illegible]

Carbide

312

HOLDERS /MILLING

MAT

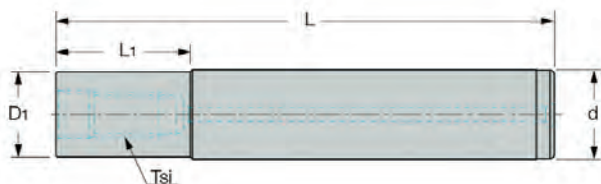
STEEL SHAFT



□□	DESCRIPTION		STOCK	DIMENSIONS								
				D	d	L	I	M				
	MAT	M10-120-S18/20	●	18	20	120	60	10				
		M10-170-S18/20	●	18	20	170	90	10				
		M12-160-S24/25	●	24	25	160	80	12				
		M12-200-S24/25	●	24	25	200	100	12				
		M12-250-S24/25	●	24	25	250	150	12				
		M16-160-S31/32	●	31	32	160	80	16				
		M16-200-S31/32	●	31	32	200	100	16				
		M16-250-S31/32	●	31	32	250	150	16				

MFT

CARBIDE SHAFT



□□	DESCRIPTION		STOCK	DIMENSIONS								
				D	d	L	I	M				
	MFT	08-08-100-M4	●	8	8	100	-	M4				
		10-10-080-M5	●	10	10	80	-	M5				
		10-10-100-M5	●	10	10	100	-	M5				
		10-10-100-M6	●	10	10	100	-	M6				
		10-10-150-M5	●	10	10	150	-	M5				
		12-12-100-M6	●	12	12	100	-	M6				
		12-12-150-M6	●	12	12	150	-	M6				
		12-12-200-M6	●	12	12	200	-	M6				

MFT

CARBIDE SHAFT



□□	DESCRIPTION		STOCK	DIMENSIONS								
				D	d	L	I	M				
MFT	16-15-100-M8	●	16	15	100	50	M8					
	16-15-150-M8	●	16	15	150	50	M8					
	16-15.6-150-M8	●	16	15,6	150	50	M8					
	16-15-200-M8	●	16	15	200	50	M8					
	16-15.6-200-M8	●	16	15,6	200	50	M8					
	16-15.6-250-M8	●	16	15,6	250	50	M8					
	17-16-100-M8	●	17	16	100	-	M8					
	17-16-150-M8	●	17	16	150	-	M8					
	17-16-200-M8	●	17	16	200	-	M8					
	17-16-250-M8	●	17	16	250	-	M8					
	17-16-300-M8	●	17	16	300	-	M8					
	20-19-150-M10	●	20	19	150	-	M10					
	20-19-250-M10	●	20	19	250	-	M10					
	21-20-100-M10	●	21	20	100	-	M10					
	21-20-150-M10	●	21	20	150	-	M10					
	21-20-200-M10	●	21	20	200	-	M10					
	21-20-250-M10	●	21	20	250	-	M10					
	21-20-300-M10	●	21	20	300	-	M10					
	25-24-150-M12	●	25	24	150	50	M12					
	25-24-200-M12	●	25	24	200	50	M12					
	25-24-250-M12	●	25	24	250	100	M12					
	25-24-300-M12	●	25	24	300	100	M12					
	26-25-150-M12	●	26	25	150	-	M12					
	26-25-200-M12	●	26	25	200	-	M12					
	26-25-250-M12	●	26	25	250	-	M12					
	26-25-300-M12	●	26	25	300	-	M12					
	35-32-150-M16	●	35	32	150	50	M16					
	35-32-200-M16	●	35	32	200	50	M16					
	35-32-250-M16	●	35	32	250	100	M16					
	35-32-300-M16	●	35	32	300	100	M16					
	35-32-350-M16	●	35	32	350	150	M16					
	35-32-400-M16	●	35	32	400	200	M16					

TURNING

GROOVING

THREADING

MILLING

DRILLING

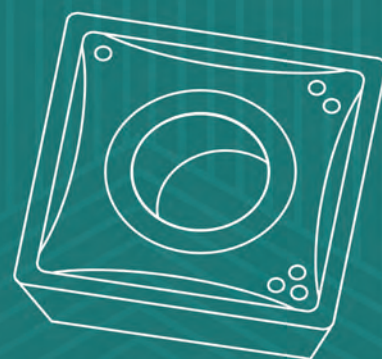
ENDMILLS

DRILLS

HSS
DRILLS & TAPSSPARE
PARTS

INDEX

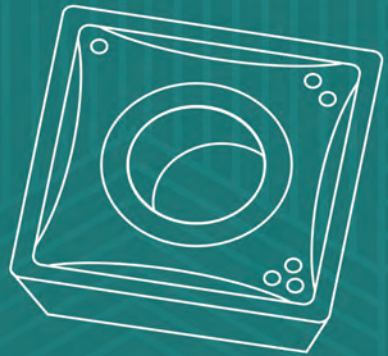




DRILLING/

carbide /385
holders 389





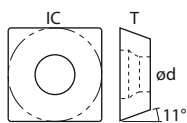
DRILLING/**CARBIDE**

CARBIDE /DRILLING

GRADES

ISO DIN 513	K					P					M					N					
																					
	K01	K10	K20	K30	K40	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	N01	N10	N20	N30	N40	
CARBIDE CVD																					
CARBIDE PVD	PS5960					PS7120 PS5960 PS7320S					PS7120 PS5960 PS7320S										
CARBIDE UNCOATED																	US2915				
CERMET UNCOATED																					

INDEX



SP □□	0402 □□	0502 □□	0602 □□	07T3 □□	0904 □□	1104 □□	1405 □□
IC	4,70	5,56	6,00	7,94	9,80	11,50	14,30
T	2,38	2,38	2,38	3,97	4,30	4,76	5,56
Ød	2,25	2,50	2,80	2,80	4,10	4,40	5,50



390

390

390

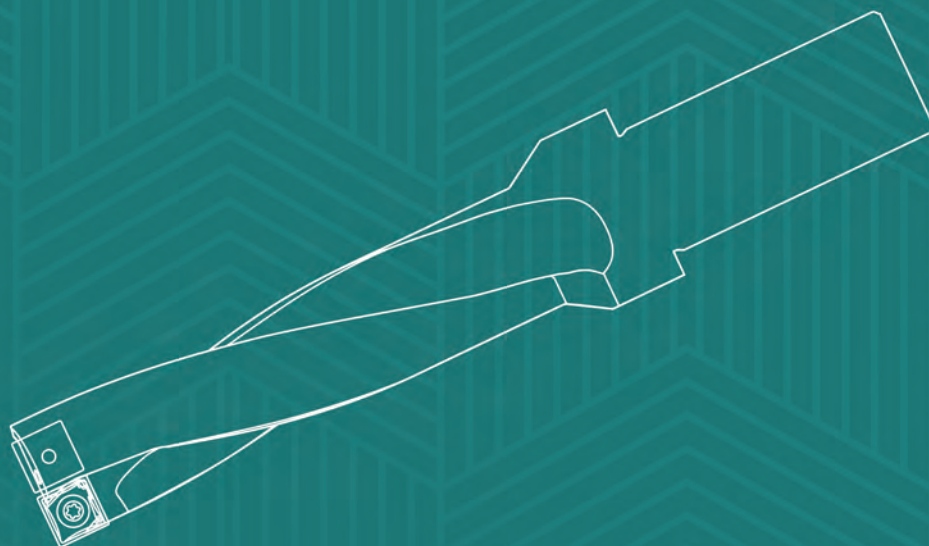
390

390

390

390

[illegible]



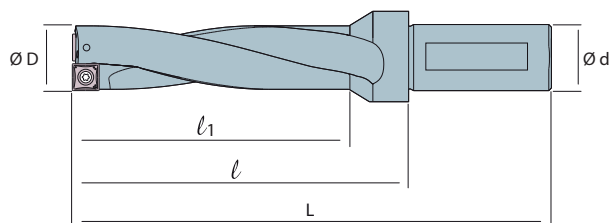
DRILLING/**HOLDERS**

HOLDERS /DRILLING

SS2D

2xD

SP□□

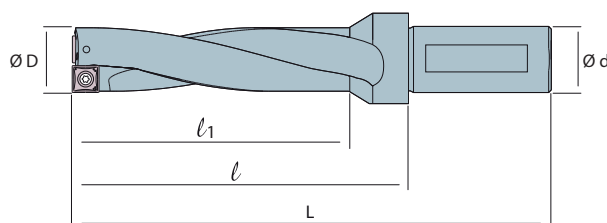


SP□□	DESCRIPTION		DESCRIPTION NEW	STOCK	DIMENSIONS					 	
					ØD	Ød	L	l	l ₁		
SPMG0402	SS2D	100-04	SPIDC100-2D-S16-SP04	●	10	16	88	38	20	ST-SC18-04	ST-WRT06
		105-04	SPIDC105-2D-S16-SP04	●	10,5	16	89	39	21	ST-SC18-04	ST-WRT06
		110-04	SPIDC110-2D-S16-SP04	●	11	16	90	40	22	ST-SC18-04	ST-WRT06
		115-04	SPIDC115-2D-S16-SP04	●	11,5	16	90	40	23	ST-SC18-04	ST-WRT06
		120-04	SPIDC120-2D-S20-SP04	●	12	20	92	42	24	ST-SC18-04	ST-WRT06
SPMG0502	SS2D	125-05	SPIDC125-2D-S20-SP05	●	12,5	20	93	43	25	ST-SC0206	ST-WRT06
		130-05	SPIDC130-2D-S20-SP05	●	13	20	104	48	26	ST-SC0206	ST-WRT06
		135-05	SPIDC135-2D-S20-SP05	●	13,5	20	105	49	27	ST-SC0206	ST-WRT06
		140-05	SPIDC140-2D-S25-SP05	●	14	25	106	50	28	ST-SC0206	ST-WRT06
		145-05	SPIDC145-2D-S25-SP05	●	14,5	25	107	51	29	ST-SC0206	ST-WRT06
		150-05	SPIDC150-2D-S25-SP05	●	15	25	108	52	30	ST-SC0206	ST-WRT06
SPMG0602		155-05	SPIDC155-2D-S25-SP05	●	15,5	25	109	53	31	ST-SC0226	ST-WRT07
	SS2D	160-06	SPIDC160-2D-S25-SP06	●	16	25	110	54	32	ST-SC0226	ST-WRT07
		165-06	SPIDC165-2D-S25-SP06	●	16,5	25	111	55	33	ST-SC0226	ST-WRT07
		170-06	SPIDC170-2D-S25-SP06	●	17	25	112	56	34	ST-SC0226	ST-WRT07
		175-06	SPIDC175-2D-S25-SP06	●	17,5	25	113	57	35	ST-SC0226	ST-WRT07
		180-06	SPIDC180-2D-S25-SP06	●	18	25	114	58	36	ST-SC0226	ST-WRT07
		185-06	SPIDC185-2D-S25-SP06	●	18,5	25	115	59	37	ST-SC0226	ST-WRT07
		190-06	SPIDC190-2D-S25-SP06	●	19	25	116	60	38	ST-SC0226	ST-WRT07
		195-06	SPIDC195-2D-S25-SP06	●	19,5	25	117	61	39	ST-SC0226	ST-WRT07
		200-06	SPIDC200-2D-S25-SP06	●	20	25	119	63	40	ST-SC0226	ST-WRT07
SPMG07T3		205-06	SPIDC205-2D-S25-SP06	●	20,5	25	120	64	41	ST-SC0226	ST-WRT07
		210-06	SPIDC210-2D-S25-SP06	●	21	25	121	65	42	ST-SC0226	ST-WRT07
		215-06	SPIDC215-2D-S25-SP06	●	21,5	25	122	66	43	ST-SC0226	ST-WRT07
	SS2D	220-07	SPIDC220-2D-S25-SP07	●	22	25	123	67	44	ST-SC0257	ST-WRT08
		225-07	SPIDC225-2D-S25-SP07	●	22,5	25	124	68	45	ST-SC0257	ST-WRT08
		230-07	SPIDC230-2D-S25-SP07	●	23	25	125	69	46	ST-SC0257	ST-WRT08
		235-07	SPIDC235-2D-S25-SP07	●	23,5	25	126	70	47	ST-SC0257	ST-WRT08
		240-07	SPIDC240-2D-S25-SP07	●	24	25	127	71	48	ST-SC0257	ST-WRT08
		245-07	SPIDC245-2D-S25-SP07	●	24,5	25	128	72	49	ST-SC0257	ST-WRT08
		250-07	SPIDC250-2D-S25-SP07	●	25	25	141	81	50	ST-SC0257	ST-WRT08
		255-07	SPIDC255-2D-S32-SP07	●	25,5	32	142	82	51	ST-SC0257	ST-WRT08
		260-07	SPIDC260-2D-S32-SP07	●	26	32	142	83	52	ST-SC0257	ST-WRT08

SS3D

3xD

SP□□



SP□□	DESCRIPTION		DESCRIPTION NEW	STOCK	DIMENSIONS					 	
					ØD	Ød	L	l	l ₁		
SPMG0402	SS3D	100-04	SPIDC100-3D-S16-SP04	●	10	16	98	48	30	ST-SC18-04	ST-WRT06
		105-04	SPIDC105-3D-S16-SP04	●	10,5	16	100	50	31,5	ST-SC18-04	ST-WRT06
		110-04	SPIDC110-3D-S16-SP04	●	11	16	101	51	33	ST-SC18-04	ST-WRT06
		115-04	SPIDC115-3D-S16-SP04	●	11,5	16	102	52	34,5	ST-SC18-04	ST-WRT06
		120-04	SPIDC120-3D-S20-SP04	●	12	20	103	53	36	ST-SC18-04	ST-WRT06
SPMG0502	SS3D	125-05	SPIDC125-3D-S20-SP05	●	12,5	20	105	55	37,5	ST-SC0206	ST-WRT06
		130-05	SPIDC130-3D-S20-SP05	●	13	20	117	61	39	ST-SC0206	ST-WRT06
		135-05	SPIDC135-3D-S20-SP05	●	13,5	20	119	63	40,5	ST-SC0206	ST-WRT06
		140-05	SPIDC140-3D-S25-SP05	●	14	25	120	64	42	ST-SC0206	ST-WRT06
		145-05	SPIDC145-3D-S25-SP05	●	14,5	25	122	66	43,5	ST-SC0206	ST-WRT06
		150-05	SPIDC150-3D-S25-SP05	●	15	25	123	67	45	ST-SC0206	ST-WRT06
		155-05	SPIDC155-3D-S25-SP05	●	15,5	25	125	69	46,5	ST-SC0226	ST-WRT07
SPMG0602	SS3D	160-06	SPIDC160-3D-S25-SP06	●	16	25	126	70	48	ST-SC0226	ST-WRT07
		165-06	SPIDC165-3D-S25-SP06	●	16,5	25	128	72	49,5	ST-SC0226	ST-WRT07
		170-06	SPIDC170-3D-S25-SP06	●	17	25	129	73	51	ST-SC0226	ST-WRT07
		175-06	SPIDC175-3D-S25-SP06	●	17,5	25	131	75	52,5	ST-SC0226	ST-WRT07
		180-06	SPIDC180-3D-S25-SP06	●	18	25	132	76	54	ST-SC0226	ST-WRT07
		185-06	SPIDC185-3D-S25-SP06	●	18,5	25	134	78	55,5	ST-SC0226	ST-WRT07
		190-06	SPIDC190-3D-S25-SP06	●	19	25	135	79	57	ST-SC0226	ST-WRT07
		195-06	SPIDC195-3D-S25-SP06	●	19,5	25	137	81	58,5	ST-SC0226	ST-WRT07
		200-06	SPIDC200-3D-S25-SP06	●	20	25	138	82	60	ST-SC0226	ST-WRT07
		205-06	SPIDC205-3D-S25-SP06	●	20,5	25	140	84	61,5	ST-SC0226	ST-WRT07
		210-06	SPIDC210-3D-S25-SP06	●	21	25	141	85	63	ST-SC0226	ST-WRT07
SPMG07T3	SS3D	215-06	SPIDC215-3D-S25-SP06	●	21,5	25	143	87	64,5	ST-SC0226	ST-WRT07
		220-07	SPIDC220-3D-S25-SP07	●	22	25	144	88	66	ST-SC0257	ST-WRT08
		225-07	SPIDC225-3D-S25-SP07	●	22,5	25	146	90	67,5	ST-SC0257	ST-WRT08
		230-07	SPIDC230-3D-S25-SP07	●	23	25	147	91	69	ST-SC0257	ST-WRT08
		235-07	SPIDC235-3D-S25-SP07	●	23,5	25	149	93	70,5	ST-SC0257	ST-WRT08
		240-07	SPIDC240-3D-S25-SP07	●	24	25	150	94	72	ST-SC0257	ST-WRT08
		245-07	SPIDC245-3D-S25-SP07	●	24,5	25	152	96	73,5	ST-SC0257	ST-WRT08
		250-07	SPIDC250-3D-S25-SP07	●	25	25	166	106	75	ST-SC0257	ST-WRT08
		255-07	SPIDC255-3D-S32-SP07	●	25,5	32	168	108	76,5	ST-SC0257	ST-WRT08
		260-07	SPIDC260-3D-S32-SP07	●	26	32	169	109	78	ST-SC0257	ST-WRT08

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPSSPARE
PARTS

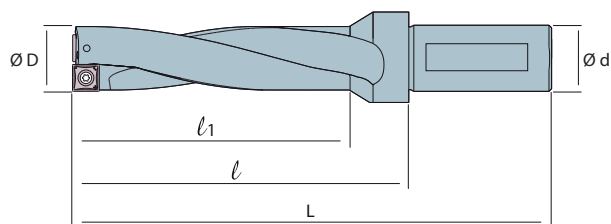
INDEX

HOLDERS /DRILLING

SS3D

3xD

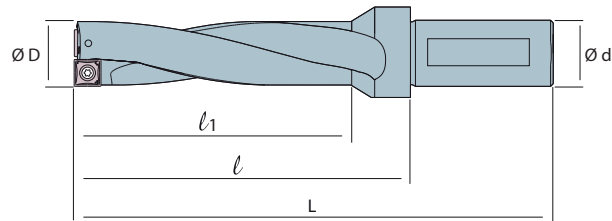
SP□□



SP□□	DESCRIPTION		DESCRIPTION NEW	STOCK	DIMENSIONS					 	
					ØD	Ød	L	l	l ₁		
SPMG07T3	SS3D	265-07	SPIDC265-3D-S32-SP07	●	26,5	32	171	111	79,5	ST-SC0257	ST-WRT08
		270-07	SPIDC270-3D-S32-SP07	●	27	32	172	112	81	ST-SC0257	ST-WRT08
		275-07	SPIDC275-3D-S32-SP07	●	27,5	32	174	114	82,5	ST-SC0257	ST-WRT08
SPMG0904	SS3D	280-09	SPIDC280-3D-S32-SP09	●	28	32	175	115	84	ST-SC3511	ST-WRT15
		285-09	SPIDC285-3D-S32-SP09	●	28,5	32	177	117	85,5	ST-SC3511	ST-WRT15
		290-09	SPIDC290-3D-S32-SP09	●	29	32	178	118	87	ST-SC3511	ST-WRT15
		295-09	SPIDC295-3D-S32-SP09	●	29,5	32	180	120	88,5	ST-SC3511	ST-WRT15
		300-09	SPIDC300-3D-S32-SP09	●	30	32	181	121	90	ST-SC3511	ST-WRT15
		305-09	SPIDC305-3D-S32-SP09	●	30,5	32	183	123	91,5	ST-SC3511	ST-WRT15
		310-09	SPIDC310-3D-S32-SP09	●	31	32	184	124	93	ST-SC3511	ST-WRT15
		315-09	SPIDC315-3D-S32-SP09	●	31,5	32	186	126	94,5	ST-SC3511	ST-WRT15
		320-09	SPIDC320-3D-S32-SP09	●	32	32	187	127	96	ST-SC3511	ST-WRT15
		325-09	SPIDC325-3D-S32-SP09	●	32,5	32	189	129	97,5	ST-SC3511	ST-WRT15
		330-09	SPIDC330-3D-S32-SP09	●	33	32	190	130	99	ST-SC3511	ST-WRT15
		335-09	SPIDC335-3D-S32-SP09	●	33,5	32	192	132	100,5	ST-SC3511	ST-WRT15
	SS3D	340-11	SPIDC340-3D-S32-SP11	●	34	32	193	133	102	ST-SC0411	ST-WRT15
SPMG1104		345-11	SPIDC345-3D-S32-SP11	●	34,5	32	195	135	103,5	ST-SC0411	ST-WRT15
		350-11	SPIDC350-3D-S32-SP11	●	35	32	196	136	105	ST-SC0411	ST-WRT15
		355-11	SPIDC355-3D-S32-SP11	●	35,5	32	198	138	106,5	ST-SC0411	ST-WRT15
		360-11	SPIDC360-3D-S32-SP11	●	36	32	199	139	108	ST-SC0411	ST-WRT15
		365-11	SPIDC365-3D-S32-SP11	●	36,5	32	201	141	109,5	ST-SC0411	ST-WRT15
		370-11	SPIDC370-3D-S32-SP11	●	37	32	202	142	111	ST-SC0411	ST-WRT15
		375-11	SPIDC375-3D-S32-SP11	●	37,5	32	204	144	112,5	ST-SC0411	ST-WRT15
		380-11	SPIDC380-3D-S32-SP11	●	38	32	205	145	114	ST-SC0411	ST-WRT15
		385-11	SPIDC385-3D-S32-SP11	●	38,5	32	207	147	115,5	ST-SC0411	ST-WRT15
		390-11	SPIDC390-3D-S32-SP11	●	39	32	208	148	117	ST-SC0411	ST-WRT15
		395-11	SPIDC395-3D-S32-SP11	●	39,5	32	210	150	118,5	ST-SC0411	ST-WRT15
		400-11	SPIDC400-3D-S32-SP11	●	40	32	211	151	120	ST-SC0411	ST-WRT15
		410-11	SPIDC410-3D-S32-SP11	●	41	32	214	154	123	ST-SC0511	ST-WRT20

SS3D

3xD

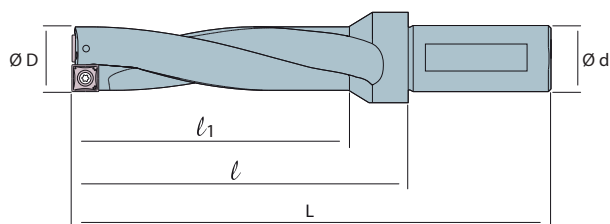
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HOLDERS /DRILLING

SS4D

4xD

SP□□

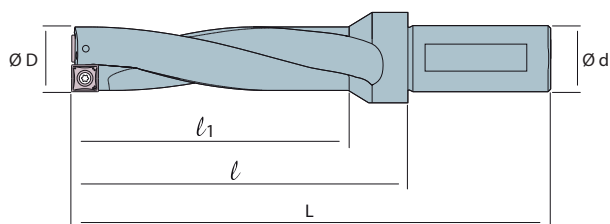


SP□□	DESCRIPTION		DESCRIPTION NEW	STOCK	DIMENSIONS					 	
					Ø D	Ø d	L	l	l ₁		
SPMG1405	SS3D	100-04	SPIDC100-4D-S16-SP04	●	10	16	111	61	44	ST-SC18-04	ST-WRT06
		105-04	SPIDC105-4D-S16-SP04	●	10,5	16	112	62	45	ST-SC18-04	ST-WRT06
		110-04	SPIDC110-4D-S16-SP04	●	11	16	113	63	46	ST-SC18-04	ST-WRT06
		115-04	SPIDC115-4D-S16-SP04	●	11,5	16	114	64	47	ST-SC18-04	ST-WRT06
		120-04	SPIDC120-4D-S20-SP04	●	12	20	115	65	48	ST-SC18-04	ST-WRT06
SPMG0502	SS3D	125-05	SPIDC125-4D-S20-SP05	●	12,5	20	117	67	50	ST-SC0206	ST-WRT06
		130-05	SPIDC130-4D-S20-SP05	●	13	20	130	74	52	ST-SC0206	ST-WRT06
		135-05	SPIDC135-4D-S20-SP05	●	13,5	20	132	76	54	ST-SC0206	ST-WRT06
		140-05	SPIDC140-4D-S25-SP05	●	14	25	134	78	56	ST-SC0206	ST-WRT06
		145-05	SPIDC145-4D-S25-SP05	●	14,5	25	136	80	58	ST-SC0206	ST-WRT06
		150-05	SPIDC150-4D-S25-SP05	●	15	25	138	82	60	ST-SC0206	ST-WRT06
		155-05	SPIDC155-4D-S25-SP05	●	15,5	25	140	84	62	ST-SC0226	ST-WRT07
SPMG0602	SS3D	160-06	SPIDC160-4D-S25-SP06	●	16	25	142	86	64	ST-SC0226	ST-WRT07
		165-06	SPIDC165-4D-S25-SP06	●	16,5	25	144	88	66	ST-SC0226	ST-WRT07
		170-06	SPIDC170-4D-S25-SP06	●	17	25	146	90	68	ST-SC0226	ST-WRT07
		175-06	SPIDC175-4D-S25-SP06	●	17,5	25	148	92	70	ST-SC0226	ST-WRT07
		180-06	SPIDC180-4D-S25-SP06	●	18	25	150	94	72	ST-SC0226	ST-WRT07
		185-06	SPIDC185-4D-S25-SP06	●	18,5	25	152	96	74	ST-SC0226	ST-WRT07
		190-06	SPIDC190-4D-S25-SP06	●	19	25	154	98	76	ST-SC0226	ST-WRT07
		195-06	SPIDC195-4D-S25-SP06	●	19,5	25	156	100	78	ST-SC0226	ST-WRT07
		200-06	SPIDC200-4D-S25-SP06	●	20	25	158	102	80	ST-SC0226	ST-WRT07
		205-06	SPIDC205-4D-S25-SP06	●	20,5	25	160	104	82	ST-SC0226	ST-WRT07
		210-06	SPIDC210-4D-S25-SP06	●	21	25	162	106	84	ST-SC0226	ST-WRT07
SPMG07T3	SS3D	215-06	SPIDC215-4D-S25-SP06	●	21,5	25	164	108	86	ST-SC0226	ST-WRT07
		220-07	SPIDC220-4D-S25-SP07	●	22	25	166	110	88	ST-SC0257	ST-WRT08
		225-07	SPIDC225-4D-S25-SP07	●	22,5	25	168	112	90	ST-SC0257	ST-WRT08
		230-07	SPIDC230-4D-S25-SP07	●	23	25	170	114	92	ST-SC0257	ST-WRT08
		235-07	SPIDC235-4D-S25-SP07	●	23,5	25	172	116	94	ST-SC0257	ST-WRT08
		240-07	SPIDC240-4D-S25-SP07	●	24	25	174	118	96	ST-SC0257	ST-WRT08
		245-07	SPIDC245-4D-S25-SP07	●	24,5	25	176	120	98	ST-SC0257	ST-WRT08
		250-07	SPIDC250-4D-S25-SP07	●	25	25	191	131	100	ST-SC0257	ST-WRT08
		255-07	SPIDC255-4D-S32-SP07	●	25,5	32	193	133	102	ST-SC0257	ST-WRT08
		260-07	SPIDC260-4D-S32-SP07	●	26	32	195	135	104	ST-SC0257	ST-WRT08

SS4D

4xD

SP□□

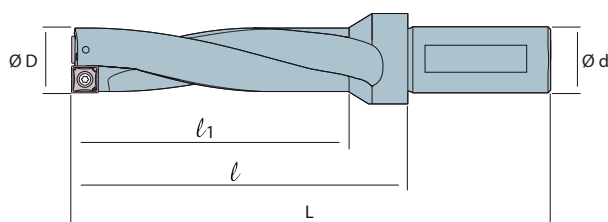


SP□□	DESCRIPTION		DESCRIPTION NEW	STOCK	DIMENSIONS					 	
					ØD	Ød	L	l	l ₁		
SPMG07T3	SS4D	265-07	SPIDC265-4D-S32-SP07	●	26,5	32	197	137	106	ST-SC0257	ST-WRT08
		270-07	SPIDC270-4D-S32-SP07	●	27	32	199	139	108	ST-SC0257	ST-WRT08
		275-07	SPIDC275-4D-S32-SP07	●	27,5	32	201	141	110	ST-SC0257	ST-WRT08
SPMG0904	SS4D	280-09	SPIDC280-4D-S32-SP09	●	28	32	203	143	112	ST-SC3511	ST-WRT15
		285-09	SPIDC285-4D-S32-SP09	●	28,5	32	205	145	114	ST-SC3511	ST-WRT15
		290-09	SPIDC290-4D-S32-SP09	●	29	32	207	147	116	ST-SC3511	ST-WRT15
		295-09	SPIDC295-4D-S32-SP09	●	29,5	32	209	149	118	ST-SC3511	ST-WRT15
		300-09	SPIDC300-4D-S32-SP09	●	30	32	211	151	120	ST-SC3511	ST-WRT15
		305-09	SPIDC305-4D-S32-SP09	●	30,5	32	213	153	122	ST-SC3511	ST-WRT15
		310-09	SPIDC310-4D-S32-SP09	●	31	32	215	155	124	ST-SC3511	ST-WRT15
		315-09	SPIDC315-4D-S32-SP09	●	31,5	32	217	157	126	ST-SC3511	ST-WRT15
		320-09	SPIDC320-4D-S32-SP09	●	32	32	219	159	128	ST-SC3511	ST-WRT15
		325-09	SPIDC325-4D-S32-SP09	●	32,5	32	221	161	130	ST-SC3511	ST-WRT15
		330-09	SPIDC330-4D-S32-SP09	●	33	32	223	163	132	ST-SC3511	ST-WRT15
		335-09	SPIDC335-4D-S32-SP09	●	33,5	32	225	165	134	ST-SC3511	ST-WRT15
SPMG1104	SS4D	340-11	SPIDC340-4D-S32-SP11	●	34	32	227	167	136	ST-SC0411	ST-WRT15
		345-11	SPIDC345-4D-S32-SP11	●	34,5	32	229	169	138	ST-SC0411	ST-WRT15
		350-11	SPIDC350-4D-S32-SP11	●	35	32	231	171	140	ST-SC0411	ST-WRT15
		355-11	SPIDC355-4D-S32-SP11	●	35,5	32	233	173	142	ST-SC0411	ST-WRT15
		360-11	SPIDC360-4D-S32-SP11	●	36	32	235	175	144	ST-SC0411	ST-WRT15
		365-11	SPIDC365-4D-S32-SP11	●	36,5	32	237	177	146	ST-SC0411	ST-WRT15
		370-11	SPIDC370-4D-S32-SP11	●	37	32	239	179	148	ST-SC0411	ST-WRT15
		375-11	SPIDC375-4D-S32-SP11	●	37,5	32	241	181	150	ST-SC0411	ST-WRT15
		380-11	SPIDC380-4D-S32-SP11	●	38	32	243	183	152	ST-SC0411	ST-WRT15
		385-11	SPIDC385-4D-S32-SP11	●	38,5	32	245	185	154	ST-SC0411	ST-WRT15
		390-11	SPIDC390-4D-S32-SP11	●	39	32	247	187	156	ST-SC0411	ST-WRT15
		395-11	SPIDC395-4D-S32-SP11	●	39,5	32	249	189	158	ST-SC0411	ST-WRT15
		400-11	SPIDC400-4D-S32-SP11	●	40	32	251	191	160	ST-SC0411	ST-WRT15
		410-11	SPIDC410-4D-S32-SP11	●	41	32	255	195	164	ST-SC0511	ST-WRT20

SS5D

5xD

SP□□



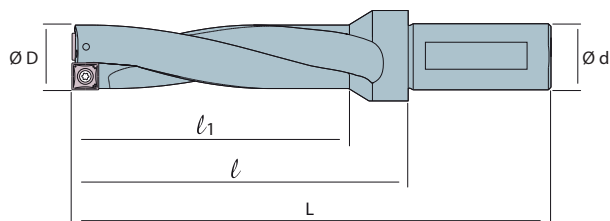
SP□□	DESCRIPTION		DESCRIPTION NEW	STOCK	DIMENSIONS					 	
					ØD	Ød	L	l	l ₁		
SPMG1405	SS5D	125-05	SPIDC125-5D-S20-SP05	●	12,5	20	139	83	60	ST-SC0206	ST-WRT06
		130-05	SPIDC130-5D-S20-SP05	●	13	20	152	96	73	ST-SC0206	ST-WRT06
		135-05	SPIDC135-5D-S20-SP05	●	13,5	20	154	98	75	ST-SC0206	ST-WRT06
		140-05	SPIDC140-5D-S25-SP05	●	14	25	156	100	77	ST-SC0206	ST-WRT06
		145-05	SPIDC145-5D-S25-SP05	●	14,5	25	157	101	78	ST-SC0206	ST-WRT06
		150-05	SPIDC150-5D-S25-SP05	●	15	25	158	102	79	ST-SC0206	ST-WRT06
		155-05	SPIDC155-5D-S25-SP05	●	15,5	25	160	104	81	ST-SC0226	ST-WRT07
SPMG0602	SS5D	160-06	SPIDC160-5D-S25-SP06	●	16	25	162	106	83	ST-SC0226	ST-WRT07
		165-06	SPIDC165-5D-S25-SP06	●	16,5	25	164	108	85	ST-SC0226	ST-WRT07
		170-06	SPIDC170-5D-S25-SP06	●	17	25	166	110	87	ST-SC0226	ST-WRT07
		175-06	SPIDC175-5D-S25-SP06	●	17,5	25	168	112	89	ST-SC0226	ST-WRT07
		180-06	SPIDC180-5D-S25-SP06	●	18	25	170	114	91	ST-SC0226	ST-WRT07
		185-06	SPIDC185-5D-S25-SP06	●	18,5	25	172	116	93	ST-SC0226	ST-WRT07
		190-06	SPIDC190-5D-S25-SP06	●	19	25	174	118	95	ST-SC0226	ST-WRT07
		195-06	SPIDC195-5D-S25-SP06	●	19,5	25	176	120	97	ST-SC0226	ST-WRT07
		200-06	SPIDC200-5D-S25-SP06	●	20	25	179	123	100	ST-SC0226	ST-WRT07
		205-06	SPIDC205-5D-S25-SP06	●	20,5	25	182	126	102,5	ST-SC0226	ST-WRT07
		210-06	SPIDC210-5D-S25-SP06	●	21	25	184	128	105	ST-SC0226	ST-WRT07
		215-06	SPIDC215-5D-S25-SP06	●	21,5	25	187	131	107,5	ST-SC0226	ST-WRT07
SPMG07T3	SS5D	220-07	SPIDC220-5D-S25-SP07	●	22	25	189	133	110	ST-SC0257	ST-WRT08
		225-07	SPIDC225-5D-S25-SP07	●	22,5	25	192	136	112,5	ST-SC0257	ST-WRT08
		230-07	SPIDC230-5D-S25-SP07	●	23	25	194	138	115	ST-SC0257	ST-WRT08
		235-07	SPIDC235-5D-S25-SP07	●	23,5	25	197	141	117,5	ST-SC0257	ST-WRT08
		240-07	SPIDC240-5D-S25-SP07	●	24	25	199	143	120	ST-SC0257	ST-WRT08
		245-07	SPIDC245-5D-S25-SP07	●	24,5	25	202	146	122,5	ST-SC0257	ST-WRT08
		250-07	SPIDC250-5D-S25-SP07	●	25	25	216	156	125	ST-SC0257	ST-WRT08
		255-07	SPIDC255-5D-S32-SP07	●	25,5	32	219	159	127,5	ST-SC0257	ST-WRT08
		260-07	SPIDC260-5D-S32-SP07	●	26	32	221	161	130	ST-SC0257	ST-WRT08
		265-07	SPIDC265-5D-S32-SP07	●	26,5	32	224	164	132,5	ST-SC0257	ST-WRT08
		270-07	SPIDC270-5D-S32-SP07	●	27	32	226	166	135	ST-SC0257	ST-WRT08
		275-07	SPIDC275-5D-S32-SP07	●	27,5	32	229	169	137,5	ST-SC0257	ST-WRT08
SPMG0904	SS5D	280-09	SPIDC280-5D-S32-SP09	●	28	32	231	171	140	ST-SC3511	ST-WRT15
		285-09	SPIDC285-5D-S32-SP09	●	28,5	32	234	174	142,5	ST-SC3511	ST-WRT15
		290-09	SPIDC290-5D-S32-SP09	●	29	32	236	176	145	ST-SC3511	ST-WRT15
		295-09	SPIDC295-5D-S32-SP09	●	29,5	32	239	179	147,5	ST-SC3511	ST-WRT15
		300-09	SPIDC300-5D-S32-SP09	●	30	32	241	181	150	ST-SC3511	ST-WRT15
		305-09	SPIDC305-5D-S32-SP09	●	30,5	32	244	184	152,5	ST-SC3511	ST-WRT15
		310-09	SPIDC310-5D-S32-SP09	●	31	32	246	186	155	ST-SC3511	ST-WRT15

HOLDERS /DRILLING

SS5D

5xD

SP□□

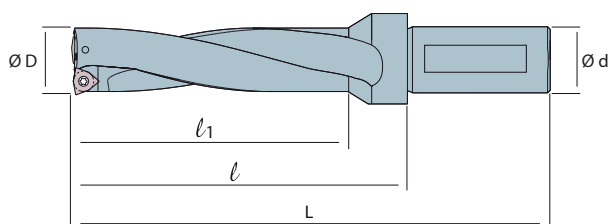


SP□□	DESCRIPTION		DESCRIPTION NEW	STOCK	DIMENSIONS					 ← 	
					ØD	Ød	L	l	l ₁		
SPMG0904	SS5D	315-09	SPIDC315-5D-S32-SP09	●	31,5	32	249	189	157,5	ST-SC3511	ST-WRT15
		320-09	SPIDC320-5D-S32-SP09	●	32	32	251	191	160	ST-SC3511	ST-WRT15
		325-09	SPIDC325-5D-S32-SP09	●	32,5	32	254	194	162,5	ST-SC3511	ST-WRT15
		330-09	SPIDC330-5D-S32-SP09	●	33	32	256	196	165	ST-SC3511	ST-WRT15
		335-09	SPIDC335-5D-S32-SP09	●	33,5	32	259	199	167,5	ST-SC3511	ST-WRT15
SPMG1104	SS5D	340-11	SPIDC340-5D-S32-SP11	●	34	32	261	201	170	ST-SC0411	ST-WRT15
		345-11	SPIDC345-5D-S32-SP11	●	34,5	32	264	204	172,5	ST-SC0411	ST-WRT15
		350-11	SPIDC350-5D-S32-SP11	●	35	32	266	206	175	ST-SC0411	ST-WRT15
		355-11	SPIDC355-5D-S32-SP11	●	35,5	32	269	209	177,5	ST-SC0411	ST-WRT15
		360-11	SPIDC360-5D-S32-SP11	●	36	32	271	211	180	ST-SC0411	ST-WRT15
		365-11	SPIDC365-5D-S32-SP11	●	36,5	32	274	214	182,5	ST-SC0411	ST-WRT15
		370-11	SPIDC370-5D-S32-SP11	●	37	32	276	216	185	ST-SC0411	ST-WRT15
		375-11	SPIDC375-5D-S32-SP11	●	37,5	32	279	219	187,5	ST-SC0411	ST-WRT15
		380-11	SPIDC380-5D-S32-SP11	●	38	32	281	221	190	ST-SC0411	ST-WRT15
		385-11	SPIDC385-5D-S32-SP11	●	38,5	32	284	224	192,5	ST-SC0411	ST-WRT15
		390-11	SPIDC390-5D-S32-SP11	●	39	32	286	226	195	ST-SC0411	ST-WRT15
		395-11	SPIDC395-5D-S32-SP11	●	39,5	32	289	229	197,5	ST-SC0411	ST-WRT15
		400-11	SPIDC400-5D-S32-SP11	●	40	32	291	231	200	ST-SC0411	ST-WRT15
		410-11	SPIDC410-5D-S32-SP11	●	41	32	296	236	205	ST-SC0511	ST-WRT20
	SS5D	420-14	SPIDC420-5D-S40-SP14	●	42	40	301	241	210	ST-SC0511	ST-WRT20
SPMG1405		430-14	SPIDC430-5D-S40-SP14	●	43	40	320	250	215	ST-SC0511	ST-WRT20
		440-14	SPIDC440-5D-S40-SP14	●	44	40	325	255	220	ST-SC0511	ST-WRT20
		450-14	SPIDC450-5D-S40-SP14	●	45	40	330	260	225	ST-SC0511	ST-WRT20
		460-14	SPIDC460-5D-S40-SP14	●	46	40	335	265	230	ST-SC0511	ST-WRT20
		470-14	SPIDC470-5D-S40-SP14	●	47	40	340	270	235	ST-SC0511	ST-WRT20
		480-14	SPIDC480-5D-S40-SP14	●	48	40	345	275	240	ST-SC0511	ST-WRT20
		490-14	SPIDC490-5D-S40-SP14	●	49	40	350	280	245	ST-SC0511	ST-WRT20
		500-14	SPIDC500-5D-S40-SP14	●	50	40	355	285	250	ST-SC0511	ST-WRT20
	SS5D	510-07	SPIDC510-5D-S40-SP07	●	51	40	360	290	255	ST-SC0257	ST-WRT08
SPMG07		520-07	SPIDC520-5D-S40-SP07	●	52	40	365	295	260	ST-SC0257	ST-WRT08
		530-07	SPIDC530-5D-S40-SP07	●	53	40	370	300	265	ST-SC0257	ST-WRT08
		540-07	SPIDC540-5D-S40-SP07	●	54	40	375	305	270	ST-SC0257	ST-WRT08
		550-07	SPIDC550-5D-S40-SP07	●	55	40	380	310	275	ST-SC0257	ST-WRT08
	SS5D	560-09	SPIDC560-5D-S40-SP09	●	56	40	385	315	280	ST-SC3511	ST-WRT15
SPMG09		570-09	SPIDC570-5D-S40-SP09	●	57	40	390	320	285	ST-SC3511	ST-WRT15
		580-09	SPIDC580-5D-S40-SP09	●	58	40	395	325	290	ST-SC3511	ST-WRT15
		590-09	SPIDC590-5D-S40-SP09	●	59	40	400	330	295	ST-SC3511	ST-WRT15
		600-09	SPIDC600-5D-S40-SP09	●	60	40	405	335	300	ST-SC3511	ST-WRT15

SW2D

2xD

WC□□

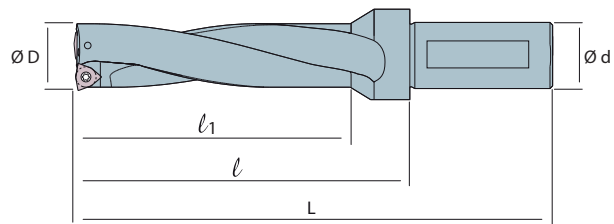


WC□□	DESCRIPTION		DESCRIPTION NEW	STOCK	DIMENSIONS					 	
					ØD	Ød	L	l	L ₁		
Wcmx0302	SW2D	140-03	WIDC140-2D-S25-WC03	●	14	25	106	50	28	ST-SC0257	ST-WRT08
		145-03	WIDC145-2D-S25-WC03	●	14,5	25	107	51	29	ST-SC0257	ST-WRT08
		150-03	WIDC150-2D-S25-WC03	●	15	25	108	52	30	ST-SC0257	ST-WRT08
		155-03	WIDC155-2D-S25-WC03	●	15,5	25	109	53	31	ST-SC0257	ST-WRT08
		160-03	WIDC160-2D-S25-WC03	●	16	25	110	54	32	ST-SC0257	ST-WRT08
		165-03	WIDC165-2D-S25-WC03	●	16,5	25	111	55	33	ST-SC0257	ST-WRT08
		170-03	WIDC170-2D-S25-WC03	●	17	25	112	56	34	ST-SC0257	ST-WRT08
		175-03	WIDC175-2D-S25-WC03	●	17,5	25	113	57	35	ST-SC0257	ST-WRT08
		180-03	WIDC180-2D-S25-WC03	●	18	25	114	58	36	ST-SC0257	ST-WRT08
		185-03	WIDC185-2D-S25-WC03	●	18,5	25	115	59	37	ST-SC0257	ST-WRT08
		190-03	WIDC190-2D-S25-WC03	●	19	25	116	60	38	ST-SC0257	ST-WRT08
Wcmx0402	SW2D	200-04	WIDC200-2D-S25-WCMX04	●	20	25	119	63	40	ST-SC0257	ST-WRT08
		205-04	WIDC205-2D-S25-WCMX04	●	20,5	25	120	64	41	ST-SC0257	ST-WRT08
		210-04	WIDC210-2D-S25-WCMX04	●	21	25	121	65	42	ST-SC0257	ST-WRT08
		215-04	WIDC215-2D-S25-WCMX04	●	21,5	25	122	66	43	ST-SC0257	ST-WRT08
		220-04	WIDC220-2D-S25-WCMX04	●	22	25	123	67	44	ST-SC0257	ST-WRT08
		225-04	WIDC225-2D-S25-WCMX04	●	22,5	25	124	68	45	ST-SC0257	ST-WRT08
		230-04	WIDC230-2D-S25-WCMX04	●	23	25	125	69	46	ST-SC0257	ST-WRT08
		235-04	WIDC235-2D-S25-WCMX04	●	23,5	25	126	70	47	ST-SC0257	ST-WRT08
Wcmx0503	SW2D	240-05	WIDC240-2D-S25-WCMX05	●	24	25	127	71	48	ST-SC0309	ST-WRT08
		245-05	WIDC245-2D-S25-WCMX05	●	24,5	25	128	72	49	ST-SC0309	ST-WRT08
		250-05	WIDC250-2D-S25-WCMX05	●	25	25	141	81	50	ST-SC0309	ST-WRT08
		255-05	WIDC255-2D-S32-WCMX05	●	25,5	32	142	82	51	ST-SC0309	ST-WRT08
		260-05	WIDC260-2D-S32-WCMX05	●	26	32	143	83	52	ST-SC0309	ST-WRT08
		265-05	WIDC265-2D-S32-WCMX05	●	26,5	32	144	84	53	ST-SC0309	ST-WRT08
		270-05	WIDC270-2D-S32-WCMX05	●	27	32	145	85	54	ST-SC0309	ST-WRT08
		275-05	WIDC275-2D-S32-WCMX05	●	27,5	32	146	86	55	ST-SC0309	ST-WRT08
		280-05	WIDC280-2D-S32-WCMX05	●	28	32	147	87	56	ST-SC0309	ST-WRT08
		285-05	WIDC285-2D-S32-WCMX05	●	28,5	32	148	88	57	ST-SC0309	ST-WRT08
		290-05	WIDC290-2D-S32-WCMX05	●	29	32	149	89	58	ST-SC0309	ST-WRT08
		295-05	WIDC295-2D-S32-WCMX05	●	29,5	32	150	90	59	ST-SC0309	ST-WRT08
		300-05	WIDC300-2D-S32-WCMX05	●	30	32	151	91	60	ST-SC0309	ST-WRT08
		305-05	WIDC305-2D-S32-WCMX05	●	30,5	32	152	92	61	ST-SC0309	ST-WRT08

TURNING

SW2D

2xD

WC [illegible]

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS DRILLS & TAPS

SPARE
PARTS

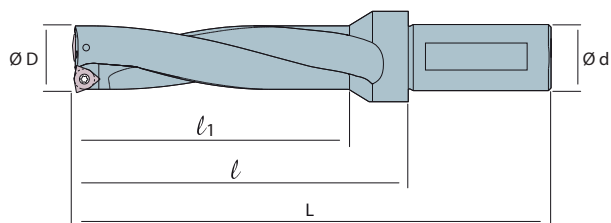
INDEX

HOLDERS /DRILLING

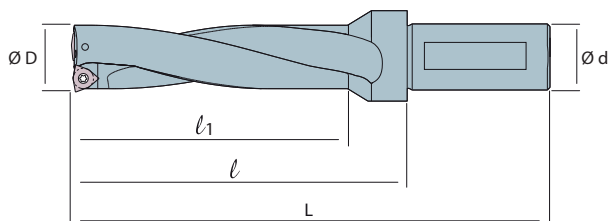
SW3D

3xD

WC



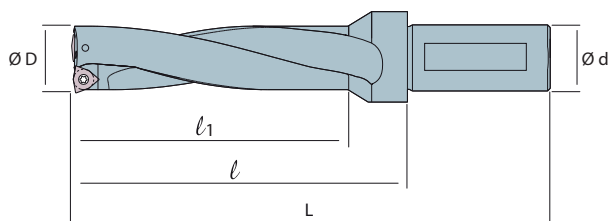
WC	DESCRIPTION		DESCRIPTION NEW	STOCK	DIMENSIONS					 	
					ØD	Ød	L	l	l ₁		
Wcmx0302	SW3D	140-03	WIDC140-3D-S25-WC03	●	14	25	120	64	42	ST-SC0257	ST-WRT08
		145-03	WIDC145-3D-S25-WC03	●	14,5	25	122	66	43,5	ST-SC0257	ST-WRT08
		150-03	WIDC150-3D-S25-WC03	●	15	25	123	67	45	ST-SC0257	ST-WRT08
		155-03	WIDC155-3D-S25-WC03	●	15,5	25	125	69	46,5	ST-SC0257	ST-WRT08
		160-03	WIDC160-3D-S25-WC03	●	16	25	126	70	48	ST-SC0257	ST-WRT08
		165-03	WIDC165-3D-S25-WC03	●	16,5	25	128	72	49,5	ST-SC0257	ST-WRT08
		170-03	WIDC170-3D-S25-WC03	●	17	25	129	73	51	ST-SC0257	ST-WRT08
		175-03	WIDC175-3D-S25-WC03	●	17,5	25	131	75	52,5	ST-SC0257	ST-WRT08
		180-03	WIDC180-3D-S25-WC03	●	18	25	132	76	54	ST-SC0257	ST-WRT08
		185-03	WIDC185-3D-S25-WC03	●	18,5	25	134	78	55,5	ST-SC0257	ST-WRT08
		190-03	WIDC190-3D-S25-WC03	●	19	25	135	79	57	ST-SC0257	ST-WRT08
		195-03	WIDC195-3D-S25-WC03	●	19,5	25	137	81	58,5	ST-SC0257	ST-WRT08
Wcmx0402	SW3D	200-04	WIDC200-3D-S25-WCMX04	●	20	25	138	82	60	ST-SC0257	ST-WRT08
		205-04	WIDC205-3D-S25-WCMX04	●	20,5	25	140	84	61,5	ST-SC0257	ST-WRT08
		210-04	WIDC210-3D-S25-WCMX04	●	21	25	141	85	63	ST-SC0257	ST-WRT08
		215-04	WIDC215-3D-S25-WCMX04	●	21,5	25	143	87	64,5	ST-SC0257	ST-WRT08
		220-04	WIDC220-3D-S25-WCMX04	●	22	25	144	88	66	ST-SC0257	ST-WRT08
		225-04	WIDC225-3D-S25-WCMX04	●	22,5	25	146	90	67,5	ST-SC0257	ST-WRT08
		230-04	WIDC230-3D-S25-WCMX04	●	23	25	147	91	69	ST-SC0257	ST-WRT08
		235-04	WIDC235-3D-S25-WCMX04	●	23,5	25	149	93	70,5	ST-SC0257	ST-WRT08
Wcmx0503	SW3D	240-05	WIDC240-3D-S25-WCMX05	●	24	25	150	94	72	ST-SC0309	ST-WRT08
		245-05	WIDC245-3D-S25-WCMX05	●	24,5	25	152	96	73,5	ST-SC0309	ST-WRT08
		250-05	WIDC250-3D-S25-WCMX05	●	25	25	166	106	75	ST-SC0309	ST-WRT08
		255-05	WIDC255-3D-S32-WCMX05	●	25,5	32	168	108	76,5	ST-SC0309	ST-WRT08
		260-05	WIDC260-3D-S32-WCMX05	●	26	32	169	109	78	ST-SC0309	ST-WRT08
		265-05	WIDC265-3D-S32-WCMX05	●	26,5	32	171	111	79,5	ST-SC0309	ST-WRT08
		270-05	WIDC270-3D-S32-WCMX05	●	27	32	172	112	81	ST-SC0309	ST-WRT08
		275-05	WIDC275-3D-S32-WCMX05	●	27,5	32	174	114	82,5	ST-SC0309	ST-WRT08
		280-05	WIDC280-3D-S32-WCMX05	●	28	32	175	115	84	ST-SC0309	ST-WRT08
		285-05	WIDC285-3D-S32-WCMX05	●	28,5	32	177	117	85,5	ST-SC0309	ST-WRT08
		290-05	WIDC290-3D-S32-WCMX05	●	29	32	178	118	87	ST-SC0309	ST-WRT08
		295-05	WIDC295-3D-S32-WCMX05	●	29,5	32	180	120	88,5	ST-SC0309	ST-WRT08
		300-05	WIDC300-3D-S32-WCMX05	●	30	32	181	121	90	ST-SC0309	ST-WRT08
		305-05	WIDC305-3D-S32-WCMX05	●	30,5	32	183	123	91,5	ST-SC0309	ST-WRT08

WC 406

SW4D

4xD

WC□□

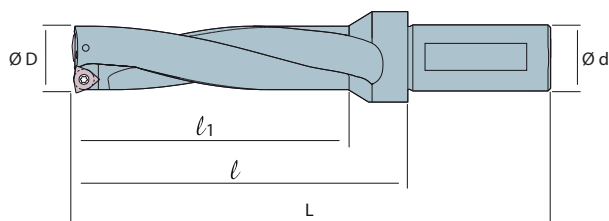


WC□□	DESCRIPTION		DESCRIPTION NEW	STOCK	DIMENSIONS						
					ØD	Ød	L	l	l ₁		
Wcmx0302	SW4D	140-03	WIDC140-4D-S25-WC03	●	14	25	134	78	56	ST-SC0257	ST-WRT08
		145-03	WIDC145-4D-S25-WC03	●	14,5	25	136	80	58	ST-SC0257	ST-WRT08
		150-03	WIDC150-4D-S25-WC03	●	15	25	138	82	60	ST-SC0257	ST-WRT08
		155-03	WIDC155-4D-S25-WC03	●	15,5	25	140	84	62	ST-SC0257	ST-WRT08
		160-03	WIDC160-4D-S25-WC03	●	16	25	142	86	64	ST-SC0257	ST-WRT08
		165-03	WIDC165-4D-S25-WC03	●	16,5	25	144	88	66	ST-SC0257	ST-WRT08
		170-03	WIDC170-4D-S25-WC03	●	17	25	146	90	68	ST-SC0257	ST-WRT08
		175-03	WIDC175-4D-S25-WC03	●	17,5	25	148	92	70	ST-SC0257	ST-WRT08
		180-03	WIDC180-4D-S25-WC03	●	18	25	150	94	72	ST-SC0257	ST-WRT08
		185-03	WIDC185-4D-S25-WC03	●	18,5	25	152	96	74	ST-SC0257	ST-WRT08
		190-03	WIDC190-4D-S25-WC03	●	19	25	154	98	76	ST-SC0257	ST-WRT08
Wcmx0402	SW4D	200-04	WIDC200-4D-S25-WCMX04	●	20	25	159	103	80	ST-SC0257	ST-WRT08
		205-04	WIDC205-4D-S25-WCMX04	●	20,5	25	161	105	82	ST-SC0257	ST-WRT08
		210-04	WIDC210-4D-S25-WCMX04	●	21	25	163	107	84	ST-SC0257	ST-WRT08
		215-04	WIDC215-4D-S25-WCMX04	●	21,5	25	165	109	86	ST-SC0257	ST-WRT08
		220-04	WIDC220-4D-S25-WCMX04	●	22	25	167	111	88	ST-SC0257	ST-WRT08
		225-04	WIDC225-4D-S25-WCMX04	●	22,5	25	169	113	90	ST-SC0257	ST-WRT08
		230-04	WIDC230-4D-S25-WCMX04	●	23	25	171	115	92	ST-SC0257	ST-WRT08
		235-04	WIDC235-4D-S25-WCMX04	●	23,5	25	173	117	94	ST-SC0257	ST-WRT08
Wcmx0503	SW4D	240-05	WIDC240-4D-S25-WCMX05	●	24	25	175	119	96	ST-SC0309	ST-WRT08
		245-05	WIDC245-4D-S25-WCMX05	●	24,5	25	177	121	98	ST-SC0309	ST-WRT08
		250-05	WIDC250-4D-S25-WCMX05	●	25	25	191	131	100	ST-SC0309	ST-WRT08
		255-05	WIDC255-4D-S32-WCMX05	●	25,5	32	193	133	102	ST-SC0309	ST-WRT08
		260-05	WIDC260-4D-S32-WCMX05	●	26	32	195	135	104	ST-SC0309	ST-WRT08
		265-05	WIDC265-4D-S32-WCMX05	●	26,5	32	197	137	106	ST-SC0309	ST-WRT08
		270-05	WIDC270-4D-S32-WCMX05	●	27	32	199	139	108	ST-SC0309	ST-WRT08
		275-05	WIDC275-4D-S32-WCMX05	●	27,5	32	201	141	110	ST-SC0309	ST-WRT08
		280-05	WIDC280-4D-S32-WCMX05	●	28	32	203	143	112	ST-SC0309	ST-WRT08
		285-05	WIDC285-4D-S32-WCMX05	●	28,5	32	205	145	114	ST-SC0309	ST-WRT08
		290-05	WIDC290-4D-S32-WCMX05	●	29	32	207	147	116	ST-SC0309	ST-WRT08
		295-05	WIDC295-4D-S32-WCMX05	●	29,5	32	209	149	118	ST-SC0309	ST-WRT08
		300-05	WIDC300-4D-S32-WCMX05	●	30	32	211	151	120	ST-SC0309	ST-WRT08
		305-05	WIDC305-4D-S32-WCMX05	●	30,5	32	213	153	122	ST-SC0309	ST-WRT08

TURNING

SW4D

4xD

WC [illegible]

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS DRILLS & TAPS

SPARE
PARTS

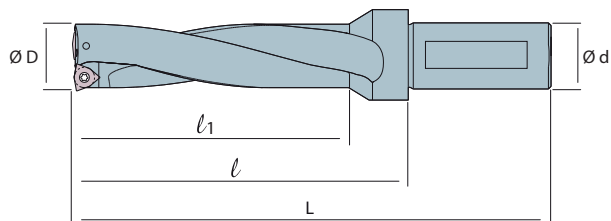
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HOLDERS /DRILLING

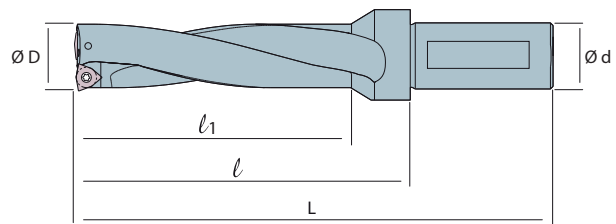
SW5D

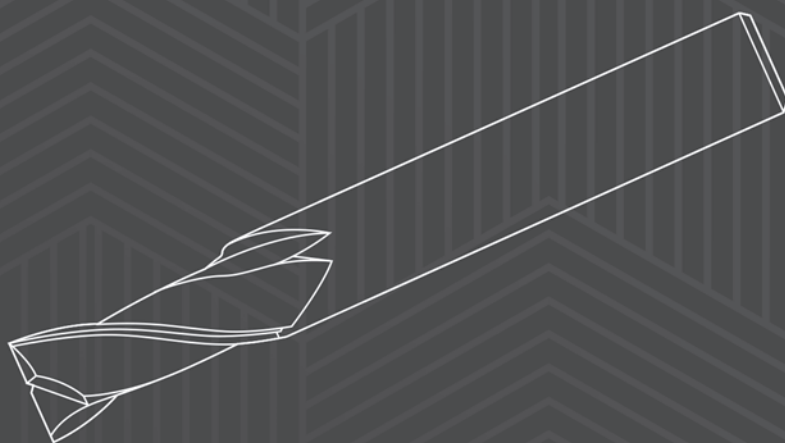
5xD

WC



WC	DESCRIPTION		DESCRIPTION	STOCK	DIMENSIONS						
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Wcmx0302	SW5D	140-03	WIDC140-5D-S25-WC03	●	14	25	156	100	77	ST-SC0257	ST-WRT08
		145-03	WIDC145-5D-S25-WC03	●	14,5	25	157	101	78	ST-SC0257	ST-WRT08
		150-03	WIDC150-5D-S25-WC03	●	15	25	158	102	79	ST-SC0257	ST-WRT08
		155-03	WIDC155-5D-S25-WC03	●	15,5	25	160	104	81	ST-SC0257	ST-WRT08
		160-03	WIDC160-5D-S25-WC03	●	16	25	162	106	83	ST-SC0257	ST-WRT08
		165-03	WIDC165-5D-S25-WC03	●	16,5	25	164	108	85	ST-SC0257	ST-WRT08
		170-03	WIDC170-5D-S25-WC03	●	17	25	166	110	87	ST-SC0257	ST-WRT08
		175-03	WIDC175-5D-S25-WC03	●	17,5	25	168	112	89	ST-SC0257	ST-WRT08
		180-03	WIDC180-5D-S25-WC03	●	18	25	170	114	91	ST-SC0257	ST-WRT08
		185-03	WIDC185-5D-S25-WC03	●	18,5	25	172	116	93	ST-SC0257	ST-WRT08
		190-03	WIDC190-5D-S25-WC03	●	19	25	174	118	95	ST-SC0257	ST-WRT08
		195-03	WIDC195-5D-S25-WC03	●	19,5	25	176	120	97	ST-SC0257	ST-WRT08
Wcmx0402	SW5D	200-04	WIDC200-5D-S25-WCMX04	●	20	25	179	123	100	ST-SC0257	ST-WRT08
		205-04	WIDC205-5D-S25-WCMX04	●	20,5	25	182	126	102,5	ST-SC0257	ST-WRT08
		210-04	WIDC210-5D-S25-WCMX04	●	21	25	184	128	105	ST-SC0257	ST-WRT08
		215-04	WIDC215-5D-S25-WCMX04	●	21,5	25	187	131	107,5	ST-SC0257	ST-WRT08
		220-04	WIDC220-5D-S25-WCMX04	●	22	25	189	133	110	ST-SC0257	ST-WRT08
		225-04	WIDC225-5D-S25-WCMX04	●	22,5	25	192	136	112,5	ST-SC0257	ST-WRT08
		230-04	WIDC230-5D-S25-WCMX04	●	23	25	194	138	115	ST-SC0257	ST-WRT08
		235-04	WIDC235-5D-S25-WCMX04	●	23,5	25	197	141	117,5	ST-SC0257	ST-WRT08
Wcmx0503	SW5D	240-05	WIDC240-5D-S25-WCMX05	●	24	25	199	143	120	ST-SC0309	ST-WRT08
		245-05	WIDC245-5D-S25-WCMX05	●	24,5	25	202	146	122,5	ST-SC0309	ST-WRT08
		250-05	WIDC250-5D-S25-WCMX05	●	25	25	216	156	125	ST-SC0309	ST-WRT08
		255-05	WIDC255-5D-S32-WCMX05	●	25,5	32	219	159	127,5	ST-SC0309	ST-WRT08
		260-05	WIDC260-5D-S32-WCMX05	●	26	32	221	161	130	ST-SC0309	ST-WRT08
		265-05	WIDC265-5D-S32-WCMX05	●	26,5	32	224	164	132,5	ST-SC0309	ST-WRT08
		270-05	WIDC270-5D-S32-WCMX05	●	27	32	226	166	135	ST-SC0309	ST-WRT08
		275-05	WIDC275-5D-S32-WCMX05	●	27,5	32	229	169	137,5	ST-SC0309	ST-WRT08
		280-05	WIDC280-5D-S32-WCMX05	●	28	32	231	171	140	ST-SC0309	ST-WRT08
		285-05	WIDC285-5D-S32-WCMX05	●	28,5	32	234	174	142,5	ST-SC0309	ST-WRT08
		290-05	WIDC290-5D-S32-WCMX05	●	29	32	236	176	145	ST-SC0309	ST-WRT08
		295-05	WIDC295-5D-S32-WCMX05	●	29,5	32	239	179	147,5	ST-SC0309	ST-WRT08
		300-05	WIDC300-5D-S32-WCMX05	●	30	32	241	181	150	ST-SC0309	ST-WRT08
		305-05	WIDC305-5D-S32-WCMX05	●	30,5	32	244	184	152,5	ST-SC0309	ST-WRT08

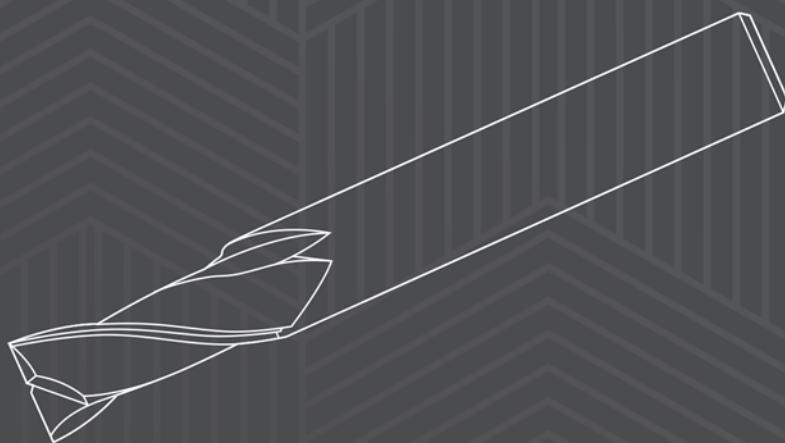
WC 412



ENDMILLS/

carbide /415

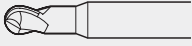
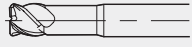


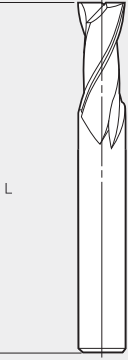
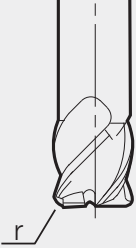


ENDMILLS/**CARBIDE**

CARBIDE /ENDMILLS

D X C 4 080 - 050 - 08 - R1

1	ENDMILL SERIES	2	HARDNESS	3	TYPE	4	FLUTE
D	Dream	G	General (HRC45)	B		2	
U	Ultra	X	Extreme (HRC55)	C		3	
		W	Wrath (HRC68)	F		4	
						6	

5	CUTTING DIA.	6	LENGTH (mm)	7	SHAFT DIA.	8	RADIUS
...		...		...		R.	

PVD ENDMILLS GRADES

MATERIAL	GRADE	Color	Operation
P/M/K	Dream General	DARK GRAY	General milling for steel up to 45HrC
			Ultra fine substrate, PVD coating
	Dream Extreme	COPPER	High cutting on hardened steel up to 55HrC
			Ultra fine substrate, PVD coating
	Dream Wraith	DARK BLUE	High cutting on hardened steel up to 68HrC
			Ultra fine substrate, PVD coating
N	Dream Aluminium	GRAY	General milling for aluminium and brass
			Ultra fine substrate

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

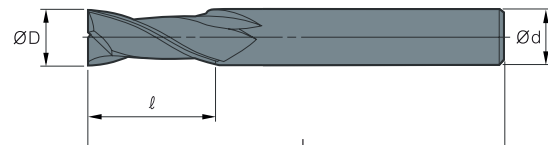
HSS
DRILLS & TAPSSPARE
PARTS

INDEX

CARBIDE /ENDMILLS

DGF

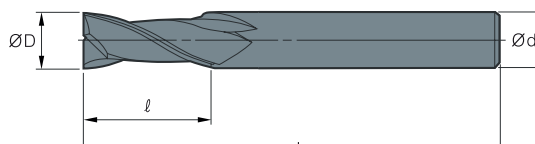
UP TO HRC45



	DESCRIPTION		STOCK	DIMENSIONS				
				ØD	Ød	l	L	r
	DGF	4010-050-04	●	1	4	3	50	-
		4010-050-06	●	1	6	3	50	-
		4015-050-03	●	1,5	3	4	50	-
		4015-050-04	●	1,5	4	4	50	-
		4015-050-06	●	1,5	6	4	50	-
		4020-050-03	●	2	3	6	50	-
		4020-050-04	●	2	4	6	50	-
		4020-050-06	●	2	6	6	50	-
		4025-050-04	●	2,5	4	8	50	-
		4025-050-06	●	2,5	6	8	50	-
		4030-050-03	●	3	3	8	50	-
		4030-050-04	●	3	4	8	50	-
		4030-050-06	●	3	6	8	50	-
		4030-075-03	●	3	3	8	75	-
		4030-100-03	●	3	3	8	100	-
		4035-050-04	●	3,5	4	11	50	-
		4035-050-06	●	3,5	6	11	50	-
		4040-050-04	●	4	4	11	50	-
		4040-050-06	●	4	6	11	50	-
		4040-075-04	●	4	4	20	75	-
		4040-100-04	●	4	4	20	100	-
		4045-050-06	●	4,5	6	11	50	-
		4050-050-05	●	5	5	13	50	-
		4050-050-06	●	5	6	13	50	-
		4050-075-05	●	5	5	20	75	-
		4050-100-05	●	5	5	20	100	-
		4055-050-06	●	5,5	6	13	50	-
		4060-050-06	●	6	6	15	50	-
		4060-060-06	●	6	6	15	60	-
		4060-075-06	●	6	6	20	75	-

DGF

UP TO HRC45



	DESCRIPTION		STOCK	DIMENSIONS				
				ØD	Ød	l	L	r
	DGF	4060-100-06	●	6	6	25	100	-
		4060-150-06	●	6	6	40	150	-
		4070-060-08	●	7	8	20	60	-
		4080-060-08	●	8	8	20	60	-
		4080-064-08	●	8	8	20	64	-
		4080-075-08	●	8	8	25	75	-
		4080-100-08	●	8	8	40	100	-
		4080-150-08	●	8	8	40	150	-
		4080-200-08	●	8	8	50	200	-
		4085-075-10	●	8.5	10	25	75	-
		4090-075-10	●	9	10	25	75	-
		4100-075-10	●	10	10	25	75	-
		4100-100-10	●	10	10	40	100	-
		4100-150-10	●	10	10	50	150	-
		4110-075-12	●	11	12	25	75	-
		4120-075-12	●	12	12	30	75	-
		4120-100-12	●	12	12	45	100	-
		4120-150-12	●	12	12	50	150	-
		4130-080-14	●	13	14	40	80	-
		4130-100-14	●	13	14	40	100	-
		4140-080-14	●	14	14	40	80	-
		4140-100-14	●	14	14	50	100	-
		4140-150-14	●	14	14	50	150	-
		4150-100-16	●	15	16	45	100	-
		4160-100-16	●	16	16	45	100	-
		4160-150-16	●	16	16	50	150	-
		4180-100-18	●	18	18	45	100	-
		4180-150-18	●	18	18	50	150	-
		4190-100-20	●	19	20	45	100	-
		4200-100-20	●	20	20	45	100	-
		4200-150-20	●	20	20	75	150	-

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

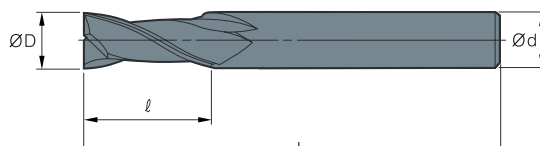
DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

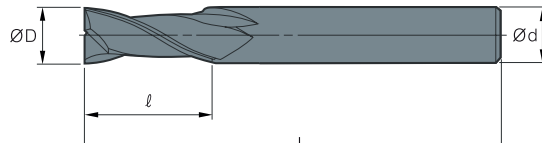
INDEX

UP TO HRC45

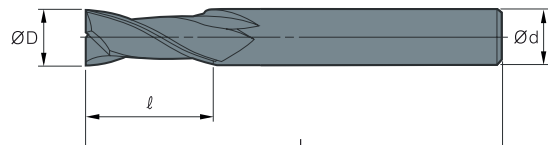
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DGR

UP TO HRC45

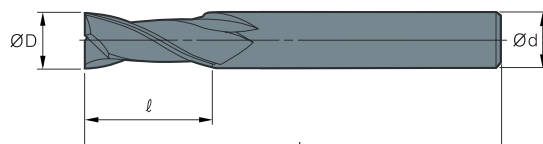
[illegible]

UP TO HRC55

[illegible]

DXF

UP TO HRC55



	DESCRIPTION		STOCK	DIMENSIONS				
				ØD	Ød	l	L	r
	DXF	4060-100-06	●	6	6	25	100	-
		4060-150-06	●	6	6	40	150	-
		4070-060-08	●	7	8	20	60	-
		4080-060-08	●	8	8	20	60	-
		4080-064-08	●	8	8	20	64	-
		4080-075-08	●	8	8	25	75	-
		4080-100-08	●	8	8	40	100	-
		4080-150-08	●	8	8	40	150	-
		4090-075-10	●	9	10	25	75	-
		4100-075-10	●	10	10	25	75	-
		4100-100-10	●	10	10	40	100	-
		4100-150-10	●	10	10	50	150	-
		4110-075-12	●	11	12	25	75	-
		4120-075-12	●	12	12	30	75	-
		4120-083-12	●	12	12	30	83	-
		4120-100-12	●	12	12	45	100	-
		4120-150-12	●	12	12	50	150	-
		4130-100-14	●	13	14	40	100	-
		4140-080-14	●	14	14	40	80	-
		4140-100-14	●	14	14	50	100	-
		4140-150-14	●	14	14	50	150	-
		4150-100-16	●	15	16	45	100	-
		4160-100-16	●	16	16	45	100	-
		4160-150-16	●	16	16	50	150	-
		4180-100-18	●	18	18	45	100	-
		4180-150-18	●	18	18	50	150	-
		4200-100-20	●	20	20	45	100	-
		4200-150-20	●	20	20	75	150	-

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

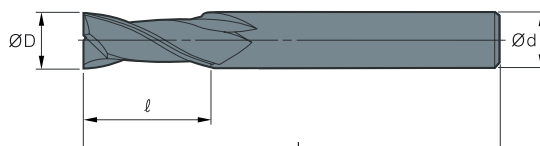
DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

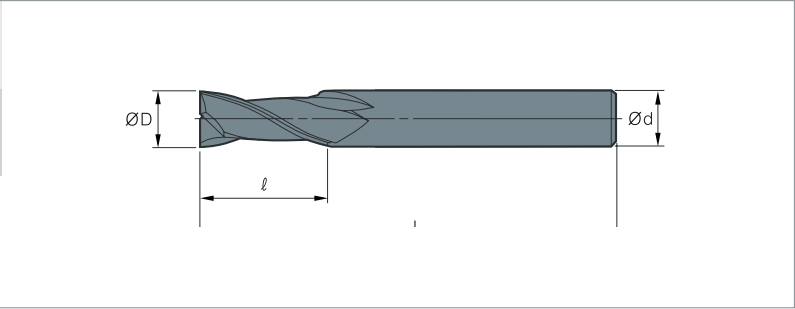
UP TO HRC68



CARBIDE /ENDMILLS

DWF

UP TO HRC68

[illegible]

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

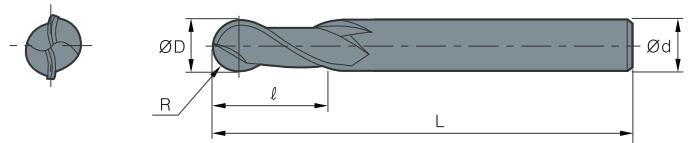
DRILLS

**HSS
DRILLS & TAPS**

SPARE PARTS

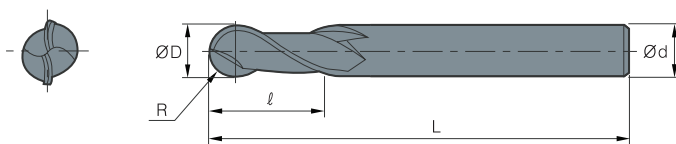
INDEX

UP TO HRC45

[illegible]

DGB

UP TO HRC45



	DESCRIPTION		STOCK	DIMENSIONS				
				ØD	Ød	l	L	r
	DGB	2060-100-06	●	6	6	25	100	-
		2060-150-06	●	6	6	40	150	-
		2070-060-08	●	7	8	20	60	-
		2080-060-08	●	8	8	20	60	-
		2080-064-08	●	8	8	20	64	-
		2080-075-08	●	8	8	25	75	-
		2080-100-08	●	8	8	40	100	-
		2080-150-08	●	8	8	40	150	-
		2090-075-10	●	9	10	25	75	-
		2100-075-10	●	10	10	25	75	-
		2100-100-10	●	10	10	40	100	-
		2100-150-10	●	10	10	50	150	-
		2120-075-12	●	12	12	30	75	-
		2120-100-12	●	12	12	45	100	-
		2120-150-12	●	12	12	50	150	-
		2130-100-14	●	13	14	50	100	-
		2140-080-14	●	14	14	40	80	-
		2140-100-14	●	14	14	50	100	-
		2140-150-14	●	14	14	50	150	-
		2150-100-16	●	15	16	45	100	-
		2160-100-16	●	16	16	45	100	-
		2160-150-16	●	16	16	50	150	-
		2170-100-18	●	17	18	45	100	-
		2180-100-18	●	18	18	45	100	-
		2180-150-18	●	18	18	50	150	-
		2200-100-20	●	20	20	45	100	-
		2200-150-20	●	20	20	75	150	-
		4060-050-06	●	6	6	15	50	-
		4080-060-08	●	8	8	16	60	-
		4080-075-08	●	8	8	16	75	-
		4080-100-08	●	8	8	16	100	-
		4100-100-10		10	10	20	100	-

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

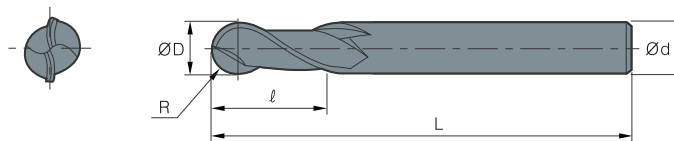
SPARE
PARTS

INDEX

CARBIDE /ENDMILLS

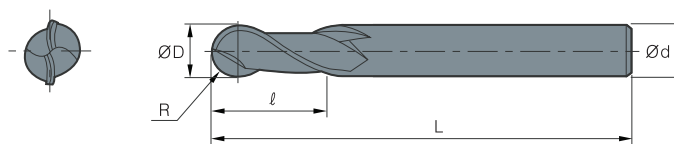
DXB

UP TO HRC55



	DESCRIPTION		STOCK	DIMENSIONS				
				ØD	Ød	l	L	r
	DXB	2010-050-04	●	1	4	3	50	-
		2010-050-06	●	1	6	3	50	-
		2015-050-03	●	1.5	3	6	50	-
		2015-050-04	●	1,5	4	4	50	-
		2015-050-06	●	1,5	6	4	50	-
		2020-050-04	●	2	4	6	50	-
		2020-050-06	●	2	6	6	50	-
		2025-050-04	●	2,5	4	8	50	-
		2025-050-06	●	2,5	6	8	50	-
		2030-050-03	●	3	3	8	50	-
		2030-050-04	●	3	4	8	50	-
		2030-050-06	●	3	6	8	50	-
		2030-075-03	●	3	3	6	75	-
		2030-100-03	●	3	3	6	100	-
		2035-050-04	●	3,5	4	11	50	-
		2035-050-06	●	3,5	6	11	50	-
		2040-050-04	●	4	4	11	50	-
		2040-050-06	●	4	6	11	50	-
		2040-075-04	●	4	4	20	75	-
		2040-100-04	●	4	4	20	100	-
		2050-050-05	●	5	5	13	50	-
		2050-050-06	●	5	6	13	50	-
		2050-075-05	●	5	5	20	75	-
		2050-075-06	●	5	6	13	75	-
		2050-100-05	●	5	5	20	100	-
		2060-050-06	●	6	6	15	50	-
		2060-075-06	●	6	6	20	75	-

INDEX

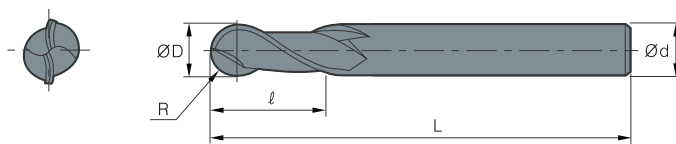


430 | **Sangeo**  cutting tools

TURNING

DWB

UP TO HRC68



GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

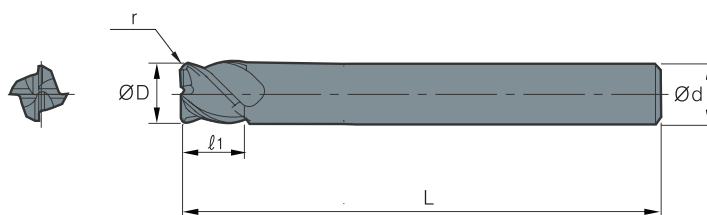
**HSS
DRILLS & TAPS**

SPARE
PARTS

INDEX

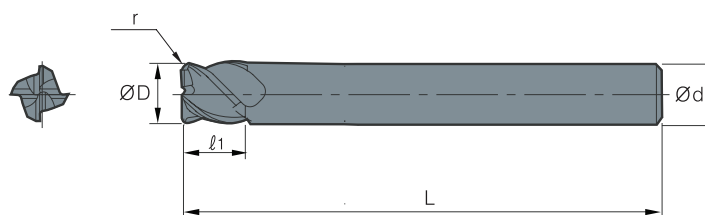
[illegible]

UP TO HRC45

[illegible]

DGC

UP TO HRC45



	DGC	DESCRIPTION	STOCK	DIMENSIONS				
				ØD	Ød	l	L	r
		4060-050-06-R1.0	●	6	6	15	50	1.0
		4060-075-06-R0.5	●	6	6	15	75	0.5
		4060-075-06-R1.0	●	6	6	15	75	1.0
		4060-100-06-R0.5	●	6	6	15	100	0.5
		4060-100-06-R1.0	●	6	6	15	100	1.0
		4060-150-06-R0.5	●	6	6	15	150	0.5
		4060-150-06-R1.0	●	6	6	15	150	1.0
		4070-060-08-R0.5	●	7	8	20	60	0.5
		4070-060-08-R1.0	●	7	8	20	60	1.0
		4080-060-08-R0.5	●	8	8	20	60	0.5
		4080-060-08-R1.0	●	8	8	20	60	1.0
		4080-075-08-R0.5	●	8	8	20	75	0.5
		4080-075-08-R1.0	●	8	8	20	75	1.0
		4080-100-08-R0.5	●	8	8	20	100	0.5
		4080-100-08-R1.0	●	8	8	20	100	1.0
		4080-150-08-R0.5	●	8	8	20	150	0.5
		4080-150-08-R1.0	●	8	8	20	150	1.0
		4090-075-10-R0.5	●	9	10	25	75	0.5
		4090-075-10-R1.0	●	9	10	25	75	1.0
		4100-075-10-R0.5	●	10	10	25	75	0.5
		4100-075-10-R1.0	●	10	10	25	75	1.0
		4100-100-10-R0.5	●	10	10	25	100	0.5
		4100-100-10-R1.0	●	10	10	25	100	1.0
		4100-150-10-R0.5	●	10	10	25	150	0.5
		4100-150-10-R1.0	●	10	10	25	150	1.0

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

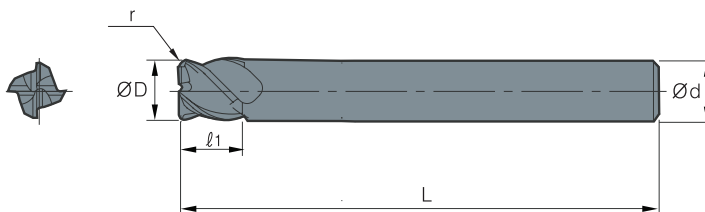
DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

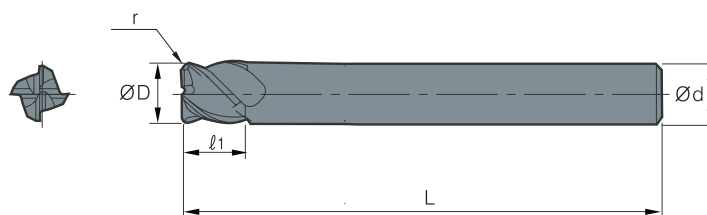
INDEX

UP TO HRC45

[illegible]

DXC

UP TO HRC55



	DESCRIPTION		STOCK	DIMENSIONS				
				ØD	Ød	l	L	r
	DXC	4020-050-04-R0.5	●	2	4	6	50	0.5
		4020-050-06-R0.5	●	2	6	6	50	0.5
	4030-050-03-R0.5	●	3	3	8	50	0.5	
	4030-050-03-R1.0	●	3	3	8	50	1.0	
	4030-050-04-R0.5	●	3	4	8	50	0.5	
	4030-050-04-R1.0	●	3	4	8	50	1.0	
	4030-050-06-R0.5	●	3	6	8	50	0.5	
	4030-050-06-R1.0	●	3	6	8	50	1.0	
	4030-075-03-R0.5	●	3	3	8	75	0.5	
	4030-075-03-R1.0	●	3	3	8	75	1.0	
	4030-075-04-R0.5	●	3	4	5	75	0.5	
	4030-100-03-R0.5	●	3	3	8	100	0.5	
	4030-100-03-R1.0	●	3	3	8	100	1.0	
	4040-050-04-R0.5	●	4	4	11	50	0.5	
	4040-050-04-R1.0	●	4	4	11	50	1.0	
	4040-050-06-R0.5	●	4	6	11	50	0.5	
	4040-050-06-R1.0	●	4	6	11	50	1.0	
	4040-075-04-R0.5	●	4	4	11	75	0.5	
	4040-075-04-R1.0	●	4	4	11	75	1.0	
	4040-100-04-R0.5	●	4	4	11	100	0.5	
	4040-100-04-R1.0	●	4	4	11	100	1.0	
	4050-050-05-R0.5	●	5	5	13	50	0.5	
	4050-050-05-R1.0	●	5	5	13	50	1.0	
	4050-050-06-R0.5	●	5	6	13	50	0.5	
	4050-050-06-R1.0	●	5	6	13	50	1.0	
	4050-075-05-R0.5	●	5	5	13	75	0.5	
	4050-075-05-R1.0	●	5	5	13	75	1.0	
	4050-100-05-R0.5	●	5	5	13	100	0.5	
	4050-100-05-R1.0	●	5	5	13	100	1.0	
	4060-050-06-R0.5	●	6	6	15	50	0.5	

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

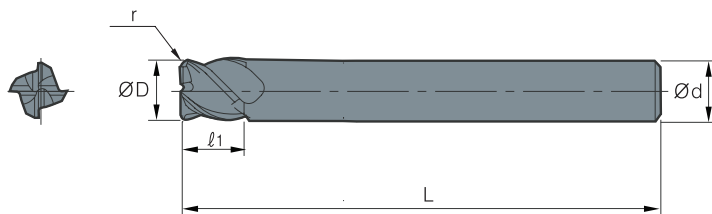
SPARE
PARTS

INDEX

CARBIDE /ENDMILLS

DXC

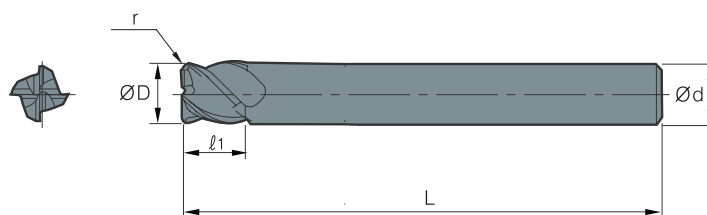
UP TO HRC55



	DESCRIPTION	STOCK	DIMENSIONS				
			ØD	Ød	l	L	r
DXC	4060-050-06-R1.0	●	6	6	15	50	1.0
	4060-075-06-R0.5	●	6	6	15	75	0.5
	4060-075-06-R1.0	●	6	6	15	75	1.0
	4060-100-06-R0.5	●	6	6	15	100	0.5
	4060-100-06-R1.0	●	6	6	15	100	1.0
	4060-150-06-R0.5	●	6	6	15	150	0.5
	4060-150-06-R1.0	●	6	6	15	150	1.0
	4070-060-08-R0.5	●	7	8	20	60	0.5
	4070-060-08-R1.0	●	7	8	20	60	1.0
	4080-060-08-R0.5	●	8	8	20	60	0.5
	4080-060-08-R1.0	●	8	8	20	60	1.0
	4080-060-08-R2.0	●	8	8	20	60	2.0
	4080-064-08-R0.5	●	8	8	20	64	0.5
	4080-064-08-R1.0	●	8	8	20	64	1.0
	4080-075-08-R0.5	●	8	8	20	75	0.5
	4080-075-08-R1.0	●	8	8	20	75	1.0
	4080-100-08-R0.5	●	8	8	20	100	0.5
	4080-100-08-R1.0	●	8	8	20	100	1.0
	4080-150-08-R0.5	●	8	8	20	150	0.5
	4080-150-08-R1.0	●	8	8	20	150	1.0
	4090-075-10-R0.5	●	9	10	25	75	0.5
	4090-075-10-R1.0	●	9	10	25	75	1.0
	4100-075-10-R0.5	●	10	10	25	75	0.5
	4100-075-10-R1.0	●	10	10	25	75	1.0
	4100-075-10-R2.0	●	10	10	20	75	2.0
	4100-100-10-R0.5	●	10	10	25	100	0.5
	4100-100-10-R1.0	●	10	10	25	100	1.0
	4100-150-10-R0.5	●	10	10	25	150	0.5
	4100-150-10-R1.0	●	10	10	25	150	1.0

DXC

UP TO HRC55



	DESCRIPTION		STOCK	DIMENSIONS				
				ØD	Ød	l	L	r
	DXC	4120-075-12-R0.5	●	12	12	30	75	0.5
		4120-075-12-R1.0	●	12	12	30	75	1.0
		4120-075-12-R2.0	●	12	12	20	75	2.0
		4120-083-12-R0.5	●	12	12	20	83	0.5
		4120-083-12-R1.0	●	12	12	20	83	1.0
		4120-100-12-R0.5	●	12	12	30	100	0.5
		4120-100-12-R1.0	●	12	12	30	100	1.0
		4120-150-12-R0.5	●	12	12	30	150	0.5
		4120-150-12-R1.0	●	12	12	30	150	1.0
		4140-080-14-R0.5	●	14	14	30	80	0.5
		4140-080-14-R1.0	●	14	14	30	80	1.0
		4140-100-14-R0.5	●	14	14	30	100	0.5
		4140-100-14-R1.0	●	14	14	30	100	1.0
		4140-150-14-R0.5	●	14	14	30	150	0.5
		4140-150-14-R1.0	●	14	14	30	150	1.0
		4160-100-16-R0.5	●	16	16	30	100	0.5
		4160-100-16-R1.0	●	16	16	30	100	1.0
		4160-150-16-R0.5	●	16	16	30	150	0.5
		4160-150-16-R1.0	●	16	16	30	150	1.0
		4180-100-18-R0.5	●	18	18	30	100	0.5
		4180-100-18-R1.0	●	18	18	30	100	1.0
		4180-150-18-R0.5	●	18	18	30	150	0.5
		4180-150-18-R1.0	●	18	18	30	150	1.0
		4200-100-20-R0.5	●	20	20	30	100	0.5
		4200-100-20-R1.0	●	20	20	30	100	1.0
		4200-150-20-R0.5	●	20	20	30	150	0.5
		4200-150-20-R1.0	●	20	20	30	150	1.0

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

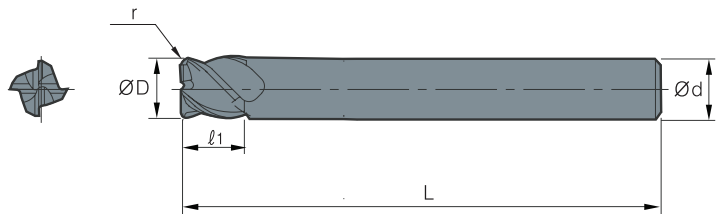
SPARE
PARTS

INDEX

CARBIDE /ENDMILLS

DWC

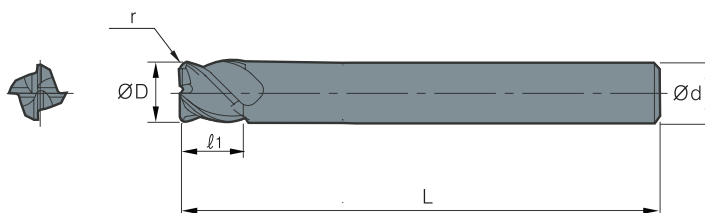
UP TO HRC68



	DESCRIPTION	STOCK	DIMENSIONS				
			ØD	Ød	l	L	r
DWC	4020-050-04-R0.5	●	2	4	6	50	0.5
	4020-050-06-R0.5	●	2	6	6	50	0.5
	4030-050-03-R0.5	●	3	3	8	50	0.5
	4030-050-03-R1.0	●	3	3	8	50	1.0
	4030-050-04-R0.5	●	3	4	8	50	0.5
	4030-050-04-R1.0	●	3	4	8	50	1.0
	4030-050-06-R0.5	●	3	6	8	50	0.5
	4030-050-06-R1.0	●	3	6	8	50	1.0
	4040-050-04-R0.5	●	4	4	11	50	0.5
	4040-050-04-R1.0	●	4	4	11	50	1.0
	4040-050-06-R0.5	●	4	6	11	50	0.5
	4040-050-06-R1.0	●	4	6	11	50	1.0
	4040-075-04-R0.5	●	4	4	11	75	0.5
	4040-075-04-R1.0	●	4	4	11	75	1.0
	4040-100-04-R0.5	●	4	4	11	100	0.5
	4040-100-04-R1.0	●	4	4	11	100	1.0
	4030-075-03-R0.5	●	3	3	20	75	0.5
	4030-075-03-R1.0	●	3	3	20	75	1.0
	4030-100-03-R0.5	●	3	3	20	100	0.5
	4030-100-03-R1.0	●	3	3	20	100	1.0
	4050-050-05-R0.5	●	5	5	13	50	0.5
	4050-050-05-R1.0	●	5	5	13	50	1.0
	4050-050-06-R0.5	●	5	6	13	50	0.5
	4050-050-06-R1.0	●	5	6	13	50	1.0
	4050-075-05-R0.5	●	5	5	13	75	0.5
	4050-075-05-R1.0	●	5	5	13	75	1.0
	4050-100-05-R0.5	●	5	5	13	100	0.5
	4050-100-05-R1.0	●	5	5	13	100	1.0
	4060-050-06-R0.5	●	6	6	15	50	0.5

DWC

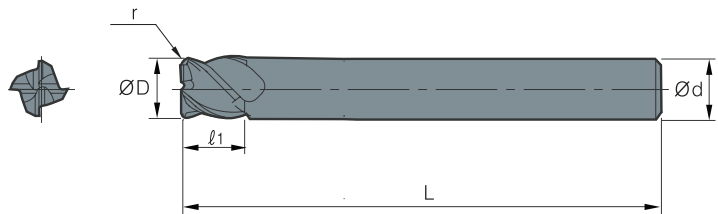
UP TO HRC68

[illegible]

CARBIDE /ENDMILLS

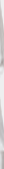
DWC

UP TO HRC68

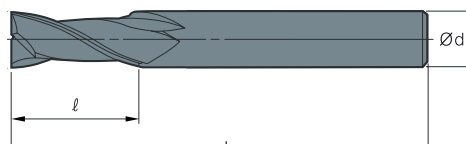


		DESCRIPTION	STOCK	DIMENSIONS				
				ØD	Ød	l	L	r
	DWC	4120-075-12-R0.5	●	12	12	30	75	0.5
		4120-075-12-R1.0	●	12	12	30	75	1.0
		4120-100-12-R0.5	●	12	12	30	100	0.5
		4120-100-12-R1.0	●	12	12	30	100	1.0
		4120-150-12-R0.5	●	12	12	30	150	0.5
		4120-150-12-R1.0	●	12	12	30	150	1.0
		4140-080-14-R0.5	●	14	14	30	80	0.5
		4140-080-14-R1.0	●	14	14	30	80	1.0
		4140-100-14-R0.5	●	14	14	30	100	0.5
		4140-100-14-R1.0	●	14	14	30	100	1.0
		4140-150-14-R0.5	●	14	14	30	150	0.5
		4140-150-14-R1.0	●	14	14	30	150	1.0
		4160-100-16-R0.5	●	16	16	30	100	0.5
		4160-100-16-R1.0	●	16	16	30	100	1.0
		4160-150-16-R0.5	●	16	16	30	150	0.5
		4160-150-16-R1.0	●	16	16	30	150	1.0
		4180-100-18-R0.5	●	18	18	30	100	0.5
		4180-100-18-R1.0	●	18	18	30	100	1.0
		4180-150-18-R0.5	●	18	18	30	150	0.5
		4180-150-18-R1.0	●	18	18	30	150	1.0
		4200-100-20-R0.5	●	20	20	30	100	0.5
		4200-100-20-R1.0	●	20	20	30	100	1.0
		4200-150-20-R0.5	●	20	20	30	150	0.5
		4200-150-20-R1.0	●	20	20	30	150	1.0

442 | **Sangeo**  cutting tools



UNCOATED CARBIDE

[illegible]



DRILLS/

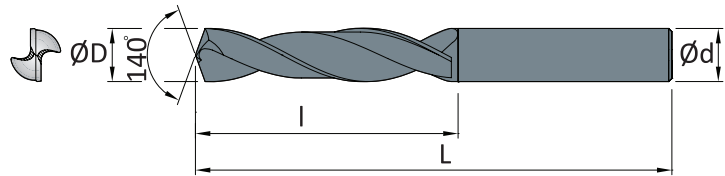
carbide /447





DRILLS/**CARBIDE**

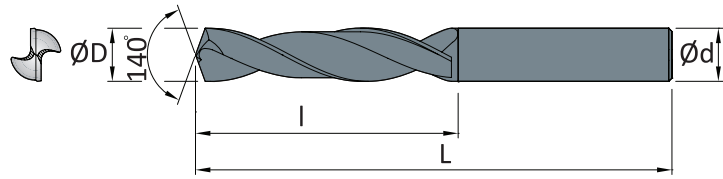
DSD 3XD



DESCRIPTION		STOCK	DIMENSIONS			
			ØD	I	L	Ød
DSD	2010-35-3	•	1.0	7	35	3
	2011-35-3	•	1.1	7	35	3
	2012-35-3	•	1.2	8	35	3
	2013-35-3	•	1.3	8	35	3
	2014-35-3	•	1.4	9	35	3
	2015-40-3	•	1.5	9	40	3
	2016-40-3	•	1.6	10	40	3
	2017-40-3	•	1.7	10	40	3
	2018-40-3	•	1.8	11	40	3
	2019-40-3	•	1.9	11	40	3
	2020-45-3	•	2.0	13	45	3
	2021-45-3	•	2.1	13	45	3
	2022-45-3	•	2.2	13	45	3
	2023-45-3	•	2.3	13	45	3
	2024-45-3	•	2.4	15	45	3
	2025-50-3	•	2.5	15	50	3
	2026-50-3	•	2.6	15	50	3
	2027-50-3	•	2.7	17	50	3
	2028-50-3	•	2.8	17	50	3
	2029-50-3	•	2.9	17	50	3
	2030-62-6	•	3.0	20	62	6
	2031-62-6	•	3.1	20	62	6
	2032-62-6	•	3.2	20	62	6
	2033-62-6	•	3.3	20	62	6
	2034-62-6	•	3.4	20	62	6
	2035-62-6	•	3.5	20	62	6

DESCRIPTION		STOCK	DIMENSIONS			
			ØD	I	L	Ød
DSD	2036-62-6	•	3.6	20	62	6
	2037-62-6	•	3.7	20	62	6
	2038-66-6	•	3.8	24	66	6
	2039-66-6	•	3.9	24	66	6
	2040-66-6	•	4.0	24	66	6
	2041-66-6	•	4.1	24	66	6
	2042-66-6	•	4.2	24	66	6
	2043-66-6	•	4.3	24	66	6
	2044-66-6	•	4.4	24	66	6
	2045-66-6	•	4.5	24	66	6
	2046-66-6	•	4.6	24	66	6
	2047-66-6	•	4.7	24	66	6
	2048-66-6	•	4.8	28	66	6
	2049-66-6	•	4.9	28	66	6
	2050-66-6	•	5.0	28	66	6
	2051-66-6	•	5.1	28	66	6
	2052-66-6	•	5.2	28	66	6
	2053-66-6	•	5.3	28	66	6
	2054-66-6	•	5.4	28	66	6
	2055-66-6	•	5.5	28	66	6
	2056-66-6	•	5.6	28	66	6
	2057-66-6	•	5.7	28	66	6
	2058-66-6	•	5.8	28	66	6
	2059-66-6	•	5.9	28	66	6
	2060-66-6	•	6.0	28	66	6
	2061-79-8	•	6.1	34	79	8

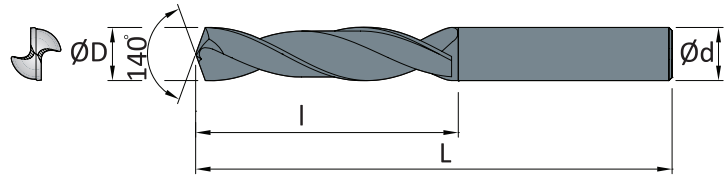
DSD 3XD



DESCRIPTION		STOCK	DIMENSIONS			
			ØD	I	L	Ød
DSD	2062-79-8	●	6.2	34	79	8
	2063-79-8	●	6.3	34	79	8
	2064-79-8	●	6.4	34	79	8
	2065-79-8	●	6.5	34	79	8
	2066-79-8	●	6.6	34	79	8
	2067-79-8	●	6.7	34	79	8
	2068-79-8	●	6.8	34	79	8
	2069-79-8	●	6.9	34	79	8
	2070-79-8	●	7.0	34	79	8
	2071-79-8	●	7.1	41	79	8
	2072-79-8	●	7.2	41	79	8
	2073-79-8	●	7.3	41	79	8
	2074-79-8	●	7.4	41	79	8
	2075-79-8	●	7.5	41	79	8
	2076-79-8	●	7.6	41	79	8
	2077-79-8	●	7.7	41	79	8
	2078-79-8	●	7.8	41	79	8
	2079-79-8	●	7.9	41	79	8
	2080-79-8	●	8.0	41	79	8
	2081-89-10	●	8.1	47	89	10
	2082-89-10	●	8.2	47	89	10
	2083-89-10	●	8.3	47	89	10
	2084-89-10	●	8.4	47	89	10
	2085-89-10	●	8.5	47	89	10
	2086-89-10	●	8.6	47	89	10
	2087-89-10	●	8.7	47	89	10

DESCRIPTION		STOCK	DIMENSIONS			
			ØD	I	L	Ød
DSD	2088-89-10	●	8.8	47	89	10
	2089-89-10	●	8.9	47	89	10
	2090-89-10	●	9.0	47	89	10
	2091-89-10	●	9.1	47	89	10
	2092-89-10	●	9.2	47	89	10
	2093-89-10	●	9.3	47	89	10
	2094-89-10	●	9.4	47	89	10
	2095-89-10	●	9.5	47	89	10
	2096-89-10	●	9.6	47	89	10
	2097-89-10	●	9.7	47	89	10
	2098-89-10	●	9.8	47	89	10
	2099-89-10	●	9.9	47	89	10
	2100-89-10	●	10.0	47	89	10
	2101-102-12	●	10.1	55	102	12
	2102-102-12	●	10.2	55	102	12
	2103-102-12	●	10.3	55	102	12
	2104-102-12	●	10.4	55	102	12
	2105-102-12	●	10.5	55	102	12
	2106-102-12	●	10.6	55	102	12
	2107-102-12	●	10.7	55	102	12
	2108-102-12	●	10.8	55	102	12
	2109-102-12	●	10.9	55	102	12
	2110-102-12	●	11.0	55	102	12
	2111-102-12	●	11.1	55	102	12
	2112-102-12	●	11.2	55	102	12
	2113-102-12	●	11.3	55	102	12

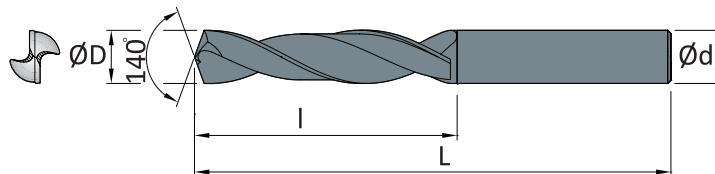
DLD 5XD



DESCRIPTION		STOCK	DIMENSIONS			
			ØD	I	L	Ød
DLD	2010-38-3	●	1.0	9	38	3
	2011-38-3	●	1.1	9	38	3
	2012-38-3	●	1.2	11	38	3
	2013-38-3	●	1.3	11	38	3
	2014-38-3	●	1.4	12	38	3
	2015-45-3	●	1.5	12	45	3
	2016-45-3	●	1.6	14	45	3
	2017-45-3	●	1.7	14	45	3
	2018-45-3	●	1.8	16	45	3
	2019-45-3	●	1.9	16	45	3
	2020-50-3	●	2.0	18	50	3
	2021-50-3	●	2.1	18	50	3
	2022-52-3	●	2.2	20	52	3
	2023-52-3	●	2.3	20	52	3
	2024-52-3	●	2.4	22	52	3
	2025-56-3	●	2.5	22	56	3
	2026-56-3	●	2.6	22	56	3
	2027-56-3	●	2.7	23	56	3
	2028-56-3	●	2.8	23	56	3
	2029-56-3	●	2.9	23	56	3
	2030-66-6	●	3.0	28	66	6
	2031-66-6	●	3.1	28	66	6
	2032-66-6	●	3.2	28	66	6
	2033-66-6	●	3.3	28	66	6
	2034-66-6	●	3.4	28	66	6
	2035-66-6	●	3.5	28	66	6

DESCRIPTION		STOCK	DIMENSIONS			
			ØD	I	L	Ød
DLD	2036-74-6	●	3.6	36	74	6
	2037-74-6	●	3.7	36	74	6
	2038-74-6	●	3.8	36	74	6
	2039-74-6	●	3.9	36	74	6
	2040-74-6	●	4.0	36	74	6
	2041-74-6	●	4.1	36	74	6
	2042-74-6	●	4.2	36	74	6
	2043-74-6	●	4.3	36	74	6
	2044-74-6	●	4.4	36	74	6
	2045-74-6	●	4.5	36	74	6
	2046-74-6	●	4.6	36	74	6
	2047-74-6	●	4.7	36	74	6
	2048-82-6	●	4.8	44	82	6
	2049-82-6	●	4.9	44	82	6
	2050-82-6	●	5.0	44	82	6
	2051-82-6	●	5.1	44	82	6
	2052-82-6	●	5.2	44	82	6
	2053-82-6	●	5.3	44	82	6
	2054-82-6	●	5.4	44	82	6
	2055-82-6	●	5.5	44	82	6
	2056-82-6	●	5.6	44	82	6
	2057-82-6	●	5.7	44	82	6
	2058-82-6	●	5.8	44	82	6
	2059-82-6	●	5.9	44	82	6
	2060-82-6	●	6.0	44	82	6
	2061-91-8	●	6.1	53	91	8

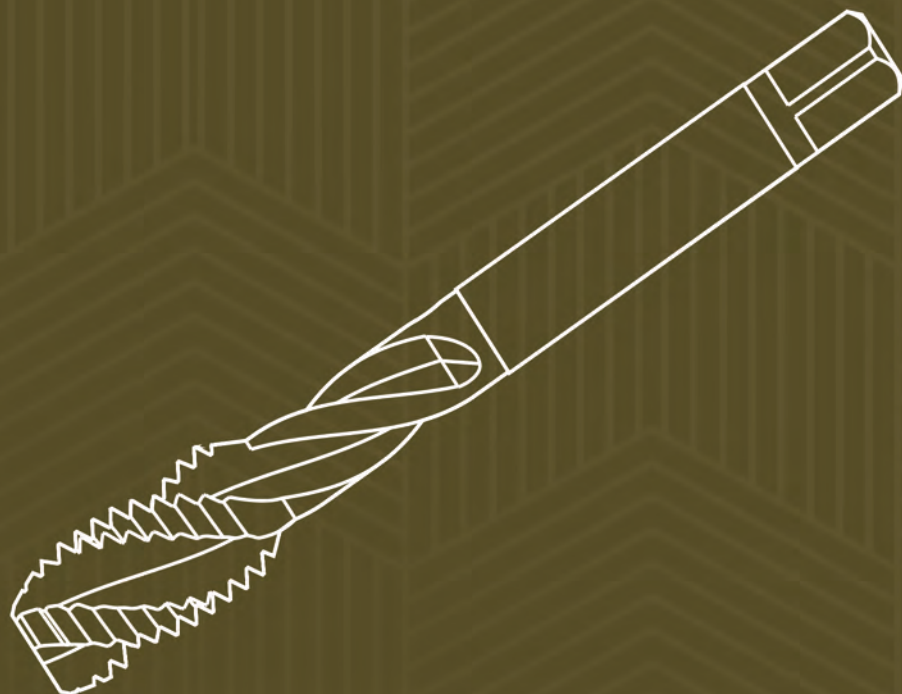
DLD 5XD



DESCRIPTION		STOCK	DIMENSIONS			
			ØD	I	L	Ød
DLD	2062-91-8	●	6.2	53	91	8
	2063-91-8	●	6.3	53	91	8
	2064-91-8	●	6.4	53	91	8
	2065-91-8	●	6.5	53	91	8
	2066-91-8	●	6.6	53	91	8
	2067-91-8	●	6.7	53	91	8
	2068-91-8	●	6.8	53	91	8
	2069-91-8	●	6.9	53	91	8
	2070-91-8	●	7.0	53	91	8
	2071-91-8	●	7.1	53	91	8
	2072-91-8	●	7.2	53	91	8
	2073-91-8	●	7.3	53	91	8
	2074-91-8	●	7.4	53	91	8
	2075-91-8	●	7.5	53	91	8
	2076-91-8	●	7.6	53	91	8
	2077-91-8	●	7.7	53	91	8
	2078-91-8	●	7.8	53	91	8
	2079-91-8	●	7.9	53	91	8
	2080-91-8	●	8.0	53	91	8
	2081-103-10	●	8.1	61	103	10
	2082-103-10	●	8.2	61	103	10
	2083-103-10	●	8.3	61	103	10
	2084-103-10	●	8.4	61	103	10
	2085-103-10	●	8.5	61	103	10
	2086-103-10	●	8.6	61	103	10
	2087-103-10	●	8.7	61	103	10

DESCRIPTION		STOCK	DIMENSIONS			
			ØD	I	L	Ød
DLD	2088-103-10	●	8.8	61	103	10
	2089-103-10	●	8.9	61	103	10
	2090-103-10	●	9.0	61	103	10
	2091-103-10	●	9.1	61	103	10
	2092-103-10	●	9.2	61	103	10
	2093-103-10	●	9.3	61	103	10
	2094-103-10	●	9.4	61	103	10
	2095-103-10	●	9.5	61	103	10
	2096-103-10	●	9.6	61	103	10
	2097-103-10	●	9.7	61	103	10
	2098-103-10	●	9.8	61	103	10
	2099-103-10	●	9.9	61	103	10
	2100-103-10	●	10.0	61	103	10
	2101-118-12	●	10.1	71	118	12
	2102-118-12	●	10.2	71	118	12
	2103-118-12	●	10.3	71	118	12
	2104-118-12	●	10.4	71	118	12
	2105-118-12	●	10.5	71	118	12
	2106-118-12	●	10.6	71	118	12
	2107-118-12	●	10.7	71	118	12
	2108-118-12	●	10.8	71	118	12
	2109-118-12	●	10.9	71	118	12
	2110-118-12	●	11.0	71	118	12
	2111-118-12	●	11.1	71	118	12
	2112-118-12	●	11.2	71	118	12
	2113-118-12	●	11.3	71	118	12





HSS /

HSS Taps /458

HSS Drills /476

HSS Others /481



HSS/TAPS

Metric /458

Metric Fine /462

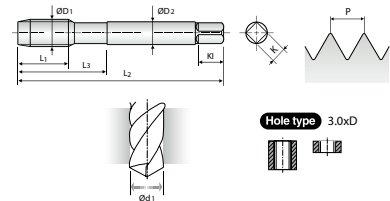
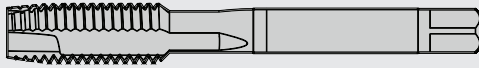
UNC /466

UNF /468

HSS- PM & HSS-E / TAPS

M

SPIRAL POINT TAPS for Stainless Steels
ISO Metric coarse threads DIN 13



WORKING MATERIAL	M	HSS-PM	HSS-E	DIN 371/376	6H	60°	B	VAP
STAINLESS STEELS		UP TO M12	OVER M12					Unit : mm

Size	Pitch	SDC No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Vap	L1	L2	L3	ØD2	K	K1	Z	Ød1
M2	0.4	IZ0428I0001	8	45	13	2.8	2.1	5	3	1.6
M2.2	0.45	IZ0428I0002	8	45	13	2.8	2.1	5	3	1.75
M2.3	0.4	IZ0428I0003	8	45	13	2.8	2.1	5	3	1.9
M2.5	0.45	IZ0428I0004	9	50	15	2.8	2.1	5	3	2.05
M2.6	0.45	IZ0428I0005	9	50	15	2.8	2.1	5	3	2.1
M3	0.5	IZ0428I0006	11	56	18	3.5	2.7	6	3	2.5
M3.5	0.6	IZ0428I0007	12	56	20	4	3	6	3	2.9
M4	0.7	IZ0428I0008	13	63	21	4.5	3.4	6	3	3.3
M4.5	0.75	IZ0428I0009	14	70	25	6	4.9	8	3	3.7
M5	0.8	IZ0428I0010	15	70	25	6	4.9	8	3	4.2
M6	1.0	IZ0428I0011	17	80	30	6	4.9	8	3	5
M7	1.0	IZ0428I0012	17	80	30	7	5.5	8	3	6
M8	1.25	IZ0428I0013	20	90	35	8	6.2	9	3	6.8
M9	1.25	IZ0428I0014	20	90	35	9	7	10	3	7.8
M10	1.5	IZ0428I0015	22	100	39	10	8	11	3	8.5
M11	1.5	IZ0428I0016	22	100	40	8	6.2	9	3	9.5
M12	1.75	IZ0428I0017	24	110	44	9	7	10	3	10.2
M14	2.0	IZ1428I0001	26	110	44	11	9	12	3	12
M16	2.0	IZ1428I0002	27	110	44	12	9	12	3	14
M18	2.5	IZ1428I0003	30	125	50	14	11	14	4	15.5
M20	2.5	IZ1428I0004	32	140	54	16	12	15	4	17.5
M22	2.5	IZ1428I0005	32	140	54	18	14.5	17	4	19.5
M24	3.0	IZ1428I0006	34	160	60	18	14.5	17	4	21
M27	3.0	IZ1428I0007	36	160	60	20	16	19	4	24
M30	3.5	IZ1428I0008	40	180	70	22	18	21	4	26.5

Unit : N/mm²

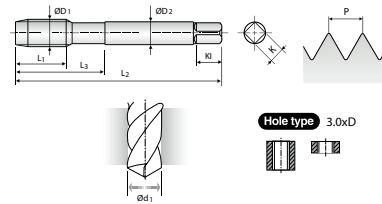
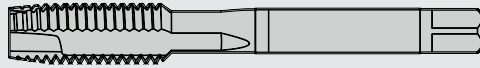
⊙ EXCELLENT ○ GOOD

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy > 1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	T Alloy < 900
	○		○			⊙	⊙							
Ti Alloy ≤ 1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al S>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
				○										

HSS-E / TAPS

M

SPIRAL POINT TAPS for Multi-Purpose
ISO Metric coarse threads DIN 13



WORKING
MATERIAL

UNI
MULTI PURPOSE

HSS-E

DIN
371/376

6H



BRIGHT

Unit : mm

Size	Pitch	SDC No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Vap	L1	L2	L3	ØD2	K	KI	Z	Ød1
M2	0.4	IZ0814I0001	8	45	13	2.8	2.1	5	3	1.6
M2.2	0.45	IZ0814I0002	8	45	13	2.8	2.1	5	3	1.75
M2.3	0.4	IZ0814I0003	8	45	13	2.8	2.1	5	3	1.9
M2.5	0.45	IZ0814I0004	9	50	15	2.8	2.1	5	3	2.05
M2.6	0.45	IZ0814I0005	9	50	15	2.8	2.1	5	3	2.1
M3	0.5	IZ0814I0006	6	56	18	3.5	2.7	6	3	2.5
M3.5	0.6	IZ0814I0007	7	56	20	4	3	6	3	2.9
M4	0.7	IZ0814I0008	7	63	21	4.5	3.4	6	3	3.3
M4.5	0.75	IZ0814I0009	8	70	25	6	4.9	8	3	3.7
M5	0.8	IZ0814I0010	8	70	25	6	4.9	8	3	4.2
M6	1.0	IZ0814I0011	10	80	30	6	4.9	8	3	5
M7	1.0	IZ0814I0012	10	80	30	7	5.5	8	3	6
M8	1.25	IZ0814I0013	13	90	35	8	6.2	9	3	6.8
M9	1.25	IZ0814I0014	13	90	35	9	7	10	3	7.8
M10	1.5	IZ0814I0015	15	100	39	10	8	11	3	8.5
M11	1.5	IZ0814I0016	17	100	40	8	6.2	9	3	9.5
M12	1.75	IZ0814I0017	18	110	44	9	7	10	3	10.2
M14	2.0	IZ1814I0001	20	110	44	11	9	12	3	12
M16	2.0	IZ1814I0002	20	110	44	12	9	12	3	14
M18	2.5	IZ1814I0003	25	125	50	14	11	14	4	15.5
M20	2.5	IZ1814I0004	25	140	54	16	12	15	4	17.5
M22	2.5	IZ1814I0005	25	140	54	18	14.5	17	4	19.5
M24	3.0	IZ1814I0006	30	160	60	18	14.5	17	4	21
M27	3.0	IZ1814I0007	30	160	60	20	16	19	4	24
M30	3.5	IZ1814I0008	35	180	70	22	18	21	4	26.5

Unit : N/mm²

☉ EXCELLENT ☉ GOOD

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy >1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	T Alloy < 900
☉	☉	☉	☉	☉		☉	☉	☉	☉	☉	☉	☉		
Ti Alloy ≤1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al S>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
				☉	☉	☉			☉	☉	☉			

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

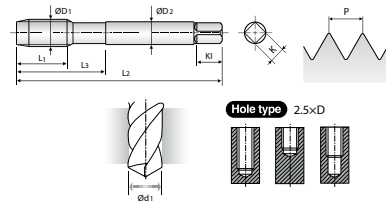
SPARE
PARTS

INDEX

HSS- PM & HSS-E / TAPS

M

SPIRAL FLUTE TAPS for Stainless Steels
ISO Metric coarse threads DIN 13



WORKING MATERIAL	M	HSS-PM	HSS-E	DIN 371/376	6H	60°	B	VAP	R45
STAINLESS STEELS		UP TO M12	OVER M12						Unit : mm

Size	Pitch	SDC No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Vap	L1	L2	L3	ØD2	K	K1	Z	Ød1
M2	0.4	IZ1744I0001	8	45	13	2.8	2.1	5	2	1.6
M2.2	0.45	IZ1744I0002	8	45	13	2.8	2.1	5	2	1.75
M2.3	0.4	IZ1744I0003	8	45	13	2.8	2.1	5	2	1.9
M2.5	0.45	IZ1744I0004	9	50	15	2.8	2.1	5	2	2.05
M2.6	0.45	IZ1744I0005	9	50	15	2.8	2.1	5	2	2.1
M3	0.5	IZ1744I0006	6	56	18	3.5	2.7	6	3	2.5
M3.5	0.6	IZ1744I0007	7	56	20	4	3	6	3	2.9
M4	0.7	IZ1744I0008	7	63	21	4.5	3.4	6	3	3.3
M4.5	0.75	IZ1744I0009	8	70	25	6	4.9	8	3	3.7
M5	0.8	IZ1744I0010	8	70	25	6	4.9	8	3	4.2
M6	1.0	IZ1744I0011	10	80	30	6	4.9	8	3	5
M7	1.0	IZ1744I0012	10	80	30	7	5.5	8	3	6
M8	1.25	IZ1744I0013	13	90	35	8	6.2	9	3	6.8
M9	1.25	IZ1744I0014	13	90	35	9	7	10	3	7.8
M10	1.5	IZ1744I0015	15	100	39	10	8	11	3	8.5
M11	1.5	IZ1744I0016	17	100	40	8	6.2	9	3	9.5
M12	1.75	IZ1744I0017	18	110	44	9	7	10	3	10.2
M14	2.0	IZ0744I0001	20	110	44	11	9	12	3	12
M16	2.0	IZ0744I0002	20	110	44	12	9	12	3	14
M18	2.5	IZ0744I0003	25	125	50	14	11	14	4	15.5
M20	2.5	IZ0744I0004	25	140	54	16	12	15	4	17.5
M22	2.5	IZ0744I0005	25	140	54	18	14.5	17	4	19.5
M24	3.0	IZ0744I0006	30	160	60	18	14.5	17	4	21
M27	3.0	IZ0744I0007	30	160	60	20	16	19	4	24
M30	3.5	IZ0744I0008	35	180	70	22	18	21	4	26.5

Unit : N/mm²

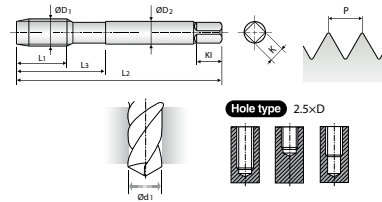
⊙ EXCELLENT ○ GOOD

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy > 1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	T Alloy < 900
	○		○			⊙	⊙							
Ti Alloy ≤ 1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al S>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
				○										

HSS-E / TAPS

M

SPIRAL FLUTE TAPS for Multi-Purpose
ISO Metric coarse threads DIN 13



WORKING
MATERIAL

UNI
MULTI PURPOSE

HSS-E

DIN
371/376

6H



BRIGHT



Unit : mm

Size	Pitch	SDC No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Vap	L1	L2	L3	ØD2	K	K1	Z	Ød1
M2	0.4	IZ0804I0001	8	45	13	2.8	2.1	5	3	1.6
M2.2	0.45	IZ0804I0002	8	45	13	2.8	2.1	5	3	1.75
M2.3	0.4	IZ0804I0003	8	45	13	2.8	2.1	5	3	1.9
M2.5	0.45	IZ0804I0004	9	50	15	2.8	2.1	5	3	2.05
M2.6	0.45	IZ0804I0005	9	50	15	2.8	2.1	5	3	2.1
M3	0.5	IZ0804I0006	6	56	18	3.5	2.7	6	3	2.5
M3.5	0.6	IZ0804I0007	7	56	20	4	3	6	3	2.9
M4	0.7	IZ0804I0008	7	63	21	4.5	3.4	6	3	3.3
M4.5	0.75	IZ0804I0009	8	70	25	6	4.9	8	3	3.7
M5	0.8	IZ0804I0010	8	70	25	6	4.9	8	3	4.2
M6	1.0	IZ0804I0011	10	80	30	6	4.9	8	3	5
M7	1.0	IZ0804I0012	10	80	30	7	5.5	8	3	6
M8	1.25	IZ0804I0013	13	90	35	8	6.2	9	3	6.8
M9	1.25	IZ0804I0014	13	90	35	9	7	10	3	7.8
M10	1.5	IZ0804I0015	15	100	39	10	8	11	3	8.5
M11	1.5	IZ0804I0016	17	100	40	8	6.2	9	3	9.5
M12	1.75	IZ0804I0017	18	110	44	9	7	10	3	10.2
M14	2.0	IZ0804I0018	20	110	44	11	9	12	3	12
M16	2.0	IZ0804I0019	20	110	44	12	9	12	3	14
M18	2.5	IZ0804I0020	25	125	50	14	11	14	4	15.5
M20	2.5	IZ0804I0021	25	140	54	16	12	15	4	17.5
M22	2.5	IZ0804I0022	25	140	54	18	14.5	17	4	19.5
M24	3.0	IZ0804I0023	30	160	60	18	14.5	17	4	21
M27	3.0	IZ0804I0024	30	160	60	20	16	19	4	24
M30	3.5	IZ0804I0025	35	180	70	22	18	21	4	26.5

Unit : N/mm²

☉ EXCELLENT ○ GOOD

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy >1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	T Alloy < 900
☉	☉	☉	☉	☉		☉	☉	☉	☉	☉	☉	☉		
Ti Alloy ≤ 1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al S>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
				☉	☉	☉			☉	☉	☉			

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

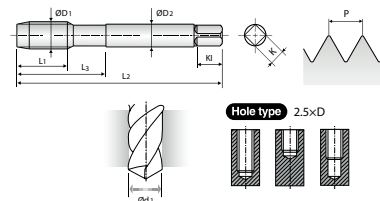
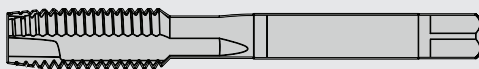
SPARE
PARTS

INDEX

HSS-E / TAPS

MF

SPIRAL POINT TAPS for Multi-Purpose
ISO Metric fine threads DIN 13



WORKING MATERIAL

UNI
MULTI PURPOSE

HSS-E

DIN 374

6H



BRIGHT

Unit : mm

Size	Pitch	SDC No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Vap	L1	L2	L3	ØD2	K	K1	Z	Ød1
M4	0.5	IZ0854I0001	10	63	21	2.8	2.1	5	3	3.5
M5	0.5	IZ0854I0002	11	70	25	3.5	2.7	6	3	4.5
M6	0.75	IZ0854I0004	13	80	30	4.5	3.4	6	3	5.2
M6	0.5	IZ0854I0003	13	80	30	4.5	3.4	6	3	5.5
M7	0.75	IZ0854I0005	14	80	30	5.5	4.3	7	3	6.2
M8	1.0	IZ0854I0007	17	90	36	6	4.9	8	3	7
M8	0.75	IZ0854I0006	14	80	36	6	4.9	8	3	7.2
M10	1.25	IZ0854I0010	22	100	40	7	5.5	8	3	8.8
M10	1.0	IZ0854I0009	18	90	40	7	5.5	8	3	9
M10	0.75	IZ0854I0008	18	90	40	7	5.5	8	3	9.2
M12	1.5	IZ0854I0013	22	100	40	9	7	10	3	10.5
M12	1.25	IZ0854I0012	22	100	40	9	7	10	3	10.8
M12	1.0	IZ0854I0011	18	100	40	9	7	10	3	11
M14	1.5	IZ0854I0016	22	100	40	11	9	12	3	12.5
M14	1.25	IZ0854I0015	22	100	40	11	9	12	3	12.8
M14	1.0	IZ0854I0014	22	100	40	11	9	12	3	13
M16	1.5	IZ0854I0018	22	100	40	12	9	12	3	14.5
M16	1.0	IZ0854I0017	18	100	40	12	9	12	3	15
M18	1.5	IZ0854I0020	25	110	44	14	11	14	4	16.5
M18	1.0	IZ0854I0019	20	110	44	14	11	14	4	17
M20	1.5	IZ0854I0022	25	125	50	16	12	15	4	18.5
M20	1.0	IZ0854I0021	20	125	50	16	12	15	4	19
M22	1.5	IZ0854I0024	25	125	50	18	14.5	17	4	20.5
M22	1.0	IZ0854I0023	20	125	50	18	14.5	17	4	21

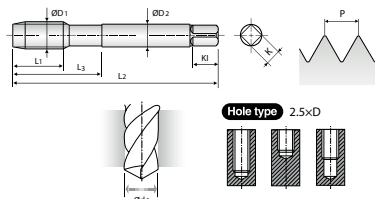
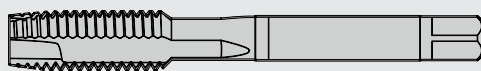
Unit : N/mm²

⊙ EXCELLENT ○ GOOD

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy > 1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	T Alloy < 900
⊙	⊙	⊙	⊙	⊙		⊙	⊙	⊙	⊙	⊙	⊙	⊙		
Ti Alloy ≤ 1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al S>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
				⊙	⊙	⊙			⊙	⊙	⊙			

MF

SPIRAL POINT TAPS for Multi-Purpose
ISO Metric fine threads DIN 13



WORKING
MATERIAL

UNI
MULTI PURPOSE

HSS-E

DIN 374

6H



BRIGHT

Unit : mm

Size	Pitch	SDC No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Vap	L1	L2	L3	ØD2	K	K1	Z	Ød1
M24	2.0	IZ0854I0026	27	140	54	18	14.5	17	4	22
M24	1.5	IZ0854I0025	27	140	54	18	14.5	17	4	22.5
M26	1.5	IZ0854I0027	28	140	54	18	14.5	17	4	24.5
M27	2.0	IZ0854I0029	28	140	54	20	16	19	4	25
M27	1.5	IZ0854I0028	28	140	54	20	16	19	4	25.5
M28	1.5	IZ0854I0030	28	140	54	20	16	19	4	26.5
M30	2.0	IZ0854I0032	30	150	57	22	18	21	4	28
M30	1.5	IZ0854I0031	30	150	57	22	18	21	4	28.5

Unit : N/mm²

◎ EXCELLENT ○ GOOD

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy > 1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	T Alloy < 900
◎	◎	◎	◎	◎		◎	◎	◎	◎	◎	◎	◎		
Ti Alloy ≤1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al S>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
				◎	◎	◎			◎	◎	◎			

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

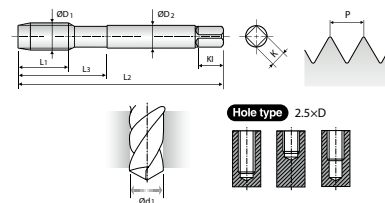
SPARE
PARTS

INDEX

HSS-E / TAPS

MF

SPIRAL FLUTE TAPS for Multi-Purpose
ISO Metric fine threads DIN 13



WORKING
MATERIAL

UNI

MULTI PURPOSE

HSS-E

DIN
371/376

6H



BRIGHT



Unit : mm

Size	Pitch	SDC No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Vap	L1	L2	L3	ØD2	K	KL	Z	Ød1
M4	0.5	IZ0844I0001	5	63	21	2.8	2.1	5	3	3.5
M5	0.5	IZ0844I0002	5	70	25	3.5	2.7	6	3	4.5
M6	0.75	IZ0844I0004	8	80	30	4.5	3.4	6	3	5.2
M6	0.5	IZ0844I0003	5	80	30	4.5	3.4	6	3	5.5
M7	0.75	IZ0844I0005	10	80	30	5.5	4.3	7	3	6.2
M8	1.0	IZ0844I0007	10	90	36	6	4.9	8	3	7
M8	0.75	IZ0844I0006	8	80	30	6	4.9	8	3	7.2
M10	1.25	IZ0844I0010	16	100	40	7	5.5	8	3	8.8
M10	1.0	IZ0844I0009	10	90	36	7	5.5	8	3	9
M10	0.75	IZ0844I0008	10	90	36	7	5.5	8	3	9.2
M12	1.5	IZ0844I0013	15	100	40	9	7	10	3	10.5
M12	1.25	IZ0844I0012	15	100	40	9	7	10	3	10.8
M12	1.0	IZ0844I0011	11	100	40	9	7	10	3	11
M14	1.5	IZ0844I0016	15	100	40	11	9	12	3	12.5
M14	1.25	IZ0844I0015	15	100	40	11	9	12	3	12.8
M14	1.0	IZ0844I0014	11	100	40	11	9	12	3	13
M16	1.5	IZ0844I0018	15	100	40	12	9	12	3	14.5
M16	1.0	IZ0844I0017	12	100	40	12	9	12	3	15
M18	1.5	IZ0844I0020	17	110	44	14	11	14	4	16.5
M18	1.0	IZ0844I0019	13	110	44	14	11	14	4	17
M20	1.5	IZ0844I0022	17	125	50	16	12	15	4	18.5
M20	1.0	IZ0844I0021	14	125	50	16	12	15	4	19
M22	1.5	IZ0844I0024	17	125	50	18	14.5	17	4	20.5
M22	1.0	IZ0844I0023	14	125	50	18	14.5	17	4	21

Unit : N/mm²

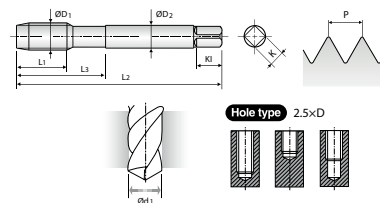
⊙ EXCELLENT ○ GOOD

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy > 1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	T Alloy < 900
⊙	⊙	⊙	⊙	⊙		⊙	⊙	⊙	⊙	⊙	⊙	⊙		
Ti Alloy ≤ 1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al S>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
				⊙	⊙	⊙			⊙	⊙	⊙			

HSS-E / TAPS

MF

SPIRAL FLUTE TAPS for Multi-Purpose
ISO Metric fine threads DIN 13



WORKING
MATERIAL

UNI
MULTI PURPOSE

HSS-E

DIN
371/376

6H



BRIGHT



Unit : mm

Size	Pitch	SDC No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Vap	L1	L2	L3	ØD2	K	K1	Z	Ød1
M24	2.0	IZ0844I0026	20	140	54	18	14.5	17	4	22
M24	1.5	IZ0844I0025	20	140	54	18	14.5	17	4	22.5
M26	1.5	IZ0844I0027	20	140	54	18	14.5	17	4	24.5
M27	2.0	IZ0844I0029	20	140	54	20	16	19	4	25
M27	1.5	IZ0844I0028	20	140	54	20	16	19	4	25.5
M28	1.5	IZ0844I0030	20	140	54	20	16	19	4	26.5
M30	2.0	IZ0844I0032	22	150	57	22	18	21	4	28
M30	1.5	IZ0844I0031	22	150	57	22	18	21	4	28.5

Unit : N/mm²

⊙ EXCELLENT ○ GOOD

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy >1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	T Alloy < 900
⊙	⊙	⊙	⊙	⊙		⊙	⊙	⊙	⊙	⊙	⊙	⊙		
Ti Alloy ≤1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al S>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
				⊙	⊙	⊙			⊙	⊙	⊙			

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

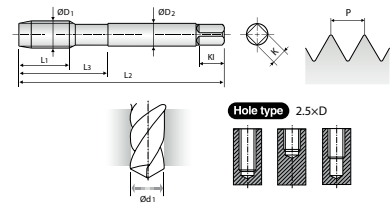
SPARE
PARTS

INDEX

HSS-E / TAPS

UNC

SPIRAL FLUTE TAPS for Multi-Purpose
Unified coarse threads



WORKING MATERIAL	UNI MULTI PURPOSE	HSS-E	DIN 371/376	2B	60°	C	BRIGHT	R40
Unit : mm								

Size	Pitch	SDC No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Vap	L1	L2	L3	ØD2	K	K1	Z	Ød1
#4	40 UNC	IZ0824I0001	6	56	18	3.5	2.7	6	3	2.3
#5	40 UNC	IZ0824I0002	7	56	18	3.5	2.7	6	3	2.6
#6	32 UNC	IZ0824I0003	7	56	20	4	3	6	3	2.85
#8	32 UNC	IZ0824I0004	8	63	21	4.5	3.4	6	3	3.5
#10	24 UNC	IZ0824I0005	10	70	25	6	4.9	8	3	3.9
#12	24 UNC	IZ0824I0006	10	80	30	6	4.9	8	3	4.5
1/4	20 UNC	IZ0824I0007	13	80	30	7	5.5	8	3	5.2
5/16	18 UNC	IZ0824I0008	14	90	35	8	6.2	9	3	6.6
3/8	16 UNC	IZ0824I0009	16	100	39	9	7	10	3	8
7/16	14 UNC	IZ0824I0010	17	100	40	8	6.2	9	3	9.4
1/2	13 UNC	IZ0824I0011	20	110	44	9	7	10	3	10.75
9/16	12 UNC	IZ0824I0012	20	110	44	11	9	12	3	12.25
5/8	11 UNC	IZ0824I0013	22	110	44	12	9	12	3	13.5
3/4	10 UNC	IZ0824I0014	25	125	50	14	11	14	4	16.5
7/8	9 UNC	IZ0824I0015	27	140	54	18	14.5	17	4	19.5
1	8 UNC	IZ0824I0016	30	160	60	20	16	19	4	22.25

Unit : N/mm²

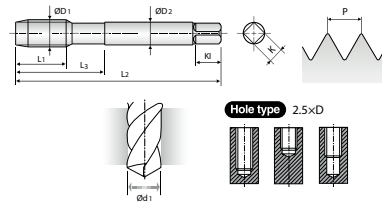
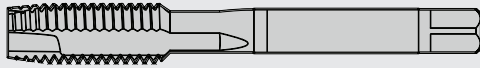
⊙ EXCELLENT ○ GOOD

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy > 1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	T Alloy < 900
⊙	⊙	⊙	⊙	⊙		⊙	⊙	⊙	⊙	⊙	⊙	⊙		
Ti Alloy ≤ 1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al S>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
				⊙	⊙	⊙			⊙	⊙	⊙			

HSS-E / TAPS

UNC

SPIRAL POINT TAPS for Multi-Purpose
Unified coarse threads



WORKING
MATERIAL

UNI
MULTI PURPOSE

HSS-E

DIN
371/376

2B



BRIGHT

Unit : mm

Size	Pitch	SDC No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Vap	L1	L2	L3	ØD2	K	KI	Z	Ød1
#4	40 UNC	IZ0834I0001	11	56	18	3.5	2.7	6	3	2.3
#5	40 UNC	IZ0834I0002	11	56	18	3.5	2.7	6	3	2.6
#6	32 UNC	IZ0834I0003	12	56	20	4	3	6	3	2.85
#8	32 UNC	IZ0834I0004	13	63	21	4.5	3.4	6	3	3.5
#10	24 UNC	IZ0834I0005	15	70	25	6	4.9	8	3	3.9
#12	24 UNC	IZ0834I0006	16	80	30	6	4.9	8	3	4.5
1/4	20 UNC	IZ0834I0007	17	80	30	7	5.5	8	3	5.2
5/16	18 UNC	IZ0834I0008	20	90	35	8	6.2	9	3	6.6
3/8	16 UNC	IZ0834I0009	22	100	39	9	7	10	3	8
7/16	14 UNC	IZ0834I0010	22	100	40	8	6.2	9	3	9.4
1/2	13 UNC	IZ0834I0011	25	110	44	9	7	10	3	10.75
9/16	12 UNC	IZ0834I0012	26	110	44	11	9	12	3	12.25
5/8	11 UNC	IZ0834I0013	27	110	44	12	9	12	3	13.5
3/4	10 UNC	IZ0834I0014	30	125	50	14	11	14	4	16.5
7/8	9 UNC	IZ0834I0015	32	140	54	18	14.5	17	4	19.5
1	8 UNC	IZ0834I0016	36	160	60	20	16	19	4	22.25

Unit : N/mm²

⊙ EXCELLENT ○ GOOD

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy > 1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	T Alloy < 900
⊙	⊙	⊙	⊙	⊙		⊙	⊙	⊙	⊙	⊙	⊙	⊙		
Ti Alloy ≤1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al S>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
				⊙	⊙	⊙			⊙	⊙	⊙			

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

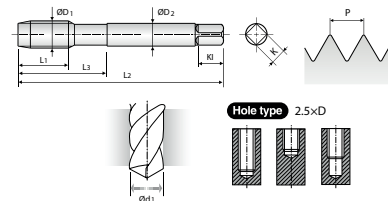
SPARE
PARTS

INDEX

HSS-E / TAPS

UNF

SPIRAL FLUTE TAPS for Multi-Purpose
Unified coarse threads



WORKING
MATERIAL

UNI
MULTI PURPOSE

HSS-E

DIN
371/374

2B

60°

C

BRIGHT

R40

Unit : mm

Size	Pitch	SDC No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Vap	L1	L2	L3	ØD2	K	KI	Z	Ød1
#4	48 UNF	IZ0864I0001	6	56	18	3.5	2.7	6	3	2.4
#5	44 UNF	IZ0864I0002	7	56	18	3.5	2.7	6	3	2.7
#6	40 UNF	IZ0864I0003	7	56	20	4	3	6	3	3
#8	36 UNF	IZ0864I0004	8	63	21	4.5	3.4	6	3	3.5
#10	32 UNF	IZ0864I0005	10	70	25	6	4.9	8	3	4.1
#12	28 UNF	IZ0864I0006	10	80	30	6	4.9	8	3	4.7
1/4	28 UNF	IZ0864I0007	10	80	30	7	5.5	8	3	5.5
5/16	24 UNF	IZ0864I0008	10	90	35	8	6.2	9	3	6.9
3/8	24 UNF	IZ0864I0009	10	100	39	9	7	10	3	8.5
7/16	20 UNF	IZ0864I0010	13	100	40	8	6.2	9	3	9.9
1/2	20 UNF	IZ0864I0011	13	100	40	9	7	10	3	11.5
9/16	18 UNF	IZ0864I0012	15	100	40	11	9	12	3	12.9
5/8	18 UNF	IZ0864I0013	15	100	40	12	9	12	3	14.5
3/4	16 UNF	IZ0864I0014	17	110	44	14	11	14	4	17.5
7/8	14 UNF	IZ0864I0015	17	125	50	18	14.5	17	4	20.5
1	12 UNF	IZ0864I0016	20	140	54	20	16	19	4	23.25

Unit : N/mm²

⊙ EXCELLENT ○ GOOD

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy > 1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	T Alloy < 900
⊙	⊙	⊙	⊙	⊙		⊙	⊙	⊙	⊙	⊙	⊙	⊙		
Ti Alloy ≤ 1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al S>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
				⊙	⊙	⊙			⊙	⊙	⊙			

HSS-E / TAPS

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

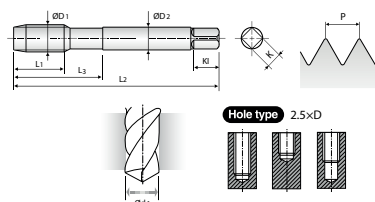
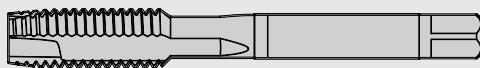
HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

UNF

SPIRAL POINT TAPS for Multi-Purpose
Unified coarse threads



WORKING
MATERIAL

UNI
MULTI PURPOSE

HSS-E

DIN
371/374

2B

60°

B

BRIGHT

Unit : mm

Size	Pitch	SDC No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Vap	L1	L2	L3	ØD2	K	K1	Z	Ød1
#4	48 UNF	IZ0874I0001	11	56	18	3.5	2.7	6	3	2.4
#5	44 UNF	IZ0874I0002	11	56	18	3.5	2.7	6	3	2.7
#6	40 UNF	IZ0874I0003	12	56	20	4	3	6	3	3
#8	36 UNF	IZ0874I0004	13	63	21	4.5	3.4	6	3	3.5
#10	32 UNF	IZ0874I0005	15	70	25	6	4.9	8	3	4.1
#12	28 UNF	IZ0874I0006	16	80	30	6	4.9	8	3	4.7
1/4	28 UNF	IZ0874I0007	17	80	30	7	5.5	8	3	5.5
5/16	24 UNF	IZ0874I0008	17	90	35	8	6.2	9	3	6.9
3/8	24 UNF	IZ0874I0009	18	100	39	9	7	10	3	8.5
7/16	20 UNF	IZ0874I0010	22	100	40	8	6.2	9	3	9.9
1/2	20 UNF	IZ0874I0011	22	100	40	9	7	10	3	11.5
9/16	18 UNF	IZ0874I0012	22	100	40	11	9	12	3	12.9
5/8	18 UNF	IZ0874I0013	22	100	40	12	9	12	3	14.5
3/4	16 UNF	IZ0874I0014	25	110	44	14	11	14	4	17.5
7/8	14 UNF	IZ0874I0015	26	125	50	18	14.5	17	4	20.5
1	12 UNF	IZ0874I0016	28	140	54	20	16	19	4	23.25

Unit : N/mm²

◎ EXCELLENT ○ GOOD

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy > 1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	T Alloy < 900
◎	◎	◎	◎	◎		◎	◎	◎	◎	◎	◎	◎		
Ti Alloy ≤ 1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al S>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
				◎	◎	◎			◎	◎	◎			

TROUBLE SHOOTING GUIDE

Specific Problem	Cause	Solution
Oversize Pitch Diameter	Incorrect Tap	1. Use proper limits of taps 2. Use longer chamfered taps
	Chip Packing	1. Use spiral point or spiral fluted taps 2. Reduce number of flutes to provide extra chip room 3. Use larger hole size 4. If tapping a hole, allow deeper hole where applicable or shorten the thread length of the parts 5. Use proper lubricant
	Galling	1. Apply proper surface treatment such as Hardslick or chrome 2. Use proper cutting lubricant 3. Reduce tapping speed 4. Use proper cutting angle in accordance with material being tapped 5. Use large hole size
	Operating Conditions	1. Apply proper tapping speed 2. Correct alignment of tap and drill hole 3. Free cutting either tap or workpiece 4. Use proper tapping speed to avoid torn or rough threads 5. Use lead screw tapper 6. Use proper tapping machine with suitable power 7. Avoid misalignment of the tap and drill hole from loose spindle or worn holder
	Tool Condition	1. Obtain proper indexing angle for the flutes at the cutting edge 2. Grind proper cutting angle and chamfer angle 3. Avoid too narrow a land width 4. Remove burrs from regrinding
Oversize Internal Diameter	Hole Size	1. Use minimum hole size 2. Avoid tapered hole 3. Use proper chamfered taps
	Galling	1. Galling solutions 1 through 4 above can be applied to this specific problem
Undersize Pitch Diameter	Incorrect Tap	1. Use oversize taps 2. Apply proper chamfer angle 3. Increase cutting angle
	Damaged Thread	1. Use proper reversing speed to avoid damaging tapped thread on the way out of the hole
	Left-over Chips	1. Increase cutting performance to avoid any left over chips in the hole 2. Remove left over chips from the hole for gage checking
Undersize Internal Diameter	Hole Size	1. Use maximum drill size
Breakage	Incorrect Tap Selection	1. Avoid chip packing in the flutes or on the bottom of the hole Use spiral pointed or spiral fluted taps or fluteless taps 2. Apply correct surface treatment such as Hardslick or bright
	Excessive Tapping Torque	1. Use larger drill size 2. Try to shorten thread length 3. Increase cutting angle 4. Apply a tap with more thread relief and reduced land width 5. Apply correct surface treatment such as Hardslick

TROUBLE SHOOTING GUIDE

Specific Problem	Cause	Solution
Breakage	Operating Conditions	1. Reduce tapping speed 2. Avoid misalignment between tap and the hole and tapered hole 3. Use floating type of tapping holder 4. Use tapping holder with torque adjustment 5. Avoid hitting bottom of the hole with tap
	Tool Condition	1. Do not grind the bottom of the flute 2. Avoid too narrow a land width 3. Remove all worn sections when regrounding the flutes 4. Regrind tool more frequently
Chipping	Incorrect Tap Selection	1. Reduce cutting angle 2. Use a different kind of high-speed steel tap 3. Reduce hardness of the tap 4. Increase chamfer length 5. Avoid chip packing in the flutes or in the bottom of the hole by using spiral fluted or spiral pointed taps
	Operating Conditions	1. Reduce tapping speed 2. Avoid misalignment between tap and hole 3. Avoid sudden return of reverse in blind hole tapping 4. Avoid galling 5. Use larger hole size
Wear	Incorrect Tap Selection	1. Apply specially designed tap for tapping heat treated material 2. Change to a type of high-speed steel tap that contains vanadium 3. Apply special surface treatment such as TiCN, TiAlN or Hardslick 4. Increase chamfer length
	Operating Conditions	1. Reduce tapping speed 2. Apply proper cutting lubricants 3. Avoid work hardened hole 4. Use larger hole size
	Tool Condition	1. Grind proper cutting angle 2. Avoid hardness reduction from grinding process
Torn or Rough Thread	Chamfer Too Short	1. Increase chamfer length
	Wrong Cutting Angle	1. Apply proper cutting angle
	Galling	1. Use thread relieved taps 2. Reduce land width 3. Apply surface treatment such as Hardslick or chrome 4. Use proper cutting lubricant 5. Reduce tapping speed 6. Use larger hole size 7. Obtain proper alignment between tap and work
	Chip Packing	1. Use spiral pointed or spiral fluted taps 2. Use larger drill size
	Tool Free Cutting	1. Reduce cutting angle 2. Reduce amount of thread relief
Chattering on Tapped Thread	Tool Free Cutting	1. Reduce cutting angle 2. Reduce amount of thread relief
	Tool Condition	1. Avoid too narrow land width 2. Do not grind the bottom of the flute

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPSSPARE
PARTS

INDEX

CUTTING SPEED TABLE

Cutting Speeds m/min. into revolutions per minute

Tool Dia.	Cutting Speed (m/min.)															
	1	2	3	4	5	6	8	10	12	15	20	25	30	40	50	60
1	318	637	955	1274	1592	1910	2548	3185	3822	4777	6366	7962	9554	12739	15924	19108
2	159	318	478	637	796	955	1274	1592	1911	2388	3185	3981	4777	6369	7962	9554
3	106	212	318	425	531	637	849	1062	1274	1592	2123	2654	3185	4246	5308	6369
4	80	159	239	318	398	478	637	796	955	1194	1592	1990	2389	3185	3981	4777
5	64	127	191	255	318	382	510	637	764	955	1274	1592	1911	2548	3185	3822
6	53	106	159	212	265	318	425	531	637	796	1062	1327	1592	2123	2653	3185
8	40	80	119	159	199	239	318	398	478	597	796	955	1194	1592	1990	2388
10	31	64	96	127	159	191	255	318	382	478	637	796	955	1274	1592	1911
12	26	53	80	106	133	159	212	265	318	398	531	663	796	1062	1327	1592
14	23	45	68	91	114	136	182	227	273	341	455	569	682	910	1137	1365
16	20	40	60	80	100	119	159	199	239	299	398	498	597	796	995	1194
18	18	35	53	71	88	106	142	177	212	265	354	442	531	708	885	1062
20	16	32	48	64	80	96	127	159	191	239	318	398	478	637	796	955
25	13	25	38	51	64	76	102	127	153	191	255	318	382	510	637	764
30	11	21	32	42	53	64	85	106	127	159	212	265	318	425	531	637
35	9	18	27	36	45	55	73	91	109	136	182	227	273	364	455	546
40	8	16	24	32	40	48	64	80	96	119	159	199	239	318	398	478

RECOMMENDED TAP DRILL SIZE (M / MF)

Metric-ISO threads coarse pitch

M	Pitch	Maximum Core Dia.	Drill Size
1	0.25	0.785	0.75
1.1	0.25	0.885	0.85
1.2	0.25	0.985	0.95
1.4	0.30	1.160	1.10
1.6	0.35	1.321	1.25
1.7	0.35	1.346	1.30
1.8	0.35	1.521	1.45
2	0.40	1.679	1.60
2.2	0.45	1.838	1.75
2.3	0.40	1.920	1.90
2.5	0.45	2.138	2.05
2.6	0.45	2.176	2.10
3	0.50	2.599	2.50
3.5	0.60	3.010	2.90
4	0.70	3.422	3.30
4.5	0.75	3.878	3.70
5	0.80	4.334	4.20
6	1.00	5.153	5.00
7	1.00	6.153	6.00
8	1.25	6.912	6.80
9	1.25	7.912	7.80
10	1.50	8.676	8.50
11	1.50	9.676	9.50
12	1.75	10.441	10.20
14	2.00	12.210	12.00
16	2.00	14.210	14.00
18	2.50	15.744	15.50
20	2.50	17.744	17.50
22	2.50	19.744	19.50
24	3.00	21.252	21.00
27	3.00	24.252	24.00
30	3.50	26.771	26.50
33	3.50	29.771	29.50
36	4.00	32.270	32.00
39	4.00	35.270	35.00
42	4.50	37.799	37.50
45	4.50	40.799	40.50
48	5.00	43.297	43.00
52	5.00	47.297	47.00
56	5.50	50.796	50.50

Metric-ISO threads fine pitch

MF	Pitch	Maximum Core Dia.	Drill Size
2.5	0.35	2.221	2.15
3	0.35	2.271	2.65
3.5	0.35	3.221	3.15
4	0.50	3.599	3.50
4.5	0.50	4.099	4.00
5	0.50	4.599	4.50
5.5	0.50	5.099	5.00
6	0.75	5.378	5.20
7	0.75	6.378	6.20
8	0.75	7.378	7.20
8	1.00	7.153	7.00
9	0.75	8.378	8.20
9	1.00	8.153	8.00
10	0.75	9.378	9.20
10	1.00	9.153	9.00
10	1.25	8.912	8.80
11	0.75	10.378	10.20
11	1.00	10.153	10.00
12	1.00	11.153	11.00
12	1.25	10.912	10.80
12	1.50	10.676	10.50
14	1.00	13.153	13.00
14	1.25	12.912	12.80
14	1.50	12.676	12.50
15	1.00	14.153	14.00
15	1.50	13.676	13.50
16	1.00	15.153	15.00
16	1.50	14.676	14.50
17	1.00	16.153	16.00
17	1.50	15.676	15.50
18	1.00	17.153	17.00
18	1.50	16.676	16.50
18	2.00	16.210	16.00
20	1.00	19.153	19.00
20	2.00	18.210	18.00
22	1.00	21.153	21.00
22	1.50	20.676	20.50
22	2.00	20.210	20.00
24	1.00	23.153	23.00
25	1.00	24.153	24.00

Metric-ISO threads fine pitch

MF	Pitch	Maximum Core Dia.	Drill Size
25	2.00	23.210	23.00
26	1.50	24.676	24.50
27	1.00	26.153	26.00
27	1.50	25.676	25.50
27	2.00	25.210	25.00
28	1.00	27.153	27.00
28	1.50	26.676	26.50
28	2.00	26.210	26.00
30	1.00	29.153	29.00
30	1.50	28.676	28.50
30	2.00	28.210	28.00
30	3.00	27.252	27.00
32	1.50	30.675	30.50
32	2.00	30.210	30.00
33	1.50	31.676	31.50
33	2.00	31.210	31.00
33	3.00	30.252	30.00
35	1.50	33.676	33.50
36	1.50	34.676	34.50
36	2.00	34.210	34.00
36	3.00	33.252	33.00
38	1.50	36.676	36.50
39	1.50	37.676	37.50
39	2.00	37.210	37.00
39	3.00	36.252	36.00
40	1.50	38.676	38.50
40	2.00	38.210	38.00
40	3.00	37.252	37.00
42	1.50	40.676	40.50
42	2.00	40.210	40.00
42	3.00	39.252	39.00
45	1.50	43.676	43.50
45	2.00	43.210	43.00
45	3.00	42.252	42.00
48	1.50	46.676	46.50
48	2.00	46.210	46.00
48	3.00	45.252	45.00
50	1.50	48.676	48.50
50	2.00	48.210	48.00
50	3.00	47.252	47.00

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPSSPARE
PARTS

INDEX

ECOMMENDED TAP DRILL SIZE (UNC / UNF)

American Unified coarse threads			
UNC	TPI	Maximum Core Dia.	Drill Size
#1	64	1.585	1.50
#2	56	1.872	1.80
#3	48	2.146	2.10
#4	40	2.385	2.30
#5	40	2.697	2.60
#6	32	2.896	2.85
#8	32	3.528	3.50
#10	24	3.950	3.90
#12	24	4.590	4.50
1/4	20	5.250	5.20
5/16	18	6.680	6.60
3/8	16	8.082	8.00
7/16	14	9.441	9.40
1/2	13	10.881	10.75
9/16	12	12.301	12.25
5/8	11	13.693	13.50
3/4	10	16.624	16.50
7/8	9	19.520	19.50
1	8	22.344	22.25
1-1/8	7	25.082	25.00
1-1/4	7	28.258	28.25
1-3/8	6	30.851	30.75
1-1/2	6	34.026	34.00
1-3/4	5	39.560	39.50
2	4.5	45.367	45.25

American Unified coarse threads			
UNC	TPI	Maximum Core Dia.	Drill Size
#0	80	1.306	1.30
#1	72	1.613	1.60
#2	64	1.913	1.90
#3	56	2.197	2.10
#4	48	2.459	2.40
#5	44	2.741	2.70
#6	40	3.012	3.00
#8	36	3.597	3.50
#10	32	4.168	4.10
#12	28	4.717	4.70
1/4	28	5.563	5.50
5/16	24	6.995	6.90
3/8	24	8.565	8.50
7/16	20	9.947	9.90
1/2	20	11.524	11.50
9/16	18	12.969	12.90
5/8	18	14.554	14.50
3/4	16	17.546	17.50
7/8	14	20.493	20.50
1	12	23.363	23.25
1-1/8	12	26.538	26.50
1-1/4	12	29.713	29.50
1-3/8	12	32.888	32.70
1-1/2	12	36.063	36.00



HSS / **DRILLS**

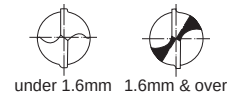
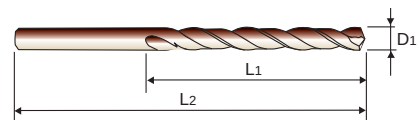
HSS-Co5 /476

HSS-E /480

HSS - Co5 / DRILLS

HSSCo5 STRAIGHT SHANK

Flute Geometry : Right hand helix
Point Angle : 135°
Surface Treatment : TiN-tip coating
Application : Drilling in Steels, Cast Steels Alloyed and Non-Alloyed, Stainless Steels, Aluminum and Titanium



HSS
-Co5

DIN
338

h8

33°

135°

Unit : mm

SDC No.	Drill Diameter	Flute Length	Overall Length	SDC No.	Drill Diameter	Flute Length	Overall Length
Vap	D1	L1	L2	Vap	D1	L1	L2
IZ0195I0010	1.0	12	34	IZ0195I0031	3.1	36	65
IZ0195I0011	1.1	14	36	IZ0195I0032	3.2	36	65
IZ0195I0012	1.2	16	38	IZ0195I0033	3.3	36	65
IZ0195I0013	1.3	16	38	IZ0195I0034	3.4	39	70
IZ0195I0014	1.4	18	40	IZ0195I0035	3.5	39	70
IZ0195I0015	1.5	18	40	IZ0195I0036	3.6	39	70
IZ0195I0016	1.6	20	43	IZ0195I0037	3.7	39	70
IZ0195I0017	1.7	20	43	IZ0195I0038	3.8	43	75
IZ0195I0018	1.8	22	46	IZ0195I0039	3.9	43	75
IZ0195I0019	1.9	22	46	IZ0195I0040	4.0	43	75
IZ0195I0020	2.0	24	49	IZ0195I0041	4.1	43	75
IZ0195I0021	2.1	24	49	IZ0195I0042	4.2	43	75
IZ0195I0022	2.2	27	53	IZ0195I0043	4.3	47	80
IZ0195I0023	2.3	27	53	IZ0195I0044	4.4	47	80
IZ0195I0024	2.4	30	57	IZ0195I0045	4.5	47	80
IZ0195I0025	2.5	30	57	IZ0195I0046	4.6	47	80
IZ0195I0026	2.6	30	57	IZ0195I0047	4.7	47	80
IZ0195I0027	2.7	33	61	IZ0195I0048	4.8	52	86
IZ0195I0028	2.8	33	61	IZ0195I0049	4.9	52	86
IZ0195I0029	2.9	33	61	IZ0195I0050	5.0	52	86
IZ0195I0030	3.0	33	61	IZ0195I0051	5.1	52	86

Unit : N/mm²

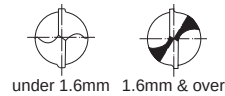
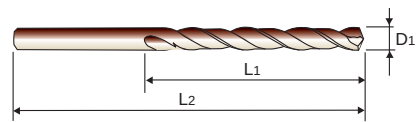
⊙ EXCELLENT ○ GOOD

P					H	M	K	N				S
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Stainless Steels	Cast Iron	Aluminum	Copper	Bronze	CFRP	Titanium	
~HB225	HB225~325	HRc20~40	HRc45~55	HRc55~								
⊙	⊙				○		○					○

HSS - Co5 / DRILLS

HSSCo5 STRAIGHT SHANK

Flute Geometry : Right hand helix
Point Angle : 135°
Surface Treatment : TiN-tip coating
Application : Drilling in Steels, Cast Steels Alloyed and Non-Alloyed, Stainless Steels, Aluminum and Titanium



HSS
-Co5

DIN
338

h8

33°

135°

Unit : mm

SDC No.	Drill Diameter	Flute Length	Overall Length
Vap	D1	L1	L2
IZ0195I0052	5.2	52	86
IZ0195I0053	5.3	52	86
IZ0195I0054	5.4	57	93
IZ0195I0055	5.5	57	93
IZ0195I0056	5.6	57	93
IZ0195I0057	5.7	57	93
IZ0195I0058	5.8	57	93
IZ0195I0059	5.9	57	93
IZ0195I0060	6.0	57	93
IZ0195I0061	6.1	63	101
IZ0195I0062	6.2	63	101
IZ0195I0063	6.3	63	101
IZ0195I0064	6.4	63	101
IZ0195I0065	6.5	63	101
IZ0195I0066	6.6	63	101
IZ0195I0067	6.7	63	101
IZ0195I0068	6.8	69	109
IZ0195I0069	6.9	69	109
IZ0195I0070	7.0	69	109
IZ0195I0071	7.1	69	109
IZ0195I0072	7.2	69	109

SDC No.	Drill Diameter	Flute Length	Overall Length
Vap	D1	L1	L2
IZ0195I0073	7.3	69	109
IZ0195I0074	7.4	69	109
IZ0195I0075	7.5	69	109
IZ0195I0076	7.6	75	117
IZ0195I0077	7.7	75	117
IZ0195I0078	7.8	75	117
IZ0195I0079	7.9	75	117
IZ0195I0080	8.0	75	117
IZ0195I0081	8.1	75	117
IZ0195I0082	8.2	75	117
IZ0195I0083	8.3	75	117
IZ0195I0084	8.4	75	117
IZ0195I0085	8.5	75	117
IZ0195I0086	8.6	81	125
IZ0195I0087	8.7	81	125
IZ0195I0088	8.8	81	125
IZ0195I0089	8.9	81	125
IZ0195I0090	9.0	81	125
IZ0195I0091	9.1	81	125
IZ0195I0092	9.2	81	125
IZ0195I0093	9.3	81	125

Unit : N/mm²

◎ EXCELLENT ○ GOOD

P					H	M	K	N				S
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Stainless Steels	Cast Iron	Aluminum	Copper	Bronze	CFRP	Titanium	
~HB225	HB225~325	HRc20~40	HRc45~55	HRc55~								
◎	◎				○		○				○	

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

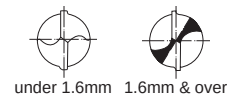
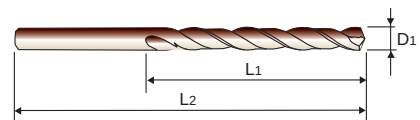
SPARE
PARTS

INDEX

HSS - Co5 / DRILLS

HSSCo5 STRAIGHT SHANK

Flute Geometry : Right hand helix
Point Angle : 135°
Surface Treatment : TiN-tip coating
Application : Drilling in Steels, Cast Steels Alloyed and Non-Alloyed, Stainless Steels, Aluminum and Titanium



HSS
-Co5

DIN
338

h8

33°

135°

Unit : mm

SDC No.	Drill Diameter	Flute Length	Overall Length
Vap	D1	L1	L2
IZ0195I0094	9.4	81	125
IZ0195I0095	9.5	81	125
IZ0195I0096	9.6	87	133
IZ0195I0097	9.7	87	133
IZ0195I0098	9.8	87	133
IZ0195I0099	9.9	87	133
IZ0195I0100	10.0	87	133
IZ0195I0101	10.1	87	133
IZ0195I0102	10.2	87	133
IZ0195I0103	10.3	87	133
IZ0195I0104	10.4	87	133
IZ0195I0105	10.5	87	133
IZ0195I0106	10.6	87	133
IZ0195I0107	10.7	94	142
IZ0195I0108	10.8	94	142
IZ0195I0109	10.9	94	142
IZ0195I0110	11.0	94	142
IZ0195I0111	11.1	94	142
IZ0195I0112	11.2	94	142
IZ0195I0113	11.3	94	142
IZ0195I0114	11.4	94	142

SDC No.	Drill Diameter	Flute Length	Overall Length
Vap	D1	L1	L2
IZ0195I0115	11.5	94	142
IZ0195I0116	11.6	94	142
IZ0195I0117	11.7	94	142
IZ0195I0118	11.8	94	142
IZ0195I0119	11.9	101	151
IZ0195I0120	12.0	101	151
IZ0195I0121	12.1	101	151
IZ0195I0122	12.2	101	151
IZ0195I0123	12.3	101	151
IZ0195I0124	12.4	101	151
IZ0195I0125	12.5	101	151
IZ0195I0126	12.6	101	151
IZ0195I0127	12.7	101	151
IZ0195I0128	12.8	101	151
IZ0195I0129	12.9	101	151
IZ0195I0130	13.0	101	151

Unit : N/mm²

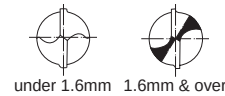
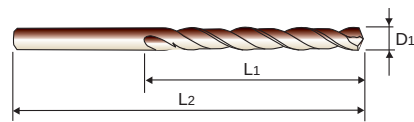
⊙ EXCELLENT ○ GOOD

P				H	M	K	N				S
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Stainless Steels	Cast Iron	Aluminum	Copper	Bronze	CFRP	Titanium
~HB225	HB225~325	HRc20~40	HRc45~55	HRc55~							
⊙	⊙				○		○				○

HSS - Co5 / DRILLS

HSSCo5 STRAIGHT SHANK

Flute Geometry : Right hand helix
Point Angle : 135°
Surface Treatment : TiN-tip coating
Application : Drilling in Steels, Cast Steels Alloyed and Non-Alloyed, Stainless Steels, Aluminum and Titanium



HSS
-Co5

DIN
338

h8

33°

135°



Unit : mm

SDC No.	Drill Diameter	Flute Length	Overall Length
Vap	D1	L1	L2
IZ0195I0094	9.4	81	125
IZ0195I0095	9.5	81	125
IZ0195I0096	9.6	87	133
IZ0195I0097	9.7	87	133
IZ0195I0098	9.8	87	133
IZ0195I0099	9.9	87	133
IZ0195I0100	10.0	87	133
IZ0195I0101	10.1	87	133
IZ0195I0102	10.2	87	133
IZ0195I0103	10.3	87	133
IZ0195I0104	10.4	87	133
IZ0195I0105	10.5	87	133
IZ0195I0106	10.6	87	133
IZ0195I0107	10.7	94	142
IZ0195I0108	10.8	94	142
IZ0195I0109	10.9	94	142
IZ0195I0110	11.0	94	142
IZ0195I0111	11.1	94	142
IZ0195I0112	11.2	94	142
IZ0195I0113	11.3	94	142
IZ0195I0114	11.4	94	142

SDC No.	Drill Diameter	Flute Length	Overall Length
Vap	D1	L1	L2
IZ0195I0115	11.5	94	142
IZ0195I0116	11.6	94	142
IZ0195I0117	11.7	94	142
IZ0195I0118	11.8	94	142
IZ0195I0119	11.9	101	151
IZ0195I0120	12.0	101	151
IZ0195I0121	12.1	101	151
IZ0195I0122	12.2	101	151
IZ0195I0123	12.3	101	151
IZ0195I0124	12.4	101	151
IZ0195I0125	12.5	101	151
IZ0195I0126	12.6	101	151
IZ0195I0127	12.7	101	151
IZ0195I0128	12.8	101	151
IZ0195I0129	12.9	101	151
IZ0195I0130	13.0	101	151

Unit : N/mm²

⊙ EXCELLENT ○ GOOD

P					H	M	K	N				S
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Stainless Steels	Cast Iron	Aluminum	Copper	Bronze	CFRP	Titanium	
~HB225	HB225~325	HRc20~40	HRc45~55	HRc55~								
⊙	⊙				○		○				○	

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

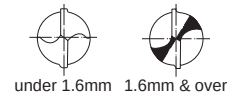
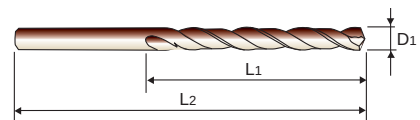
SPARE
PARTS

INDEX

HSS - E / DRILLS

HSS-E STRAIGHT SHANK

Flute Geometry : Right hand helix
Point Angle : 135°
Surface Treatment : Coloring (Gold color)
Drilling stainless steels and difficult - to - cut materials such as titanium and inconel.



HSS-E

DIN
338



h8



33°



135°



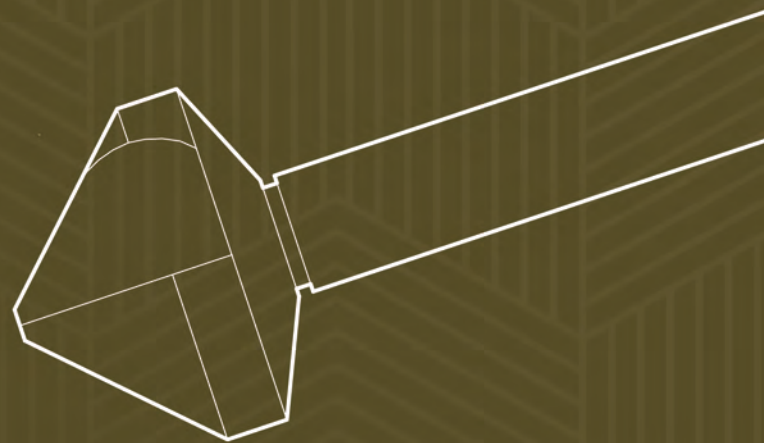
Unit : mm

SDC No.	Drill Diameter	Flute Length	Overall Length	SDC No.	Drill Diameter	Flute Length	Overall Length
Vap	D1	L1	L2	Vap	D1	L1	L2
IZ0105I0001	9.7	87	133	IZ0105I0014	14.0	108	160
IZ0105I0002	9.75	87	133	IZ0105I0015	14.5	114	169
IZ0105I0003	9.8	87	133	IZ0105I0016	15.0	114	169
IZ0105I0004	9.9	87	133	IZ0105I0017	15.5	120	178
IZ0105I0005	10.0	87	133	IZ0105I0018	16.0	120	178
IZ0105I0006	10.2	87	133	IZ0105I0019	16.5	125	184
IZ0105I0007	10.5	87	133	IZ0105I0020	17.0	125	184
IZ0105I0008	11.0	94	142	IZ0105I0021	17.5	130	191
IZ0105I0009	11.5	94	142	IZ0105I0022	18.0	130	191
IZ0105I0010	12.0	101	151	IZ0105I0023	18.5	135	198
IZ0105I0011	12.5	101	151	IZ0105I0024	19.0	135	198
IZ0105I0012	13.0	101	151	IZ0105I0025	19.5	140	205
IZ0105I0013	13.5	108	160	IZ0105I0026	20.0	140	205

⊙ EXCELLENT ○ GOOD

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	☉	☉	☉	◯		☉	◯	◯		◯		☉	◯	◯	◯	◯	◯		◯	

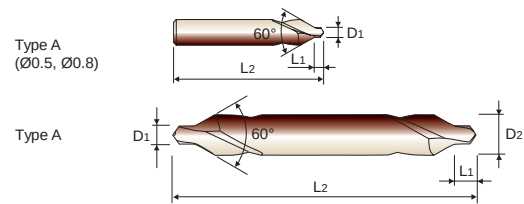
ISO	N										S							H				
Material Description	Aluminum wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HRc											15	30	25	38	34			55	60	42	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550	
Recommended	○	○	○						○							○						



HSS / **OTHERS**

Centerdrill /482
Countersink /483

HSS CENTER DRILLS



HSS

DIN
333



k12



120°



h8



Unit : mm

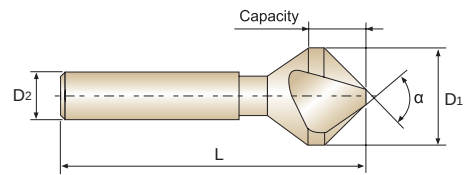
SDC No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Vap	D1	D2	L1	L2
IZ1303I0001	1.0	3.15	1.3	31.5
IZ1303I0002	1.25	3.15	1.6	31.5
IZ1303I0003	1.6	4	2	35.5
IZ1303I0004	2.0	5	2.5	40
IZ1303I0005	2.5	6.3	3.1	45
IZ1303I0006	3.15	8	3.9	50
IZ1303I0007	4.0	10	5	56
IZ1303I0008	5.0	12.5	6.3	63
IZ1303I0009	6.3	16	8	71

⊙ EXCELLENT ○ GOOD

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	☉	☉	☉	◯		☉	◯	◯		◯		☉	◯	◯	◯	◯	◯		◯	

ISO	N										S						H						
Material Description	Aluminum wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41		
HRc											15	30	25	38	34			55	60	42	55		
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550		
Recommended	○	○	○						○							○							

HSS COUNTERSINK



HSS

DIN
335C

Unit : mm

SDC No.	Point Angle	Cutter Diameter	Shank Diameter	Overall Length	Capacity
Vap	α	D1	D2	L(±1)	min/max
IZ3139I0001	90°	4.3	4	40	1.3 - 4.3
IZ3139I0002	90°	5.0	4	40	1.5 - 5.0
IZ3139I0003	90°	6.0	5	45	1.5 - 6.0
IZ3139I0004	90°	6.3	5	45	1.5 - 6.3
IZ3139I0005	90°	7.0	6	50	1.8 - 7.0
IZ3139I0006	90°	8.0	6	50	2.0 - 8.0
IZ3139I0007	90°	8.3	6	50	2.0 - 8.3
IZ3139I0008	90°	10.0	6	50	2.5 - 10.0
IZ3139I0009	90°	10.4	6	50	2.5 - 10.4
IZ3139I0010	90°	11.5	8	56	2.8 - 11.5
IZ3139I0011	90°	12.4	8	56	2.8 - 12.4
IZ3139I0012	90°	15.0	10	60	3.2 - 15.0
IZ3139I0013	90°	16.5	10	60	3.2 - 16.5
IZ3139I0014	90°	19.0	10	63	3.5 - 19.0
IZ3139I0015	90°	20.5	10	63	3.5 - 20.5
IZ3139I0016	90°	23.0	10	67	3.8 - 23.0
IZ3139I0017	90°	25.0	10	67	3.8 - 25.0
IZ3139I0018	90°	30.0	12	71	4.2 - 30.0
IZ3139I0019	90°	31.0	12	71	4.2 - 31.0

☒ EXCELLENT ☐ GOOD

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VDI 3323																				
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	☉	☉	☉	◯		☉	◯	◯		◯		☉	◯	◯	◯	◯	◯		◯	

ISO	N										S						H				
Material Description	Aluminum wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	○						○							○					



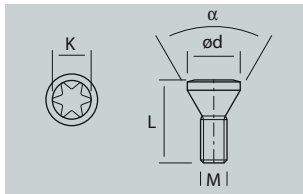


SPARE PARTS/

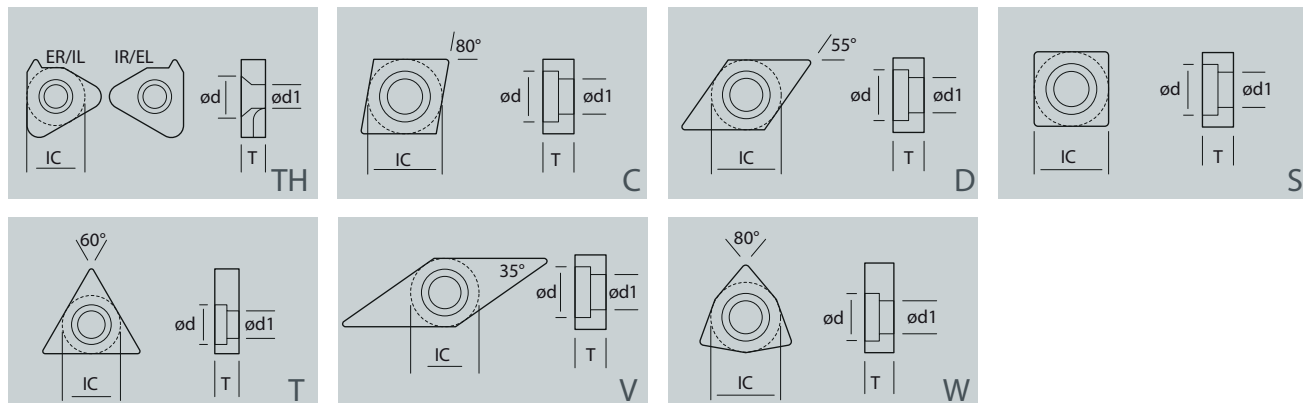
Spare Parts/486

SPARE PARTS

INSERTS CLAMPING SCREW



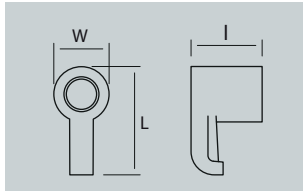
DESCRIPTION	d	M	L	α	K	TORQUE (Nm)
ST-SC1804	2.60	M1.8 x 0.40	4.00	60°	T6	0.50
ST-SC0206	2.70	M2.0 x 0.40	6.00	60°	T6	0.50
ST-SC0226	3.10	M2.2 x 0.45	6.00	60°	T7	0.80
ST-SC0257	3.10	M2.5 x 0.45	7.00	60°	T7	0.80
ST-SC0309	4.30	M3.0 x 0.50	9.00	90°	T10	1.40
ST-SC3511	5.30	M3.5 x 0.60	11.0	60°	T15	3.50
ST-SC3514	5.30	M3.5 x 0.60	14.0	60°	T15	3.50
ST-SC3507	5.30	M3.5 x 0.60	7.00	60°	T15	3.50
ST-SC0411	5.50	M4.0 x 0.70	11.0	60°	T15	3.50
ST-SC0416	5.50	M4.0 x 0.70	16.0	60°	T15	3.50
ST-SC0415	5.50	M4.0 x 0.70	15.0	60°	T15	3.50
ST-SC4516	6.20	M4.5 x 0.75	16.0	60°	T15	3.50
ST-SC0513	7.00	M5.0 x 0.80	13.0	60°	T20	4.50
ST-SC0511	7.00	M5.0 x 0.80	11.0	60°	T20	4.50
ST-SC0512	7.00	M5.0 x 0.80	12.0	60°	T20	4.50
ST-SC0616	8.00	M6.0 x 1.00	16.0	60°	T20	4.50
ST-SC0523	7.00	M5.0 x 0.80	23.0	60°	T20	4.50
ST-SC0525	7.00	M5.0 x 0.80	25.0	60°	T20	4.50
ST-SC0630	8.00	M6.0 x 1.00	30.0	60°	T20	4.50
ST-SC6307	8.00	M6.0 x 1.00	30.0	90°	T20	4.50
ST-SC0830	9.50	M8.0 x 1.25	30.0	60°	T20	5.50
ST-SC6301	8.00	M6.0 x 1.00	30.0	90°	T20	4.50
ST-SC420	5.50	M4.0 x 0.70	20.0	60°	T15	3.50
ST-SC512	7.00	M5.0 x 0.80	12.0	60°	T20	4.50
ST-SC625	8.00	M6.0 x 1.00	25.0	60°	T20	4.50
ST-SC8301	9.50	M8.0 x 1.25	30.0	90°	T20	5.50
ST-SC610	8.00	M6.0 x 1.00	10.0	90°	T20	4.50
ST-SC810	9.50	M8.0 x 1.25	10.0	60°	T20	5.50



DESCRIPTION	IC	T	ød	ød1	INSERT	DRAWING
ST-SHDN11	8.50	3.20	6.60	5.20	DC□□11, DN□□11	ref. D
ST-SHDN15	12.50	3.20	8.40	6.70	DN□□1506	ref. D
ST-SHCN12	12.50	3.20	8.40	6.70	CN□□12	ref. C
ST-SHCN16	15.50	4.80	10.80	9.70	CN□□16	ref. C
ST-SHCN19	18.70	4.80	13.10	11.20	CN□□19	ref. C
ST-SHWN08	12.20	4.80	8.00	7.30	WN□□08	ref. W
ST-SHSN12	12.30	4.80	8.00	7.30	SN□□12	ref. S
ST-SHSN19	18.70	4.80	13.10	11.20	SN□□19	ref. S
ST-SHTN16	9.30	3.20	6.60	5.80	TN□□16	ref. T
ST-SHTN22	18.70	4.80	8.00	7.30	TN□□22	ref. T
ST-SHVN16	9.20	3.20	6.60	5.80	VN□□16	ref. V
ST-SHDC11	8.50	3.20	6.60	5.20	DC□□11	ref. D
ST-SHSC09	12.20	4.80	8.00	7.30	SC□□09	ref. S
ST-SHSC12	11.40	3.90	8.40	6.70	SC□□12	ref. S
ST-SHCC09	8.50	3.20	6.60	5.20	CC□□09	ref. C
ST-SHCC12	11.40	3.90	8.40	6.70	CC□□12	ref. C
ST-SHVB16	8.20	3.20	6.60	5.40	VB□□16	ref. V
ST-SHTC16	9.10	3.20	6.60	4.50	TC□□16	ref. T
ST-SHVC16	8.20	3.20	6.60	5.40	VC□□16	ref. V
ST-SHKNR/L	11.40	3.20	6.60	7.30	KN□□16	ref. K
ST-SHEI16	9.50	3.20	6.00	4.20	16ER/16IR	ref. TH
ST-SHEI22	18.70	4.80	8.00	7.30	22ER/22IR	ref. TH

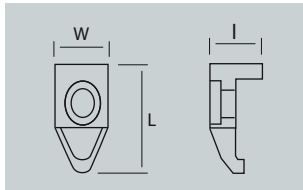
SPARE PARTS

CLAMPS (M-STYLE CLAMPING)



DESCRIPTION	W	L	I			
ST-CS006	9.40	18.20	13.50			
ST-CS007	7.90	16.90	7.90			
ST-CS008	7.75	14.90	10.95			
ST-CS009	9.40	18.20	13.50			

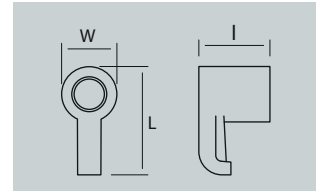
CLAMPS (D-STYLE CLAMPING)



DESCRIPTION	Ød	M	L			
ST-CS001	9.70	M6x1	24.00			
ST-CS002	9.70	M6x1	24.00			
ST-CS003	9.70	M6x1	24.00			
ST-CS004	9.70	M6x1	24.00			
ST-CS004	9.70	M6x1	24.00			

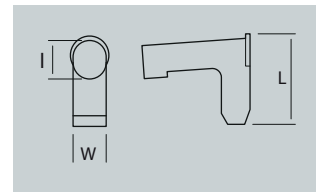
SPARE PARTS

CLAMPS (C-STYLE CLAMPING)



DESCRIPTION	W	L	I			
ST-CS010	9.40	18.20	13.50			
ST-CS011	7.90	16.90	7.90			
ST-CS012	9.40	18.20	13.50			
ST-CS013	7.90	16.90	7.90			

LEVER (P-STYLE CLAMPING)



DESCRIPTION	W	L	I			
ST-LV001	4.75	13.60	4.45			
ST-LV002	4.60	14.50	5.00			
ST-LV003	4.70	14.80	5.10			

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

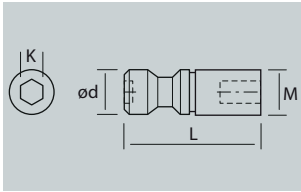
HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

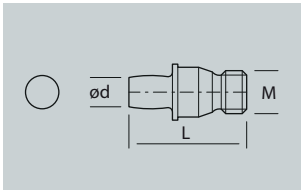
SPARE PARTS

LEVER LOCKING SYSTEM (P-STYLE CLAMPING)



DESCRIPTION	d	M	L	K		
ST-SC820	8.00	M8.0 x 1.00	20.0	HEXA 3		
ST-SC822	8.00	M8.0 x 1.00	22.0	HEXA 3		
ST-SC1020	10.00	M10.0 x 1.25	20.0	HEXA 4		
ST-SC1022	10.00	M10.0 x 1.25	22.0	HEXA 4		

ECCENTRIC LOCK PIN (M-STYLE CLAMPING)



DESCRIPTION	M	L	I			
ST-SP001	5.00	17.7	5.00			
ST-SP002	6.00	21.8	6.20			
ST-SP003	4.50	14.0	3.70			

INDEX

DESCRIPTION		
06IR-A55	■	THREADING carbide 241
06IR-A60	■	THREADING carbide 239
08IR-A55	■	THREADING carbide 241
08IR-A60	■	THREADING carbide 239
11ER-□□ISO	■	THREADING carbide 242
11ER-□□BSPT	■	THREADING carbide 254
11ER-□□NPT	■	THREADING carbide 256
11ER-□□TR	■	THREADING carbide 260
11ER-□□UN	■	THREADING carbide 250
11ER-□□W	■	THREADING carbide 246
11ER-A55	■	THREADING carbide 240
11ER-A60	■	THREADING carbide 238
11ER-W□□-T□□	■	GROOVING carbide 198
11IR-□□ISO	■	THREADING carbide 244
11IR-□□BSPT	■	THREADING carbide 255
11IR-□□NPT	■	THREADING carbide 257
11IR-□□TR	■	THREADING carbide 261
11IR-□□UN	■	THREADING carbide 252
11IR-□□W	■	THREADING carbide 248
11IR-A55	■	THREADING carbide 241
11IR-A60	■	THREADING carbide 239
11IR-W□□-T□□	■	GROOVING carbide 199
16ER-□□ISO	■	THREADING carbide 242
16ER-□□BSPT	■	THREADING carbide 254
16ER-□□NPT	■	THREADING carbide 256
16ER-□□RND	■	THREADING carbide 258
16ER-□□TR	■	THREADING carbide 260
16ER-□□UN	■	THREADING carbide 250
16ER-□□UN	■	THREADING carbide 251
16ER-□□W	■	THREADING carbide 246
16ER-□□W	■	THREADING carbide 247
16ER-A55	■	THREADING carbide 240
16ER-A60	■	THREADING carbide 238
16ER-AG55	■	THREADING carbide 240
16ER-AG60	■	THREADING carbide 238
16ER-G55	■	THREADING carbide 240
16ER-G60	■	THREADING carbide 238
16ERM-□□ISO	■	THREADING carbide 243
16ERM-□□BSPT	■	THREADING carbide 254
16ERM-□□NPT	■	THREADING carbide 256
16ERM-□□TR	■	THREADING carbide 260
16ERM-□□UN	■	THREADING carbide 251
16ERM-□□W	■	THREADING carbide 247
16ERM-AG55	■	THREADING carbide 240
16ERM-AG60	■	THREADING carbide 238
16ERM-G60	■	TURNING carbide 238
16ER-W□□-T□□	■	GROOVING carbide 198
16ER-W□□-T□□-R□□	■	GROOVING carbide 200
16IR-□□ISO	■	TURNING carbide 244
16IR-□□BSPT	■	TURNING carbide 255

DESCRIPTION		
16IR-□□NPT	■	THREADING carbide 257
16IR-□□RND	■	THREADING carbide 259
16IR-□□TR	■	THREADING carbide 261
16IR-□□UN	■	THREADING carbide 252
16IR-□□UN	■	THREADING carbide 253
16IR-□□W	■	THREADING carbide 248
16IR-□□W	■	THREADING carbide 249
16IR-A55	■	THREADING carbide 241
16IR-A60	■	THREADING carbide 239
16IR-AG55	■	THREADING carbide 241
16IR-AG60	■	THREADING carbide 239
16IR-G55	■	THREADING carbide 241
16IR-G60	■	THREADING carbide 239
16IRM-□□ISO	■	THREADING carbide 245
16IRM-□□BSPT	■	THREADING carbide 255
16IRM-□□NPT	■	THREADING carbide 257
16IRM-□□TR	■	THREADING carbide 261
16IRM-□□UN	■	THREADING carbide 253
16IRM-□□W	■	THREADING carbide 249
16IRM-AG55	■	THREADING carbide 241
16IRM-AG60	■	THREADING carbide 239
16IR-W□□-T□□	■	GROOVING carbide 199
16IR-W□□-T□□-R□□	■	GROOVING carbide 201
22ER-□□ISO	■	THREADING carbide 243
22ER-□□RND	■	THREADING carbide 258
22ER-□□TR	■	THREADING carbide 260
22ER-□□UN	■	THREADING carbide 251
22ER-□□W	■	THREADING carbide 247
22ER-N55	■	THREADING carbide 240
22ER-N60	■	THREADING carbide 238
22IR-□□ISO	■	THREADING carbide 245
22IR-□□RND	■	THREADING carbide 259
22IR-□□TR	■	THREADING carbide 261
22IR-□□UN	■	THREADING carbide 253
22IR-□□W	■	THREADING carbide 249
22IR-N55	■	THREADING carbide 241
22IR-N60	■	THREADING carbide 239
27ER-□□RND	■	THREADING carbide 258
27ER-□□TR	■	THREADING carbide 260
27ER-□□UN	■	THREADING carbide 251
27ER-□□W	■	THREADING carbide 247
27ER-Q55	■	THREADING carbide 240
27ER-Q60	■	THREADING carbide 238
27IR-□□RND	■	THREADING carbide 259
27IR-□□TR	■	THREADING carbide 261
27IR-□□UN	■	THREADING carbide 253
27IR-□□W	■	THREADING carbide 249
27IR-Q55	■	THREADING carbide 241
27IR-Q60	■	THREADING carbide 239
3PGX□□□□□R-M	■	MILLING carbide 313

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPSSPARE
PARTS

INDEX

INDEX

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

DESCRIPTION			
6GR-□□□	■	GROOVING carbide	196
7GR-□□□	■	GROOVING carbide	196
8GR-□□□	■	GROOVING carbide	196
9GR-□□□	■	GROOVING carbide	196
APEX□□□□PDER-ALU	■	MILLING carbide	290
APKT□□□□□ALU	■	MILLING carbide	290
APKT□□□□PDER-ALU	■	MILLING carbide	290
APKT□□□□PER-ST	■	MILLING carbide	290
APMT□□□□PDER-ALU	■	MILLING carbide	290
APMT□□□□PDER-QH2	■	MILLING carbide	290
APMT□□□□PDER-QM2	■	MILLING carbide	291
APMT□□□□PDER-RM	■	MILLING carbide	290
APMT□□□□PDSR-QM	■	MILLING carbide	291
APMT□□□□PDSR-QX	■	MILLING carbide	291
APMT□□□□PDSR-RM	■	MILLING carbide	291
APMT□□□□RM	■	MILLING carbide	290
AXMX□□□□□R	■	MILLING carbide	292
AXMX□□□□□R-ALU	■	MILLING carbide	292
BLGX□□□□R-M	■	MILLING carbide	293
BLGX□□□□R-MM	■	MILLING carbide	293
C□□□SCLCR/L 03	■	TURNING holders	136
C□□□SCLCR/L 04	■	TURNING holders	136
C□□□SCLCR/L 06	■	TURNING holders	136
C□□□SCLCR/L 09	■	TURNING holders	136
C□□□SDQCR/L 07	■	TURNING holders	149
C□□□SDQCR/L 11	■	TURNING holders	149
C□□□STFCR/L 11	■	TURNING holders	167
C□□□STFPR/L 08	■	TURNING holders	167
C□□□STFPR/L 11	■	TURNING holders	167
CCGT□□□□□1C	■	TURNING diamond	89
CCGT□□□□□2C	■	TURNING diamond	89
CCGT□□□□□ALU	■	TURNING carbide	19
CCGT□□□□□DER/L-U	■	TURNING carbide	18
CCGT□□□□□L-F	■	TURNING carbide	18
CCGT□□□□□R/L-W15	■	TURNING carbide	18
CCGT□□□□□R/L-W20	■	TURNING carbide	18
CCGW□□□□□1C	■	TURNING PCBN	69
CCGW□□□□□1C	■	TURNING diamond	89
CCGW□□□□□2C	■	TURNING PCBN	69
CCGW□□□□□2C	■	TURNING diamond	89
CCGX□□□□□R/L-FE	■	TURNING diamond	89
CCMT□□□□□CG	■	TURNING carbide	19
CCMT□□□□□HF	■	TURNING carbide	19
CCMT□□□□□HM	■	TURNING carbide	19
CCMT□□□□□HQ	■	TURNING carbide	20
CCMT□□□□□MF1	■	TURNING carbide	20
CCMT□□□□□MF2	■	TURNING carbide	20
CCMT□□□□□ST	■	TURNING carbide	20
CCMT□□□□□TS	■	TURNING carbide	20
CCMT□□□□□VM	■	TURNING carbide	20

DESCRIPTION			
CCMT□□□□□VQ	■	TURNING carbide	51
CDJNR/L□□□□□15	■	TURNING carbide	51
CENTERDRILL HSS 1.0-6.3	■	TURNING carbide	51
CKJNR/L□□□□□16	■	TURNING carbide	51
CNGA□□□□□□	■	TURNING carbide	51
CNGA□□□□□□1C	■	TURNING carbide	52
CNGA□□□□□□1C	■	TURNING carbide	53
CNGA□□□□□□2C	■	TURNING carbide	53
CNGA□□□□□□2C	■	TURNING carbide	53
CNGA□□□□□□4C	■	TURNING carbide	53
CNGN□□□□□□	■	TURNING carbide	53
CNMA□□□□□□	■	TURNING carbide	53
CNMG□□□□□M	■	TURNING carbide	54
CNMG□□□□□□	■	TURNING carbide	54
CNMG□□□□□□ALU	■	TURNING carbide	54
CNMG□□□□□□HQ	■	TURNING carbide	54
CNMG□□□□□□HR	■	TURNING carbide	54
CNMG□□□□□□MF2	■	TURNING carbide	54
CNMG□□□□□□MF3	■	TURNING carbide	55
CNMG□□□□□□MM	■	TURNING carbide	55
CNMG□□□□□□PM	■	TURNING carbide	55
CNMG□□□□□□TF	■	TURNING carbide	55
CNMG□□□□□□TK	■	TURNING carbide	55
CNMG□□□□□□TS	■	TURNING carbide	55
CNMG□□□□□□UF	■	TURNING PCBN	69
CNMG□□□□□□UM1	■	TURNING PCBN	69
CNMG□□□□□□UMC	■	TURNING PCBN	70
CNMG□□□□□□UR	■	TURNING PCBN	70
CNMG□□□□□□US	■	TURNING PCBN	70
CNMM□□□□□□GR	■	TURNING PCBN	71
CNMM□□□□□□HTR	■	TURNING PCBN	71
CNMX□□□□□□	■	TURNING PCBN	72
COUNTERSINK HSS 4.3-31.0	■	TURNING PCBN	72
CRDCN□□□□□□06	■	TURNING PCBN	72
CRDCN□□□□□□09	■	TURNING PCBN	73
CRDCN□□□□□□12	■	TURNING PCBN	73
CRDCN□□□□□□15	■	TURNING PCBN	74
CRDCN□□□□□□19	■	TURNING PCBN	75
CRDCN□□□□□□25	■	TURNING PCBN	76
DCGT□□□□□□1C	■	TURNING PCBN	76
DCGT□□□□□□2C	■	TURNING PCBN	76
DCGT□□□□□□ALU	■	TURNING PCBN	76
DCGT□□□□□□EL-U	■	TURNING PCBN	77
DCGT□□□□□□ER-U	■	TURNING PCBN	77
DCGT□□□□□□SF	■	TURNING PCBN	78
DCGW□□□□□□1C	■	TURNING PCBN	78
DCGW□□□□□□2C	■	TURNING PCBN	78
DCGW□□□□□□1C	■	TURNING PCBN	79
DCGW□□□□□□2C	■	TURNING PCBN	79
DCGX□□□□□□R/L-FE	■	TURNING PCBN	80

DESCRIPTION		
DCLNR/L0000012	■	TURNING holders 137
DCLNR/L0000016	■	TURNING holders 137
DCLNR/L0000019	■	TURNING holders 137
DCMNN0000012	■	TURNING holders 138
DCMT000000CG	■	TURNING carbide 26
DCMT000000HF	■	TURNING carbide 26
DCMT000000HM	■	TURNING carbide 26
DCMT000000HQ	■	TURNING carbide 27
DCMT000000HR	■	TURNING carbide 27
DCMT000000MF1	■	TURNING carbide 27
DCMT000000MM1	■	TURNING carbide 27
DCMT000000SG	■	TURNING carbide 27
DCMT000000ST	■	TURNING carbide 27
DCMT000000TS	■	TURNING carbide 28
DCMT000000VM	■	TURNING carbide 28
DCMT000000VQ	■	TURNING carbide 28
DCMT000000VW	■	TURNING carbide 28
DCZNN0000012	■	TURNING holders 139
DCZNN0000019	■	TURNING holders 139
DDJNR/L0000011	■	TURNING holders 151
DDJNR/L0000015	■	TURNING holders 151
DDNNN0000015	■	TURNING holders 152
DDNNN0000011	■	TURNING holders 152
DGA2000-000-00	■	ENDMILLS carbide 441
DGA2000-000-00-000	■	ENDMILLS carbide 442
DGA3000-000-00	■	ENDMILLS carbide 443
DGA3000-000-00	■	ENDMILLS carbide 444
DGB2000-000-00	■	ENDMILLS carbide 426
DGB2000-000-00	■	ENDMILLS carbide 427
DGC4000-000-00-000	■	ENDMILLS carbide 432
DGC4000-000-00-000	■	ENDMILLS carbide 433
DGC4000-000-00-000	■	ENDMILLS carbide 434
DGF40000-000-00	■	ENDMILLS carbide 418
DGF40000-000-00	■	ENDMILLS carbide 419
DGP30000-000-00	■	ENDMILLS carbide 420
DGR60000-000-00	■	ENDMILLS carbide 421
DLDSX0000-00-0	■	DRILLS carbide 451
DLDSX0000-00-0	■	DRILLS carbide 452
DLDSX0000-00-0	■	DRILLS carbide 453
DNGA000000	■	TURNING ceramic 110
DNGA0000001C	■	TURNING PCBN 72
DNGA0000001C	■	TURNING diamond 92
DNGA0000002C	■	TURNING PCBN 72
DNGA0000002C	■	TURNING diamond 92
DNGA0000004C	■	TURNING PCBN 72
DNGN000000	■	TURNING ceramic 111
DNMA000000	■	TURNING carbide 29
DNMG000000	■	TURNING carbide 29
DNMG000000ALU	■	TURNING carbide 29
DNMG000000HA	■	TURNING carbide 29

DESCRIPTION		
DNMG000000HQ	■	TURNING carbide 29
DNMG000000R/L-ST	■	TURNING carbide 29
DNMG000000TK	■	TURNING carbide 29
DNMG000000TM	■	TURNING carbide 30
DNMG000000TS	■	TURNING carbide 30
DNMG000000UF	■	TURNING carbide 30
DNMG000000UM	■	TURNING carbide 30
DNMG000000UM1	■	TURNING carbide 30
DNMG000000UMC	■	TURNING carbide 31
DNMG000000UR	■	TURNING carbide 31
DNMG000000US	■	TURNING carbide 31
DNMG000000UT	■	TURNING carbide 31
DRILLS HSSCo5 1.0-5.1	■	DRILLS hss 476
DRILLS HSSCo5 5.2-9.3	■	DRILLS hss 477
DRILLS HSSCo5 9.4-13.0	■	DRILLS hss 478
DRILLS HSSCo5 9.4-13.0	■	DRILLS hss 479
DRILLS HSSCo5 9.7-20.0	■	DRILLS hss 480
DSD3X0000-00-0	■	DRILLS carbide 448
DSD3X0000-00-0	■	DRILLS carbide 449
DSD3X0000-00-0	■	DRILLS carbide 450
DSDNN0000012	■	TURNING holders 162
DSDNN0000015	■	TURNING holders 162
DSKNR/L0000012	■	TURNING holders 163
DSKNR/L0000015	■	TURNING holders 163
DSSNR/L0000012	■	TURNING holders 163
DSSNR/L0000015	■	TURNING holders 163
DTJNR/L0000016	■	TURNING holders 168
DTJNR/L0000022	■	TURNING holders 168
DVJNR/L0000016	■	TURNING holders 177
DWB2000-000-00	■	ENDMILLS carbide 430
DWB2000-000-00	■	ENDMILLS carbide 431
DWC4000-000-00-000	■	ENDMILLS carbide 438
DWC4000-000-00-000	■	ENDMILLS carbide 439
DWC4000-000-00-000	■	ENDMILLS carbide 440
DWF4000-000-00	■	ENDMILLS carbide 424
DWF6000-000-00	■	ENDMILLS carbide 425
DWLNR/L00000106	■	TURNING holders 178
DWLNR/L00000108	■	TURNING holders 178
DXB2000-000-00	■	ENDMILLS carbide 428
DXB2000-000-00	■	ENDMILLS carbide 429
DXC4000-000-00-000	■	ENDMILLS carbide 437
DXC4000-000-00-000	■	ENDMILLS carbide 435
DXC4000-000-00-000	■	ENDMILLS carbide 436
DXF4000-000-00	■	ENDMILLS carbide 422
DXF6000-000-00	■	ENDMILLS carbide 423
EPGX000000R-SM	■	MILLING carbide 294
HNGX0000ANSN-M	■	MILLING carbide 295
HNGX0000ANSN-R	■	MILLING carbide 295
KNMX000000R/L-11	■	TURNING carbide 32
KNMX000000R12	■	TURNING carbide 32

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

INDEX

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

DESCRIPTION		
LNGX□□□□□RSE	■	MILLING carbide 296
LNKT□□□□□R-GM	■	MILLING carbide 296
LNMX□□□□SER-M	■	MILLING carbide 296
LNMX□□□□SER-MJ	■	MILLING carbide 296
MAGC□□□	■	GROOVING carbide 188
MAGD□□□J-15D	■	GROOVING carbide 188
MAGJ□□□	■	GROOVING carbide 189
MAGN□□□	■	GROOVING PCBN 209
MAGN□□□	■	GROOVING diamond 213
MAGN□□□MA	■	GROOVING carbide 190
MAGN□□□WA	■	GROOVING carbide 190
MAGR□□□	■	GROOVING carbide 189
MAGS□□□	■	GROOVING carbide 190
MAT□□□-□□□-□□□/□□	■	MILLING holders 380
MF3P□□□□-10-**-C	■	MILLING holders 355
MF3P□□□□-15-**-C	■	MILLING holders 357
MF45-TC11-□□□□□□□□	■	MILLING holders 370
MF45-TC16-□□□□□□□□	■	MILLING holders 370
MFAP□□□□□-11-□□-□	■	MILLING holders 328
MFAP75□□□□-16-□□	■	MILLING holders 333
MFAP90□□-10-□□	■	MILLING holders 324
MFAP90□□□□-10-□□-□	■	MILLING holders 324
MFAP90□□□□-12-□□	■	MILLING holders 331
MFAP90□□□□-16-□□	■	MILLING holders 332
MFAP90□□□□-16-□□-□	■	MILLING holders 332
MFBL□□□□-06-□□-□	■	MILLING holders 336
MFHN45□□□□-09-□□-□	■	MILLING holders 339
MFHN45□□□□-09-□□	■	MILLING holders 339
MFLN□□□□-13-□□-□	■	MILLING holders 346
MFLN90□□□□-03-□□-□	■	MILLING holders 340
MFLN90□□-10-□□□-□	■	MILLING holders 342
MFLN90□□□□-11-□□-□	■	MILLING holders 344
MFLN90□□□□-15-□□-□	■	MILLING holders 347
MFLO□□□□-03-□□-□	■	MILLING holders 349
MFPN45□□□□-09-□□-□	■	MILLING holders 353
MFPN66□□□□-09-□□-□	■	MILLING holders 354
MFRD□□□□-10-□□	■	MILLING holders 358
MFRD□□□□-10-□□-□	■	MILLING holders 358
MFRD□□□□-12-□□	■	MILLING holders 358
MFRD□□□□-12-□□-□	■	MILLING holders 358
MFRD□□□□-16-□□-□	■	MILLING holders 362
MFSE45□□□□-□□	■	MILLING holders 365
MFSE45□□□□-□□-□	■	MILLING holders 365
MFSN45□□□□-□□	■	MILLING holders 366
MFSN45□□□□-□□-□	■	MILLING holders 366
MFSO□□□□-08-□□-□	■	MILLING holders 368
MFSP□□□□-12□□-□	■	MILLING holders 368
MFSP□□□□-12-□□-□	■	MILLING holders 368
MFT□□-□□-□□□-□□	■	MILLING holders 380
MFT□□-□□-□□□-□□	■	MILLING holders 381

DESCRIPTION		
MFTP90□□□□-16-□□	■	MILLING holders 371
MFTP90□□□□-16-□□-□	■	MILLING holders 371
MFTP90□□□□-22-□□	■	MILLING holders 371
MFWN90□□□□-08-□□	■	MILLING holders 374
MFWN90□□□□-08□□-□	■	MILLING holders 374
MFWN90□□□□-09□□-□	■	MILLING holders 375
MFYN90□□□□-06-□□-□	■	MILLING holders 377
MGGN□□□	■	GROOVING carbide 191
MGGN□□□R0.2	■	GROOVING carbide 191
MMAP□□-□□□-10-□□	■	MILLING holders 325
MMAP□□-□□□-10-□□-□	■	MILLING holders 325
MMAP□□-□□□-16-□□-□	■	MILLING holders 333
MMAP□□-□□-11-□□-□	■	MILLING holders 329
MMBL□□-□□□-06-□□-□	■	MILLING holders 337
MMEP□□-□□□-06-□□-□	■	MILLING holders 338
MMLO□□-□□-03-□□-□	■	MILLING holders 350
MMRD□□-□□□-08-□□-□	■	MILLING holders 359
MMRD□□-□□□-10-□□-□	■	MILLING holders 359
MMRD□□-□□□-12-□□-□	■	MILLING holders 359
MMRT□□-□□□-10-□□-□	■	MILLING holders 363
MMSO□□-□□□-08-□□-□	■	MILLING holders 367
MMSP□□-□□□-12-□□-□	■	MILLING holders 369
MMTW□□□□□□□	■	MILLING holders 372
MMXD□□-□□□-06□□-□	■	MILLING holders 376
MMXD□□-□□□-10□□-□	■	MILLING holders 376
MMYN□□-□□□-06□□-□	■	MILLING holders 378
MRMN□□□	■	GROOVING PCBN 209
MS3P□□□□-10-□□-□	■	MILLING holders 356
MSAP□□-□□□-10-□□-□□	■	MILLING holders 326
MSAP□□-□□□-10-□□-□□	■	MILLING holders 327
MSAP□□-□□□-10-□□-□□-□	■	MILLING holders 326
MSAP□□-□□□-10-□□-□□-□	■	MILLING holders 327
MSAP□□-□□□-11-□□-□□	■	MILLING holders 330
MSAP□□-□□□-11-□□-□□-□	■	MILLING holders 330
MSAP□□-□□□-16-□□-□□	■	MILLING holders 334
MSAX□□-□□□-07-□□-□□	■	MILLING holders 335
MSAX□□-□□□-07-□□-□□-□	■	MILLING holders 335
MSLN□□-□□□-03-□□-□□	■	MILLING holders 341
MSLN□□-□□□-03-□□-□	■	MILLING holders 341
MSLN□□-□□□-10-□□-□	■	MILLING holders 343
MSLN□□-□□□-11-□□-□□-□	■	MILLING holders 345
MSLN□□-□□□-15-□□-□	■	MILLING holders 348
MSLO□□-□□□-03-□□-□□	■	MILLING holders 351
MSLO□□-□□□-03-□□-□□	■	MILLING holders 352
MSLO□□-□□□-03-□□-□□-□	■	MILLING holders 351
MSLO□□-□□□-03-□□-□□-□	■	MILLING holders 352
MSRD□□-□□□-08-□□-□□	■	MILLING holders 360
MSRD□□-□□□-10-□□-□□	■	MILLING holders 360
MSRD□□-□□□-10-□□-□□-□	■	MILLING holders 360
MSRD□□-□□□-12-□□-□□	■	MILLING holders 361

INDEX

DESCRIPTION			
S□□□DDUNR/L 11	■	TURNING holders	154
S□□□DDUNR/L 15	■	TURNING holders	154
S□□□DTUNR/L 16	■	TURNING holders	169
S□□□DVUNR/L 16	■	TURNING holders	177
S□□□DWLNR/L 08	■	TURNING holders	180
S□□□MT-NR/L 16	■	TURNING holders	170
S□□□MTQNR/L 16	■	TURNING holders	171
S□□□MTQNR/L 22	■	TURNING holders	171
S□□□MTUNR/L 16	■	TURNING holders	170
S□□□MTUNR/L 22	■	TURNING holders	170
S□□□MWLNR/L 06	■	TURNING holders	181
S□□□MWLNR/L 08	■	TURNING holders	181
S□□□PCLNR/L 12	■	TURNING holders	142
S□□□PCLNR/L 16	■	TURNING holders	142
S□□□PCLNR/L 19	■	TURNING holders	142
S□□□PDUNR/L 15	■	TURNING holders	156
S□□□PWLNR/L 08	■	TURNING holders	181
S□□□SCLCR/L 06	■	TURNING holders	135
S□□□SCLCR/L 09	■	TURNING holders	135
S□□□SCLCR/L 12	■	TURNING holders	135
S□□□SD-CR/L 07	■	TURNING holders	147
S□□□SD-CR/L 11	■	TURNING holders	147
S□□□SDQCR/L 07	■	TURNING holders	145
S□□□SDQCR/L 11	■	TURNING holders	145
S□□□SDUCR/L 07	■	TURNING holders	146
S□□□SDUCR/L 11	■	TURNING holders	146
S□□□SDXCR/L 07	■	TURNING holders	148
S□□□SDXCR/L 11	■	TURNING holders	148
S□□□SSIR/L 11	■	THREADING holders	279
S□□□SSIR/L 22	■	THREADING holders	279
S□□□SSTGR* 4-25	■	GROOVING holders	229
S□□□SSTGR*3-15	■	GROOVING holders	229
S□□□SSTGR*3-25	■	GROOVING holders	229
S□□□SSTGR*4-15	■	GROOVING holders	229
S□□□STFCR/L 11	■	TURNING holders	165
S□□□STFCR/L 16	■	TURNING holders	165
S□□□STUCR/L 11	■	TURNING holders	166
S□□□SVJBR/L 16	■	TURNING holders	175
S□□□SVUBR/L 11	■	TURNING holders	175
S□□□SVUBR/L 16	■	TURNING holders	175
S□□□SVUCR/L 11	■	TURNING holders	176
S□□□SVUCR/L 16	■	TURNING holders	176
SAGC□□□□□	■	GROOVING carbide	191
SAGD□□□□J-15D	■	GROOVING carbide	192
SAGD□□□□J-4D	■	GROOVING carbide	192
SAGD□□□□J-6D	■	GROOVING carbide	192
SAGJ□□□□	■	GROOVING carbide	192
SCGT□□□□□□ALU	■	TURNING carbide	34
SCLCR/L□□□□□□06	■	TURNING holders	134
SCLCR/L□□□□□□09	■	TURNING holders	134

INDEX

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

DESCRIPTION			
SCLCR/L	TURNING holders	134	
SCMT	TURNING carbide	34	
SCMT	TURNING carbide	34	
SDGN	GROOVING carbide	193	
SDGR	GROOVING carbide	193	
SDGR	GROOVING carbide	193	
SDHT	MILLING carbide	300	
SDJCR/L	TURNING holders	143	
SDJCR/L	TURNING holders	143	
SDMT	MILLING carbide	300	
SDNCN	TURNING holders	144	
SDNCN	TURNING holders	144	
SEET	MILLING carbide	301	
SEHT	MILLING carbide	301	
SEMT	MILLING carbide	301	
SEMT	MILLING carbide	301	
SGDD	GROOVING carbide	195	
SGDM	GROOVING carbide	194	
SGRIP	GROOVING carbide	194	
SGTER/L	GROOVING holders	218	
SGTIR/L	GROOVING holders	219	
SITER/L	GROOVING holders	220	
SITIR/L	GROOVING holders	221	
SKFC12R/L	GROOVING carbide	197	
SKFC16R/L	GROOVING carbide	197	
SKFCL	GROOVING carbide	197	
SKFCR	GROOVING carbide	197	
SKTER/L	GROOVING holders	222	
SKTFR	GROOVING holders	224	
SKTIR/L	GROOVING holders	223	
SNGA	TURNING ceramic	115	
SNGA	TURNING PCBN	76	
SNGA	TURNING PCBN	76	
SNGA	TURNING PCBN	76	
SNGA	TURNING PCBN	76	
SNGN	TURNING ceramic	116	
SNGR	GROOVING holders	225	
SNGX	TURNING ceramic	116	
SNMA	TURNING carbide	35	
SNMG	TURNING carbide	35	
SNMG	TURNING carbide	35	
SNMG	TURNING carbide	35	
SNMG	TURNING carbide	36	
SNMG	TURNING carbide	36	
SNMG	TURNING carbide	36	
SNMG	TURNING carbide	36	
SNMG	TURNING carbide	36	
SNMG	TURNING carbide	37	
SNMG	TURNING carbide	37	

SNMG	TURNING carbide	37	
SNMM	TURNING carbide	37	
SNMM	TURNING carbide	37	
SNMM	TURNING carbide	38	
SNMX	MILLING carbide	302	
SNMX	MILLING carbide	302	
SNMX	MILLING carbide	302	
SNMX	MILLING carbide	302	
SNMX	MILLING carbide	302	
SOMT	MILLING carbide	303	
SOMW	MILLING carbide	303	
SPGG	DRILLING carbide	387	
SPKN	MILLING carbide	304	
SPKN	MILLING carbide	304	
SPKN	MILLING carbide	304	
SPKN	MILLING carbide	304	
SPKR	MILLING carbide	304	
SPMG	DRILLING carbide	387	
SPMG	DRILLING carbide	387	
SPMT	TURNING carbide	39	
SPMT	TURNING carbide	39	
SPMT	TURNING carbide	39	
SPMW	MILLING carbide	303	
SR14I	THREADING carbide	271	
SR14I	THREADING carbide	273	
SR21I	THREADING carbide	271	
SR21I	THREADING carbide	273	
SR30I	THREADING carbide	272	
SR30I	THREADING carbide	273	
SR40I	THREADING carbide	272	
SR40I	THREADING carbide	273	
SRDCN	TURNING holders	159	
SRDCN	TURNING holders	159	
SRDCN	TURNING holders	159	
SRDCN	TURNING holders	159	
SRDCN	TURNING holders	159	
SRGCR/L	TURNING holders	160	
SRGCR/L	TURNING holders	160	
SRGCR/L	TURNING holders	160	
SRHCR/L	TURNING holders	161	
SRHCR/L	TURNING holders	161	
SS2D	DRILLING holders	390	
SS2D	DRILLING holders	390	
SS2D	DRILLING holders	390	
SS2D	DRILLING holders	390	
SS2D	DRILLING holders	391	
SS2D	DRILLING holders	391	
SS2D	DRILLING holders	392	
SS3D	DRILLING holders	393	
SS3D	DRILLING holders	393	

DESCRIPTION			
SS3D□□□06	■	DRILLING holders	393
SS3D□□□07	■	DRILLING holders	393
SS3D□□□07	■	DRILLING holders	394
SS3D□□□09	■	DRILLING holders	394
SS3D□□□11	■	DRILLING holders	394
SS3D□□□14	■	DRILLING holders	395
SS4D□□□04	■	DRILLING holders	396
SS4D□□□05	■	DRILLING holders	396
SS4D□□□06	■	DRILLING holders	396
SS4D□□□07	■	DRILLING holders	396
SS4D□□□09	■	DRILLING holders	397
SS4D□□□11	■	DRILLING holders	397
SS4D□□□14	■	DRILLING holders	397
SS4D□□□15	■	DRILLING holders	398
SS5D□□□05	■	DRILLING holders	399
SS5D□□□06	■	DRILLING holders	399
SS5D□□□07	■	DRILLING holders	399
SS5D□□□09	■	DRILLING holders	399
SS5D□□□11	■	DRILLING holders	400
SS5D□□□14	■	DRILLING holders	400
SSER/L□□□□11	■	THREADING holders	278
SSER/L□□□□11VS	■	THREADING holders	280
SSER/L□□□□16	■	THREADING holders	278
SSER/L□□□□16VS	■	THREADING holders	280
SSER/L□□□□22	■	THREADING holders	278
SSER/L□□□□22VS	■	THREADING holders	280
SSKFR/L□□□□-□□12	■	GROOVING holders	230
SSKFR/L□□□□-□□16	■	GROOVING holders	230
SSP□□□	■	GROOVING carbide	195
SSTGR□□□□3-15	■	GROOVING holders	228
SSTGR□□□□3-25	■	GROOVING holders	228
SSTGR□□□□4-15	■	GROOVING holders	228
SSTGR□□□□4-25	■	GROOVING holders	228
SSTGR□□□□4-35	■	GROOVING holders	228
ST□□□□□□-□□□ISO	■	THREADING carbide	275
STFCR/L□□□□□09	■	TURNING holders	164
STFCR/L□□□□□11	■	TURNING holders	164
STFCR/L□□□□□16	■	TURNING holders	164
STGF32R□□	■	GROOVING carbide	202
STGF43R□□	■	GROOVING carbide	203
STGR32□□□□	■	GROOVING carbide	204
STGR43□□□□	■	GROOVING carbide	204
STTER/L□□□□-□□	■	GROOVING holders	226
STTIR/L□□-□□	■	GROOVING holders	227
SVHBR/L□□□□□11	■	TURNING holders	172
SVHBR/L□□□□□16	■	TURNING holders	172
SVJBR/L□□□□□11	■	TURNING holders	173
SVJBR/L□□□□□16	■	TURNING holders	173
SVJCR/L□□□□□11	■	TURNING holders	176
SVJCR/L□□□□□16	■	TURNING holders	176

DESCRIPTION			
SVBN□□□□□11	■	TURNING holders	174
SVBN□□□□□16	■	TURNING holders	174
SW2D□□□03	■	DRILLING holders	401
SW2D□□□04	■	DRILLING holders	401
SW2D□□□05	■	DRILLING holders	401
SW2D□□□06	■	DRILLING holders	402
SW2D□□□06	■	DRILLING holders	402
SW2D□□□08	■	DRILLING holders	403
SW2D□□□09	■	DRILLING holders	403
SW3D□□□03	■	DRILLING holders	404
SW3D□□□04	■	DRILLING holders	404
SW3D□□□05	■	DRILLING holders	404
SW3D□□□06	■	DRILLING holders	405
SW3D□□□08	■	DRILLING holders	406
SW4D□□□03	■	DRILLING holders	407
SW4D□□□04	■	DRILLING holders	407
SW4D□□□05	■	DRILLING holders	407
SW4D□□□06	■	DRILLING holders	408
SW4D□□□08	■	DRILLING holders	409
SW5D□□□03	■	DRILLING holders	410
SW5D□□□04	■	DRILLING holders	410
SW5D□□□05	■	DRILLING holders	410
SW5D□□□06	■	DRILLING holders	411
SW5D□□□08	■	DRILLING holders	412
TAPS HSS-E M14-30	■	TAPS hss	460
TAPS HSS-E M14-M30	■	TAPS hss	458
TAPS HSS-E M2-30	■	TAPS hss	461
TAPS HSS-E M2-M30	■	TAPS hss	459
TAPS HSS-E MF M24-30	■	TAPS hss	463
TAPS HSS-E MF M4-22	■	TAPS hss	462
TAPS HSS-E MF M4-22	■	TAPS hss	464
TAPS HSS-E MFM24-30	■	TAPS hss	465
TAPS HSS-E UNC 8-40	■	TAPS hss	466
TAPS HSS-E UNC 8-40	■	TAPS hss	467
TAPS HSS-E UNF 12-48	■	TAPS hss	468
TAPS HSS-E UNF 12-48	■	TAPS hss	469
TAPS HSS-PM M2-12	■	TAPS hss	460
TAPS HSS-PM M2-M12	■	TAPS hss	458
TBGT□□□□□□L	■	TURNING carbide	39
TCGT□□□□□□3C	■	TURNING diamond	93
TCGT□□□□□□1C	■	TURNING diamond	93
TCGT□□□□□□ALU	■	TURNING carbide	40
TCGW□□□□□□1C	■	TURNING PCBN	77
TCGW□□□□□□1C	■	TURNING diamond	93
TCGW□□□□□□3C	■	TURNING PCBN	77
TCGW□□□□□□3C	■	TURNING diamond	93
TCGX□□□□□□R/L-FE	■	TURNING diamond	93
TCMT□□□□□□CG	■	TURNING carbide	40
TCMT□□□□□□HF	■	TURNING carbide	40
TCMT□□□□□□HM	■	TURNING carbide	40

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

INDEX

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

DESCRIPTION		
TCMT□□□□□HQ	■	TURNING carbide 41
TCMT□□□□□HR	■	TURNING carbide 41
TCMT□□□□□MM1	■	TURNING carbide 41
TCMT□□□□□TS	■	TURNING carbide 41
TCMT□□□□□UM2	■	TURNING carbide 41
TCMT□□□□□VM	■	TURNING carbide 41
TNGA□□□□□	■	TURNING ceramic 117
TNGA□□□□□1C	■	TURNING PCBN 78
TNGA□□□□□1C	■	TURNING diamond 94
TNGA□□□□□3C	■	TURNING PCBN 78
TNGA□□□□□3C	■	TURNING diamond 94
TNGA□□□□□6C	■	TURNING PCBN 78
TNGA□□□□□6C	■	TURNING diamond 94
TNGG□□□□□R/L-P	■	TURNING carbide 42
TNGN□□□□□	■	TURNING ceramic 118
TNMA□□□□□	■	TURNING carbide 42
TNMG□□□□□	■	TURNING carbide 42
TNMG□□□□□ALU	■	TURNING carbide 42
TNMG□□□□□HA	■	TURNING carbide 43
TNMG□□□□□HQ	■	TURNING carbide 43
TNMG□□□□□PM	■	TURNING carbide 43
TNMG□□□□□R/L-C	■	TURNING carbide 43
TNMG□□□□□R/L-ST	■	TURNING carbide 43
TNMG□□□□□TK	■	TURNING carbide 43
TNMG□□□□□TS	■	TURNING carbide 44
TNMG□□□□□UF	■	TURNING carbide 44
TNMG□□□□□UH	■	TURNING carbide 44
TNMG□□□□□UM	■	TURNING carbide 44
TNMG□□□□□UMC	■	TURNING carbide 44
TNMG□□□□□UR	■	TURNING carbide 45
TNMG□□□□□US	■	TURNING carbide 45
TNMG□□□□□VQ	■	TURNING carbide 45
TPGH□□□□□L	■	TURNING carbide 46
TPGN□□□□□	■	TURNING ceramic 119
TPGT□□□□□1C	■	TURNING diamond 95
TPGW□□□□□1C	■	TURNING PCBN 79
TPGW□□□□□1C	■	TURNING diamond 95
TPGW□□□□□3C	■	TURNING PCBN 79
TPKN□□□□□PDSR-SU	■	MILLING carbide 305
TPKN□□□□□PDTR-SU	■	MILLING carbide 305
TPMT□□□□□CG	■	TURNING carbide 46
TPMT□□□□□HQ	■	TURNING carbide 46
TPUN□□□□□	■	TURNING carbide 46
TPUN□□□□□FG	■	TURNING carbide 46
TW□□□□□	■	MILLING carbide 306
VBGT□□□□□1C	■	TURNING diamond 96
VBGT□□□□□2C	■	TURNING diamond 96
VBGT□□□□□ALU	■	TURNING carbide 47
VBGT□□□□□L-W11	■	TURNING carbide 52
VBGT□□□□□R/L-Y	■	TURNING carbide 47

DESCRIPTION		
VBGW□□□□□1C	■	TURNING PCBN 80
VBGW□□□□□2C	■	TURNING PCBN 80
VBGW□□□□□1C	■	TURNING diamond 96
VBGW□□□□□2C	■	TURNING diamond 96
VBMT□□□□□	■	TURNING carbide 47
VBMT□□□□□CG	■	TURNING carbide 47
VBMT□□□□□HQ	■	TURNING carbide 47
VBMT□□□□□HR	■	TURNING carbide 47
VBMT□□□□□MF1	■	TURNING carbide 48
VBMT□□□□□TF	■	TURNING carbide 48
VBMT□□□□□TS	■	TURNING carbide 48
VBMT□□□□□UMC	■	TURNING carbide 48
VBMT□□□□□VM	■	TURNING carbide 48
VBMT□□□□□VW	■	TURNING carbide 48
VCGT□□□□□1C	■	TURNING diamond 97
VCGT□□□□□2C	■	TURNING diamond 97
VCGT□□□□□ALU	■	TURNING carbide 49
VCGT□□□□□VF	■	TURNING carbide 49
VCGW□□□□□1C	■	TURNING PCBN 81
VCGW□□□□□2C	■	TURNING PCBN 81
VCGW□□□□□1C	■	TURNING diamond 97
VCGW□□□□□2C	■	TURNING diamond 97
VCGX□□□□□R/L-FE	■	TURNING diamond 97
VCGX□□□□□SF	■	TURNING carbide 49
VCMT□□□□□	■	TURNING carbide 50
VCMT□□□□□CG	■	TURNING carbide 50
VCMT□□□□□MF1	■	TURNING carbide 49
VCMT□□□□□MM1	■	TURNING carbide 49
VER11□□ISO	■	THREADING carbide 264
VER11□□NPT	■	THREADING carbide 268
VER11□□UN	■	THREADING carbide 265
VER11□□W	■	THREADING carbide 266
VER11-A55	■	THREADING carbide 263
VER11-A60	■	THREADING carbide 262
VER16□□BSPT	■	THREADING carbide 267
VER16□□ISO	■	THREADING carbide 264
VER16□□NPT	■	THREADING carbide 268
VER16□□UN	■	THREADING carbide 265
VER16□□W	■	THREADING carbide 266
VER16-A55	■	THREADING carbide 263
VER16-A60	■	THREADING carbide 262
VER16-AG55	■	THREADING carbide 263
VER16-AG60	■	THREADING carbide 262
VER16-G55	■	THREADING carbide 263
VER16-G60	■	THREADING carbide 262
VER22-N55	■	THREADING carbide 263
VER22-N60	■	THREADING carbide 262
VER27□□TR	■	THREADING carbide 269
VNGA□□□□□	■	TURNING ceramic 120
VNGA□□□□□1C	■	TURNING PCBN 82

DESCRIPTION			
VNGA□□□□□□2C	■	TURNING PCBN	82
VNGA□□□□□□4C	■	TURNING PCBN	82
VNMG□□□□□□	■	TURNING carbide	51
VNMG□□□□□□EM	■	TURNING carbide	51
VNMG□□□□□□HQ	■	TURNING carbide	51
VNMG□□□□□□PM	■	TURNING carbide	51
VNMG□□□□□□TS	■	TURNING carbide	51
VNMG□□□□□□UF	■	TURNING carbide	51
VNMG□□□□□□UM	■	TURNING carbide	51
WCMX□□□□□□S	■	DRILLING carbide	388
WCMX□□□□□□T	■	DRILLING carbide	388
WNGA□□□□□□	■	TURNING ceramic	121
WNGA□□□□□□IC	■	TURNING PCBN	83
WNGA□□□□□□IC	■	TURNING diamond	98
WNGA□□□□□□3C	■	TURNING PCBN	83
WNGA□□□□□□3C	■	TURNING diamond	98
WNGA□□□□□□6C	■	TURNING PCBN	83
WNGA□□□□□□6C	■	TURNING diamond	98
WNMA□□□□□□	■	TURNING carbide	53
WNMG□□□□□□	■	TURNING carbide	53
WNMG□□□□□□ALU	■	TURNING carbide	53
WNMG□□□□□□HA	■	TURNING carbide	53
WNMG□□□□□□HQ	■	TURNING carbide	53
WNMG□□□□□□MF2	■	TURNING carbide	53
WNMG□□□□□□PM	■	TURNING carbide	54
WNMG□□□□□□R/L-ST	■	TURNING carbide	54
WNMG□□□□□□TK	■	TURNING carbide	54
WNMG□□□□□□TM	■	TURNING carbide	54
WNMG□□□□□□TS	■	TURNING carbide	54
WNMG□□□□□□UF	■	TURNING carbide	54
WNMG□□□□□□UM	■	TURNING carbide	55
WNMG□□□□□□UM1	■	TURNING carbide	55
WNMG□□□□□□UR	■	TURNING carbide	55
WNMG□□□□□□UR1	■	TURNING carbide	55
WNMG□□□□□□US	■	TURNING carbide	55
WNMG□□□□□□UT	■	TURNING carbide	55
WNMU□□□□□□EN-ALU	■	MILLING carbide	307
WNMU□□□□□□EN-GM	■	MILLING carbide	307
WNMU□□□□□□GM	■	MILLING carbide	307
WNMU□□□□□□ZNN-SS	■	MILLING carbide	307
XDHX□□□□□□OSS	■	MILLING carbide	308
XNEK□□□□□□	■	MILLING carbide	309
XNGU□□□□□□ANTR-GM	■	MILLING carbide	310
XOMT□□□□□□R-GM	■	MILLING carbide	311
YNGX□□□□□□R-SM	■	MILLING carbide	312
VER22-N55	■	THREADING carbide	263
VER22-N60	■	THREADING carbide	262

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

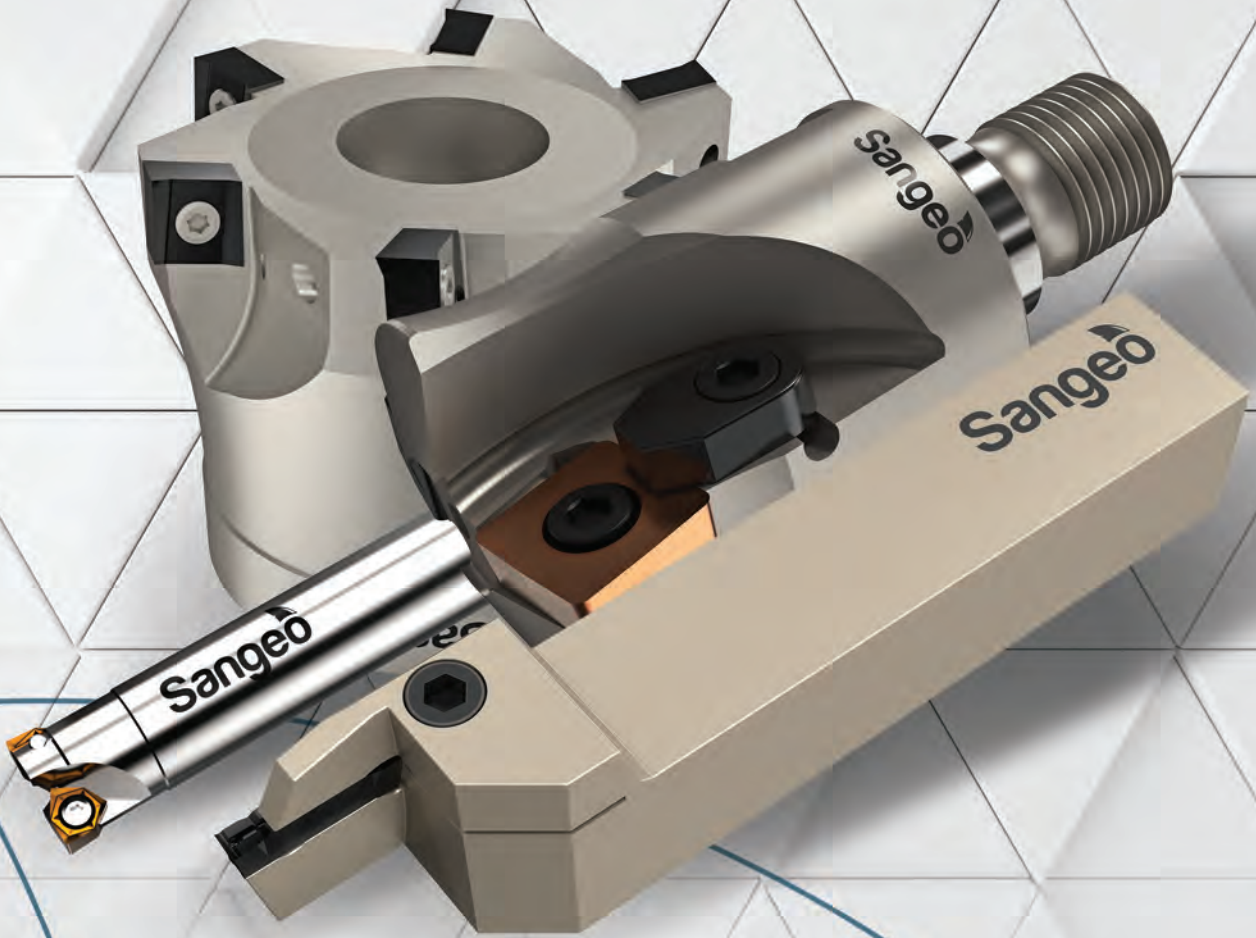
DRILLS

HSS
DRILLS & TAPS

SPARE
PARTS

INDEX

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