



2026

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Grade



Grade	ISO Range	Features & Application
DC210 UNCOATED	N10	• For Aluminum machining • Uncoated grade
DC610 CERMET	P05 – P15 M05 – M15 K05 – K15	• Finishing & Semi finishing of Steel, Cast Iron and Stainless Steel • General turning in Steel machining • Covering wide application range
DP5010 PVD COATED	M05 – M25 S05 – S25	• Wide range of turning for Stainless Steel and heat resistant alloy
Upgrade DC820 CVD COATED	K05 – K15	• High speed machining in Cast Iron machining • Combination thick Al₂O₃ coating layer and high wear resistant substrate for extreme wear resistance. • TiCN-Al₂O₃-TiN
NEW DC9005	P05 – P15	• High speed turning of steel in high conditions
Upgrade DC9015 CVD COATED	P10 – P25	• First recommendation for high speed machining in Steel • Good combinaton wear resistance and toughness • TiN-TiCN-Al₂O₃-TiN • Improved chipping resistance
Upgrade DC9025 CVD COATED	P15 – P35	• For general machining in Steel • Wide application range and good wear resistance and toughness. • TiN-TiCN-Al₂O₃-TiN • Improved chipping resistance
DC8035 CVD COATED	P20 – P40 M30 – M40	• For Low Carbon Steel, Low Carbon Alloy Steel and Stainless Steel • Interrupted cutting in general Steel • Excellent toughness • TiN-TiCN-Al₂O₃-TiN
DP5320 PVD COATED	M20 – M40 S20 – S40	• Very hard submicron substrate • For turning small components
DP8330 PVD COATED	P30 – P50 M30 – M50 S30 – S50	• Interrupted and rough turning of stainless steel and steel • Interrupted turning of heat resistant super alloys in low speed conditions



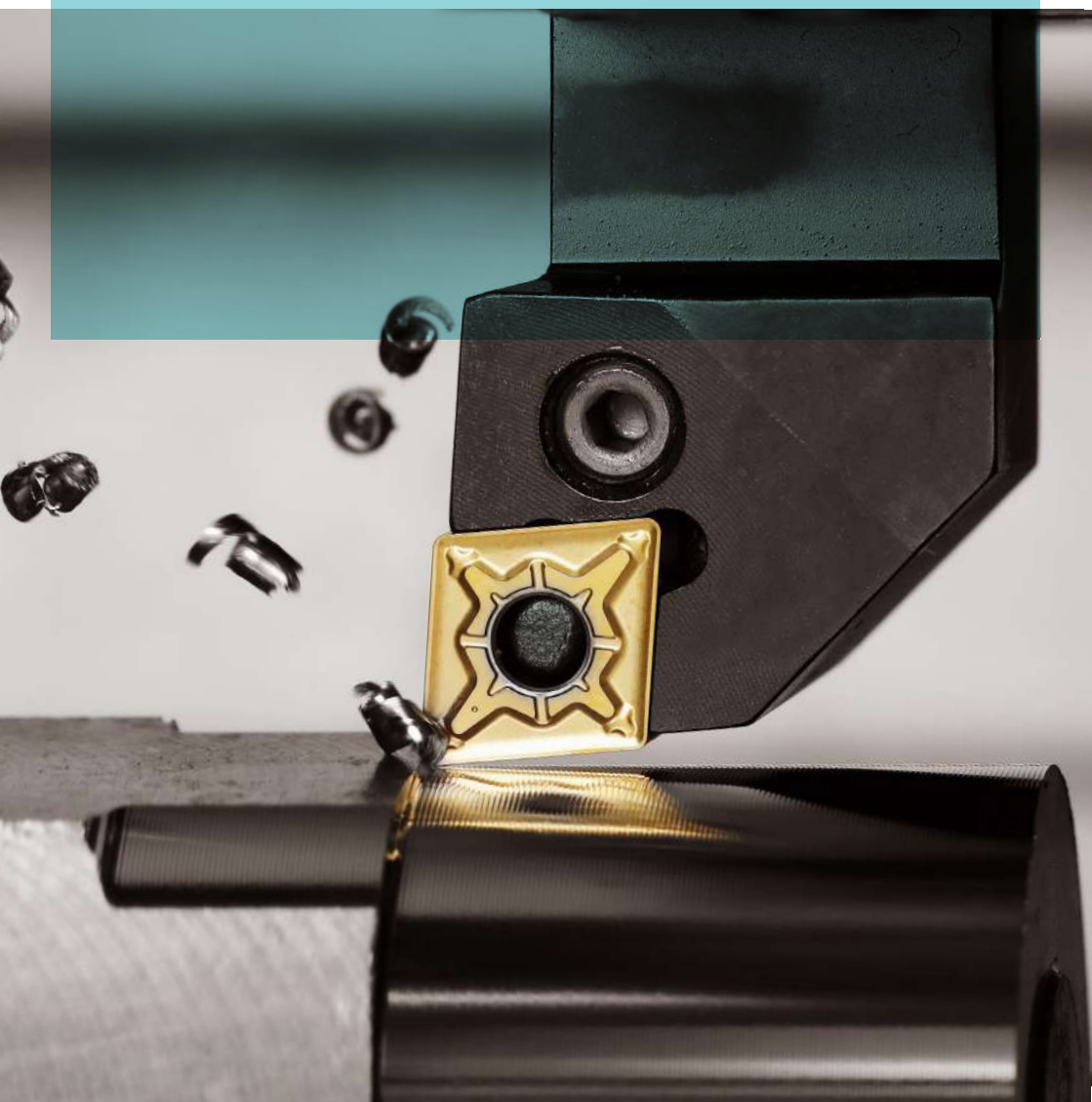
Grade	ISO Range	Features & Application
DC154 PVD COATED	P20 – P35	• Semi-medium and Roughing of steel • TiCN
DP5320 PVD COATED	P15 – P35 M10 – M30 S15 – S25	• General machining of steel, Stainless Steel and heat resistant alloy
DC9235 PVD COATED	M30 – M40 P30 – P45 K20 – K40 N15 – N30 S20 – S30	• General machining of steel and Stainless Steel • Low speed High feed machining of steel and Stainless Steel • TiCN

Grade



Grade	ISO Range	Features & Application
DC210 UNCOATED	N10	• For Aluminum machining • Uncoated grade
DC325M UNCOATED	P30 – P40	• For Steel milling • Uncoated grade
DC7040 CVD COATED	P15 – P35	• High speed machining in steel machining • For peripheral insert
DC9235 PVD COATED	M30 – M40 P30 – P45 K20 – K40 N15 – N30 S20 – S30	• Interrupted and rough machining of steel and stainless steel • Low speed and interrupted machining of heat-resistant alloy • TiCN
DP7320 PVD COATED	K05 – K20	• General machining for gray and ductile cast iron • Finish and medium machining of hardened steel
DP9320 PVD COATED	P05 – P25 K05 – K25	• General milling of steel • Heavy interrupted cutting of cast iron
DP5320 PVD COATED	P15 – P35 M10 – M30 S15 – S25	• General machining of steel, stainless steel and heat-resistant alloy
DC154 PVD COATED	P20 – P35	• For heavy duty applications in milling of steel • Improved edge strenght and better toughness • TiCN
DP5030 PVD COATED	M05 – M30 P10 – P30 S10 – S20	• Medium and Roughing of steel and stainless steel Excerant wear resistance
DC9800 PVD COATED	M10 – M30 P15 – P35 K10 – K30 S10 – S25 H15 – H30	• For semi-roughing and medium machining applications • Optimum mechanical shock resistance • TiAlN
DP8330 PVD COATED	P30 – P45 M25 – M40 S15 – S30	• High mechanical shock resistance • For semi -roughing and medium machining applications • TiAlN + TiN
Upgrade DC7070 PVD COATED	P20 – P40	• For mold and die • TiAlN • For semi-roughing and medium machining
DP9020 PVD COATED	P25 – P45	• For carbon and alloy steel

DURACARB SOLUTIONS **TURNING**



1. Shape



R



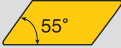
E



S



D



K



T



V



C



W

2. Clearance Angle



N

0°



B

5°



C

7°



P

11°

C1

N2

M3

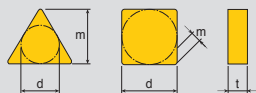
G4

125

5. Cutting Edge Length

I.C(mm)	C	D	R	S	T	V	W	K
								
3.97	03	04		03	06		02	
4.76	04	05		04	08	08		
5.56	05	06		05	09	09	03	
6.35	06	07		06	11	11	04	
7.94	08	09		07	13	13	05	
8.0			08					
9.52	09	11	09	09	16	16	06	16
10.0			10					
12.0			12					
12.7	12	15		12	22	22	08	
15.88	16	19	15	15	27	27	10	
16.0			16					
19.05	19	23	19	19	33	33	13	
20.0			20					
25.0			25					
25.4	25	31	25	25	44			
32.0			32					

3. Tolerance



M class

Tolerance mm		
IC	m ±	d ±
6.35	± 0.08	± 0.05
9.52	± 0.08	± 0.05
12.70	± 0.13	± 0.08

G class

class	m	t	d
H	± 0.013	± 0.025	± 0.013
E	± 0.025	± 0.025	± 0.025
G	± 0.025	± 0.13	± 0.025

4. Type

- N** No chipbreaker, No hole
- A** No chipbreaker, Straight Hole
- F** Double sided CB, No hole
- G** Single sided CB, Straight Hole
- M** Single sided CB, Straight Hole
- R** Single sided CB, No Hole
- W,B** No chipbreaker, Screw hole
- T,H** Single sided CB, Screw hole
- Z, X** Special

6. Thickness



02 = 2,38mm

03 = 3,18mm

T3 = 3,97mm

04 = 4,76mm

06 = 6,35mm

07 = 7,94mm

09 = 9,52mm

04
6

08
7

(R)
8

46
9

7. Coner R



ex) 0,8mm = 08

8. Hand of Insert



R Right



L Left

9. Chipbreaker

- 31
- 41
- 42
- 43
- 45
- 46
- 86
- 53
- MA
- AU
- .
- .
- .

Recommended Cutting Conditions



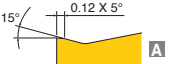
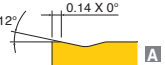
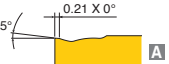
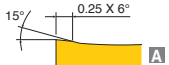
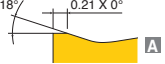
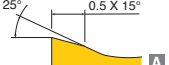
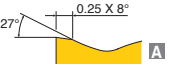
ISO	Material	Condition	Tensile strength (N/mm²)	Hardness HB	Material No.
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C Annealed	420	125	1
		>=0.25%C Annealed	650	190	2
		<0.55%C Quenched and tempered	850	250	3
		>=0.55%C Annealed	750	220	4
		Quenched and tempered	1000	300	5
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed	600	200	6
			930	275	7
		Quenched and tempered	1000	300	8
			1200	350	9
	High alloy steel, cast steel and tool steel	Annealed	680	200	10
		Quenched and tempered	1100	325	11
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12
		Martensitic	820	240	13
		Austenitic	600	180	14
K	Gray cast iron (GG)	Ferritic		160	15
		Pearlitic		250	16
	Cast iron nodular (GGG)	Ferritic		180	17
		Pearlitic		260	18
	Malleable cast iron	Ferritic		130	19
		Pearlitic		230	20
N	Aluminum - wrought alloy	Not cureable		60	21
		Cured		100	22
	Aluminum-cast, alloyed	<=12% Si Not cureable		75	23
		Cured		90	24
		>12% Si High temp.		130	25
	Copper alloys	>1% Pb Free cutting		110	26
		Brass		90	27
		Electrolitic copper		100	28
	Non-metallic	Duroplastics, fiber plastics		70 Shore D	29
		Hard rubber		55 Shore D	30
S	High temp. alloys	Fe based	Annealed	200	31
			Cured	280	32
		Ni or Co based	Annealed	250	33
			Cured	350	34
			Cast	320	35
	Titanium, Ti alloys	Pure	Rm 400	190	36
		Alpha+beta alloys, hardened	Rm 1050	310	37
H	Hardened steel	Hardened		55HRC	38
		Hardened		60HRC	39
	Chilled cast iron	Cast		400	40
	Cast iron nodular	Hardened		55HRC	41

► For more information of material groups, see the materials & grades "material conversion table"

■ Steel
 ■ Stainless steel
 ■ Cast iron
 ■ Nonferrous
 ■ High temp. alloys
 ■ Hardened steel

Cutting speed Vc(m/min)									
Coated								Uncoated	Cermet
DC820	DC9005	DC9015	DC9025	DC8035	DP5010	DP5320	DP8330	DC210	DC610
	310-580	280-530	230-480	200-450			110-310		300-570
	270-530	240-480	200-420	170-390			110-280		250-500
	230-490	200-440	160-380	130-350			90-210		220-460
	250-500	220-450	190-400	160-370			100-220		240-470
	210-470	180-420	150-350	120-320			90-190		220-440
	230-550	200-500	170-400	140-370			90-210		220-520
	180-330	150-280	140-250	110-220			40-120		170-300
	160-300	130-250	120-230	90-200			40-90		150-270
	150-280	120-230	110-200	80-170			30-90		130-250
	210-420	190-380	140-280	110-250			60-160		250-395
	100-200	90-180	70-130	40-100			40-80		130-195
					160-390	120-290	110-260		180-270
					160-280	120-270	110-240		170-250
					100-250	90-240	80-200		150-240
290-450								110-180	220-320
250-360								95-140	205-280
150-350								95-135	135-200
130-300								90-125	95-140
250-390								110-140	160-255
200-320								90-125	170-230
								200-1000	
								200-1000	
								50-400	
								50-500	
								40-350	
								50-500	
								50-500	
								30-300	
								50-300	
								50-150	
					50-180	40-160	30-80	55-85	
					40-160	30-130	20-60	40-65	
					45-100	35-80	20-50	32-55	
					35-90	30-70	20-40	21-40	
					30-80	30-60	20-30	16-26	
					110-200	90-180	80-160	50-75	
					50-100	40-80	30-50	45-70	

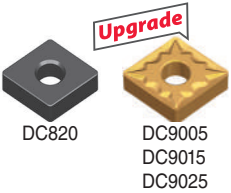
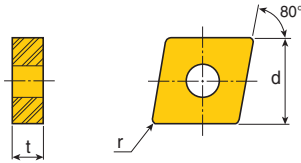


Type	Insert • Edge geometry		Feature • Application
NEGATIVE	NEW 31	 	• For finish application • Wide supporting area
	41	 	• For medium & finishing • Good chip evacuation in low feed and depth of cut • Excellent chip control
	43	 	• Balance between strength and sharpness • For semi finishing to medium machining in steel and alloy steel • Good chip control in profiling
	86	 	• For steel machining • From roughing to semi-finishing applications • Low cutting force • Excellent chip evacuation
	90	 	• For slender workpiece applications • Vibration free • Steel and stainless steel machining • High positive rake geometry to minimize cutting forces
	46	 	• Medium for carbon steel and alloy steel • From medium to finishing of cast iron machining • Suitable for continuous to interrupted • Geometry of low cutting force
	53	 	• Medium to roughing in steel and cast iron • Strong cutting edge • Recommended for unstable conditions
	42	 	• For medium machining in stainless steel and low carbon steel • Low cutting force with sharp edge geometry
	45	 	• For medium machining in stainless steel, low carbon steel & low carbon alloy steel • Semi finishing in cast Iron • Minimum of built-up edge from sharp edge geometry
	56	 	• For roughing application for steel and cast iron • Strong cutting edge • Excellent performance for interrupted machining



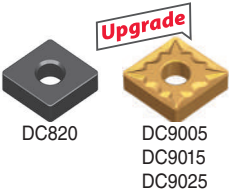
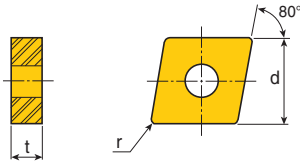
Type	Insert • Edge geometry		Feature • Application
POSITIVE	NEW 31	* Cermet only 6°	• For super finish application • Excellent chip control in low depth and low speed
	NEW 32	* Cermet only 17°	• Finish application • Excellent chip control • Low cutting force
	41	17° 0.08 X 9°	• Finishing on boring application • Good chip evacuation in low feed and depth of cut • Low cutting force & good chip control
	51	18° 0.1 X 0°	• For semi-finishing to medium machining • Good chip evacuation in low feed and depth of cut • Good chip control
	52	10° 0.12 X 0°	• Medium to roughing in steel and cast iron • Applicable to both interrupted and continuous
	AU	26°	• For aluminum machining • Low cutting force, excellent chip evacuation

Negative 80° Insert



Insert		Designation	Dimension(mm)			Recommended cutting condition		Cermat	CVD coated					PVD coated		
			d	t	r	D.O.C (mm)	Feed (mm/rev)		DC610	DC820	DC9005	DC9015	DC9025	DC8035	DP5320	DP5010
	CNMA For Cast Iron	CNMA 120404	12.7	4.76	0.4	0.5-7.0	0.25-0.70		●							
		120408	12.7	4.76	0.8	0.5-7.0	0.25-0.70		●							
		120412	12.7	4.76	1.2	0.5-7.0	0.25-0.70		●							
	CNMG 31 Finishing	CNMG 120404 31	12.7	4.76	0.4	0.2-2.0	0.08-0.30				●	●				
		120408 31	12.7	4.76	0.8	0.3-2.0	0.10-0.30					●	●			
	CNMG 41 Finishing & Medium	CNMG 120404 41	12.7	4.76	0.4	0.5-2.0	0.05-0.30	●			●	●	●			
		120408 41	12.7	4.76	0.8	0.5-2.0	0.07-0.30	●		●	●	●	●			
		120412 41	12.7	4.76	1.2	0.5-2.0	0.10-0.30	●		●						
	CNMG 42 For Stainless Steel	CNMG 120404 42	12.7	4.76	0.4	0.5-5.0	0.10-0.50						●			
		120408 42	12.7	4.76	0.8	0.5-5.0	0.12-0.50						●		●	
		120412 42	12.7	4.76	1.2	0.5-5.0	0.14-0.50						●			
	CNMG 43 Semi finishing & Medium	CNMG 120404 43	12.7	4.76	0.4	0.7-4.8	0.12-0.52				●	●				
		120408 43	12.7	4.76	0.8	0.7-4.8	0.12-0.52			●	●	●				
		120412 43	12.7	4.76	1.2	0.7-4.8	0.12-0.52			●	●	●				
	CNMG 45 Medium & Roughing	CNMG 120404 45	12.7	4.76	0.4	1.2-5.0	0.15-0.50	●			●	●	●	○	●	
		120408 45	12.7	4.76	0.8	1.2-5.0	0.15-0.50	●			●	●	●	○	●	
		120412 45	12.7	4.76	1.2	1.2-5.0	0.15-0.50				●	●	●	○	●	
	CNMG 86 Semi finishing, Medium & Semi Roughing	CNMG 120408 86	12.7	4.76	0.8	0.8-4.0	0.15-0.45			●	●	●			●	
		120412 86	12.7	4.76	1.2	1.0-4.0	0.15-0.45			●	●	●			●	
	CNMG 46 Medium	CNMG 120404 46	12.7	4.76	0.4	1.0-5.0	0.1 - 0.40				●	●	●			
		120408 46	12.7	4.76	0.8	1.2-5.0	0.17-0.55		●		●	●	●			
		120412 46	12.7	4.76	1.2	1.5-5.0	0.20-0.55		●		●	●	●		●	
	CNMG 53 Medium & Roughing	CNMG 120404 53	12.7	4.76	0.4	2.3-5.5	0.22-0.60		●		●	●				
		120408 53	12.7	4.76	0.8	2.3-5.5	0.22-0.60		●		●	●				
		120412 53	12.7	4.76	1.2	2.3-5.5	0.22-0.60		●		●	●				

Negative 80° Insert



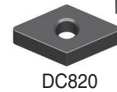
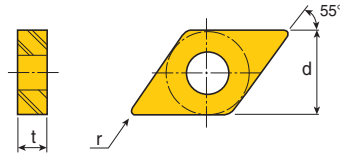
Insert	Designation	Dimension(mm)			Recommended cutting condition		Cermet	CVD coated				PVD coated		
		d	t	r	D.O.C (mm)	Feed (mm/rev)		DC610	DC820	DC9005	DC9015	DC9025	DC8035	DP5320
 Type B CNMG 56 Roughing	CNMG 120408 56	12.7	4.76	0.8	2.5-6.0	0.25-0.70		●		●	●	●		
	120412 56✓	12.7	4.76	1.2	2.5-6.0	0.25-0.70		●		●	●	●		
	120416 56	12.7	4.76	1.6	2.5-6.0	0.30-0.70		●		●	●			

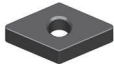
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• ✓ : Type B chipbreaker

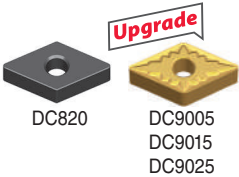
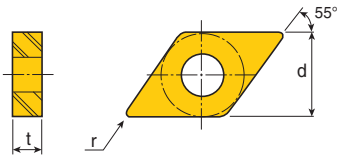
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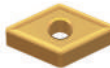
Negative 55° Insert



Insert		Designation	Dimension(mm)			Recommended cutting condition		Cermat		CVD coated				PVD coated	
			d	t	r	D.O.C (mm)	Feed (mm/rev)	DC610	DC820	DC9005	DC9015	DC9025	DC8035	DP5320	DP5010
 DNMA For Cast Iron	DNMA	150608	12.7	6.35	0.8	0.5-7.0	0.25-0.70		●						
		150612	12.7	6.35	1.2	0.5-7.0	0.25-0.70		●						
 DNMG 31 Finishing	DNMG	150404 31	12.7	4.76	0.4	0.2-2.0	0.08-0.30				●	●			
		150408 31	12.7	4.76	0.8	0.3-2.0	0.10-0.30				●	●			
		150604 31	12.7	6.35	0.4	0.2-2.0	0.08-0.30				●	●			
		150608 31	12.7	6.35	0.8	0.3-2.0	0.10-0.30				●	●			
 DNMG 41 Finishing & Medium	DNMG	150404 41	12.7	4.76	0.4	0.5-2.0	0.05-0.30	●		●					
		150408 41	12.7	4.76	0.8	0.5-2.0	0.07-0.30	●		●	●	●			
		150412 41	12.7	4.76	1.2	0.5-2.0	0.10-0.30			●					
		150604 41	12.7	6.35	0.4	0.5-2.0	0.05-0.30	●		●	●	●			
		150608 41	12.7	6.35	0.8	0.5-2.0	0.07-0.30	●		●	●	●			
		150612 41	12.7	6.35	1.2	0.5-2.0	0.10-0.30			●					
 DNMG 42 For Stainless Steel	DNMG	150604 42	12.7	6.35	0.4	0.5-5.0	0.10-0.50							●	
		150608 42	12.7	6.35	0.8	0.5-5.0	0.12-0.50							●	
		150612 42	12.7	6.35	1.2	0.5-5.0	0.14-0.50							●	
 DNMG 43 Semi finishing & Medium	DNMG	150404 43	12.7	4.76	0.4	0.7-4.8	0.12-0.52			●					
		150408 43	12.7	4.76	0.8	0.7-4.8	0.12-0.52			●					
		150412 43	12.7	4.76	1.2	0.7-4.8	0.12-0.52			●					
		150604 43	12.7	6.35	0.4	0.7-4.8	0.12-0.52			●	●	●			
		150608 43	12.7	6.35	0.8	0.7-4.8	0.12-0.52			●	●	●			
		150612 43	12.7	6.35	1.2	0.7-4.8	0.12-0.52			●	●	●			
 DNMG 45 Medium & Roughing	DNMG	150604 45	12.7	6.35	0.4	1.2-5.0	0.15-0.50	●			●	●	●		
		150608 45	12.7	6.35	0.8	1.2-5.0	0.15-0.50				●	●	●		
		150612 45	12.7	6.35	1.2	1.2-5.0	0.15-0.50				●	●	●		
 DNMG 86 Semi finishing, Medium & Semi Roughing	DNMG	150608 86	12.7	4.76	0.8	0.7-4.0	0.15-0.40				●	●			
 DNMG 46 Medium	DNMG	150604 46	12.7	6.35	0.4	0.8-4.0	0.15-0.40				●	●	●		
		150608 46	12.7	6.35	0.8	1.0-4.0	0.17-0.50		●		●	●	●		●
		150612 46	12.7	6.35	1.2	1.3-4.0	0.20-0.50		●		●	●	●		

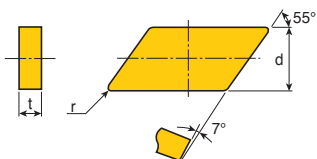
- Holder: 39, 51 page
- ✓ : Type B chipbreaker

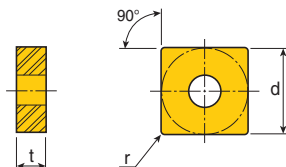


Insert	Designation	Dimension(mm)			Recommended cutting condition		Cermet	CVD coated					PVD coated		
		d	t	r	D.O.C (mm)	Feed (mm/rev)		DC610	DC820	DC9005	DC9015	DC9025	DC8035	DP5320	DP5010
	DNMG 53 Medium & Roughing	DNMG 150604 53	12.7	6.35	0.4	2.3-5.5	0.22-0.60		●		●	●			
		150608 53	12.7	6.35	0.8	2.3-5.5	0.22-0.60		●		●	●			
		150612 53	12.7	6.35	1.2	2.3-5.5	0.22-0.60		●		●	●			
 Type B	DNMG 56 Roughing	DNMG 150608 56	12.7	6.35	0.8	2.0-4.0	0.25-0.65		●		●	●			
		150612 56✓	12.7	6.35	1.2	2.0-4.0	0.25-0.65		●			●			
		150616 56	12.7	6.35	1.6	2.0-4.0	0.25-0.65					●	●		

• Holder: 39, 51 page
• ✓ : Type B chipbreaker

Negative 55° Insert

[illegible]



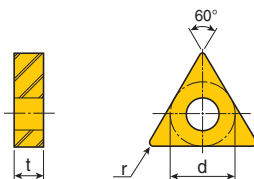
DC820



DC9005
DC9015
DC9025

[illegible]

Negative 60° Insert



DC820



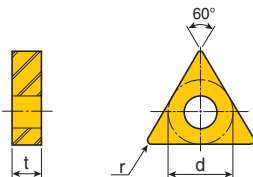
DC9005
DC9015
DC9025

Insert		Designation	Dimension(mm)			Recommended cutting condition		Cermet	CVD coated					PVD coated	
			d	t	r	D.O.C (mm)	Feed (mm/rev)		DC610	DC820	DC9005	DC9015	DC9025	DC8035	DP5320
	TNMA For Cast Iron	TNMA 160404	9.52	4.76	0.4	0.5-7.0	0.25-0.70		●						
		160408	9.52	4.76	0.8	0.5-7.0	0.25-0.70		●						
		160412	9.52	4.76	1.2	0.5-7.0	0.25-0.70		●						
	TNMG 41 Finishing & Medium	TNMG 160404 41	9.52	4.76	0.4	0.5-2.0	0.05-0.30	●			●	●			
		160408 41	9.52	4.76	0.8	0.5-2.0	0.07-0.30	●			●	●			
	TNMG 42 For Stainless Steel	TNMG 160404 42	9.52	4.76	0.4	0.5-5.0	0.10-0.50						●		
		160408 42	9.52	4.76	0.8	0.5-5.0	0.12-0.50						●		
		160412 42	9.52	4.76	1.2	0.5-5.0	0.14-0.50						●		
	TNMG 43 Semi finishing & Medium	TNMG 160404 43	9.52	4.76	0.4	0.7-4.8	0.12-0.52				●	●			
		160408 43	9.52	4.76	0.8	0.7-4.8	0.12-0.52				●	●			
		160412 43	9.52	4.76	1.2	0.7-4.8	0.12-0.52			●	●	●			●
	TNMG 45 Medium & Roughing	TNMG 160404 45	9.52	4.76	0.4	1.2-5.0	0.15-0.50	●			●	●	●	○	
		160408 45	9.52	4.76	0.8	1.2-5.0	0.15-0.50	●			●	●	●	○	
		160412 45	9.52	4.76	1.2	1.2-5.0	0.15-0.50				●	●	●		
	TNMG 86 Semi finishing, Medium & Semi Roughing	TNMG 160408 86	9.52	4.76	0.8	0.8-3.5	0.15-0.40				●	●			●
	TNMG 90 Medium	TNMG 160404 L-90	9.52	4.76	0.4	0.7-3.5	0.10-0.30	●			●	●			
		160404 R-90	9.52	4.76	0.4	0.7-3.5	0.10-0.30	●			●	●			
		160408 R-90	9.52	4.76	0.8	1.0-3.5	0.12-0.35	●			●	●			
	TNMG 46 Medium	TNMG 160404 46	9.52	4.76	0.4	1.0-3.5	0.17-0.40				●	●	●		
		160408 46	9.52	4.76	0.8	1.2-3.5	0.17-0.50		●		●	●	●		
		160412 46	9.52	4.76	1.2	1.5-3.5	0.20-0.50		●		●	●	●		
	TNMG 53 Medium & Roughing	TNMG 160404 53	9.52	4.76	0.4	2.3-5.5	0.22-0.60		●		●	●			
		160408 53	9.52	4.76	0.8	2.3-5.5	0.22-0.60		●		●	●			
		160412 53	9.52	4.76	1.2	2.3-5.5	0.22-0.60		●		●	●			

• Holder: 42, 47, 48, 52, 59 page

○ : on request

Negative 60° Insert

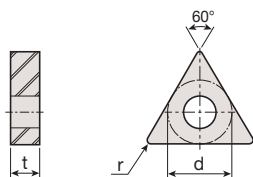


Insert	Designation		Dimension(mm)			Recommended cutting condition		Cermet	CVD coated				PVD coated		
			d	t	r	D.O.C (mm)	Feed (mm/rev)	DC610	DC820	DC9005	DC9015	DC9025	DC8035	DP5320	DP5010
 TNMG 56 Roughing	TNMG 160408 56		9.52	4.76	0.8	2.0-5.0	0.25-0.65		●		●	●			
	160412 56		9.52	4.76	1.2	2.0-5.0	0.25-0.65		●		●	●			

• Holder: 42, 47, 48, 52, 59 page

TNGG

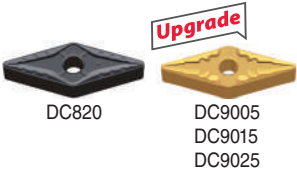
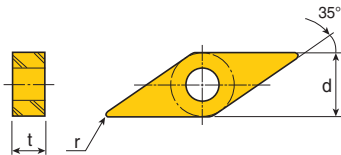
Negative 60° Insert



Insert	Designation	Dimension(mm)			Recommended cutting condition		Cermet	CVD coated					PVD coated	
		d	t	r	D.O.C (mm)	Feed (mm/rev)	DC610	DC820	DC9005	DC9015	DC9025	DC8035	DP5320	DP5010
	TNGG 160402 L-D	9.52	4.76	0.2	1.0-4.0	0.10-0.30	●							
	160402 R-D	9.52	4.76	0.2	1.0-4.0	0.10-0.30	●							
	160404 L-D	9.52	4.76	0.4	1.0-4.0	0.12-0.30	●							
	160404 R-D	9.52	4.76	0.4	1.0-4.0	0.12-0.30	●							
	160408 L-D	9.52	4.76	0.8	1.0-4.0	0.12-0.30	●							
	160408 R-D	9.52	4.76	0.8	1.0-4.0	0.12-0.30	●							

• Holder: 42, 47, 48, 52, 59 page

Negative 35° Insert



Insert	Designation	Dimension(mm)			Recommended cutting condition		Cermet	CVD coated					PVD coated	
		d	t	r	D.O.C (mm)	Feed (mm/rev)		DC610	DC820	DC9005	DC9015	DC9025	DC8035	DP5320
 VNMG 31 Finishing	VNMG 160404 31	9.52	4.76	0.4	0.2-1.5	0.08-0.30				●	●			
	160408 31	9.52	4.76	0.8	0.3-1.5	0.10-0.30				●	●			
 VNMG 41 Finishing & Medium	VNMG 160404 41	9.52	4.76	0.4	0.5-2.0	0.05-0.30	●		●	●	●			●
	160408 41	9.52	4.76	0.8	0.5-2.0	0.07-0.30	●		●	●	●			
 VNMG 43 Finishing & Medium	VNMG 160404 43	9.52	4.76	0.4	0.5-2.5	0.07-0.30			●	●	●			
	160408 43	9.52	4.76	0.8	0.7-3.0	0.10-0.30			●	●	●			
	160412 43	9.52	4.76	1.2	1.0-3.0	0.12-0.30				●	●			
 VNMG 45 Medium & Roughing	VNMG 160404 45	9.52	4.76	0.4	1.2-5.0	0.15-0.50	●			●	●	●	●	●
	160408 45	9.52	4.76	0.8	1.2-5.0	0.15-0.50	●			●	●	●		
	160412 45	9.52	4.76	1.2	1.2-5.0	0.15-0.50				●	●	●		
 VNMG 46 Medium	VNMG 160404 46	9.52	4.76	0.4	0.8-3.0	0.15-0.36				●	●	●		
	160408 46	9.52	4.76	0.8	1.0-2.5	0.17-0.36		●		●	●	●		
	160412 46	9.52	4.76	1.2	1.2-2.5	0.20-0.36		●		●	●	●		
 VNMG 53 Medium & Roughing	VNMG 160404 53	9.52	4.76	0.4	2.3-5.5	0.22-0.60		●		●	●			
	160408 53	9.52	4.76	0.8	2.3-5.5	0.22-0.60		●		●	●			
	160412 53	9.52	4.76	1.2	2.3-5.5	0.22-0.60		●		●	●			

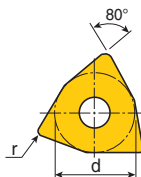
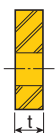
• Holder: 35, 36 page



DC820

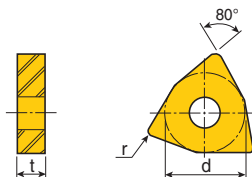


DC9005
DC9015
DC9025



Insert		Designation	Dimension(mm)			Recommended cutting condition		Carnet	CVD coated				PVD coated			
			d	t	r	D.O.C (mm)	Feed (mm/rev)		DC610	DC820	DC9005	DC9015	DC9025	DC8035	DP5320	DP5010
	WNMA For Cast Iron	WNMA 080408	12.7	4.76	0.8	0.5-5.0	0.25-0.70		●							
		080412	12.7	4.76	1.2	0.5-5.0	0.25-0.70		●							
	WNMG 31 Finishing	WNMG 080404 31	12.7	4.76	0.4	0.2-2.0	0.08-0.30				●	●		●	●	
		080408 31	12.7	4.76	0.8	0.3-2.0	0.10-0.30					●	●		●	●
	WNMG 41 Finishing & Medium	WNMG 080408 41	12.7	4.76	0.8	0.5-2.0	0.07-0.30	●		●	●	●	●			
		080412 41	12.7	4.76	1.2	0.5-2.0	0.10-0.30	●		●	●	●				
	WNMG 42 For Stainless Steel	WNMG 080404 42	12.7	4.76	0.4	0.5-5.0	0.10-0.50							●		
		080408 42	12.7	4.76	0.8	0.5-5.0	0.12-0.50							●		
		080412 42	12.7	4.76	1.2	0.5-5.0	0.14-0.50							●		
	WNMG 43 Semi finishing & Medium	WNMG 080404 43	12.7	4.76	0.4	0.7-4.8	0.12-0.52					●	●			
		080408 43	12.7	4.76	0.8	0.7-4.8	0.12-0.52				●	●	●			
		080412 43	12.7	4.76	1.2	0.7-4.8	0.12-0.52					●	●	●		
	WNMG 45 Medium & Roughing	WNMG 060404 45	9.52	4.76	0.4	1.2-5.0	0.15-0.50					●	●	●		
		060408 45	9.52	4.76	0.8	1.2-5.0	0.15-0.50					●	●	●		●
		060412 45	9.52	4.76	1.2	1.2-5.0	0.15-0.50					●	●	●		
		080404 45	12.7	4.76	0.4	1.2-5.0	0.15-0.50	●				●	●	●	○	
		080408 45	12.7	4.76	0.8	1.2-5.0	0.15-0.50	●				●	●	●	○	
	WNMG 86 Semi finishing, Medium & Semi Roughing	WNMG 080408 86	12.7	4.76	0.8	0.8-4.0	0.15-0.45			●	●	●			●	
		080412 86	12.7	4.76	1.2	1.0-4.0	0.15-0.45			●	●	●			●	
		080416 86	12.7	4.76	1.6	1.0-4.0	0.15-0.45			●	●	●				
	WNMG 90 Medium	WNMG 080408 L-90	12.7	4.76	0.8	1.0-3.5	0.12-0.35					●	●			
		080408 R-90	12.7	4.76	0.8	1.0-3.5	0.12-0.35						●	●		
	WNMG 46 Medium	WNMG 080404 46	12.7	4.76	0.4	1.0-4.0	0.12-0.40	●				●	●	●		
		080408 46	12.7	4.76	0.8	1.2-4.0	0.17-0.55		●	●	●	●	●		●	
		080412 46	12.7	4.76	1.2	1.5-4.0	0.25-0.55		●	●	●	●	●			
		080416 46	12.7	4.76	1.6	1.5-4.0	0.25-0.55			●						

○ : on request



DC820

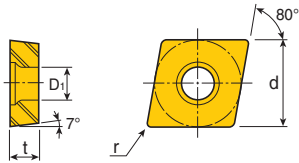


DC9005
DC9015
DC9025

[illegible]

○: on request

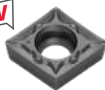
Upgrade



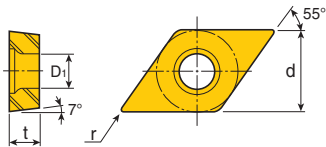
DC820

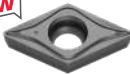
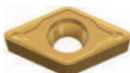


DC9005
DC9015
DC9025

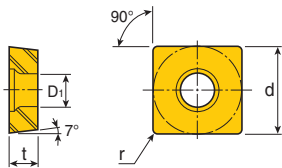
Insert	Designation	Dimension(mm)				Recommended cutting condition		Cermet	CVD coated				PVD coated		
		d	t	r	D ₁	D.O.C (mm)	Feed (mm/rev)	DC610	DC820	DC9005	DC9015	DC9025	DC8035	DP5320	DP5010
	CCMT 060204 32	6.35	2.38	0.4	2.8	0.3-1.5	0.05-0.15	●							
	09T304 32	9.52	3.97	0.4	4.4	0.4-2.0	0.09-0.20	●							
	CCMT 060204 41	6.35	2.38	0.4	2.8	0.3-1.5	0.05-0.15	●		●					
	09T304 41	9.52	3.97	0.4	4.4	0.5-2.5	0.05-0.15	●		●	●	●			
	09T308 41	9.52	3.97	0.8	4.4	0.5-2.5	0.07-0.15	●			●	●			
	CCMT 060204 51	6.35	2.38	0.4	2.8	1.0-2.0	0.05-0.20	●							
	09T304 51	9.52	3.97	0.4	4.4	1.0-3.0	0.07-0.25	●	●		●	●			
	09T308 51	9.52	3.97	0.8	4.4	1.0-3.0	0.09-0.25		●		●	●			
	CCMT 060204 52	6.35	2.38	0.4	2.8	1.0-2.0	0.10-0.25	●			●	●			
	09T304 52	9.52	3.97	0.4	4.4	1.2-3.0	0.12-0.30	●			●	●			
	09T308 52	9.52	3.97	0.8	4.4	1.2-3.0	0.12-0.30	●			●	●			

Negative 55° Insert



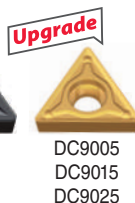
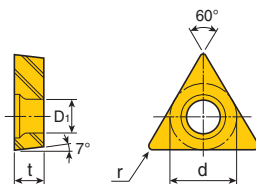
Insert	Designation	Dimension(mm)				Recommended cutting condition		Cermat	CVD coated				PVD coated			
		d	t	r	D ₁	D.O.C (mm)	Feed (mm/rev)		DC610	DC820	DC9005	DC9015	DC9025	DC8035	DP5320	DP5010
 	DCMT 31 Finishing	DCMT 11T302 31	9.52	3.97	0.2	4.4	0.1-2.0	0.03-0.15	●							
		11T304 31	9.52	3.97	0.4	4.4	0.2-2.0	0.05-0.20	●							
 	DCMT 32 Finishing	DCMT 070204 32	6.35	2.38	0.4	2.8	0.4-1.5	0.07-0.20	●							
		11T304 32	9.52	3.97	0.4	4.4	0.6-1.5	0.10-0.25	●							
		11T308 32	9.52	3.97	0.8	4.4	0.6-2.0	0.10-0.25	●							
	DCMT 41 Finishing	DCMT 11T304 41	9.52	3.97	0.4	4.4	0.5-2.5	0.05-0.15	●			●	●			
		11T308 41	9.52	3.97	0.8	4.4	0.5-2.5	0.07-0.15				●	●			
	DCMT 51 Medium	DCMT 11T304 51	9.52	3.97	0.4	4.4	1.0-3.0	0.07-0.25	●	●		●	●			
		11T308 51	9.52	3.97	0.8	4.4	1.0-3.0	0.09-0.25	●	●		●	●			
		11T312 51	9.52	3.97	1.2	4.4	1.0-3.0	0.10-0.25		●		●	●			
	DCMT 52 Medium & Roughing	DCMT 070204 52	6.35	2.38	0.4	2.8	1.0-2.0	0.10-0.25	●			●	●			
		11T304 52	9.52	3.97	0.4	4.4	1.2-3.0	0.12-0.30	●			●	●			
		11T308 52	9.52	3.97	0.8	4.4	1.2-3.0	0.12-0.30	●			●	●			

Upgrade



Insert	Designation	Dimension(mm)				Recommended cutting condition		Cermet	CVD coated				PVD coated				
		d	t	r	D ₁	D.O.C (mm)	Feed (mm/rev)		DC610	DC820	DC9005	DC9015	DC9025	DC8035	DP5320	DP5010	
	SCMT 41 Finishing	SCMT 09T304 41	9.52	3.97	0.4	4.4	0.5-2.5	0.05-0.15				●	●				
		09T308 41	9.52	3.97	0.8	4.4	0.5-2.5	0.07-0.15				●	●				
	SCMT 51 Medium	SCMT 09T304 51	9.52	3.97	0.4	4.4	1.0-3.0	0.07-0.25	●	●		●	●				
		09T308 51	9.52	3.97	0.4	4.4	1.0-3.0	0.09-0.25		●		●	●				

Positive 60° Insert

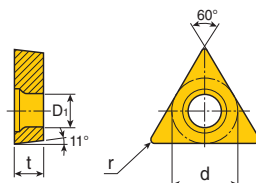


Insert	Designation	Dimension(mm)				Recommended cutting condition		Cermat	CVD coated					PVD coated		
		d	t	r	D ₁	D.O.C (mm)	Feed (mm/rev)		DC610	DC820	DC9005	DC9015	DC9025	DC8035	DP5320	DP5010
 TCMT 32 Finishing	TCMT 16T304 32	9.52	3.97	0.4	4.4	0.4-2.0	0.07-0.20	●								
 TCMT 41 Finishing	TCMT 16T304 41	9.52	3.97	0.4	4.4	0.5-2.5	0.05-0.15				●	●				
	16T308 41	9.52	3.97	0.8	4.4	0.5-2.5	0.07-0.15				●	●				
 TCMT 51 Medium	TCMT 090208 51	5.56	2.38	2.5	2.5	0.8-2.0	0.10-0.30	●								
	110204 51	6.35	2.38	0.4	2.8	0.6-3.0	0.07-0.25	●								
	16T304 51	9.52	3.97	0.4	4.4	1.0-3.0	0.07-0.25	●	●		●	●				
	16T308 51	9.52	3.97	0.8	4.4	1.0-3.0	0.09-0.25		●		●	●				
	16T312 51	9.52	3.97	1.2	4.4	1.0-3.0	0.10-0.25		●		●	●				
 TCMT 52 Medium & Roughing	TCMT 110204 52	6.35	2.38	0.4	2.8	1.0-2.5	0.10-0.25	●			●	●				
	16T304 52	9.52	3.97	0.4	4.4	1.2-3.0	0.12-0.30	●								

• Holder: 45, 57 page

TPMT

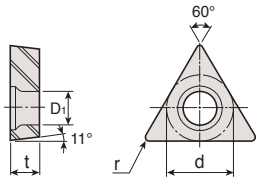
Positive 60° Insert



Insert	Designation	Dimension(mm)				Recommended cutting condition		Cermetal	CVD coated					PVD coated		
		d	t	r	D1	D.O.C (mm)	Feed (mm/rev)		DC610	DC820	DC9005	DC9015	DC9025	DC8035	DP5320	DP5010
	TPMT 31 Finishing	TPMT 110304 31	6.35	3.18	0.4	3.4	0.2-1.5	0.05-0.20	●							
	TPMT 32 Finishing	TPMT 110304 32	6.35	3.18	0.4	3.4	0.2-1.5	0.07-0.20	●							

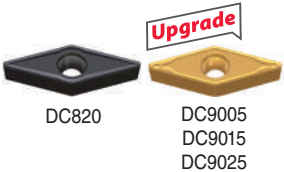
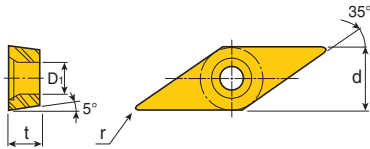
• Holder: 58 page

Positive 60° Insert



Insert	Designation	Dimension(mm)				Cermet	CVD coated					PVD coated	
		d	t	r	D ₁	DC610	DC820	DC9005	DC9015	DC9025	DC8035	DP5320	DP5010
	TPGT 090202 L-D	5.56	2.28	0.5	2.5	●							
	090204 L-D	5.56	2.38	0.4	2.5	●							
	110302 R/L-D	6.35	3.18	0.2	3.3	●							
	110304 R/L-D	6.35	3.18	0.4	3.3	●							
	110308 L-D	6.38	3.18	0.8	3.3	●							
	160304 L-D	9.525	4.76	0.4	4.4	●							
	160404 L-D	9.525	4.76	0.4	4.4	●							

Positive 35° Insert



NEW



VBMT 31
Finishing

VBMT 110304 31

6.35	3.18	0.4	2.8	0.2-1.5	0.05-0.20	●							



VBMT 32
Finishing

VBMT 160404 32

160408 32

9.52	4.76	0.4	4.4	0.5-1.5	0.07-0.20	●							
9.52	4.76	0.8	4.4	0.7-2.0	0.10-0.25	●							



VBMT 41
Finishing

VBMT 160404 41

160408 41

9.52	4.76	0.4	4.4	0.5-2.5	0.05-0.15	●			●	●			
9.52	4.76	0.8	4.4	0.5-2.5	0.07-0.15	●			●	●			



VBMT 51
Medium

VBMT 160404 51

160408 51

160412 51

9.52	4.76	0.4	4.4	1.0-3.0	0.07-0.25		●		●	●			
9.52	4.76	0.8	4.4	1.0-3.0	0.09-0.25		●	●	●	●			
9.52	4.76	1.2	4.4	1.0-3.0	0.10-0.25			●	●	●			



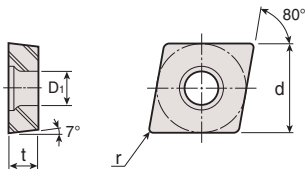
VBMT 52
Medium &
Roughing

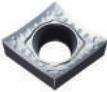
VBMT 160404 52

160408 52

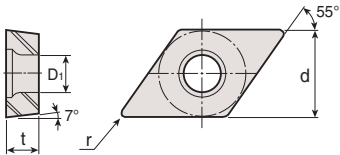
9.52	4.76	0.4	4.4	1.2-3.0	0.10-0.25	●			●	●			
9.52	4.76	0.8	4.4	1.2-3.0	0.10-0.30	●			●	●			

Positive 80° Insert - For Aluminum



Insert	Designation	Dimension(mm)				Grade
		d	t	r	D1	DC210
	CCGT 060202 AU	6.35	2.38	0.2	2.8	●
	060204 AU	6.35	2.38	0.4	2.8	●
	09T302 AU	9.52	3.97	0.2	4.4	●
	09T304 AU	9.52	3.97	0.4	4.4	●
	09T308 AU	9.52	3.97	0.8	4.4	●
	120404 AU	12.7	4.76	0.4	5.5	●
	120408 AU	12.7	4.76	0.8	5.5	●

Positive 55° Insert - For Aluminum

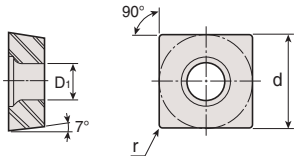


Insert	Designation	Dimension(mm)				Grade
		d	t	r	D1	DC210
	DCGT					
	070202 AU	6.35	2.38	0.2	2.8	●
	070204 AU	6.35	2.38	0.4	2.8	●
	11T302 AU	9.525	3.97	0.2	4.4	●
	11T304 AU	9.525	3.97	0.4	4.4	●
	11T308 AU	9.525	3.97	0.8	4.4	●

• Holder: 44, 54, 55 page

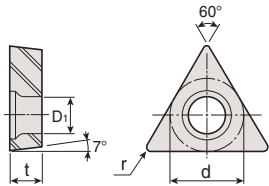
SCGT AU

Positive 90° Insert - For Aluminum



Insert	Designation	Dimension(mm)				Grade
		d	t	r	D1	DC210
	SCGT					
	120404 AU	12.70	4.76	0.4	5.5	●
	120408 AU	12.70	4.76	0.8	5.5	●

Positive 60° Insert - For Aluminum

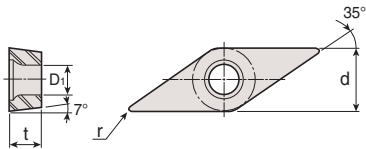


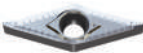
Insert	Designation	Dimension(mm)				Grade
		d	t	r	D1	DC210
	TCGT 110204 AU	6.35	2.38	0.4	2.8	●
	16T304 AU	9.525	3.97	0.4	4.4	●
	16T308 AU	9.525	3.97	0.8	4.4	●

• Holder: 45, 57 page

VCGT AU

Positive 35° Insert - For Aluminum



Insert	Designation	Dimension(mm)				Grade
		d	t	r	D1	DC210
	VCGT 110302 AU	6.35	3.18	0.2	2.8	●
	110304 AU	6.35	3.18	0.4	2.8	●
	160404 AU	9.52	4.76	0.4	4.4	●
	160408 AU	9.52	4.76	0.8	4.4	●

• Holder: 46 page

1. Clamping System



P / Lever Lock



C / Top Clamp



S / Screw Clamp



M / Multi Lock



W / Wedge Clamp

2. Insert Shape



C



D



K



R



S



T



V

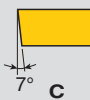
4. Insert Clearance Angle



N



B



C



P

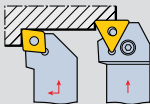
P C L N R
1 2 3 4 5

3. Approach Angle

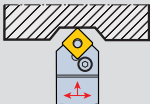
Symbol	Shape	Offset	Symbol	Shape	Offset	Symbol	Shape	Offset
A		×	J		O	V		×
			K		O	W		O
B		×	L		O	X	Special	
			M		×			
D		×	N		×			
E		×	R		O			
F		O	S		O			
G		O	T		O			
			U		O			

5. Hand of Tool

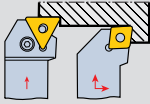
R=Right



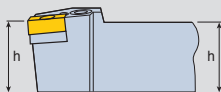
N=Neutral



L=Left

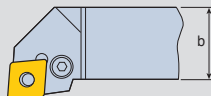


6. Shank Height



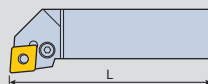
Integers to be preceded by 0
e.g.: h=8=mm indicated by 08

7. Shank Width



Integers to be preceded by 0
e.g.: b=8=mm indicated by 08

8. Tool Length



L (mm)	Symbol	L (mm)	Symbol
32	A	160	N
40	B	170	P
50	C	180	Q
60	D	200	R
70	E	250	S
80	F	300	T
90	G	350	U
100	H	400	V
110	J	450	W
125	K	500	Y
140	L	Special	X
150	M		

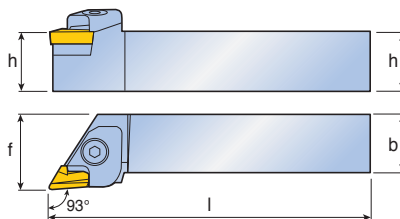
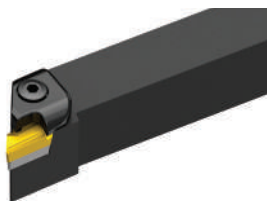
25 **25** **M** **12** - 
6 **7** **8** **9** **10**

9. Cutting Edge Length



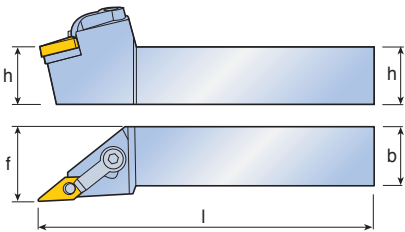
10. Manufacturer's Type

Unique to manufacturer



Holder/ Related insert	Component						
	Clamp	Screw	Clamp Spring	Pin & Spring	Shim	Shim Screw	Wrench
							
2020...16	DCC 16KR/L	DCS 16K	DCS 90	DPS 48, DP 48S	DCS-K, 1604R/L	* DSP16K	DHLW- 4
2525...16	DCC 16KR/L	DCS 16K	DCS 90	DPS 48, DP 48S	DCS-K, 1604R/L	FH M3 X 0.5 X 10	DHLW- 4
3232...16	DCC 16KR/L	DCS 16K	DCS 90	DPS 48, DP 48S	DCS-K, 1604R/L	FH M3 X 0.5 X 10	DHLW- 4

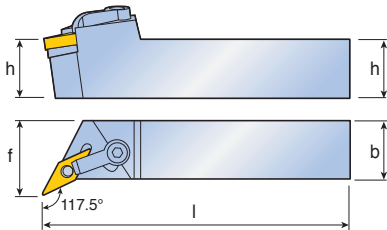
* DSP16K is a Shim Pin.



Designation	Dimension(mm)				Insert
	h	b	l	f	
MVJNR/L 2020 K16-D	20	20	125	25	 VN... 1604 ...
2525 M16-D	25	25	150	32	

Holder/ Related insert	Component				
	Clamp	Screw	Shim	Lock Pin	Wrench
					
...16	DMC 30	DNSM 0825	DMS-V 324	DLP 3	DHLW-2, DHLW-4

• Insert: 20 page

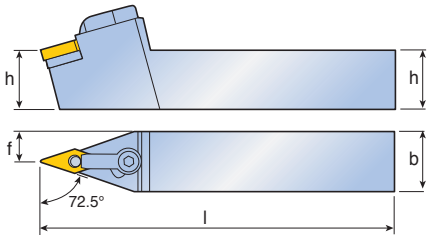


Designation	Dimension(mm)				Insert
	h	b	l	f	
MVQNR/L 2525 M16-D	25	25	150	32	 VN... 1604 ...

Holder/ Related insert	Component				
	Clamp	Screw	Shim	Lock Pin	Wrench
...16	 DMC 30	 DNSM 0825	 DMS-V 324	 DLP 3	 DHLW-2, DHLW-4

• Insert: 20 page

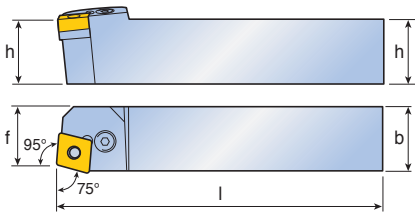
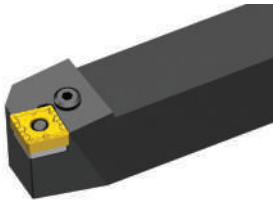
MVVNN



Designation	Dimension(mm)				Insert
	h	b	l	f	
MVVNN 2020 K16-D	20	20	125	10.0	 VN... 1604 ...
2525 M16-D	25	25	150	12.5	

Holder/ Related insert	Component				
	Clamp	Screw	Shim	Lock Pin	Wrench
...16	 DMC 30	 DNSM 0825	 DMS-V 324	 DLP 3	 DHLW-2, DHLW-4

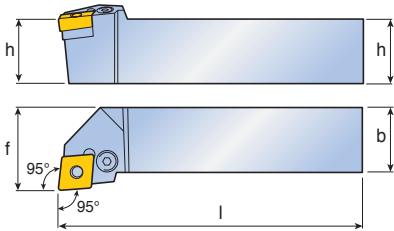
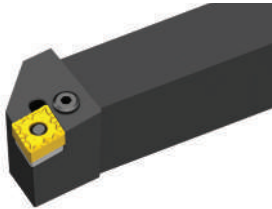
• Insert: 20 page



Designation	Dimension(mm)				Insert
	h	b	l	f	
PCBNR/L 2020 K12-D	20	20	125	17.5	 CN... 1204 ...
2525 M12-D	25	25	150	22.5	
3225 P12-D	32	25	170	22.5	

Holder/ Related insert	Component				
	Lever	Screw	Shim	Shim Pin	Wrench
					
...12	DLC 4	DLCS 4-D	DLS-C 42	DSP 4A	DHLW-3

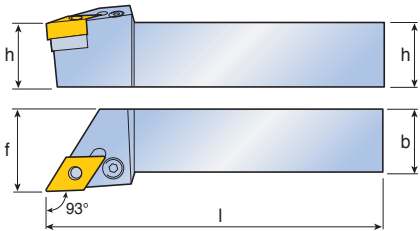
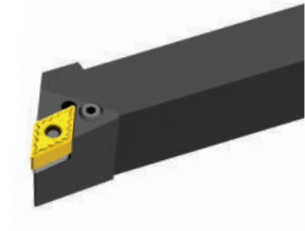
• Insert: 13 page



Designation	Dimension(mm)				Insert
	h	b	l	f	
PCLNR/L 1616 H12-D	16	16	100	20	 CN... 1204 ...
2020 K12-D	20	20	125	25	
2525 M12-D	25	25	150	32	
3225 P12-D	32	25	170	32	
3232 P12-D	32	32	170	40	

Holder/ Related insert	Component				
	Lever	Screw	Shim	Shim Pin	Wrench
					
...12	DLC 4	DLCS 4-D	DLS-C 42	DSP 4A	DHLW-3

• Insert: 12 page

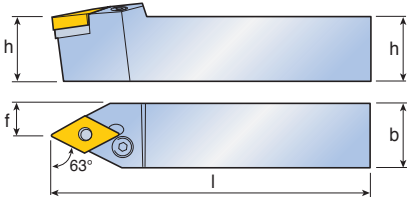
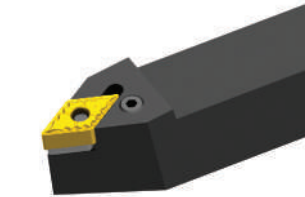


Designation	Dimension(mm)				Insert
	h	b	l	f	
PDJNR/L 2020 K15-D	20	20	125	25	 55° DN... 1506 ...
2525 M15-D	25	25	150	32	
3232 P15-D	32	32	170	40	

Holder/ Related insert	Component				
	Lever	Screw	Shim	Shim Pin	Wrench
...15					
...15	DLC 4A	DLCS 4-D	DLS-D 42	DSP 4A	DHLW-3

• Insert: 14 page

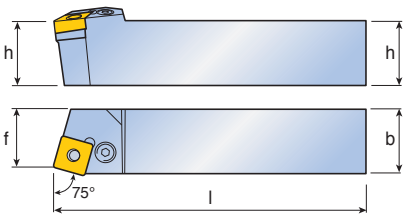
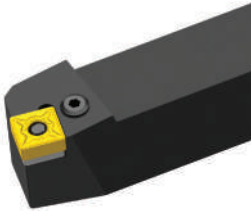
PDNNR/L



Designation	Dimension(mm)				Insert
	h	b	l	f	
PDNNR/L 2525 M15-D	25	25	150	18.5	 55° DN... 1506 ...
3232 P15-D	32	32	170	23.4	

Holder/ Related insert	Component				
	Lever	Screw	Shim	Shim Pin	Wrench
...15					
...15	DLC 4A	DLCS 4-D	DLS-D 42	DSP 4A	DHLW-3

• Insert: 14 page

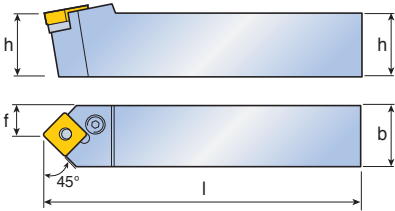


Designation	Dimension(mm)				Insert
	h	b	l	f	
PSBNR/L 2020 K12-D 2525 M12-D	20	20	125	17	 SN... 1204 ...
	25	25	150	22	

Holder/ Related insert	Component				
	Lever	Screw	Shim	Shim Pin	Wrench
...12	 DLC 4	 DLCS 4-D	 DLS-S 42	 DSP 4A	 DHLW-3

• Insert: 17 page

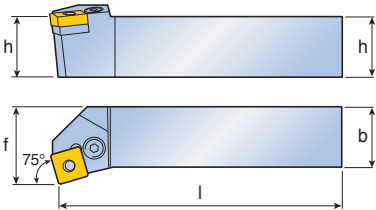
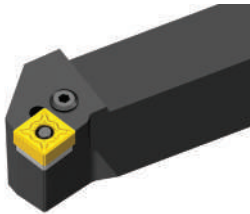
PSDNN



Designation	Dimension(mm)				Insert
	h	b	l	f	
PSDNN 2020 K12-D 2525 M12-D 3225 P12-D	20	20	125	10.0	 SN... 1204 ...
	25	25	150	12.5	
	32	25	170	12.5	

Holder/ Related insert	Component				
	Lever	Screw	Shim	Shim Pin	Wrench
...12	 DLC 4	 DLCS 4-D	 DLS-S 42	 DSP 4A	 DHLW-3

• Insert: 17 page

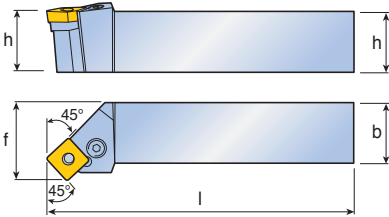
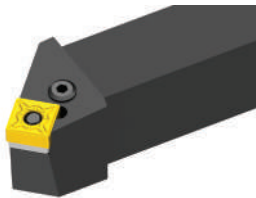


Designation	Dimension(mm)				Insert
	h	b	l	f	
PSKNR/L 2525 M12-D	25	25	150	32	 SN... 1204 ...

Holder/ Related insert	Component				
	Lever	Screw	Shim	Shim Pin	Wrench
					
...12	DLC 4	DLCS 4-D	DLS-S 42	DSP 4A	DHLW-3

• Insert: 17 page

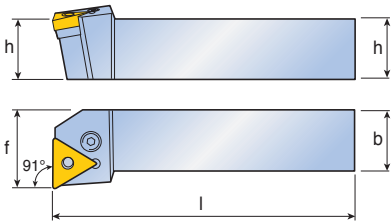
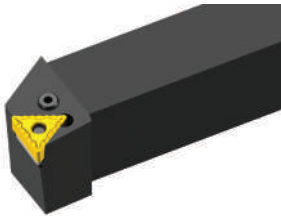
PSSNR/L



Designation	Dimension(mm)				Insert
	h	b	l	f	
PSSNR/L 2020 K12-D	20	20	125	25	 SN... 1204 ...
2525 M12-D	25	25	150	32	

Holder/ Related insert	Component				
	Lever	Screw	Shim	Shim Pin	Wrench
					
...12	DLC 4	DLCS 4-D	DLS-S 42	DSP 4A	DHLW-3

• Insert: 17 page

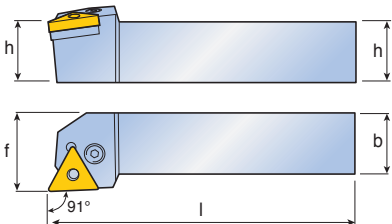
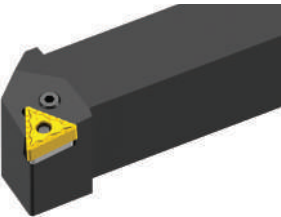


Designation	Dimension(mm)				Insert
	h	b	l	f	
PTFNR/L 2020 K16-D	20	20	125	25	 TN... 1604 ...
2525 M16-D	25	25	150	32	

Holder/ Related insert	Component				
	Lever	Screw	Shim	Shim Pin	Wrench
...16	 DLC 3	 DLCS 3	 DLS-T 31.8	 DSP 3A	 DHLW-2.5

• Insert: 18, 19 page

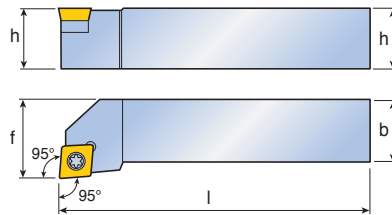
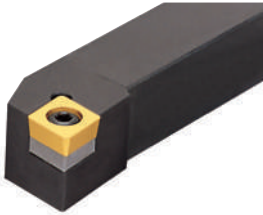
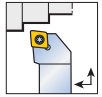
PTGNR/L



Designation	Dimension(mm)				Insert
	h	b	l	f	
PTGNR/L 1616 H16-D	16	16	100	20	 TN... 1604 ...
2020 K16-D	20	20	125	25	
2525 M16-D	25	25	150	32	

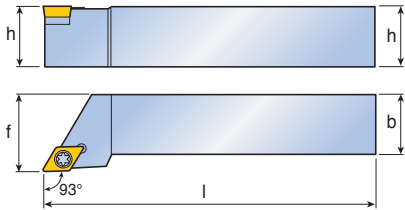
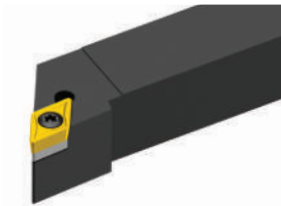
Holder/ Related insert	Component				
	Lever	Screw	Shim	Shim Pin	Wrench
...16	 DLC 3	 DLCS 3	 DLS-T 31.8	 DSP 3A	 DHLW-2.5

• Insert: 18, 19 page

[illegible]

Holder/ Related insert	Component			
	Screw	Shim	Shim Screw	Wrench
				
1212...09	DS 35080I	-	-	DTFW-15
1616...09	DS 35124I	DSS-C 32	DSC 50090S	DTFW-15
2020...09	DS 35124I	DSS-C 32	DSC 50090S	DTFW-15
2525...09	DS 35124I	DSS-C 32	DSC 50090S	DTFW-15
2020...12	DS 45130I-SO	DSS-C 43N	DSC 60105S-SO	DTFW-20

- Insert: 23, 29 page

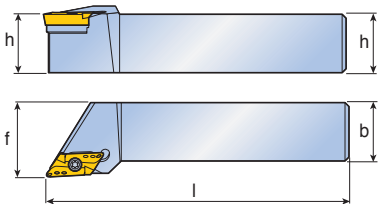
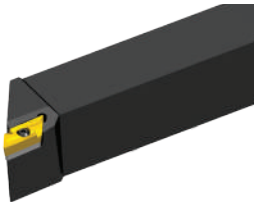


Designation	Dimension(mm)				Insert
	h	b	l	f	
SDJCR/L 1616 H11-D	16	16	100	20	 DC... 11T3 ...
2020 K11-D	20	20	125	25	
2525 M11-D	25	25	150	32	

Holder/ Related insert	Component			
	Screw	Shim	Shim Screw	Wrench
				
...11	DS 35124I	DSS-D 32	DSC 50090S	DTFW-15

• Insert: 24, 30 page

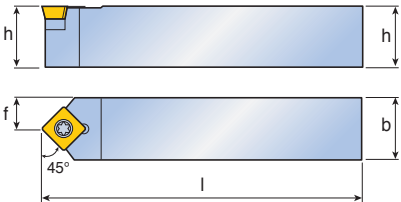
SKJNR/L



Designation	Dimension(mm)				Insert
	h	b	l	f	
SKJNR/L 2525 M16-D	25	25	150	32	 KNMX 1604 ...

Holder/ Related insert	Component				
	Shim	Screw	Shim Screw	Wrench	
					
...16	TKX 160310R/L	DSR 16-236/P	DSR TC-3	DHW 2.5	DTFW-15

• Insert: 16 page

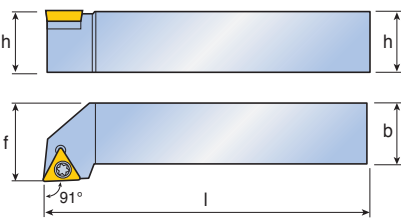
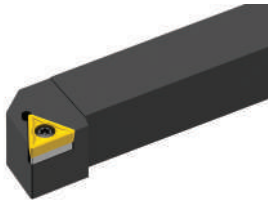


Designation	Dimension(mm)				Insert
	h	b	l	f	
SSDCN 1212 F09-D	12	12	80	6	 SC... 09T3 ...
	16	16	100	8	

Holder/ Related insert	Component			
	Screw	Shim	Shim Screw	Wrench
				
1212...09	DS 35080I	-	-	DTFW-15
1616...09	DS 35124I	DSS-S 32	DSC 50090S	DTFW-15

• Insert: 25 page

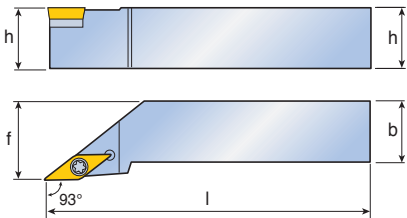
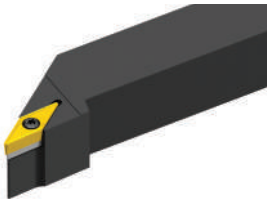
STGCR/L



Designation	Dimension(mm)				Insert
	h	b	l	f	
STGCR/L 1616 H16-D	16	16	100	20	 TC... 16T3 ...
	20	20	125	25	
	25	25	150	32	

Holder/ Related insert	Component			
	Screw	Shim	Shim Screw	Wrench
				
...16	DS 35124I	DSS-T 32	DSC 50090S	DTFW-15

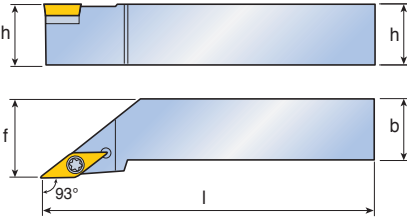
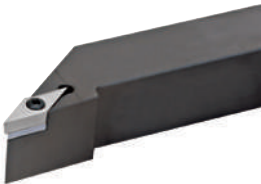
• Insert: 26, 31 page



Designation	Dimension(mm)				Insert
	h	b	l	f	
SVJBR/L 2020 K16-D 2525 M16-D	20	20	125	25	 VB... 1604 ...
	25	25	150	32	
Holder/ Related insert	Component				
	Screw	Shim	Shim Screw	Wrench	
...16					DTFW-15
	DS 35124I	DSS-V 32	DSC 50090S		

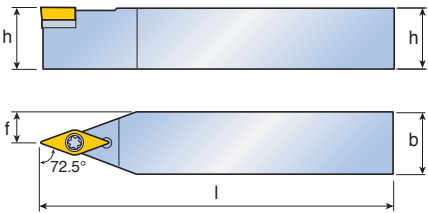
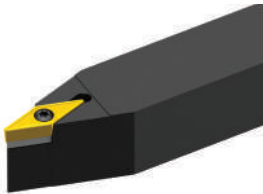
• Insert: 28 page

SVJCR/L



Designation	Dimension(mm)				Insert
	h	b	l	f	
SVJCR/L 2020 K16-D 2525 M16-D	20	20	125	25	 VCG... 1604 ...
	25	25	150	32	
Holder/ Related insert	Component				
	Screw	Shim	Shim Screw	Wrench	
...16					DTFW-15
	DS 35124I	DSS-V 32	DSC 50090S		

• Insert: 31 page

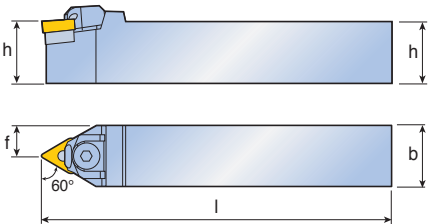
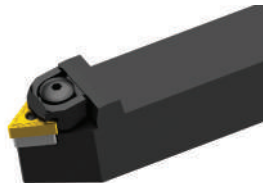


Designation		Dimension(mm)				Insert
		h	b	l	f	
SVVBN	2020 K16-D	20	20	125	10.0	 VB... 1604 ...
	2525 M16-D	25	25	150	12.5	

Holder/ Related insert	Component			
	Screw	Shim	Shim Screw	Wrench
				
...16	DS 35124I	DSS-V 32	DSC 50090S	DTFW-15

• Insert: 28 page

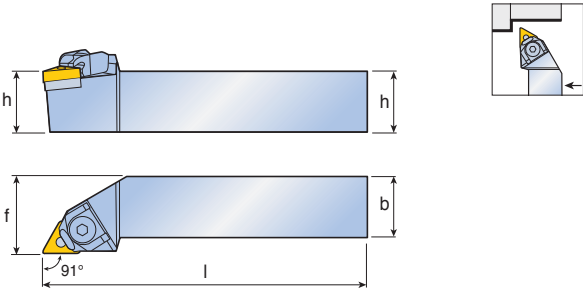
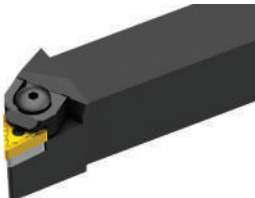
WTENN



Designation		Dimension(mm)				Insert
		h	b	l	f	
WTENN	2020 K16-D	20	20	125	10.0	 TN... 1604 ...
	2525 M16-D	25	25	150	12.5	
	2525 M22-D	25	25	150	12.5	

Holder/ Related insert	Component					
	Wedge Clamp	Screw	Snap Ring	Shim	Pin Screw	Wrench
						
...16	DWC 33	DWCS 4	DWSR 4	DWS-T 33	DWSS 33	DHLW-3
...22	DWC 43	DWCS 4	DWSR 4	DWS-T 43	DWSS 43	DHLW-3

• Insert: 18, 19 page

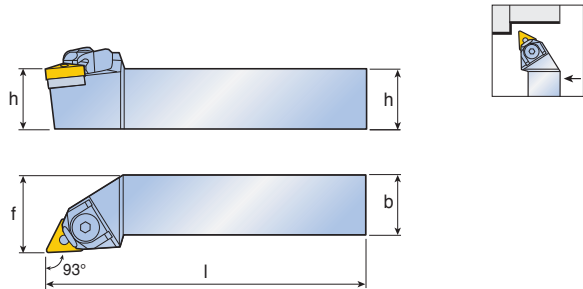
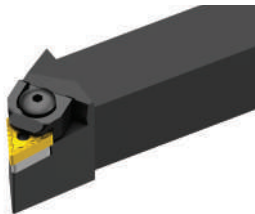


Designation	Dimension(mm)				Insert
	h	b	l	f	
WTGNR/L 2020 K16-D 2525 M16-D	20	20	125	25	 TN... 1604 ...
	25	25	150	32	

Holder/ Related insert	Component					
	Wedge Clamp	Screw	Snap Ring	Shim	Pin Screw	Wrench
						
...16	DWC 33	DWCS 4	DWSR 4	DWS-T 33	DWSS 33	DHLW-3

• Insert: 18, 19 page

WTJNR/L



Designation	Dimension(mm)				Insert
	h	b	l	f	
WTJNR/L 2020 K16-D 2525 M16-D	20	20	125	25	 TN... 1604 ...
	25	25	150	32	

Holder/ Related insert	Component					
	Wedge Clamp	Screw	Snap Ring	Shim	Pin Screw	Wrench
						
...16	DWC 33	DWCS 4	DWSR 4	DWS-T 33	DWSS 33	DHLW-3

• Insert: 18, 19 page

1.Type of Boring Bar

S : Steel Shank

A : Coolant Through Steel Shank

X : Special

2. Bar Diameter

3. Tool Length

K	125	U	350
M	150	V	400
Q	180	W	450
R	200	Y	500
S	250	X	Special
T	300		

4. Clamping System

P / Lever Lock

C / Top Clamp

S / Screw Clamp

M / Multi Lock

W / Wedge Clamp

S 25 T - P C L N R - 16 - □

1 2 3 4 5 6 7 8 9 10

5. Insert Shape

C

D

E

R

S

T

V

W

6. Approach Angle

L

K

U

Z

F

Q

P

7. Insert Clearance Angle

N

B

C

P

8. Hand of Tool

Right

* Left Hand insert

Left

* Right Hand insert

9. Cutting Edge Length

R

S

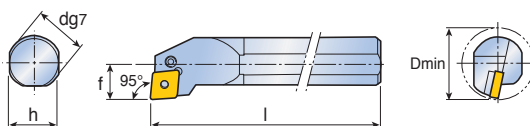
T

C,D,E,V

W

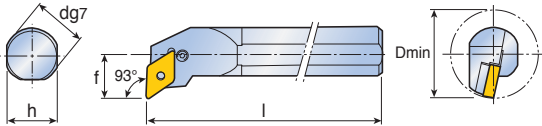
10. Manufacturer's Type

Unique to manufacturer



Holder/ Related insert	Component					
	Lever	Screw	Shim	Shim Pin	Snap Ring	Wrench
						
S25T...12	DLC 4B	DLCS 4B	-	-	DLSR 4B	DHLW-2.5
S32T...12	DLC 4	DLCS 4S	DLS-C 42	DSP 4	-	DHLW-3
S40T...12	DLC 4	DLCS 4	DLS-C 42	DSP 4	-	DHLW-3
S50U..12	DLC 4	DLCS 4	DLS-C 42	DSP 4	-	DHLW-3

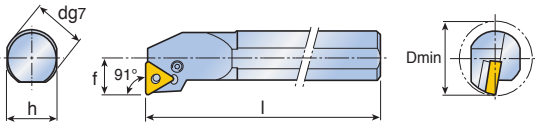
50



Designation		Dimension(mm)					Insert
		d	h	l	f	Dmin	
S32T	PDUNR/L 15-D	32	30	300	22	40	 DN... 1506 ...
S40T	PDUNR/L 15-D	40	37	300	27	50	
S50U	PDUNR/L 15-D	50	47	350	35	63	

Holder/ Related insert	Component				
	Lever	Screw	Shim	Shim Pin	Wrench
					
S32T...15	DLC 4A	DLCS 4S	DLS-D 42	DSP 4A	DHLW-3
S40T...15	DLC 4A	DLCS 4	DLS-D 42	DSP 4A	DHLW-3
S50U...15	DLC 4A	DLCS 4	DLS-D 42	DSP 4A	DHLW-3

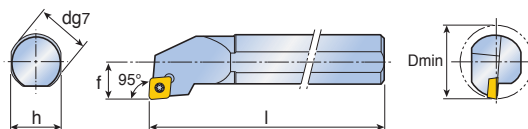
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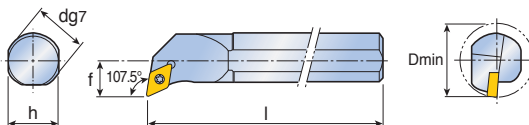
Designation	Dimension(mm)					Insert
	d	h	l	f	Dmin	
S25T PTFNR/L 16-D	25	23	300	17	32	 TN... 1604 ...
S32T PTFNR/L 16-D	32	30	300	22	40	

Holder/ Related insert	Component					
	Lever	Screw	Shim	Shim Pin	Snap Ring	Wrench
						
S25T...16	DLC 3BH	DLCS 3B	-	-	DLSR 3B	DHLW-2
S32T...16	DLC 3	DLCS 3	DLS-T 31.8	DSP 3A	-	DHLW-2.5

• Insert: 18, 19 page

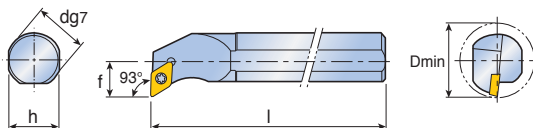


Duracarb Member IWC Group

[illegible]

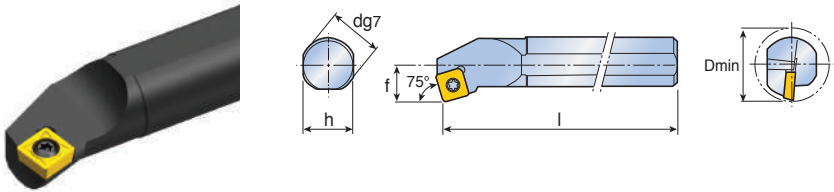
Holder/ Related insert	Component	
	Screw	Wrench
		
S10K...07	DS 25050I	DTFW-7
S12M,S16R...07	DS 25065I	DTFW-7
...11	DS 35080I	DTFW-15

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[illegible]

Holder/ Related insert	Component	
	Screw	Wrench
		
S10K...07	DS 25065I	DTFW-7
S12M,S16R...07	DS 25065I	DTFW-7
...11	DS 35080I	DTFW-15

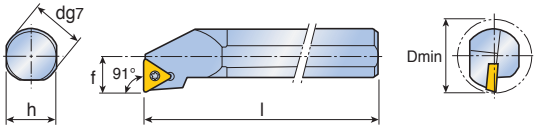
- Insert: 25, 30 page



Designation	Dimension(mm)					Insert
	d	h	l	f	Dmin	
S16R SSKCR/L 09-D	16	15	200	11	20	 SC... 09T3 ...
S20S SSKCR/L 09-D	20	18	250	13	25	

Holder/ Related insert	Component	
	Screw	Wrench
		
...09	DS 35080I	DTFW-15

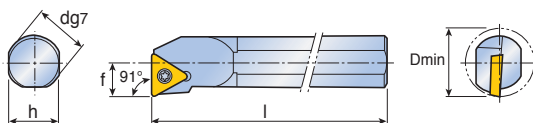
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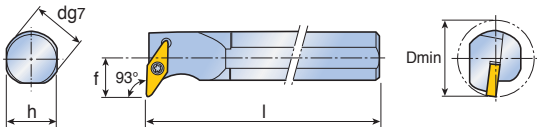
Designation	Dimension(mm)					Insert
	d	h	l	f	Dmin	
S08K STFCR/L 09-D	8	7	125	6	11	 TC... 0902 ...
S10K STFCR/L 09-D	10	9	125	7	13	
S12M STFCR/L 09-D	12	11	150	9	16	
S12M STFCR/L 1102-D	12	11	150	9	16	
S16R STFCR/L 1102-D	16	15	200	11	20	
S20S STFCR/L 1102-D	20	18	250	13	25	 TC... 1102 ...
S20S STFCR/L 16-D	20	18	250	13	25	
S25T STFCR/L 16-D	25	23	300	17	32	
						 TC... 16T3 ...

Holder/ Related insert	Component	
	Screw	Wrench
		
S08K...09	DS 22046I-TS	DTFW-7
S10K,S12M...09	DS 22050I	DTFW-7
...11	DS 25065I	DTFW-7
S20S...16	DS 35080I	DTFW-15
S25T...16	DS 35080I	DTFW-15

• Insert: 26, 31 page



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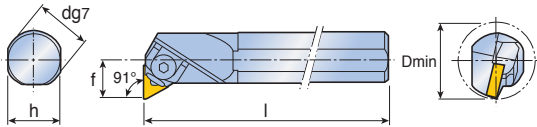


Designation	Dimension(mm)					Insert
	d	h	l	f	Dmin	
S32T SVUBR/L 16-D	32	30	300	22	40	VB... 1604 ...
S40T SVUBR/L 16-D	40	37	300	27	50	

Holder/ Related insert	부품			
	Screw	Shim	Shim Screw	Wrench
...16	DS 35124I	DSS-V 32	DSC 50090S	DTFW-15

• Insert: 28 page

S-WTFNR/L



Designation	Dimension(mm)					Insert
	d	h	l	f	Dmin	
S25T WTFNR/L 16-D	25	23	300	17	32	TN... 1604 ...
S32T WTFNR/L 16-D	32	30	300	22	40	

Holder/ Related insert	Component					
	Wedge Clamp	Screw	Snap Ring	Shim	Pin Screw	Wrench
S25T...16	DWC 33	DWCS 4B	DWSR 4	-	DWSS 33-1	DHLW-3
S32T...16	DWC 33	DWCS 4	DWSR 4	DWS-T 33	DWSS 33	DHLW-3

• Insert: 18, 19 page



DURACARB SOLUTIONS

PARTING & GROOVING



1. Duracarb

2. Insert Shape

Single-ended



S

Double-ended



D

3. chipbreaker

M 
for Medium

L 
for Light

G 
Grooving and Turning

T 
Without Chipbreaker

4. Hand of Insert

Left



L

Right



R

5. Insert Width

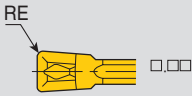


2 = 2.0 mm
3 = 3.0 mm
4 = 4.0 mm
5 = 5.0 mm
6 = 6.0 mm

D D T R/L - 3.00 - 0.10 - 6RS

1 2 3 4 5 6 7 8 9

6. Coner R (mm)



7. Lead angle



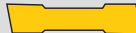
8. Hand for Lead Angle type

Left



L

Right



R

9. Corner type

Sharp



S

General



Holders for external turning and grooving



Fig.1

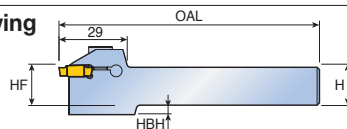
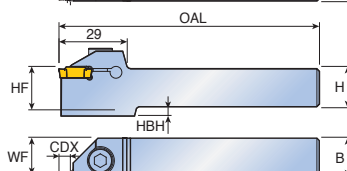


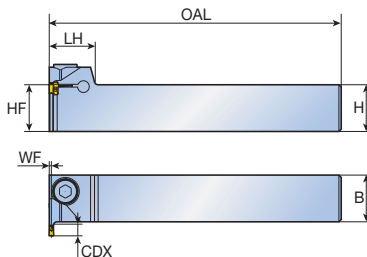
Fig.2



Designation	Dimension(mm)								Insert seat size	Insert		Torque (N•cm)	Fig.
	H	B	OAL	HF	WF	CDX	WB	HBH		DDT	DDTR/L		
DCER/L 1616-2T035	16	16	110	16	15.1	3.5	1.8	4.0	2	1.25-1.85	1.25-2.00	5.5	1
1616-2T05	16	16	110	16	15.1	5.0	1.8	-	2	2.00-2.80	2.50-2.80	8.0	2
2020-2T035	20	20	125	20	19.1	3.5	1.8	-	2	1.25-1.85	1.25-2.00	5.5	1
2020-2T05	20	20	125	20	19.1	5.0	1.8	-	2	2.00-2.80	2.50-2.80	8.0	2
2525-2T035	25	25	150	25	24.1	3.5	1.8	-	2	1.25-1.85	1.25-2.00	5.5	1
2525-2T05	25	25	150	25	24.1	5.0	1.8	-	2	2.00-2.80	2.50-2.80	8.0	2
1616-3T05	16	16	110	16	14.8	5.0	2.4	4.0	3	3.00-3.50		8.0	2
2020-3T05	20	20	125	20	18.8	5.0	2.4	-	3	3.00-3.50		8.0	2
2525-3T05	25	25	150	25	23.8	5.0	2.4	-	3	3.00-3.50		8.0	2
1616-4T05	16	16	110	16	14.5	5.0	3.0	4.0	4	4.00		8.0	2
2020-4T05	20	20	125	20	18.5	5.0	3.0	-	4	4.00		8.0	2
2525-4T05	25	25	150	25	23.5	5.0	3.0	-	4	4.00		8.0	2

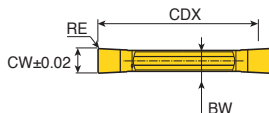
• Interner boring bar for turning and grooving can be supplied by special item

Holder	Component	
	Screw	Wrench
...1616-2T035	DS M5X0.8X20-SH	DHLW-4
...2020-2T035	DS M5X0.8X20-SH	DHLW-4
...1616-2T05	DS M6X1X20-SH	DHLW-5
...2020-2T05	DS M6X1X20-SH	DHLW-5
...2525-2T035	DS M5X0.8X25-SH	DHLW-4
...2525-2T05	DS M6X1X25-SH	DHLW-5
...2525-3T05	DS M6X1X25-SH	DHLW-5
...2525-4T05	DS M6X1X25-SH	DHLW-5
...1616-3T05	DS M6X1X20-SH	DHLW-5
...2020-3T05	DS M6X1X20-SH	DHLW-5
...1616-4T05	DS M6X1X20-SH	DHLW-5
...2020-4T05	DS M6X1X20-SH	DHLW-5

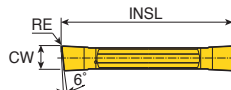


- Interner boring bar for turning and grooving can be supplied by special item

Duracarb Member IWC Group



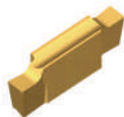
CW+0.02 ↑



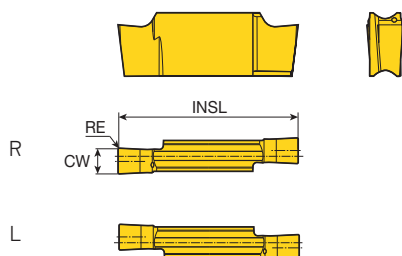
- Special supply available
ex) DDT 2.00 - 0.10 - 6R



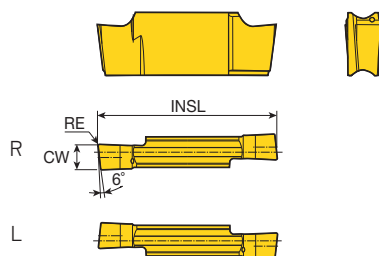
Standard type



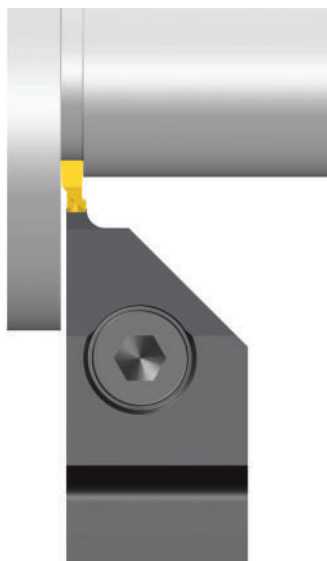
for shouldering
*Please refer to 65page



ex) DDTR 2.00 - 0.10



ex) DDTR 2.00 - 0.10 - 6R



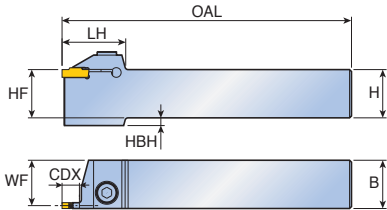
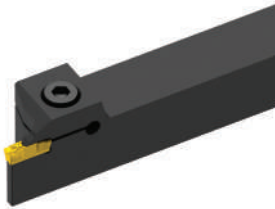
General type for shouldering



lead angle type (6°) for shouldering

- Special supply available
- The same range with DDT insert line

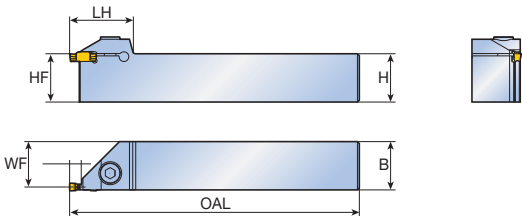
Holders for external turning and grooving



Designation	Dimension(mm)								Insert seat size	Torque (N•cm)
	H(HF)	B	OAL	WF	LH	WB	HBH	CDX		
DCER/L 16T09-2	16	16	110	15.1	33	1.80	4	9	2	8.0
16T16-2	16	16	110	15.1	35	1.80	4	16	2	8.0
16T09-3	16	16	110	14.8	33	2.40	4	9	3	8.0
16T16-3	16	16	110	14.8	35	2.40	4	16	3	8.0
16T10-4	16	16	110	14.5	33	3.00	4	10	4	8.0
20T09-2	20	20	125	19.1	33	1.80	-	9	2	8.0
20T16-2	20	20	125	19.1	35	1.80	-	16	2	8.0
20T09-3	20	20	125	18.8	33	2.40	-	9	3	8.0
20T16-3	20	20	125	18.8	35	2.40	-	16	3	8.0
20T10-4	20	20	125	18.5	33	3.00	-	10	4	8.0
20T16-4	20	20	125	18.5	35	3.00	-	16	4	8.0
20T12-5	20	20	125	18.075	37	3.85	-	12	5	8.0
20T20-5	20	20	125	18.1	37	3.85	-	20	5	8.0
25T09-2	25	25	150	24.1	33	1.80	-	9	2	8.0
25T16-2	25	25	150	24.1	35	1.80	-	16	2	8.0
25T09-3	25	25	150	23.8	33	2.40	-	9	3	8.0
25T16-3	25	25	150	23.8	35	2.40	-	16	3	8.0
25T10-4	25	25	150	23.5	33	3.00	-	10	4	8.0
25T16-4	25	25	150	23.5	35	3.00	-	16	4	8.0
25T12-5	25	25	150	23.075	37	3.85	-	12	5	8.0
25T20-5	25	25	150	23.1	37	3.85	-	20	5	8.0

Holder	Component	
	Screw	Wrench
		
...16T09-2,3	DS M6X1X25-SH	DHLW-5
...16T16-2,3	DS M6X1X20-SH	DHLW-5
...16T10-4	DS M6X1X20-SH	DHLW-5
...20T...	DS M6X1X25-SH	DHLW-5
...25T10-4	DS M6X1X20-SH	DHLW-5
...25T12-5	DS M6X1X20-SH	DHLW-5
...25T09-2,3	DS M6X1X25-SH	DHLW-5
...25T16-2,3,4	DS M6X1X25-SH	DHLW-5
...25T20-5	DS M6X1X25-SH	DHLW-5

Holder for shallow grooving

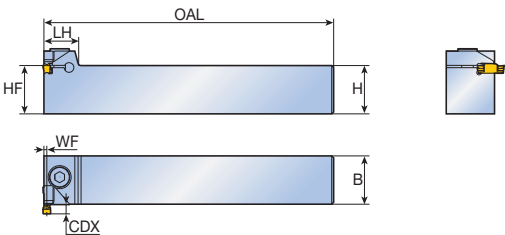


Designation	Dimension(mm)						Insert seat size	Torque (N•cm)
	H(HF)	B	OAL	LH	WF	CDX		
DCFR 2525-4T05	25	25	150	33	23.5	4.8	4	8.0

Holder	Component	
	Screw	Wrench
	 DS M6X1X25-SH	 DHLW-5
...2525-4T05	DS M6X1X25-SH	DHLW-5

DCFPR

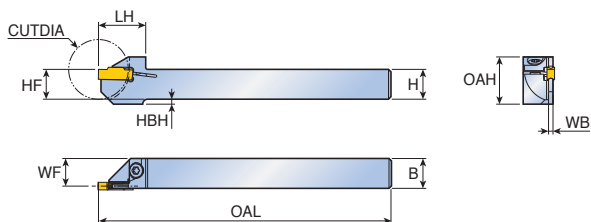
Prependicular type holder for shallow grooving



Designation	Dimension(mm)							Insert seat size	Torque (N•cm)
	H	HF	B	OAL	LH	WF	CDX		
DCFPR 2525-4T05	25	25	25	150	18	1.5	4.8	4	8.0

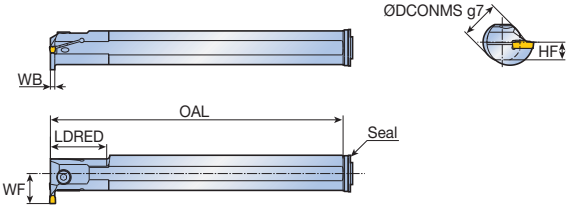
Holder	Component	
	Screw	Wrench
	 DS M6X1X25-SH	 DHLW-5
...2525-4T05	DS M6X1X25-SH	DHLW-5

External turning and grooving holders for Swiss machines

[illegible]

Holder	Component	
	Screw	Wrench
		
...ST	DS 40A115I-TS	DTFW-15

Internal boring bars for turning and grooving

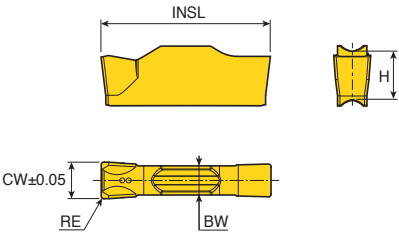


Designation	Dimension(mm)								Insert seat size
	DCONMS	OAL	LDRED	WF	HF	WB	CDX	Dmin	
DCIR/L 16-2C-T8	16	125	-	16	7.5	1.8	8.0	25	2
20-2C-T8	20	160	40	18	9.0	1.8	8.0	27	2
25-2C-T8	25	200	40	20.5	11.5	1.8	8.0	32	2
32-2C-T8	32	250	40	24	14.0	1.8	8.0	36	2
20-3C-T8	20	160	40	18	9.0	2.4	8.0	27	3
25-3C-T8	25	200	40	20.5	11.5	2.4	8.0	32	3
32-3C-T10	32	250	60	26	15.0	2.4	10.0	40	3
40-3C-T10	40	300	65	30	19.0	2.4	10.0	45	3
20-4C-T8	20	160	40	18	9.0	3.0	8.0	27	4
25-4C-T8	25	200	40	20.5	11.5	3.0	8.0	32	4
32-4C-T10	32	250	60	26	15.0	3.0	10.0	40	4
40-4C-T10	40	300	65	30	19.0	3.0	10.0	45	4

Holder	Component		
	Screw	Wrench	Seal
			
DCIR/L 16-2	DS M5X0.8X10-SH	DHLW-4	DPL 16 (M6)
DCIR/L 20-2/3/4	DS M5X0.8X12-SH	DHLW-4	DPL 20 (M6)
DCIR/L 25-2/3/4	DS M5X0.8X16-SH	DHLW-4	DPL 25 (R1/8)
DCIR/L 32-2/3/4	DS M5X0.8X16-SH	DHLW-4	DPL 32 (R1/8)
DCIR/L 40-3/4	DS M5X0.8X16-SH	DHLW-4	DPL 40 (R1/8)

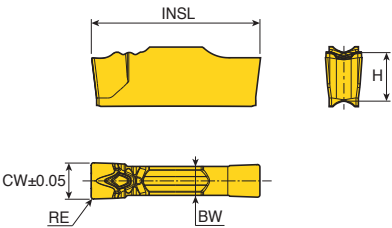
[illegible]

Single - ended M type inserts for turning and grooving



Insert	Designation	Insert seat size	Dimension(mm)					Grade		
			CW	RE	BW	INSL	H	DP5320	DC154	DC9235
	DSM 2	2	2.0	0.20	1.6	14.0	4.0	●	●	●
	3	3	3.0	0.20	2.4	14.0	4.0	●	●	●
	4	4	4.0	0.30	3.0	14.0	4.0	●	●	●
	5	5	5.0	0.30	4.0	17.5	5.1	●	●	●

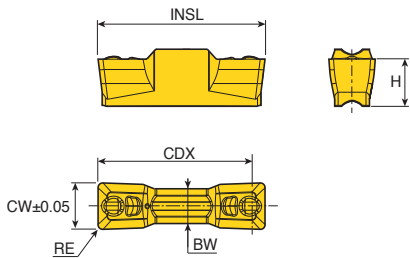
Single - ended L type inserts for turning and grooving



Insert	Designation	Insert seat size	Dimension(mm)					Grade		
			CW	RE	BW	INSL	H	DP5320	DC154	DC9235
	DSL 2	2	2.0	0.20	1.6	14.0	4.0	●	●	●
	3	3	3.0	0.20	2.4	14.0	4.0	●	●	●
	4	4	4.0	0.30	3.0	14.0	4.0	●	●	●
	5	5	5.0	0.30	4.0	17.5	5.1	●	●	●

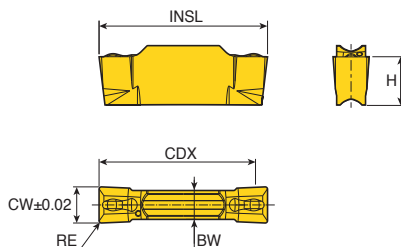
DDG

Double - ended inserts for turning and grooving



Insert	Designation	Insert seat size	Dimension(mm)						Grade		
			CW	RE	BW	INSL	H	CDX	DP5320	DC154	DC9235
	DDG 30040	3	3.0	0.4	2.4	14.0	4.0	13	●	●	
	40040	4	4.0	0.4	3.0	14.0	4.0	13	●	●	
	50040	5	5.0	0.4	4.0	17.5	5.1	17	●	●	

Double - ended and Grinded inserts for turning and grooving

[illegible]

- Special widths supply available

ISO	Material		Condition	Hardness (HB)	Grade	
					DC154	DC9235
P	Non-alloy steel, cast steel, Free cutting steel	< 0.25%C	Annealed	125	110-170	80-120
		>= 0.25%C	Annealed	190	100-150	80-110
		< 0.55%C	QT	250	90-140	70-90
		>= 0.55%C	Annealed	220	100-220	70-100
			QT	300	70-170	40-70
	Low alloy steel (Less than 5% of alloying elements)		Annealed	200	90-120	70-100
			QT	275	80-170	50-70
				300	70-130	40-60
				350	50-120	30-50
	High alloy steel, cast steel, tool		Annealed	200	60-140	50-80
			QT	325	50-70	30-60
M	Stainless Steel, cast steel		Ferritic / Martensitic	135	70-170	80-120
			Martensitic	70	60-170	60-90
			Austenitic	-	90-180	60-90



DURACARB SOLUTIONS **DRILLING**





DEC D160S25 – 2D

1

2

3

1. Drill Diameter

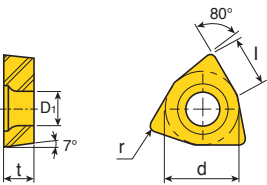
- D160 → Ø 16,0 mm
- D210 → Ø 21,0 mm

2. Shank Length

- S25 → Ø 25,0 mm
- S32 → Ø 32,0 mm

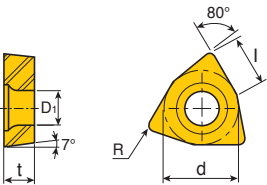
3. Drilling Depth

- 2D → 2XD
- 3D → 3XD

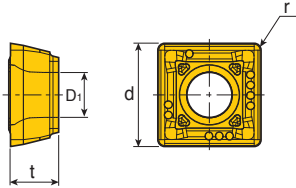


Insert	Designation	Dimension(mm)					Grade			
		d	t	r	D1	l	DC154	DC9800	DP5320	DC7040
	WCMX 030204	5.56	2.38	0.4	2.55	3.8		●	●	
	030208	5.56	2.38	0.8	2.55	3.6		●	●	
	040204	6.35	2.38	0.4	2.8	4.3		●	●	
	040208	6.35	2.38	0.8	2.8	4.1		●	●	
	050308	7.94	3.18	0.8	3.2	5.4	●	●		●
	06T308	9.52	3.97	0.8	3.7	6.5	●	●		●
	080412	12.70	4.76	1.2	4.3	8.7	●	●		●

WCGX ...-S

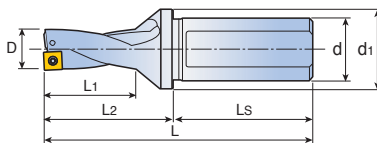


Insert	Designation	Dimension(mm)					Grade		
		d	t	R	D1	l	DC9800	DP9020	DC7040
	WCGX 030204-S	5.56	2.38	0.4	2.55	3.8	●	●	
	040204-S	6.35	2.38	0.4	2.8	4.3	●	●	●
	050308-S	7.94	3.18	0.8	3.4	5.4	●	●	●
	06T308-S	9.52	3.97	0.8	4.4	6.5	●	●	●
	080408-S	12.70	4.76	0.8	5.5	8.7	●	●	●



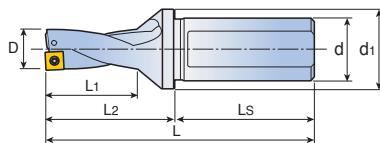
Insert	Designation	Dimension(mm)				Screw	Grade		
		d	t	r	D1		DP5030	DC9800	DC9235
	SPMX 05T204 MG	5	2.68	0.4	2.25	DS 20043I/HG-P	●	●	●
	06T204 MG	6	2.8	0.4	2.61	DS 22052I/HG	●	●	●
	070308 MG	7.94	3.5	0.8	2.85	DS 25064I	●	●	●
	09T308 MG	9.8	3.8	0.8	4.05	DS 35088I	●	●	●
	11T308 MG	11.5	4.3	0.8	4.45	DS 40093I	●	●	●

Drilling Depth: 2XD

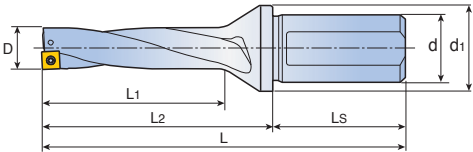


Designation		Dimension(mm)						Insert	Component				Torque (N·cm)		
		D	d	d ₁	LS	L ₂	L ₁		L	Screw	Wrench	Plug		Set Screw	
DEC	D125S20-2D	12.5	20	25	50	44	26	94	SPMX 05T204 MG	DS 20043/ HG-P-TS	DTDW- 6P	DSL 20 M	-	50-70	
	D130S20-2D	13	20	25	50	44	26	94						50-70	
	D135S20-2D	13.5	20	25	50	46	28	96						50-70	
	D140S20-2D	14	20	25	50	46	28	96						50-70	
	D145S20-2D	14.5	20	25	50	49	30	99						50-70	
	D150S20-2D	15	20	25	50	49	30	99	SPMX 06T204 MG	DS 22052/ HG-TS	DTDW-7	DSL 25 M	-	80-100	
	D155S25-2D	15.5	25	32	56	52	32	108						80-100	
	D160S25-2D	16	25	32	56	52	32	108						80-100	
	D165S25-2D	16.5	25	32	56	54	34	110						80-100	
	D170S25-2D	17	25	32	56	54	34	110						80-100	
	D175S25-2D	17.5	25	32	56	57	36	113						80-100	
	D180S25-2D	18	25	32	56	57	36	113						80-100	
	D185S25-2D	18.5	25	32	56	59	38	115						80-100	
	D190S25-2D	19	25	32	56	59	38	115						80-100	
	D195S25-2D	19.5	25	32	56	63	40	119						80-100	
	D200S25-2D	20	25	32	56	63	40	119						80-100	
	D205S25-2D	20.5	25	32	56	65	42	121						80-100	
	D210S25-2D	21	25	32	56	65	42	121						80-100	
	D215S25-2D	21.5	25	32	56	67	44	123						80-100	
	D220S25-2D	22	25	32	56	67	44	123	SPMX 070308 MG	DS 25064/ TS	DTDW-8	DSL 25 M	-	100-120	
	D225S25-2D	22.5	25	45	56	71	46	127						100-120	
	D230S25-2D	23	25	45	56	71	46	127						100-120	
	D235S25-2D	23.5	25	45	56	74	48	130						100-120	
	D240S25-2D	24	25	45	56	74	48	130						100-120	
	D245S32-2D	24.5	32	45	60	77	50	137						100-120	
	D250S32-2D	25	32	45	60	77	50	137				DSL 32 M		100-120	
	D255S32-2D	25.5	32	45	60	79	52	139						100-120	
D260S32-2D	26	32	45	60	79	52	139	100-120							
D265S32-2D	26.5	32	45	60	81	54	141	100-120							
D270S32-2D	27	32	45	60	81	54	141	100-120							
D275S32-2D	27.5	32	45	60	84	56	144	-				DSS M6X1X6	100-120		

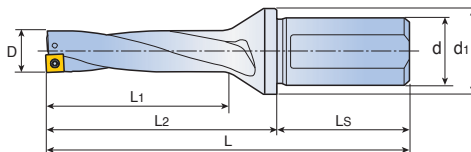
Drilling Depth: 2XD

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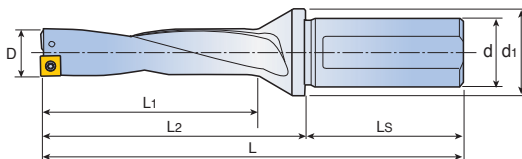
Drilling Depth: 3XD



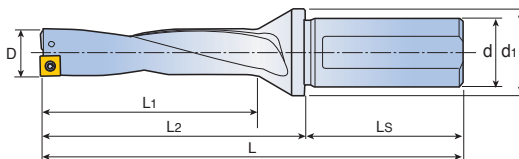
Designation		Dimension(mm)						Insert	Component				Torque (N•cm)					
		D	d	d1	LS	L2	L1		L	Screw	Wrench	Plug		Set Screw				
DEC	D125S20-3D	12.5	20	25	50	57	39	107	SPMX 05T204 MG	DS 20043/ HG-P-TS	DTDW- 6P	DSL 20 M	-	50-70				
	D130S20-3D	13	20	25	50	57	39	107						50-70				
	D135S20-3D	13.5	20	25	50	60	42	110						50-70				
	D140S20-3D	14	20	25	50	60	42	110						50-70				
	D145S20-3D	14.5	20	25	50	64	45	114						50-70				
	D150S20-3D	15	20	25	50	64	45	114						50-70				
	D155S25-3D	15.5	25	32	56	68	48	124	SPMX 06T204 MG	DS 22052/ HG-TS	DTDW-7	DSL 25 M	-	80-100				
	D160S25-3D	16	25	32	56	68	48	124						80-100				
	D165S25-3D	16.5	25	32	56	71	51	127						80-100				
	D170S25-3D	17	25	32	56	71	51	127						80-100				
	D175S25-3D	17.5	25	32	56	75	54	131						80-100				
	D180S25-3D	18	25	32	56	75	54	131						80-100				
	D185S25-3D	18.5	25	32	56	78	57	134						80-100				
	D190S25-3D	19	25	32	56	78	57	134						80-100				
	D195S25-3D	19.5	25	32	56	83	60	139						80-100				
	D200S25-3D	20	25	32	56	83	60	139						80-100				
	D205S25-3D	20.5	25	32	56	86	63	142						80-100				
	D210S25-3D	21	25	32	56	86	63	142						80-100				
	D215S25-3D	21.5	25	32	56	89	66	145						80-100				
	D220S25-3D	22	25	32	56	89	66	145						SPMX 070308 MG	DS 25064I- TS	DTDW-8	DSL 25 M	-
	D225S25-3D	22.5	25	45	56	94	69	150	100-120									
	D230S25-3D	23	25	45	56	94	69	150	100-120									
	D235S25-3D	23.5	25	45	56	98	72	154	100-120									
	D240S25-3D	24	25	45	56	98	72	154	100-120									
	D245S32-3D	24.5	32	45	60	102	75	162	100-120									
	D250S32-3D	25	32	45	60	102	75	162	100-120									
	D255S32-3D	25.5	32	45	60	105	78	165	100-120									
	D260S32-3D	26	32	45	60	105	78	165	100-120									
	D265S32-3D	26.5	32	45	60	108	81	168	100-120									
	D270S32-3D	27	32	45	60	108	81	168	100-120									
	D275S32-3D	27.5	32	45	60	112	84	172	100-120									
												-	DSS M6X1X6				100-120	

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Drilling Depth: 4XD



Designation		Dimension(mm)							Insert	Component				Torque (N·cm)		
		D	d	d ₁	LS	L ₂	L ₁	L		Screw	Wrench	Plug	Set Screw			
DEC	D125S20-4D	12.5	20	25	50	70	52	120	SPMX 05T204 MG	DS 20043// HG-P-TS	DTDW- 6P	DSL 20 M	-	50-70		
	D130S20-4D	13	20	25	50	70	52	120						50-70		
	D135S20-4D	13.5	20	25	50	74	56	124						50-70		
	D140S20-4D	14	20	25	50	74	56	124						50-70		
	D145S20-4D	14.5	20	25	50	79	60	129						50-70		
	D150S20-4D	15	20	25	50	79	60	129	SPMX 06T204 MG	DS 22052// HG-TS	DTDW-7	DSL 25 M	-	80-100		
	D155S25-4D	15.5	25	32	56	84	64	140						80-100		
	D160S25-4D	16	25	32	56	84	64	140						80-100		
	D165S25-4D	16.5	25	32	56	88	68	144						80-100		
	D170S25-4D	17	25	32	56	88	68	144						80-100		
	D175S25-4D	17.5	25	32	56	93	72	149						80-100		
	D180S25-4D	18	25	32	56	93	72	149						80-100		
	D185S25-4D	18.5	25	32	56	97	76	153						80-100		
	D190S25-4D	19	25	32	56	97	76	153						80-100		
	D195S25-4D	19.5	25	32	56	103	80	159						80-100		
	D200S25-4D	20	25	32	56	103	80	159						80-100		
	D205S25-4D	20.5	25	32	56	107	84	163						80-100		
	D210S25-4D	21	25	32	56	107	84	163						80-100		
	D215S25-4D	21.5	25	32	56	111	88	167						80-100		
	D220S25-4D	22	25	32	56	111	88	167						SPMX 070308 MG	DS 25064I- TS	DTDW-8
D225S25-4D	22.5	25	45	56	117	92	173	100-120								
D230S25-4D	23	25	45	56	117	92	173	100-120								
D235S25-4D	23.5	25	45	56	122	96	178	100-120								
D240S25-4D	24	25	45	56	122	96	178	100-120								
D245S32-4D	24.5	32	45	60	127	100	187	100-120								
D250S32-4D	25	32	45	60	127	100	187	100-120								
D255S32-4D	25.5	32	45	60	131	104	191	100-120								
D260S32-4D	26	32	45	60	131	104	191	100-120								
D265S32-4D	26.5	32	45	60	135	108	195	100-120								
D270S32-4D	27	32	45	60	135	108	195	100-120								
D275S32-4D	27.5	32	45	60	140	112	200	-	DSS M6X1X6	100-120						

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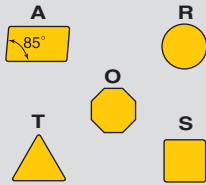
ISO	Workpiece Material	Vc (m/min)	Feed (mm/rev)		
			Ø16 - Ø21.5	Ø22 - Ø27.5	Ø28 - Ø33
P	Low Carbon Steel (- 0.3% C)	180 - 240	0.06 - 0.10	0.06 - 0.12	0.07 - 0.13
	Carbon Steel (0.3% C-)	150 - 220	0.08 - 0.15	0.10 - 0.18	0.12 - 0.22
	Alloy Steel (- HB300)	140 - 200	0.08 - 0.14	0.10 - 0.18	0.12 - 0.22
	Alloy Steel (HB300-)	120 - 180	0.08 - 0.15	0.10 - 0.20	0.12 - 0.23
M	Stainless Steel	150 - 220	0.06 - 0.12	0.08 - 0.15	0.09 - 0.16
K	Cast Iron	160 - 240	0.08 - 0.16	0.12 - 0.20	0.15 - 0.25
	Ductile Cast Iron	120 - 200	0.08 - 0.15	0.10 - 0.18	0.12 - 0.20
N	Aluminum	250 - 350	0.08 - 0.15	0.10 - 0.20	0.12 - 0.22
S	Titanium Alloy (Ti 6Al)	30 - 60	0.06 - 0.14	0.08 - 0.18	0.10 - 0.22



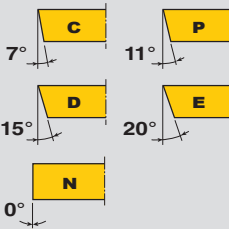
DURACARB SOLUTIONS **MILLING**



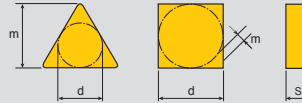
1. Shape



2. Clearance Angle

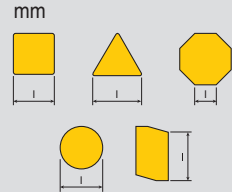


3. Tolerance

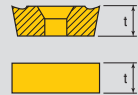


Symbol	$\pm \Delta m$	$\pm \Delta s$	$\pm \Delta d$
A	0.005	0.025	0.025
C	0.013	0.025	0.025
E	0.025	0.025	0.025
K	0.013	0.025	0.05 d=9.525 0.08 d=12.70 0.10 d=15.87
M	0.07 0.13	0.13	0.05 d=9.525 0.08 d=12.70
U	0.15 0.013	0.025	0.10 d=15.87 0.013

5. Cutting edge length



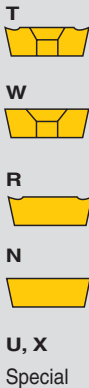
6. Thickness



01t = 1.59	05t = 5.56
02t = 2.38	06t = 6.35
03t = 3.18	07t = 7.94
T3t = 3.97	09t = 9.52
04t = 4.76	

A P K T 1 6 0 4 □ □ P D □ R
1 2 3 4 5 6 7 8 9 10

4. Type

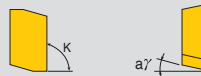


7. Corner Radius

Symbol	Radius(mm)
04	0.4
08	0.8
16	1.6
24	2.4
32	3.2
48	4.8
64	6.35

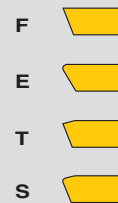


8. Parallel Land

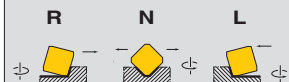


Entering Angle (K)	Clearance Angle (a°)
A = 45°	C = 7°
D = 60°	P = 11°
E = 75°	D = 15°
P = 90°	E = 20°
	F = 25°

9. Edge Condition



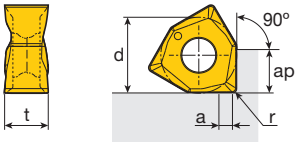
10. Hand of Insert



Designation	Features • Application	Edge Geometry & Picture		Cutter Designation		
NEW WNKU 07 WNKU 10	• For steel & cast Iron • Helical geometry for low cutting force			• 90° Facemill	90F...WN07	112 page
				• 90° Facemill • 90° Endmill • 90° Modular	90F...WN10 90E...WN07 90E...WN07	113 page 114 page 115 page
NEW ONMU 05	• For steel & cast Iron			• 45° Facemill • 45° Endmill	45FW...ON05 45EW...ON05	132 page 133 page
NEW ONMU 07	• For steel & cast Iron			• 43° Facemill	43FW...ON07	140 page
	• For stainless steel & roughing					
NEW SDKT 13	• For steel & cast Iron • Helical geometry for low cutting force			• 45° Facemill	45F...SD13	134 page
NEW SNMU 10	• For steel & cast Iron			• 90° Facemill	90F...SN10	116 page
NEW SOMX 12	• For steel & cast Iron			• 90° Facemill	90F...SO12	117 page
NEW TOMX 10	• For steel & cast Iron • Helical geometry for low cutting force			• 90° Endmill	90E...TO10	118 page
NEW SDMT 06	• For steel & cast Iron • For High feed			• High Feed Endmill	12E...SD06	108 page
NEW SDMT 10	• For steel & cast Iron • For High feed			• High Feed Facemill	10F...SD10	109 page
				• High Feed Endmill	10E...SD10	110 page
NEW WLMT 12	• For steel & cast Iron • For High feed			• High Feed Facemill	10F...WL12	111 page
	• For steel & stainless steel • For High feed					
SNKU 12 & SNKU 12	• For steel & cast Iron			• 45° Facemill • 75° Facemill	45F...SN12-N 75F...SN12-N	131 page 130 page
APMT 1504T-WT	• For roughing					
APKT 16	• High positive geometry for lower cutting force • For general machining			• 90° Endmill • 90° Facemill	90E...AP16 90F...AP16	124 page 123 page
				• 90° Endmill • 90° Facemill • 90° Endmill • 90° Facemill	90E...APM11 90F...APM11 90E...APM16 90F...APM16	120 page 119 page 122 page 121 page
NEW APHT 16	• For aluminum			• 90° Endmill • 90° Facemill	90E...APM16 90F...APM16	122 page 121 page

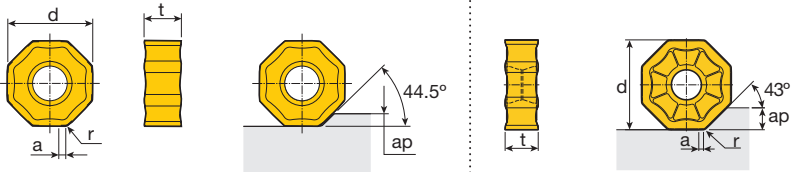
Designation	Features · Application	Edge Geometry & Picture		Cutter Designation	
OFC(M)T	• For steel			• 43° Facemill	43F...OFS05 141 page
	• For stainless steel & roughing				
	• For aluminum				
OFCN 07 OFCR 07	• For High feed & hardened steel			• 43° Facemill	43F...OF07 142 page
	• For stainless steel & low machine power				
	• Ground insert & good surface finish				
RBEX 40, 50	• For Pre-hardened Steel and Stainless Steel			• Ball Endmill(Rough)	DRBX... 143 page
	• App. range between M and MR type				
	• Strong cutting edge for high feed machining and for hard materials				
RBET 20, 25, 30, 32	• Roughing for high feed machining				
SDMT 09 RBE	• For roughing				
SPMT 06 RBE	• For roughing				
SPMT 12 RBE	• For roughing				
RPMT (W) 10, 12	• For mold & die			• Round Endmill • Round Endmill	ERP... 145 page FRP... 144 page
					
					
SDKN 12, 42 SDKN 15, 53	• For steel			• 45° Facemill	45F...SD12 135 page
	• For steel			• 45° Facemill	45F...SD15 136 page

Designation	Features • Application	Edge Geometry & Picture		Cutter Designation			
SEKN 12 SEKN 15 SEKR 12 SEKR 15	• For steel	SEKN AFSN-EM 		• 45° Facemill • 45° Facemill • 45° Facemill	45F...SE12	137 page	
	• For steel	SEKR AFSN-EM 			45F...SE15	138 page	
	• For steel	SEKN AFSN-HPN 			DMFN45...SE12	139 page	
SPKN 12 SPKN 15 SPKR 12 SPKR 15	• For low carbon steel and stainless steel	SPKR EDR-EM 		• 75° Facemill • 75° Facemill • 75° Facemill	75F...SP12	127 page	
	• For steel	SPKN EDSR-EM 			75F...SP15	129 page	
	• For low carbon steel and stainless steel	SPKR EDSR-EM 			DMFN75...SP12/15	128 page	
	• For cast Iron	SPKN EDR-HPN 					
		• For steel	SPKN EDSR-HPN 				
SPMT 120408 MD	• For roughing	SPMT-MD 					
TPKN 16/22	• For steel	PPSR-EM 		• 90° Facemill	90F...TP22	125 page	
	• For steel	PDSR-EM 					
	• For cast Iron	PDR-HPN 					
	• For steel	PDSR-HPN 					
TEKN 22	• For steel	PESR-EM 		• 90° DM Facemill	DMFN90...TE22	126 page	



Insert	Designation	Dimension(mm)					Recommended cutting condition		Coated		
		d	t	a	r	ap	Feed (mm/tooth)	D.O.C (mm)	DP5320	DP8330	DP7320
	WNKU 070408R-M	10.15	5.4	1.8	0.8	6	0.08-0.15	1.5-5.0	●	●	●
	100608R-M	13.5	8	2	0.8	8	0.1-0.25	1.5-8.0	●		●
	WNKU 070408R-ML	10.15	5.4	1.8	0.8	6	0.05-0.10	1.5-5.0	●	●	●

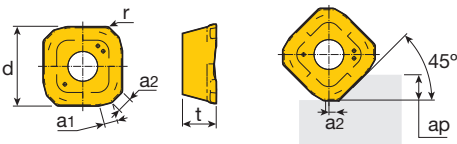
ONMU 05/07



ONMU 05

ONMU 07

Insert	Designation	Dimension(mm)					Recommended cutting condition		Coated		
		d	t	r	ap	a	Feed (mm/tooth)	D.O.C (mm)	DP8330	DP7320	DP5320
	ONMU 050508-M	12.7	5	0.8	2.5	0.8	0.10-0.25	1.0-2.5	●	●	●
	ONMU 070608-M	19	6	0.8	4.0	1.0	0.10-0.20	1.0-4.0	●	●	●
	070608-ML	19	6	0.8	4.0	1.0	0.10-0.20	1.0-4.0	●		●

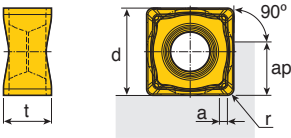


NEW



Insert	Designation	Dimension(mm)						Recommended cutting condition		Coated		
		d	t	r	ap	a1	a2	Feed (mm/tooth)	D.O.C (mm)	DP8330	DP7320	DP5320
SDKT 1305 XTR-M		13.76	5.9	0.5	4.0	2.0	2.5	0.10-0.30	1.5-4.0	●	●	●

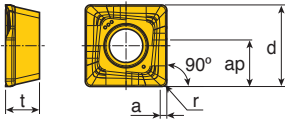
SNMU 10



NEW



Insert	Designation	Dimension(mm)					Recommended cutting condition		Coated		
		d	t	r	ap	a	Feed (mm/tooth)	D.O.C (mm)	DP7320	DP5320	DP8330
SNMU 100508-M		10.9	6	0.8	4	1	0.10-0.25	1.0-4.0	●	●	●

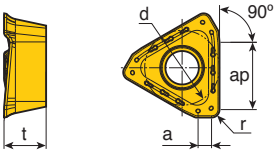


NEW



Insert	Designation	Dimension(mm)					Recommended cutting condition		Coated		
		d	t	r	ap	a	Feed (mm/tooth)	D.O.C (mm)	DP8330	DP7320	DP5320
SOMX 120508PEER-DM		12.5	5.2	0.8	7.0	2.5	0.10-0.30	1.0-6.0	●	●	●

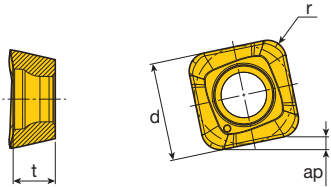
TOMX 1004



NEW



Insert	Designation	Dimension(mm)					Recommended cutting condition		Coated		
		d	t	r	ap	a	Feed (mm/tooth)	D.O.C (mm)	DP8330	DP7320	DP5320
TOMX 100408PDTR-DM		7.5	4.2	0.8	7.4	1.5	0.05-0.12	2.0-6.0	●	●	●

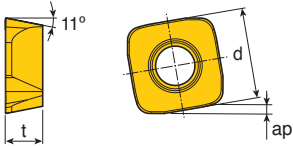


NEW



Insert	Designation	Dimension(mm)				Recommended cutting condition		Coated		
		d	t	r	ap	Feed (mm/tooth)	D.O.C (mm)	DP8330	DP7320	DP5320
	SDMT 0603-DM	6.3	2.9	1.2	0.8	0.2-2.0	0.1~0.8			●

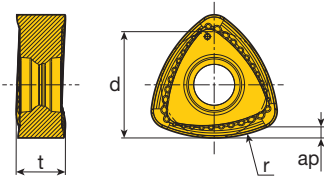
SDMT 1004



NEW

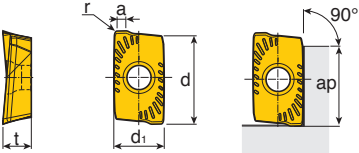


Insert	Designation	Dimension(mm)				Recommended cutting condition		Coated		
		d	t	r	ap	Feed (mm/tooth)	D.O.C (mm)	DP8330	DP7320	DP5320
	SDMT 1004-DM	10.3	4.3	1.5	1.2	0.2-2.0	0.1-1.2	●	●	●

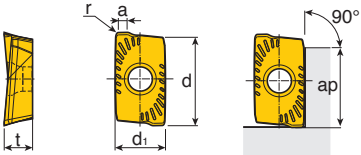


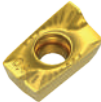
Insert	Designation	Dimension(mm)				Recommended cutting condition		Coated		
		d	t	r	ap	Feed (mm/tooth)	D.O.C (mm)	DP8330	DP7320	DP5320
	WLMT 1205R-M	12	5.5	15	2.0	4.50-0.40	0.5-2.0			●
	WLMT 1205R-MM	12	5.5	15	2.0	4.50-0.40	0.5-2.0			●

APMT 11

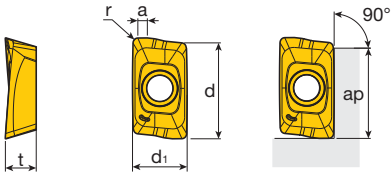


Insert	Designation	Dimension(mm)						Recommended cutting condition		Coated			Uncoated	
		d	d1	a	t	r	ap	Feed (mm/tooth)	D.O.C (mm)	DP5320	DP7320	DC9235	DC210	DC325M
	APMT 1135 PDER	9.8	6.24	1.2	3.5	0.8	9.5	0.07-0.14	3.5-9.5	●				

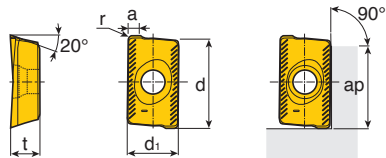


Insert	Designation	Dimension(mm)						Recommended cutting condition		Coated					Uncoated
		d	d1	a	t	r	ap	Feed (mm/tooth)	D.O.C (mm)	DP5320	DP7320	DP9320	DC9800	DC9235	DC210
	APMT 160404 PDER	16.3	9.33	1.7	5.27	0.4	13	0.09-0.17	4.5-13.0	●					
	1604 PDER	16.4	9.33	1.6	5.26	0.8	13	0.09-0.17	4.5-13.0	●	●			●	
	160412 PDER	16.3	9.33	1.4	5.26	1.2	13	0.09-0.17	4.5-13.0	●					
	160416 PDER	16.3	9.33	1.1	5.26	1.6	13	0.09-0.17	4.5-13.0	●					
	160424 PDER	16.2	9.33	0.6	5.19	2.4	13	0.09-0.17	4.5-13.0	●					
	160430 PDER	16.2	9.33	-	5.07	3	13	0.09-0.17	4.5-13.0	●					

APHT 16

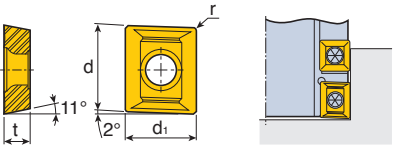


Insert	Designation	Dimension(mm)						Recommended cutting condition		Coated					Uncoated
		d	d1	a	t	r	ap	Feed (mm/tooth)	D.O.C (mm)	DP5320	DP7320	DP9320	DC9800	DC9235	DC210
	APHT 160404R-AL	16.3	9.3	2	5.32	0.4	13	0.50-0.10	4.5-13.0						●
	160408R-AL	16.3	9.3	1.6	5.28	0.8	13	0.50-0.10	4.5-13.0						●
	160416R-AL	16.3	9.3	1.3	5.2	1.6	13	0.50-0.10	4.5-13.0						●
	160420R-AL	16.2	9.3	0.9	5.23	2	13	0.50-0.10	4.5-13.0						●
	160430R-AL	16.1	9.3	0.7	5.06	3	13	0.50-0.10	4.5-13.0						●
	160432R-AL	16.1	9.3	0.7	5.03	3.2	13	0.50-0.10	4.5-13.0						●

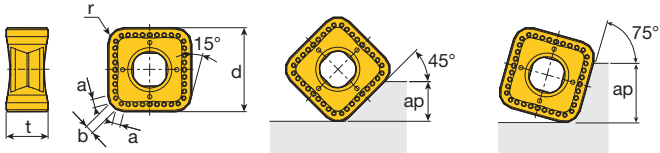


Insert	Designation	Dimension(mm)						Recommended cutting condition		Coated				Uncoated	
		d	d1	a	t	r	ap	Feed (mm/tooth)	D.O.C (mm)	DP5320	DP7320	DP9320	DC9235	DC210	DC325M
	APKT 160408 PDSR	16.4	9.45	1.7	5.25	0.8	13	0.09-0.17	4.5-13.0	●	●	●	●	●	●

APMT...T-WT

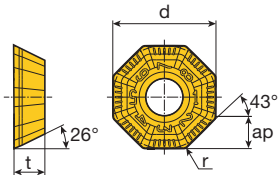


Insert	Designation	Dimension(mm)				Coated				Uncoated	
		d	d1	t	r	DP5320	DP7320	DP9320	DC9235	DC210	DC325M
	APMT 1504 T-WT	15.91	12.7	4.76	0.4	●	●	●	●		●

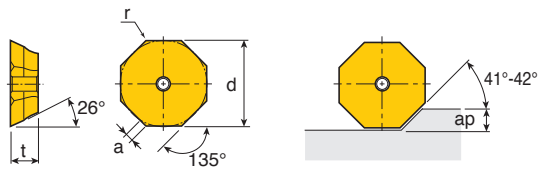


Insert	Designation	Dimension(mm)						Recommended cutting condition		Coated			
		d	t	a	b	r	ap	Feed (mm/tooth)	D.O.C (mm)	DP5320	DP7320	DP8330	DP9320
	SNGU 1205 XTN	12.7	6.35	1.25	1.3	0.4	45° 6	0.01-0.25	1.0-6.0	●	●	●	●
	SNKU 1205 XTN						75° 9		1.0-9.0	●	●	●	●

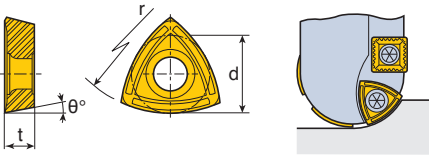
OFC(M)T 05



Insert	Designation	Dimension(mm)						Recommended cutting condition		Coated			Uncoated
		d	t	a	r	ap	Feed (mm/tooth)	D.O.C (mm)		DP8330	DP7320	DP5320	DC210
	OFCT 05T3 DN-AU	12.7	3.67	-	0.5	2.8	0.1-0.5	1.0-3.0					●
	OFCT 05T3 DN-EM	12.7	3.86	-	0.6	3	0.08-0.1	1.0-3.0	●		●		
	OFMT 05T3 DN-ML	12.7	3.8	-	0.6	3	0.06-0.12	1.0-3.0	●		●		

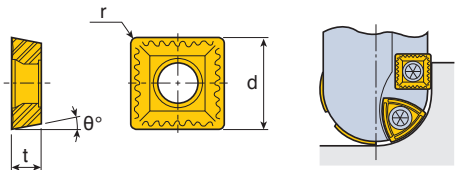


Insert	Designation	Dimension(mm)					Recommended cutting condition		Coated				Uncoated	
		d	t	a	r	ap	Feed (mm/tooth)	D.O.C (mm)	DP5320	DP7320	DP9320	DC9235	DC210	DC325M
	OFCN 0704	17.94	5.1	1.3	0.8	5	0.08-0.15	1.5-4.0		●	●			
	OFCR 0704	17.94	5.1	1.3	0.8	5	0.08-0.15	1.5-4.0		●	●			
	OFCR 0704-G	17.94	5.1	1.7	0.8	5	0.05-0.15	1.5-4.0		●	●			



Insert	Designation	Dimension(mm)				Coated				Uncoated	
		d	t	θ°	r	DP5320	DP7320	DP9320	DC9235	DC210	DC325M
	RBET 20-M	6.7	3.20	14°	10	●		●	●		
	25-M	8.5	3.65	14°	12.5	●		●	●		
	30-M	10.5	4.76	14°	15	●		●	●		●
	32-M	10.5	4.76	14°	16	●	●	●	●		●
	RBEX 40-M	12.7	5.56	11°	20	●	●	●	●		
	50-M	12.7	5.56	11°	25	●	●	●	●		●
	RBEX 50-MM	12.7	5.56	11°	25	●	●	●			
	RBEX 50-MR	12.7	5.56	11°	25	●	●	●			

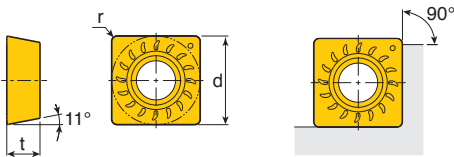
• MR: For roughing M: For general machining
• Recommended cutting condition: 147 page



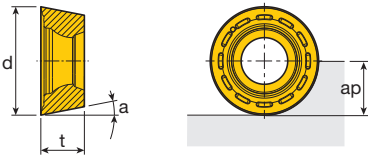
Insert	Designation	Dimension(mm)				Coated					Uncoated	
		d	t	θ°	r	DP5320	DP7320	DP9320	DC9800	DC9235	DC210	DC325M
	SPMT 060304 RBE	6.35	3.18	11°	0.4	●	●	●				
	SDMT 090308 RBE	9.525	3.18	14°	0.8	●	●	●	●	●		
	SPMT 120408 RBE	12.7	4.76	11°	0.8	●	●	●		●		●

• Recommended cutting condition: 147 page

SPMT...MD

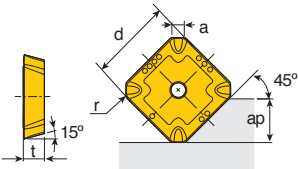


Insert	Designation	Dimension(mm)			Coated				Uncoated	
		d	t	r	DP5320	DP7320	DP9320	DC9235	DC210	DC325M
	SPMT 120408 MD	12.7	4.76	0.8	●	●	●			

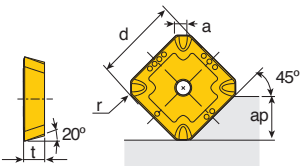


Insert	Designation	Dimension(mm)				Recommended cutting condition		Coated			Uncoated	
		d	a	t	ap	Feed (mm/tooth)	D.O.C (mm)	DP5320	DP7320	DC9235	DC210	DC325M
	RPMT 10T3 MO	10	11°	4.02	5	0.10-0.30	1.5-4.0	●				
	RPMT 1204 M-C	12	12°	4.76	6	0.10-0.45	1.8-5.0	●				
	RPMW 1003 MO	10	11°	3.18	5	0.10-0.30	1.5-4.0	●				

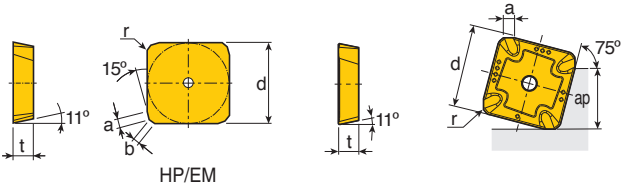
SDKN 12/15



Insert	Designation	Dimension(mm)						Recommended cutting condition		Coated				
		d	t	a	ap	b	r	Feed (mm/tooth)	D.O.C (mm)	DP5320	DP7320	DP9320	DC7070	DC9235
	SDKN 1203 MT-HPN	12.7	3.18	2	6.5	-	-	0.10-0.25	1.5-6.0	●		●		
	1504 MT-HPN	15.875	4.76	1.89	8.5	-	-	0.10-0.25	1.5-8.0	●		●		
	53 MT-HPN	15.875	4.76	1.89	8.5	-	-	0.10-0.25	1.5-8.0	●		●		
	SDKN 42 MT-EM	12.7	3.18	1.3	6.5	-	1.2	0.10-0.25	1.5-6.0					●
	53 MT-EM	15.875	4.76	1.4	8.5	-	1.2	0.10-0.25	1.5-8.0		●			●



Insert	Designation	Dimension(mm)							Recommended cutting condition		Coated				
		d	t	a	ap	b	r	Feed (mm/tooth)	D.O.C (mm)		DP5320	DP7320	DP9320	DC7070	DC9235
	SEKN 1203 AFSN-HPN	12.7	3.18	2.08	6.5	-	-	0.10-0.25	1.5-6.0		●		●		
	1504 AFSN-HPN	15.875	4.76	2.06	9	-	-	0.10-0.25	1.5-8.0		●	●	●		●
	SEKN 1203 AFSN-EM	12.7	3.18	1.6	6.5	-	0.8	0.10-0.25	1.5-6.0						●
	1504 AFSN-EM	15.875	4.76	1.51	9	-	0.8	0.10-0.25	1.5-8.0						●
	SEKR 1203 AFSN-EM	12.7	3.18	1.6	6	-	0.8	0.10-0.25	1.5-5.5				●		●
	SEKR 1504 AFSN-EM	15.875	4.76	1.52	8.5	-	0.8	0.10-0.25	1.5-8.0					●	●



Insert	Designation	Dimension(mm)							Recommended cutting condition		Coated				Uncoated	
		d	t	a	ap	b	r	Feed (mm/tooth)	D.O.C (mm)		DP5320	DP7320	DP9320	DC9235	DC210	DC325M
	SPKN 1203 EDR-HPN	12.7	3.18	1.6	9	1.31	-	0.10-0.25	1.5-7.0		●	●		●		●
	1504 EDR-HPN	15.875	4.76	1.6	11.5	1.26	-	0.10-0.25	1.5-10.0		●	●		●		●
	SPKN 1203 EDSR-HPN	12.7	3.18	1.46	9.5	1.2	-	0.10-0.25	1.5-7.0		●		●	●		
	1504 EDSR-HPN	15.875	4.76	1.67	12.5	1.11	-	0.10-0.25	1.5-10.0		●		●			
	SPKN 1203 EDSR-EM	12.7	3.18	1.28	9.5	1.03	0.8	0.10-0.25	1.5-7.0					●		
	1504 EDSR-EM	15.875	4.76	1.34	12.5	1.02	1.2	0.10-0.25	1.5-10.0					●		
	SPKR 1203 EDR-EM	12.7	3.18	1.7	9	-	0.8	0.10-0.25	1.5-7.0					●		
	SPKR 1504 EDSR-EM	15.875	4.76	1.73	12.5	-	1.2	0.10-0.25	1.5-10.0					●		

HP/EM

TPKN

TEKN

[illegible]

NEW

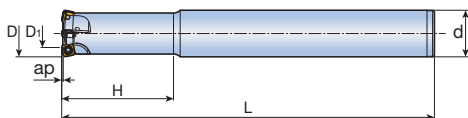


Fig.1

[illegible]

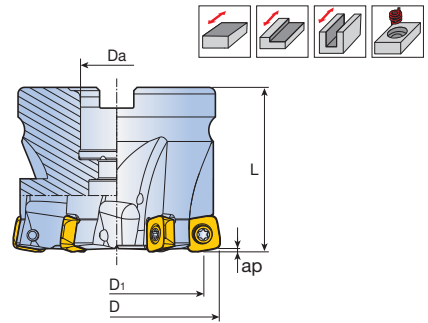
	Component	
	Screw	Wrench
		
	DS 25054I/HG-P-TS	DTDW-8P

- Ramping program: 147 page

10F...SD 10



High Feed Mill

[illegible]

	Component	
	Screw	Wrench
		
	DS 35D100/HG-TS	DTDW-15

- Ramping program: 148 page

10E...SD 10



High Feed Mill

NEW

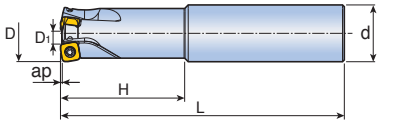


Fig.1

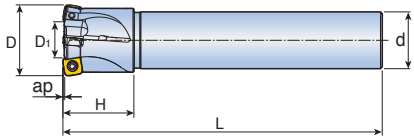


Fig.2

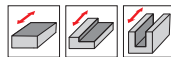
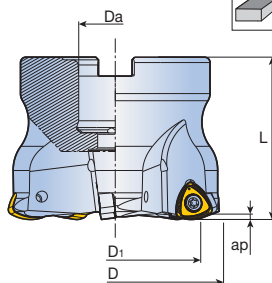
Designation	Insert		Dimension(mm)						Weight (Kg)	Fig.
			D	D1	d	H	L	ap		
10E2-D25-25-SD10-L150	SDMT 1004-DM	2	25	11.5	25	70	150	1.2	0.5	1
10E3-D32-32-SD10-L160		3	32	18.5	32	70	160	1.2	0.8	1
10E3-D32-32-SD10-L220		3	32	18.5	32	120	220	1.2	1	1
10E4-D40-32-SD10-L180		4	40	26.5	32	40	180	1.2	1	2
10E4-D40-32-SD10-L250		4	40	26.5	32	40	250	1.2	1.4	2

	Component	
	Screw	Wrench
	DS 35D100I/HG-TS	DTDW-15

• Ramping program: 148 page

10F...WL 12

High Feed Mill

[illegible]

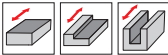
	Component	
	Screw	Wrench
		
	DS 40120I-TS	DTTW-15

- Ramping program: 149 page

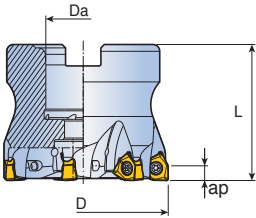
90F...WN 07



90° Facemill



NEW



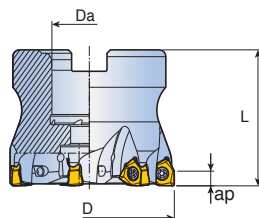
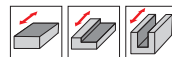
Designation	Insert		Dimension(mm)				Weight (Kg)	Mounting Bolt
			D	Da	L	ap		
90F4-D40-16R-WN07	WNKU 0704	4	40	16	40	6	0.24	SH M8X1.25X30
90F4-D50-22R-WN07		4	50	22	40	6	0.31	SH M10X1.5X30
90F6-D50-22R-WN07		6	50	22	40	6	0.3	SH M10X1.5X30
90F4-D63-22R-WN07		4	63	22	40	6	0.49	SH M10X1.5X30
90F6-D63-22R-WN07		6	63	22	40	6	0.49	SH M10X1.5X30
90F7-D63-22R-WN07		7	63	22	40	6	0.48	SH M10X1.5X30
90F5-D80-27R-WN07		5	80	27	50	6	0.94	SH M12X1.75X35
90F7-D80-27R-WN07		7	80	27	50	6	0.97	SH M12X1.75X35
90F9-D80-27R-WN07		9	80	27	50	6	0.96	SH M12X1.75X35
90F6-D100-32R-WN07		6	100	32	50	6	1.87	SH M16X2X35
90F8-D100-32R-WN07		8	100	32	50	6	1.92	SH M16X2X35
90F11-D100-32R-WN07		11	100	32	50	6	1.92	SH M16X2X35
90F7-D125-40R-WN07		7	125	40	63	6	2.9	SH M20X2.5X40
90F11-D125-40R-WN07		11	125	40	63	6	2.91	SH M20X2.5X40
90F14-D125-40R-WN07		14	125	40	63	6	2.98	SH M20X2.5X40

	Component	
	Screw	Wrench
	DS 35A088I/HG-TS	DTDW-10P

90F...WN 10

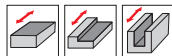


90° Facemill

[illegible]

	Component	
	Screw	Wrench
		
	DS 50A1211/HG-TS	DTTW-20

90° Endmill



NEW

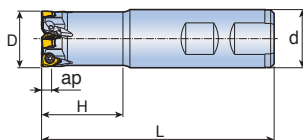


Fig.1

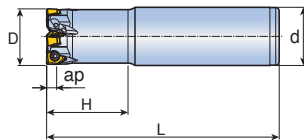
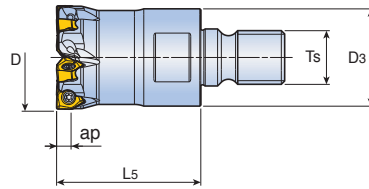
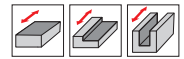


Fig.2

	Component	
	Screw	Wrench
		
	DS 35A088/HG-TS	DTDW-10P

Modular 90° Endmill

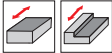


	Component	
	Screw	Wrench
		
	DS 35A088I/HG-TS	DTDW-10P

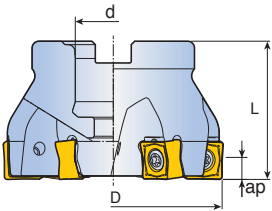
90F...SN 10



90° Facemill



NEW



Designation	Insert		Dimension(mm)				Weight (Kg)	Mounting Bolt
			D	d	H	ap		
90F4-D40-16R-SN10	SNMU 100508-M	4	40	16	40	4	0.2	SH M8X1.25X25
90F5-D50-22R-SN10		5	50	22	40	4	0.31	SH M10X1.5X30
90F6-D63-22R-SN10		6	63	22	40	4	0.55	SH M10X1.5X30

	Component	
	Screw	Wrench
	DS 35C110I-TS	DTTW-15

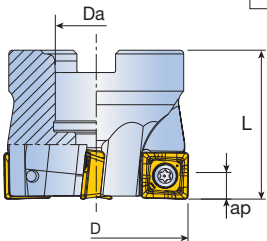
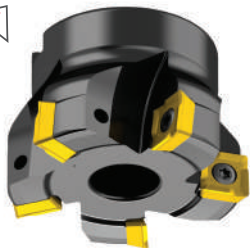
90F...S0 12



90° Facemill



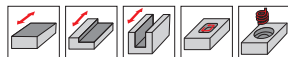
NEW



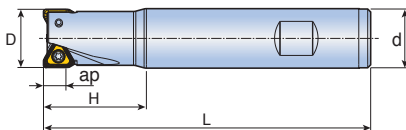
Designation	Insert		Dimension(mm)				Weight (Kg)	Mounting Bolt
			D	Da	L	ap		
90F4-D50-22R-S012	SOMX 120508PEER-DM	4	50	22	40	7	0.31	SH M10X1.5X30
90F5-D63-22R-S012		5	63	22	40	7	0.43	SH M10X1.5X30
90F6-D80-27R-S012		6	80	27	50	7	1.13	SH M12X1.75X35
90F8-D100-32R-S012		8	100	32	50	7	1.81	SH M16X2X35
90F10-D125-40R-S012		10	125	40	63	7	3.23	SH M20X2.5X40

	Component	
	Screw	Wrench
	DS 40B100I-TS	DTTW-15

90° Endmill



NEW



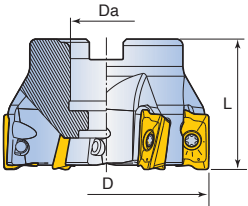
	Component	
	Screw	Wrench
		
	DS 30B068I/HG-TS	DTDW-8

118

90F...APM 11



90° Facemill



Designation	Insert		Dimension(mm)				Weight (Kg)	Mounting Bolt
			D	Da	L	ap		
90F4-D50-22-APM11	APMT 1135	4	50	22	40	9.5	0.33	SH M10X1.5X30
90F5-D63-22-APM11		5	63	22	40	9.5	0.52	SH M10X1.5X30
90F6-D80-25.4-APM11		6	80	25.4	50	9.5	1.32	SH M12X1.75X35

	Component	
	Screw	Wrench
	DS 25055I/HG-TS	DTDW-8

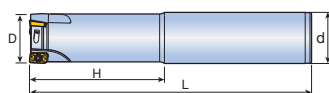


Fig.1

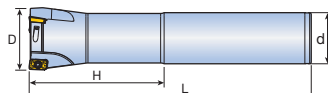


Fig.2

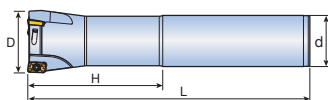
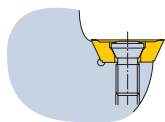
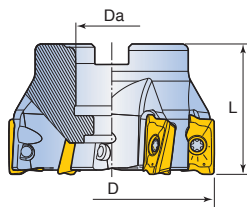


Fig.3

[illegible]

Component	
Screw	Wrench
	
DS 25055/HG-TS	DTDW-8



• Cutter body for APM(H)T 16 insert with corner radius more than 1.6mm should be modified accordingly body “r”=insert “r”-0.5mm.

Duracarb Member EAC Group 121

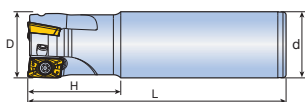


Fig.1

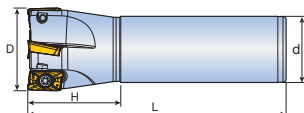


Fig.2

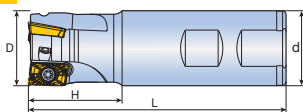
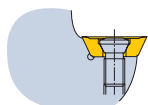
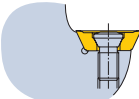


Fig.3

[illegible]

- Cutter body for APM(H)T 16 insert with corner radius more than 1.6mm should be modified accordingly body "r"=insert "r"-0.5mm.



	Component	
	Screw	Wrench
		
90E2-2525-APM16-L115	DS 40085I-TS	DTDW-15
90E2-2625W-APM16-L100		
90E2-2625-APM16-L200		
90E3-3232W-APM16-L110		
90E3-3232-APM16-L125	DS 40093I-TS	
90E3-3232-APM16-L200		
90E3-3332-APM16-L215		
90E4-4032-APM16-L125		
90E4-4032-APM16-L215		

90F...AP 16

90° Facemill

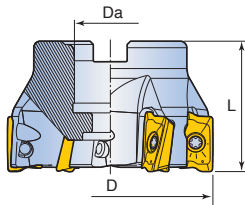


Fig.1

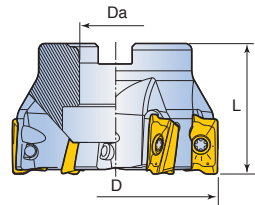
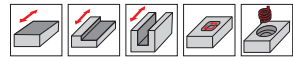


Fig.2

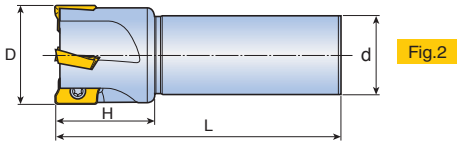
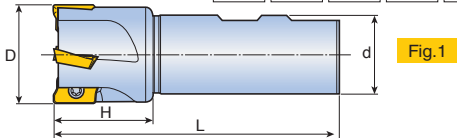
Designation	Insert		Dimension(mm)			Fig.	Mounting Bolt
			D	Da	L		
90F3-D40-16-AP16	APKT 1604	3	40	16	40	1	SH M8 X 1.25 X 30
90F3-D50-22-AP16		3	50	22	40	1	SH M10 X 1.5 X 30
90F4-D63-22-AP16		4	63	22	40	1	SH M10 X 1.5 X 30
90F5-D80-27-AP16		5	80	27	50	1	SH M12 X 1.75 X 35
90F6-D100-32-AP16		6	100	32	50	2	-

	Component	
	Screw	Wrench
90F-D40 - 90F-D63		
90F-D80 - 90F-D100		

90E...AP 16



90° Endmill



Designation	Insert		Dimension(mm)				Fig.
			D	d	L	H	
90E02020W-AP16-L90	APKT 1604	1	20	20	90	32	1
90E02525W-AP16-L100		2	25	25	100	39	1
90E02525-AP16-L210		2	25	25	210	40	2
90E02625-AP16-L200		2	26	25	200	40	2
90E02625-AP16-L250		2	26	25	250	40	2
90E03232WF-AP16-L110		3	32	32	110	40	1
90E03232-AP16-L250		2	32	32	250	65	2
90E03332-AP16-L250		2	33	32	250	40	2
90E03332F-AP16-L250		3	33	32	250	55	2
90E03332-AP16-L300		2	33	32	300	40	2
90E03232W-AP16-L200		3	32	32	200	65	1
90E04032-AP16-L250		2	40	32	250	54	2
90E04032F-AP16-L200		3	40	32	200	54	2

	Component	
	Screw	Wrench
90E02020 - 90E02525	 DS40085I-TS	 DTDW-15
90E02626 - 90E04032		

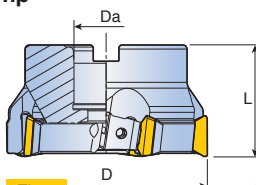


Fig.1

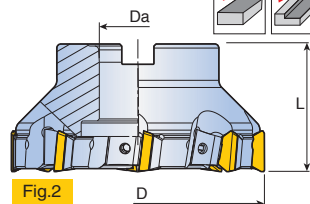


Fig.2

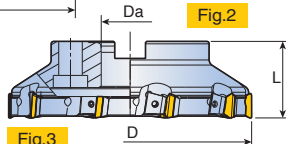
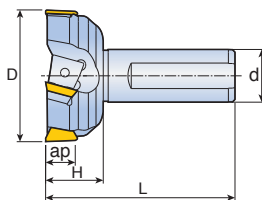


Fig.3

	Component				
	Shim	Wedge	Shim Screw	Wedge Screw	Wrench
					
	DSTP 22N	DWPA 8	DS 40B100I-TS	DS 80200W-TS, *DS 80160W-TS	DTTW-4

Duracarb Member BAC Group

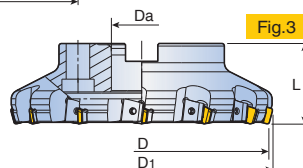
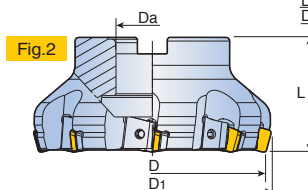
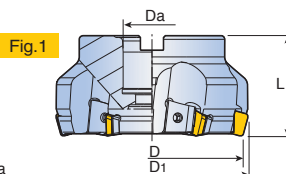
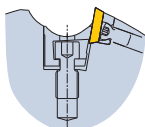
The diagram consists of two separate boxes. The left box shows a rectangular block with a red double-headed arrow above it, indicating uniform stress. The right box shows a rectangular block with a rectangular notch on its top surface. A red double-headed arrow is above the notch, indicating non-uniform stress concentrated in that area.

[illegible]

	Component					
	Shim	Wedge	Shim Screw	Wedge Screw	Wrench	Shim Screw Wrench
						
	DSTE 22N	DWPA 8	DS 40B100I-TS	DS 80160W-TS	DTTW-4	DTTW-15

- DTTW-15⁽¹⁾ is not included in the package

- Do not mount other insert on a cutter

[illegible]

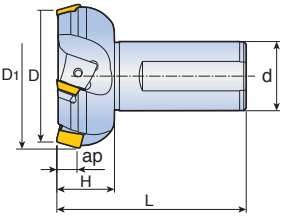
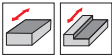
	Component				
	Shim	Wedge	Shim Screw	Wedge Screw	Wrench
					
	DSSP 12N	DWPA 8	DS 40B100I-TS	DS 80200W-TS, *DS 80160W-TS	DTTW-4

- Do not mount other insert on a cutter

DMFN75...SP 12/15 (ISO Insert)



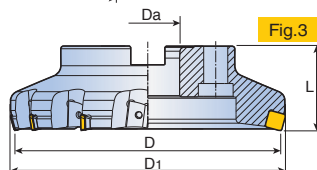
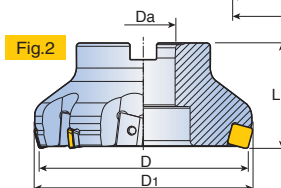
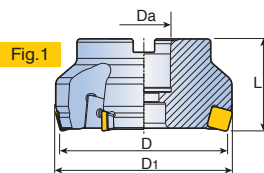
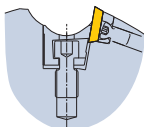
75° Facemill, Wedge + Shim Clamp



Designation	Insert		Dimension(mm)					
			D	D1	d	L	H	ap
DMFN75-D63-SP12	SPKN 1203 EDR-HPN	3	63	68.3	32	115	35	8
	SPKN 1203 EDSR-EM	3	63	68.3	32	115	35	8
	SPKN 1203 EDSR-HPN	3	63	68.3	32	115	35	8
	SPKR 1203 EDR-EM	3	63	68.3	32	115	35	8
DMFN75-D80-SP15	SPKN 1504 EDR-HPN	4	80	86.9	42	115	35	12
	SPKN 1504 EDSR-EM	4	80	86.9	42	115	35	12
	SPKN 1504 EDSR-HPN	4	80	86.9	42	115	35	12
	SPKR 1504 EDSR-EM	4	80	86.9	42	115	35	12

	Component				
	Shim	Wedge	Shim Screw	Wedge Screw	Wrench
DMFN75-D63-SP12	DSSP 12N	DWPA 8	DS 40B100I-TS	DS 80200W-TS	DTTW-4
DMFN75-D80-SP15	DSSP 15N			DS 80160W-TS	

• Do not mount other insert on a cutter

[illegible]

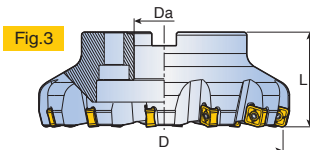
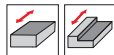
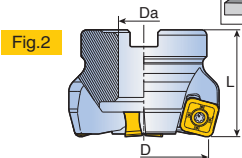
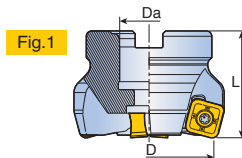
	Component				
	Shim	Wedge	Shim Screw	Wedge Screw	Wrench
					
	DSSP 15N	DWPA 8	DS 40B100I-TS	DS 80200W-TS, *DS 80160W-TS	DTTW-4

• * DS 80160W-TS: For Ø80 cutter • Do not mount other insert on a cutter

75F...SN 12-N



75° Facemill



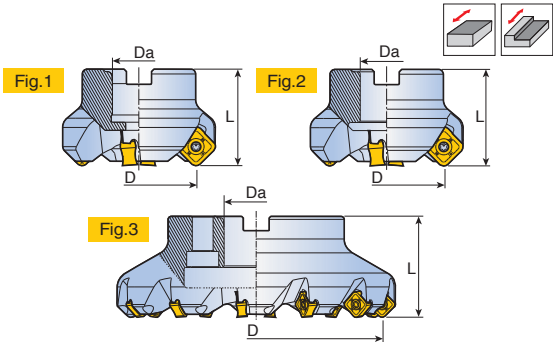
Designation	Insert		Dimension(mm)			Weight (Kg)	Fig.	Mounting Bolt
			D	Da	L			
75F4-D40-22R-SN12-N	SNGU 1205 XTN SNKU 1205 XTN	4	40	22	40	0.3	1	LH M10X1.5X25
75F6-D50-22R-SN12-N		6	50	22	40	0.3	1	LH M10X1.5X25
75F6-D63-22R-SN12-N		6	63	22	40	0.5	1	LH M10X1.5X25
75F8-D63-22R-SN12-N		8	63	22	40	0.5	1	LH M10X1.5X25
75F7-D80-25.4R-SN12-N		7	80	25.4	50	1.3	1	LH M12X1.75X30
75F7-D80-27R-SN12-N		7	80	27	50	1.2	1	LH M12X1.75X30
75F9-D80-27R-SN12-N		9	80	27	50	1.2	1	LH M12X1.75X30
75F10-D80-25.4R-SN12-N		10	80	25.4	50	1.3	1	LH M12X1.75X30
75F10-D80-27R-SN12-N		10	80	27	50	1.2	1	LH M12X1.75X30
75F8-D100-31.75R-SN12-N		8	100	31.75	50	1.7	2	-
75F8-D100-32R-SN12-N		8	100	32	50	1.8	1	LH M16X2X35
75F8-D100-32L-SN12-N		8	100	32	50	1.9	1	LH M16X2X35
75F12-D100-31.75R-SN12-N		12	100	31.75	50	1.7	2	-
75F12-D100-32R-SN12-N		12	100	32	50	1.9	1	LH M16X2X35
75F10-D125-38.1R-SN12-N		10	125	38.1	63	2.9	2	-
75F10-D125-40R-SN12-N		10	125	40	63	3	1	SH M20X2.5X40
75F16-D125-31.8R-SN12-N		16	125	31.8	63	2.9	2	-
75F16-D125-40R-SN12-N		16	125	40	63	3	1	SH M20X2.5X40
75F12-D160-40R-SN12-N		12	160	40	63	4.6	3	-
75F12-D160-50.8R-SN12-N		12	160	50.8	63	4.8	2	-
75F20-D160-50.8R-SN12-N		20	160	50.8	63	4.8	2	-
75F22-D200-60R-SN12-N		22	200	60	63	6.2	3	-
75F19-D315-60R-SN12-N		19	315	60	63	18	3	-

	Component	
	Screw	Wrench
	DS 40B100I-TS	DTTW-15

45F...SN 12-N



45° Facemill



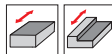
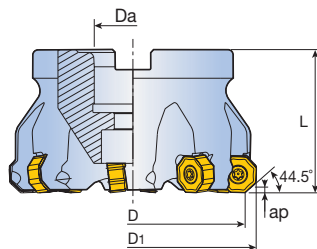
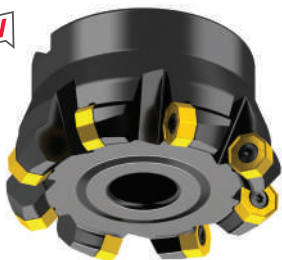
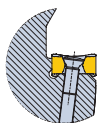
Designation	Insert		Dimension(mm)			Weight (Kg)	Fig.	Mounting Bolt
			D	Da	L			
45F4-D50-22R-SN12-N	SNGU 1205 XTN SNKU 1205 XTN	4	50	22	40	0.3	1	LH M10X1.5X25
45F6-D50-22R-SN12-N		6	50	22	40	0.3	1	LH M10X1.5X25
45F6-D63-22R-SN12-N		6	63	22	40	0.5	1	LH M10X1.5X25
45F6-D63-22L-SN12-N		6	63	22	40	0.6	1	LH M10X1.5X25
45F8-D63-22R-SN12-N		8	63	22	40	0.5	1	LH M10X1.5X25
45F7-D80-25.4R-SN12-N		7	80	25.4	50	1.4	1	LH M12X1.75X30
45F7-D80-27R-SN12-N		7	80	27	50	1.2	1	LH M12X1.75X30
45F10-D80-25.4R-SN12-N		10	80	25.4	50	1.4	1	LH M12X1.75X30
45F10-D80-27R-SN12-N		10	80	27	50	1.2	1	LH M12X1.75X30
45F5-D100-32R-SN12-N		5	100	32	50	2	1	LH M16X2X35
45F8-D100-31.75R-SN12-N		8	100	31.75	50	1.9	2	-
45F8-D100-32R-SN12-N		8	100	32	50	2	1	LH M16X2X35
45F12-D100-31.75R-SN12-N		12	100	31.75	50	1.9	2	-
45F12-D100-32R-SN12-N		12	100	32	50	2	2	LH M16X2X35
45F8-D125-38.1R-SN12-N		8	125	38.1	63	3.4	2	-
45F10-D125-38.1R-SN12-N		10	125	38.1	63	3.2	2	-
45F10-D125-40R-SN12-N		10	125	40	63	3.2	1	SH M20X2.5X40
45F16-D125-38.1R-SN12-N		16	125	38.1	63	3.2	2	-
45F16-D125-40R-SN12-N		16	125	40	63	3.4	1	SH M20X2.5X40
45F12-D160-40R-SN12-N		12	160	40	63	4.6	3	-
45F20-D160-40R-SN12-N		20	160	40	63	4.6	3	-
45F20-D160-50.8R-SN12-N		20	160	50.8	63	5	2	-
45F18-D200-60R-SN12-N		18	200	60	63	6.5	3	-
45F26-D200-60R-SN12-N		26	200	60	63	6.5	3	-
45F20-D250-60R-SN12-N		20	250	60	63	13	3	-

	Component	
	Screw	Wrench
	DS 40B100I-TS	DTTW-15

45FW...ON 05



45° Facemill

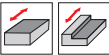
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Component	
Screw	Wrench
	
DS 40B100I-TS	DTTW-15

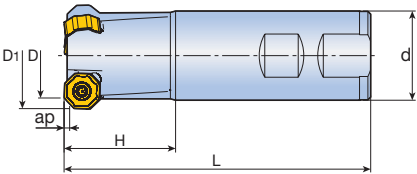
45EW...ON 05



45° Endmill



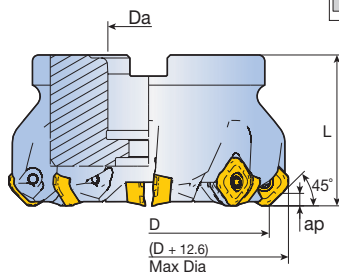
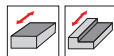
NEW



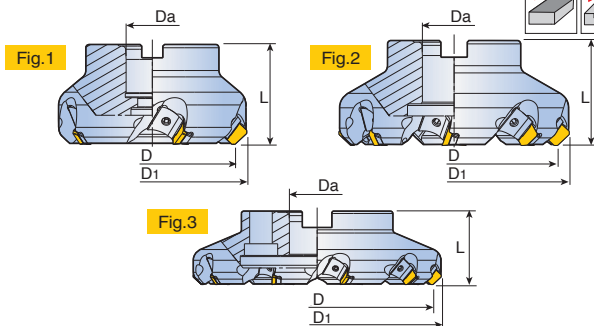
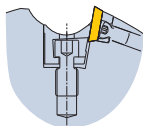
Designation	Insert		Dimension(mm)						Weight (Kg)
			D	D1	d	H	L	ap	
45EW3-02525W-ON05-L110	ONMU 050508-M	3	25	33.2	25	40	110	2.5	0.6
45EW3-03232W-ON05-L110		3	32	40.2	32	40	110	2.5	0.8
45EW4-04032W-ON05-L110		4	40	48.2	32	40	110	2.5	0.9
	ONMU 050508-M								

	Component	
	Screw	Wrench
	DS 40B100I-TS	DTTW-15

45° Facemill

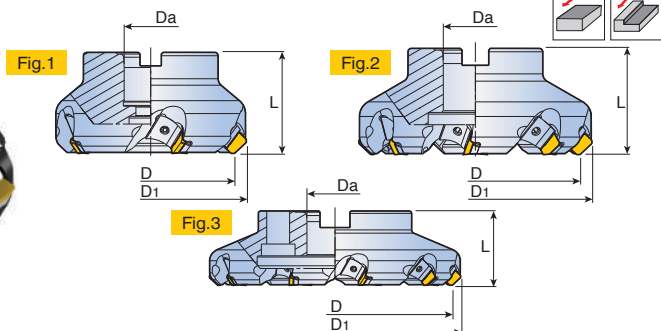
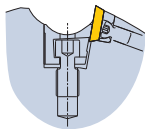


	Component	
	Screw	Wrench
		
	DS 40B100I-TS	DTTW-15

[illegible]

	Component				
	Shim	Wedge	Shim Screw	Wedge Screw	Wrench
					
	DSSDSE 12N	DWPA 8	DS 40B100I-TS	DS 80200W-TS	DTTW-4

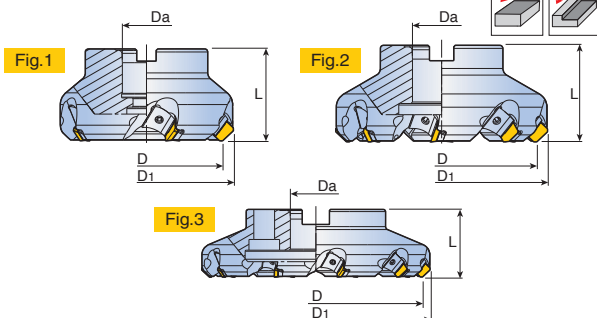
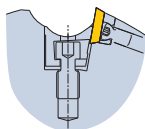
Duracarb Member IWC Group

[illegible]

Component				
Shim	Wedge	Shim Screw	Wedge Screw	Wrench
				
DSSDSE 15N	DWPA 8	DS 40B100I-TS	DS 80200W-TS	DTTW-4

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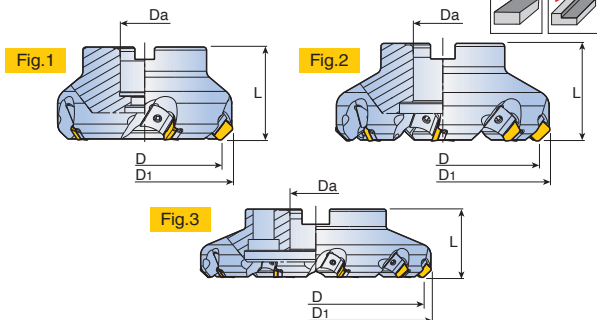
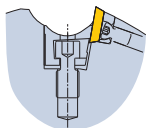
The diagram consists of two rectangular blocks. The left block is subjected to uniform stress, indicated by two red arrows pointing in opposite directions from the top and bottom surfaces. The right block is subjected to non-uniform stress, indicated by two red arrows pointing in opposite directions from the top and bottom surfaces, but the arrows are positioned such that they represent a bending or shearing force.

[illegible]

	Component				
	Shim	Wedge	Shim Screw	Wedge Screw	Wrench
					
	DSSDSE 12N	DWPA 8	DS 40B100I-TS	DS 80200W-TS	DTTW-4

Duracarb Member IWC Group

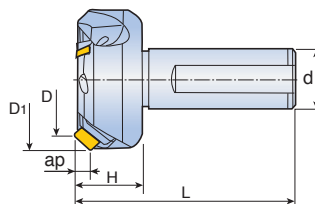
The diagram illustrates two types of stress. On the left, a rectangular block is shown under uniform stress, represented by two red arrows pointing in opposite horizontal directions from the top and bottom surfaces. On the right, a rectangular block is shown under shear stress, represented by two red arrows pointing in opposite diagonal directions from the top and bottom surfaces, causing the block to deform into a parallelepiped shape.

[illegible]

	Component				
	Shim	Wedge	Shim Screw	Wedge Screw	Wrench
					
	DSSDSE 15N	DWPA 8	DS 40B100I-TS	DS 80200W-TS	DTTW-4

138

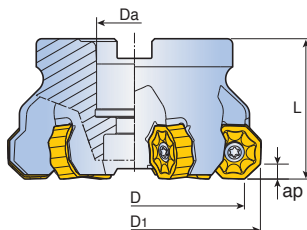
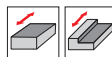
The diagram consists of two rectangular blocks. The left block is subjected to uniform stress, indicated by two red arrows pointing away from the top surface. The right block is subjected to non-uniform stress, indicated by two red arrows pointing away from the top surface, but the arrows are of different lengths, suggesting varying stress intensity across the surface.

[illegible]

	Component					
	Shim	Wedge	Shim Screw	Wedge Screw	Wrench	Shim Screw Wrench
						
	DSSDSE 12N	DWPA 8	DS 40B100I-TS	DS 80200W-TS	DTTW-4	DTTW-15 ⁽¹⁾

- Do not mount other insert on a cutter

43° Facemill

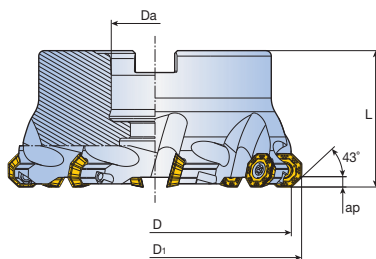
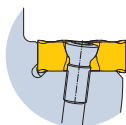


	Component	
	Screw	Wrench
		
	DS 50C130I/HG-TS	DTTW-20

43F...0FS05

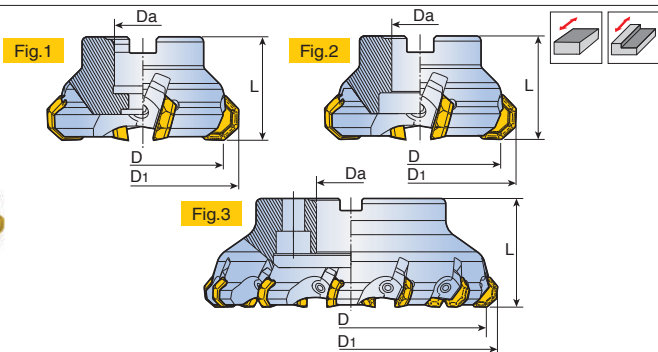
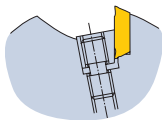


43° Facemill

[illegible]

	Component	
	Screw	Wrench
		
	DS 40093I-TS	DTTW-15

43° Facemill

[illegible]

	Component		
	Wedge	Screw	Wrench
			
	DWFO-8Z	DWS8S	DTTW-4

Ball Endmills for roughing

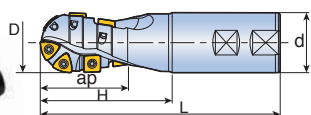


Fig.1

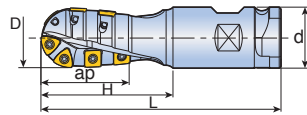


Fig.2

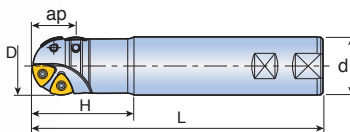


Fig.3

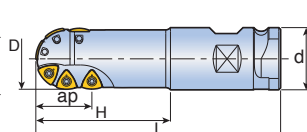
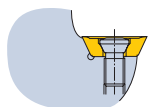


Fig.4

Designation		Insert		Insert	Dimension(mm)					Fig.				
					D	d	ap	L	H					
DRBX02020-W20-L125	2	RBET 20-M	2	SPMT 060304 RBE	20	20	20.5	125	50	1				
DRBX02020-W20-L150					20	20	20.5	150	80	1				
DRBX02020-W25-L200					20	25	20.5	200	100	1				
DRBX02523-W25-L135					25	25	23	135	55	1				
DRBX02523-W25-L170	2	RBET 25-M	2	SPMT 060304 RBE	25	25	23	170	90	1				
DRBX02523-W25-L200					25	25	23	200	100	1				
DRBX03030-W32-L150					30	32	30	150	60	1				
DRBX03030-W32-L200					30	32	30	200	90	1				
DRBX03030-W32-L250	2	RBET 30-M	2	SDMT 090308 RBE	30	32	30	250	100	1				
DRBX03231-W32-L150					32	32	31	150	60	1				
DRBX03231-W32-L200					32	32	31	200	90	1				
DRBX03231-W32-L250					32	32	31	250	100	1				
DRBX04030-W40-L200	4	RBEX 40-M	-	-	40	40	30	200	70	3				
DRBX04041-W40-L150	2	RBEX 40-M	2	SPMT 120408 RBE	40	40	41	150	70	1				
DRBX04041-W40-L200					40	40	41	200	70	1				
DRBX04041-W42-L150					40	42	41	150	70	1				
DRBX04041-W42-L200					40	42	41	200	70	1				
DRBX04041-W42-L250	3	RBEX 50-M RBEX 50-MM RBEX 50-MR	2	SPMT 120408 RBE	50	40	46	150	67	1				
DRBX05046-W40-L200					50	40	46	200	67	1				
DRBX05046-W42-L150			4	-	-	50	42	46	150	67	1			
DRBX05046-50.8CN-L200						50	50.8	46	200	110	4			
DRBX05046-50.8CN-L250	6	RBEX 50-M RBEX 50-MM RBEX 50-MR	-	-	50	50.8	46	250	150	4				
DRBX05067-W42-L200					4	SPMT 120408 RBE	50	42	67	200	110	1		
DRBX05067-W42-L250			50	42			67	250	110	1				
DRBX05067-W50-L200			50	50			67	200	110	1				
DRBX05067-50.8CN-L200	3	RBEX 50-M RBEX 50-MM RBEX 50-MR	4	SPMT 120408 RBE	50	50.8	67	200	110	2				
DRBX05067-50.8CN-L250					50	50.8	67	250	110	2				
DRBX05056-50.8CN-L200					7	RBEX 50-M RBEX 50-MM RBEX 50-MR	-	-	50	50.8	56	200	110	4
DRBX05056-50.8CN-L250									50	50.8	56	250	150	4



Component

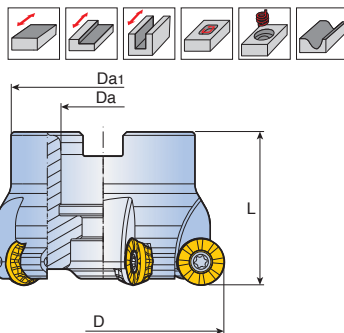
Screw



Wrench



DRBX 020, 025	DS 25055I/HG-TS	DTDW-8
DRBX 030, 032	DS 40D080I-HG-TS	DTDW-15
DRBX 040, 050	DS 50A105I-TS	DTDW-20

[illegible]

	Component	
	Screw	Wrench
		
FRP...10	DS 35085I-HG-TS	DTDW-15
FRP...12	DS 40093I	

Endmills for Mold and Die

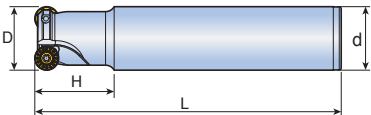
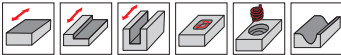


Fig.1

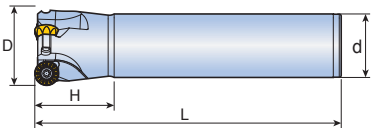


Fig.2

Designation	Insert		Dimension(mm)				Fig.
			D	L	d	H	
ERP02020-10-L180	RPMW 1003	2	20	180	20	30	1
ERP02525-10-L180		2	25	180	25	30	1
ERP03232-12-L200		2	32	200	32	40	1
ERP04032-12-L200		3	40	200	32	40	2
	RPMT 1204						

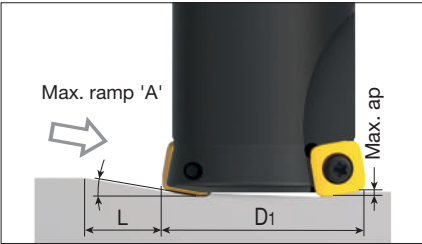
	Component	
	Screw	Wrench
ERP02020-10-L180	DS 35070I-HG-TS	DTDW-15
ERP02525-10-L180	DS 35085I-HG-TS	
ERP...12-L200	DS 40093I-TS	

Recommended Cutting Condition

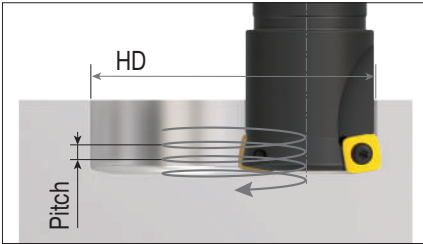


ISO	Material		Condition	Tensile strength (N/mm ²)	Hardness (HB)	Material No.	Uncoated	Coated				
							DC210	DP5320	DP9320	DP8330	DC9235	DP7320
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C	Annealed	420	125	1		220-370	250-410	170-250	150-210	
		>=0.25%C	Annealed	650	190	2		180-310	200-380	130-220	120-200	
		<0.55%C	Quenched and tempered	850	250	3		115-195	140-230	90-170	70-140	
		>=0.55%C	Annealed	750	220	4		130-210	160-250	100-190	90-150	
			Quenched and tempered	1000	300	5		115-175	135-195	70-160	60-130	
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	6		175-265	190-290	150-220	130-170	
				930	275	7		130-215	150-240	110-190	70-150	
			Quenched and tempered	1000	300	8		105-185	135-225	80-160	60-110	
				1200	350	9		95-160	120-190	70-120	50-100	
	High alloy steel, cast steel and tool steel		Annealed	680	200	10		85-155	100-150	70-110	50-80	
			Quenched and tempered	1100	325	11		75-135	90-140	60-100	40-80	
M	Stainless steel and cast steel		Ferritic / martensitic	680	200	12		115-270		90-200	75-170	
			Martensitic	820	240	13		100-230		70-160	60-130	
			Austenitic	600	180	14		120-275		100-210	80-180	
K	Gray cast iron (GG)		Ferritic		160	15	70-130					200-390
			Pearlitic		250	16	50-110					160-300
	Cast iron nodular (GGG)		Ferritic		180	17	45-90					130-250
			Pearlitic		260	18	40-85					110-210
	Malleable cast iron		Ferritic		130	19	70-140					210-330
			Pearlitic		230	20	55-115					130-280
N	Aluminum - wrought alloy		Not cureable		60	21	550-700					
			Cured		100	22	600-750					
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23	800-900					
			Cured		90	24	650-800					
		>12% Si	High temp.		130	25	250-320					
	Copper alloys	>1% Pb	Free cutting		110	26	300-400					
			Brass		90	27	300-400					
	Non-metallic		Electrolitic copper		100	28	210-280					
S	High temp. alloys	Fe based				29						
			Duroplastics, fiber plastics			30						
		Ni or Co based	Hard rubber									
	Titanium, Ti alloys	Fe based	Annealed		200	31	50-70	40-80		30-65		
			Cured		280	32	40-50	30-60		20-45		
		Ni or Co based	Annealed		250	33	50-70	35-70		25-50		
			Cured		350	34	35-40	30-60		20-40		
H	Hardened steel		Cast		320	35	45-50	35-65		20-45		
			Cast									
	Chilled cast iron			Rm 400		36	120-145	90-130		60-100		
			Alpha+beta alloys cured	Rm 1050		37	35-45	35-70		25-55		
	Cast iron nodular											

Straight ramping



Helical ramping



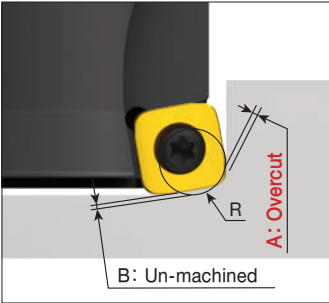
SDMT 06

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
16	2.1	0.8	21.83	23.1		0.80
					32	0.80
17	2.1	0.8	21.83	25.1		0.80
					34	0.80
20	2.1	0.8	21.83	31.0		0.80
					40	0.80
21	2.05	0.8	22.36	33.0		0.80
					42	0.80
25	2	0.8	22.92	41.0		0.80
					50	0.80
26	1.9	0.8	24.13	43.0		0.80
					52	0.80
32	1.9	0.8	24.13	55.0		0.80
					64	0.80
33	1.8	0.8	25.47	57.0		0.80
					66	0.80

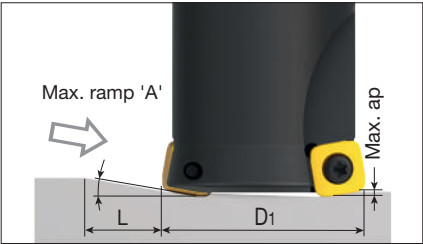
Programming technical data

When performing CNC programming operations, specify tools with “Corner R” value for the SDMT 10 insert. This will achieve un-machined material thickness of approximately “B” mm along the corner. When applying the CNC program with “Corner R,” the over cut area is indicated as “A” mm. For other program “Corner R” data, please refer to the diagram below.

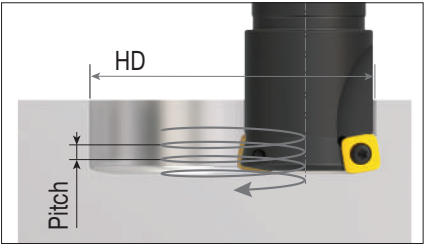
	R Program	A Over cut	B Un-machined
SDMT 06	2	0.00	0.62
	2.5	0.10	0.53
	3.0	0.27	0.44



Straight ramping



Helical ramping



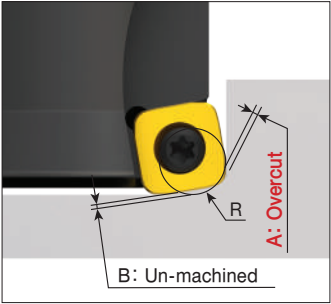
SDMT 10

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
25	0.3	1.1	210	34.2		0.1
					50	0.3
32	1.2	1.1	53	48.2		0.9
					64	1.1
40	4.1	1.1	16	64.2		1.1
					80	1.1
50	3.1	1.1	21	84.2		1.1
					100	1.1
52	3	1.1	21	88.2		1.1
					104	1.1
63	2.2	1.1	29	110.2		1.1
					126	1.1

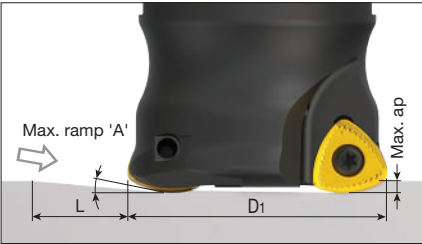
Programming technical data

When performing CNC programming operations, specify tools with “Corner R” value for the SDMT 10 insert. This will achieve un-machined material thickness of approximately “B” mm along the corner. When applying the CNC program with “Corner R,” the over cut area is indicated as “A” mm. For other program “Corner R” data, please refer to the diagram below.

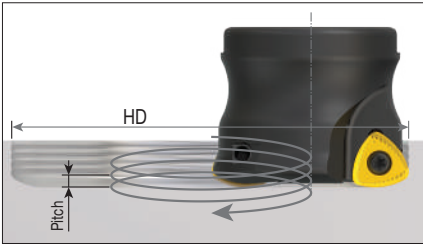
	R Program	A Over cut	B Un-machined
SDMT 10	2.5	0	0.74
	3	0.05	0.66
	3.5	0.2	0.58
	4	0.38	0.5
	4.5	0.57	0.43



Straight ramping



Helical ramping



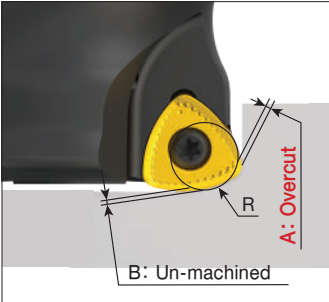
WLMT 12

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
50	1.1	2	104.21	84.2	100	2.00
						2.00
63	0.8	2	143.30	110.2	126	2.00
						2.00
80	0.7	2	163.78	144.1	160	2.00
						2.00
100	0.5	2	229.29	184.1	200	2.00
						2.00

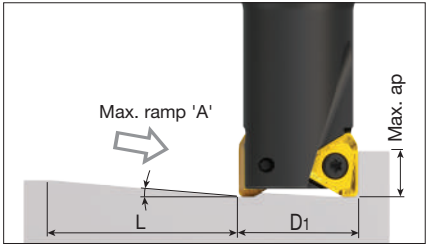
Programming technical data

When performing CNC programming operations, specify tools with “Corner R” value for the SDMT 10 insert. This will achieve un-machined material thickness of approximately “B” mm along the corner. When applying the CNC program with “Corner R,” the over cut area is indicated as “A” mm. For other program “Corner R” data, please refer to the diagram below.

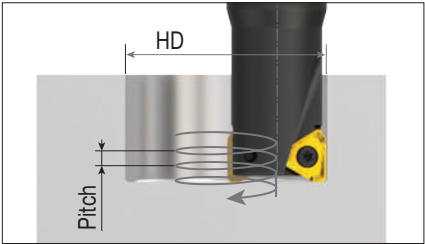
	R Program	A Over cut	B Un-machined
WLMT 12	3.5	0.00	1.01
	3.6	0.00	0.98
	4.0	0.03	0.86
	4.5	0.13	0.71



Straight ramping



Helical ramping



TOMX 10

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
20	4.4	7.5	98	32		2.5
					40	4.1
25	4.5	7.5	96	41		3.4
					50	5.2
32	3.2	7.5	135	55		3.4
					64	4.8

Recommended Condition for Ball Endmill (Roughing)

ISO	Material	Hardness (HB)	Ap (mm)	D20			D25			D32			D40			D50		
				V	*RPM	**Feed	V	*RPM	**Feed	V	*RPM	**Feed	V	*RPM	**Feed	V	*RPM	**Feed
P	Low Carbon Steel	85 - 175	0.4	714	11,374	15,924	797	10,159	18,285	900	8,958	18,633	1,005	8,002	12,803	1,122	7,149	11,438
			0.8	510	8,124	11,374	568	7,238	13,028	641	6,376	13,262	714	5,687	9,099	797	5,075	8,120
			1.5	380	6,043	8,460	421	5,366	9,659	473	4,708	9,792	526	4,190	6,705	586	3,734	5,974
			3.2	273	4,345	6,083	299	3,814	6,865	333	3,317	6,900	369	2,935	4,696	408	2,602	4,163
			4.8	234	3,729	5,221	254	3,235	5,823	280	2,787	5,798	308	2,450	3,920	339	2,162	3,459
			6.4	214	3,413	4,779	229	2,919	5,254	250	2,488	5,175	273	2,172	3,475	299	1,906	3,050
			7.9	205	3,258	4,561	215	2,740	4,931	232	2,308	4,800	251	2,000	3,200	274	1,746	2,794
			10	200	3,185	4,459	204	2,601	4,681	216	2,147	4,467	231	1,839	2,942	250	1,592	2,548
	High Carbon Steel	175 - 225	0.4	643	10,237	11,260	718	9,143	10,971	810	8,063	10,481	905	7,202	11,163	1,010	6,434	9,651
			0.8	459	7,312	8,043	511	6,514	7,817	577	5,738	7,460	643	5,118	7,933	717	4,568	6,852
			1.5	342	5,439	5,983	379	4,829	5,795	426	4,237	5,508	474	3,771	5,846	528	3,360	5,040
			3.2	246	3,910	4,301	269	3,433	4,119	300	2,986	3,881	332	2,642	4,095	368	2,342	3,513
			4.8	211	3,356	3,692	229	2,911	3,494	252	2,509	3,261	277	2,205	3,417	305	1,946	2,919
			6.4	193	3,072	3,379	206	2,627	3,153	225	2,239	2,911	245	1,954	3,029	269	1,716	2,574
			7.9	184	2,932	3,225	194	2,466	2,959	209	2,077	2,700	226	1,800	2,790	247	1,572	2,358
			10	180	2,866	3,153	184	2,341	2,809	194	1,933	2,513	208	1,655	2,565	225	1,433	2,150
	Alloy Steel	275 - 325	0.4	571	9,099	9,099	638	8,127	8,940	720	7,167	8,600	804	6,401	8,962	898	5,719	8,006
			0.8	408	6,499	6,499	455	5,790	6,369	513	5,101	6,121	571	4,550	6,369	637	4,060	5,684
			1.5	304	4,834	4,834	337	4,293	4,722	378	3,766	4,519	421	3,352	4,693	469	2,987	4,182
			3.2	218	3,476	3,476	240	3,051	3,356	267	2,654	3,185	295	2,348	3,287	327	2,082	2,914
			4.8	187	2,983	2,983	203	2,588	2,847	224	2,230	2,676	246	1,960	2,744	272	1,730	2,422
			6.4	171	2,731	2,731	183	2,335	2,569	200	1,990	2,389	218	1,737	2,432	239	1,525	2,135
			7.9	164	2,606	2,606	172	2,192	2,411	186	1,846	2,215	201	1,600	2,240	219	1,397	1,956
			10	160	2,548	2,548	163	2,081	2,289	173	1,718	2,062	185	1,471	2,059	200	1,274	1,783
	Tool Steel	200 - 250	0.4	536	8,530	6,824	598	7,619	6,857	675	6,719	6,719	754	6,001	7,202	842	5,361	6,434
			0.8	383	6,093	4,875	426	5,428	4,886	480	4,782	4,782	536	4,265	5,118	598	3,806	4,568
			1.5	285	4,532	3,626	316	4,024	3,622	355	3,531	3,531	395	3,143	3,771	440	2,800	3,360
			3.2	205	3,259	2,607	225	2,861	2,574	250	2,488	2,488	276	2,201	2,642	306	1,951	2,342
			4.8	176	2,797	2,238	190	2,426	2,184	210	2,091	2,091	231	1,837	2,205	255	1,622	1,946
			6.4	161	2,560	2,048	172	2,189	1,970	188	1,866	1,866	205	1,629	1,954	224	1,430	1,716
			7.9	153	2,444	1,955	161	2,055	1,849	174	1,731	1,731	188	1,500	1,800	206	1,310	1,572
			10	150	2,389	1,911	153	1,951	1,756	162	1,611	1,611	173	1,379	1,655	188	1,194	1,433
M	Stainless Steel 300 Series	135 - 185	0.4	464	7,393	5,175	518	6,603	5,282	585	5,823	5,241	603	4,801	5,761	673	4,289	5,147
			0.8	332	5,281	3,697	369	4,705	3,764	416	4,144	3,730	429	3,412	4,095	478	3,045	3,654
			1.5	247	3,928	2,750	274	3,488	2,790	307	3,060	2,754	316	2,514	3,017	352	2,240	2,688
			3.2	177	2,824	1,977	195	2,479	1,983	217	2,156	1,941	221	1,761	2,113	245	1,561	1,873
			4.8	152	2,424	1,697	165	2,103	1,682	182	1,812	1,631	185	1,470	1,764	204	1,297	1,557
			6.4	139	2,219	1,553	149	1,897	1,518	163	1,617	1,456	164	1,303	1,564	180	1,144	1,373
			7.9	133	2,118	1,482	140	1,781	1,425	151	1,500	1,350	151	1,200	1,440	165	1,048	1,257
			10	130	2,070	1,449	133	1,691	1,352	140	1,396	1,256	139	1,103	1,324	150	955	1,146
	Stainless Steel 400 Series	135 - 185	0.4	357	5,687	3,412	399	5,079	3,556	450	4,479	3,583	503	4,001	4,201	561	3,574	3,753
			0.8	255	4,062	2,437	284	3,619	2,533	320	3,188	2,550	357	2,843	2,986	398	2,538	2,665
			1.5	190	3,022	1,813	211	2,683	1,878	237	2,354	1,883	263	2,095	2,200	293	1,867	1,960
			3.2	136	2,172	1,303	150	1,907	1,335	167	1,659	1,327	184	1,468	1,541	204	1,301	1,366
			4.8	117	1,865	1,119	127	1,617	1,132	140	1,394	1,115	154	1,225	1,286	170	1,081	1,135
			6.4	107	1,707	1,024	115	1,460	1,022	125	1,244	995	136	1,086	1,140	150	953	1,001
			7.9	102	1,629	977	108	1,370	959	116	1,154	923	126	1,000	1,050	137	873	917
			10	100	1,592	955	102	1,300	910	108	1,074	859	115	919	965	125	796	836

*RPM adjusted to compensate for actual dia. at DOC

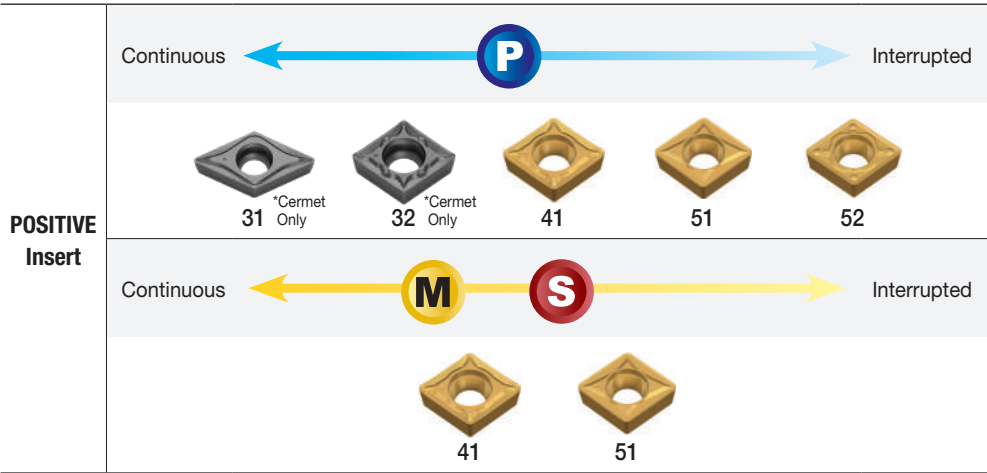
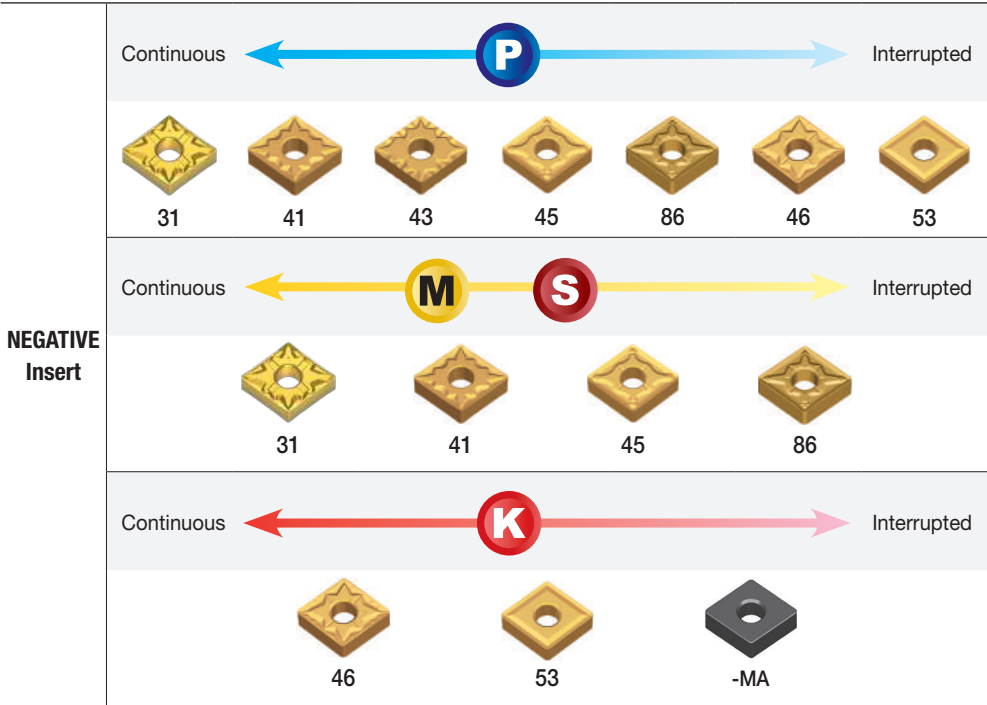
**Feed(m/min) adjusted to compensate for radial chip thinning

DURACARB SOLUTIONS



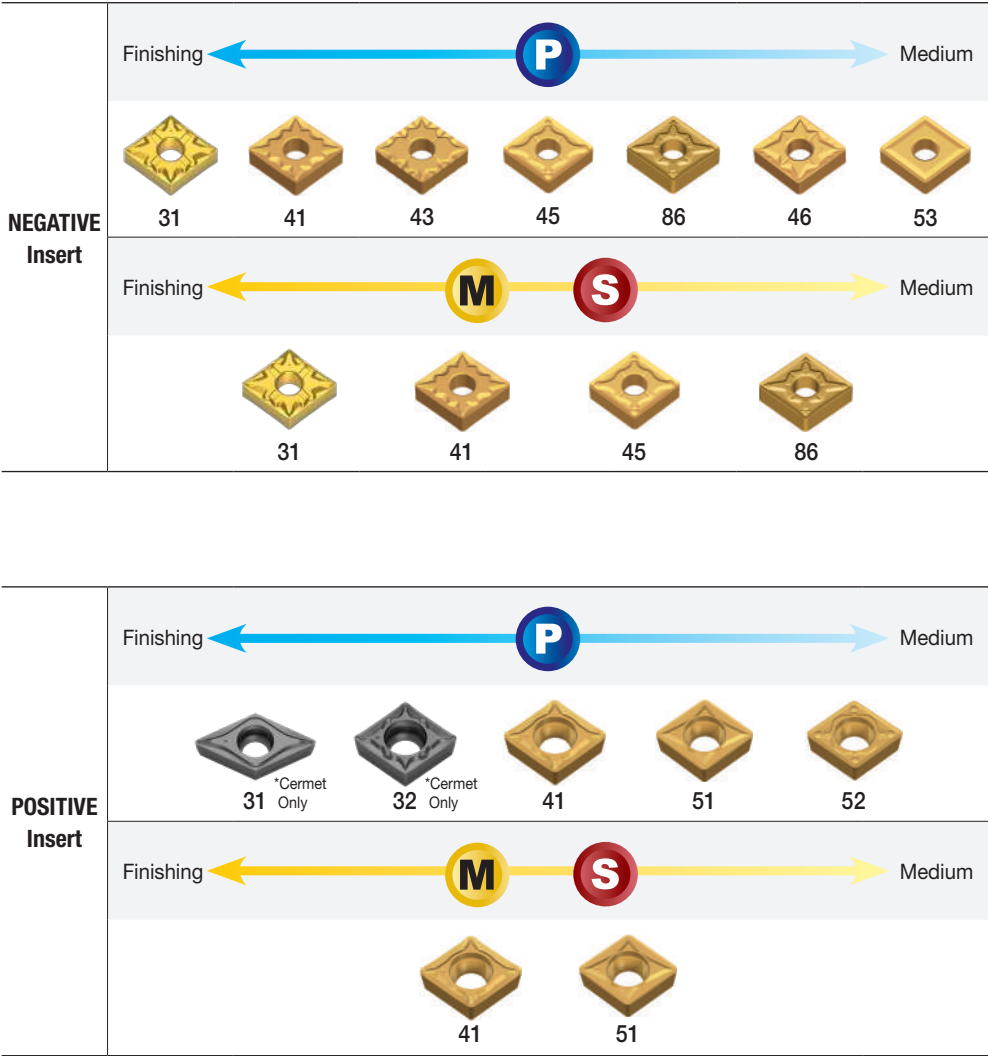
Technical information

Chip breaker selection according to workpiece shape



Technical information

Chip-Breaking



Technical information

Material	Operation	1st	2nd
Carbon Steel & Alloy Steel (S45C, SCM4.....)	Finishing	31	41
	Medium	86	43 / 46
	Roughing	86 / 46	53
Low Carbon Steel & Low Alloy Steel (S20C, SCM415...)	Finishing	31	41
	Medium	86	45
	Roughing	86	46
Stainless Steel	Finishing	31	
	Medium	45	86
	Roughing	86	
Cast Iron	Finishing	46	
	Medium	53	46
	Roughing	MA	53

Technical information

Turning Grades

	ISO	Duracarb	Korloy	Mitsubishi	Sumitomo	Kyocera	Tungaloy	Seco	Walter	Kennametal	Sandvik	TaeguTec	ISCAR
Turning	P	DC9005		UE6105 UE6005	AC810P	CA510 CA5505	T9205 T9105 T9005	TP0501 TP0500	WKP01G WPP05S WPP05	KCP05	GC4305 GC4205	TT8105	
		DC9015	NC3010 NC3015	MC6015 UE6110 UE6010	AC1000 AC700G	CA515 CA5515	T9115 T9015	TP1501 TP1500 TP1000	WPP10S WPP10	KCP10 KCP10B KC9110	GC4315 GC4215	TT8115	IC8150 IC9150
		DC9025 DC8035	NC3220 NC3120 NC3020	MC6025 UE6020	AC820P AC2000 ACZ310	CA525 CA5525	T9125 T9025	TP2501 TP2500 TP2000	WPP20S WMP20S	KCP25 KCP25B KC9125	GC4325 GC4225	TT8125 TT5100	IC8250 IC9250
	M	DC8035	NC9125	MC7025	AC6030M	CA6525	T6130	CP500	WMP20S	KCM25	GC2025	TT5100	IC6025
		DP5010	PC8105	MP9005	AC510U	PR1305	AH8005	TH1000	WSM10	KC5510	GC1105	TT5030	IC807
	K	DC820	NC6210 NC6110	MC5015 UC5115	AC415K AC500G	CA4515 CA4115 CA4120	T5115 T5020	TK2001 TK2000	WKK20S WAK20	KCK15 KCK15B KC9325	GC3210 GC3015	TT7015 TT7310	IC5005
	S H	DP5010	PC8110	MP9005 MP9015 VP05RT VP10RT	AC510U EH510Z EH10Z	PR1005 PR930	AH110	TH1000 TH1500 TS2000 TS2500 CP200	WSM10	KCU10 KC5510 KC5010	GCS05F GC1105 GC1115	TT5080	IC807 IC907
		DP5320	PC5300 PC9530 PC5400	VP15TF VP20RT	AC520U EH20Z	PR1025 PR1125 PR1225 PR1425	AH120	CP500	WSM21 WSM20 WSM30	KCU25 KC5525 KC5025	GC15 GC1125 GC1025 GC1515 GC1525	TT9080	IC808 IC908
Cut Grip		DC210	H01	HT10	H1 EH10		G1F TH10	HX			H10 H10A	K10	IC20
		DC154	PC3500								GC1025 GC4125	TT7220	IC350
		DC9235	PC9030 PC9530		ACZ350		AH140 GH330	CP600 F40M	WXP43	KC935M KC722	GC2145	TT8020	IC328
		DC9800	PC9530	VP15TF	ACP200	PR830 PR925 PR1025	GH330 AH720	F30M	WAM30	KC522M KC635M	GC1030 GC2030	TT9030	IC808 IC908

Technical information

Milling Grades

	ISO	Duracarb	Korloy	Mitsubishi	Sumitomo	Kyocera	Tungaloy	Seco	Walter	Kennametal	Sandvik	TaeguTec	ISCAR
Milling	P	DP9320 DC7070 DC9300			ACP100		T3130 AH330	MP1500 MP2500 T250M T25M	WKP25 WAM10 WAM20		GC4220 GC4230	TT7080 TT7030	IC950
		DP5320 DC9800	PC3500 PC5300	VP15TF VP20RT UP20M	ACP200	PR830 PR1225 PR1230 PR9925	AH725 AH730 GH330 AH120	F25M F30M MP3000	WAM30	KC522M KC635M	GC1030 GC4240	TT9080 TT9030	IC808 IC908
		DP8330 DC9235	PC5400 PC3545	VP30RT FH7020 F7030	ACP300 ACZ350	PR1525	AH140 T3130 AH130 AH3035 AH9030	F40M T350M	WKP35 WXP45 WSP45	KC725M KC735M KC935M KCPM20	GC4240 GC1040	TT8080 TT8020 TT7800	IC830 IC330 IC928
	M S	DP5320 DC9800	PC5300 PC9530	VP15TF VP20RT UP20M	ACP100 ACP200 ACP300	PR830 PR1210 PR1025 PR1225 PR905	T3130 AH725 AH120 AH4035	MS2050 MP2500 F25M F30M	WAM30 WXM35	KC635M	GC1030 GC2030 S30T GC1025	TT9080 TT9030	IC808 IC908
		DP8330 DC9235	PC5300 PC5400	F7030 MP7030 VP30RT MP9130	ACM100 ACM200 ACM300	PR1225 PR905	AH130 AH140 SH730 AH3035	F40M MS2500 MM4500	WXM35 WSM35 WSP45	KC725M	GC2040 S40T	TT8080 TT8020	IC830 IC330 IC928
	K	DP7320	PC6510 PC5300 PC5400	MP8010 VP15TF VP20RT F5010	ACK200 ACK300 ACZ310	PR905 PR1210 PR1510	T1115 AH110 AH120	MK2050	WKP25S WKP35S WKK25S WKK25	KCK15 KC520M	GC1020 GC4230 GC3040 GC4240	TT6080	IC810 IC910
Drilling	H	DP5320	PC210F	MP8010 VP15TF MP9130				MH1000 F15M MP1500 F30M MP3000	WHH15	KC510M KC522M KC635M	GC1010 GC1030	TT9080	IC903 IC900
		DC9800 DP5030	PC9530	VP15TF	ACP200	PR830 PR925 PR1025	GH330	F30M	WAM30	KC522M KC635M	GC1030 GC2030	TT9030	IC808 IC908
		DC154	PC3500								GC1025 GC4125	TT7220	IC350
		DC9235	PC9030 PC9530		ACZ350		AH140 GH330	CP600 F40M	WXP43	KC935M KC722	GC2145	TT8020	IC328

	Duracarb	Korloy	Mitsubishi	Sumitomo	Kyocera	Tungaloy	Seco	NTK	Kennametal	Sandvik	TaeguTec	Ceramtec
Cermet	DC610	CN1500 CN2000 CC125	MP3025 UP35N	T1500A T1200A T2000Z	PV7020 PV7025 PV60 TN6010 TN6020 TN60 TN620	GT730 GT530 NS520 NS720	TP1030 CMP CM	T15 C30 Q50	KT5020 KT125 KT150	CT5005 CT5015 CT525 GC1525	CT3000	SC15 SC8015 SC7035 SC40
	DC630	CN20 CN30	VP45N NX99 NX3035	T3000Z T130Z	TN100M TC60M PV90	NS730 NS530	TP1020 C15M	N20 Z15 C50 C7X	KT1120 KT175	CT530	CT7000	SC7015 SC60

Technical information

Chipbreaker

Description			Duracarb	TaeguTec	Mitsubishi	Sumitomo	Kyocera	Tungaloy	Korloy	Sandvik	Kennametal	Seco	Walter	ISCAR
Negative	Steel	Double sided	31	FLP	SH	SP, SU, FE		TS, AS, TSF, TQ	VF	QF	MP-K, LF, FN	MF2	NF3, NF4	NF, F3P
			41	FG	SY	SU	HQ	TSF	VF	QF	FP	MF2	NF3	NF
				FC	SH	LU		TF	GF	PF	FN			
			43	FC	SA	GE	CQ	TSF	VC	PF	FN	MF3	NS6	TF
				PC	SH		PS	TM						
			86	MM	MA	GU	PS	TM	HS, GS	PM, QM	P	MF5, M3	NM4	TF
			46	MT		UX, GX	HS		HM, GM	HM, XMR	MP		NM6	GN
			53	-MG	MG-	UZ	C	MG-	B25		MG		MG	
	Stainless Steel	Double sided	42	ML	MS	EX	MU, MS	SS	HS	MM	UP	MF4	NMS	TMN
			45	EM	MA	GU	HU	SM	GS	MR	RP	MF5	NR4	
	Cast Iron	Double sided	53	-MG	MG-	UZ	C	MG-	B25		MG		MG	
Positive	Steel		31 *Cermet Only	FA	FV	LU	GK, GP, DP	01, PSF	VL, FP	PF, UF	UF, 11, GM	FF1	PF4, FP4	PF
			32 *Cermet Only	FG	LP, SV	LB, SU	GK		HMP	UM	LF		PS5	SM
			41	FG	SQ	LU	GP	PF	HPF	PF	FP, LF	F1	PS4	SM
			51	MT	MT	SU	GK	PS	HMP	PM	MP		PF2	17
			52	FM	SV	MU	HQ	PM	C25	UM	MF	F2	PM5	19
	Aluminum		AU	FL	AZ	AG	AH	AL	AR	AL	HP	AL	PM2	AF, AS

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS EN	AFNOR
1	A 366 (1012) 1008	0.0030 C10	040 A 10 045 M 10 1449 10 CS	AF 34 C 10 XC 10
1		1.0028 Ust 34-2 (S250G1T)		A 34-2
1		1.0034 RSt 34-2 (S250G2T)	1449 34/20 HR, HS, CR, CS	A 34-2 NE
1		1.0035 St185 (Fe 310-0) St 33	Fe 310-0 1449 15 HR, HS	A 33
1	A 570 Gr. 33,36	1.0036 S235JRG1 (Fe 360 B) Ust 37-2	Fe 360 B 4360-40 B	
1		1.0037 S235JR (Fe 360 B) St 37-2	Fe 360 B 4360-40 B	E 24-2
1	1115	1.0038 GS-CK16	030A04 1A	
1	A 570 Gr. 40	1.0044 S275JR (Fe 430 B) St44-2	Fe 430 B FN 1449 43/25 HR, HS 4360-43 B	E 28-2
1		1.0045 S355JR	4360-50 B	E 36-2
1	A 570 Gr.50 A 572 Gr.50	1.0050 E295 (Fe 490-2) St 50-2	Fe 490-2 FN 4360-50 B	A 50-2
1	A 572 Gr. 65	1.0060 E335 (Fe 590-2) St 60-2	Fe 60-2 4360-55 E; 55 C	A 60-2
1		1.0060 St 60-2		
1		1.0070 E360 (Fe 690-2) St 70-2	Fe 690-2 FN	A 70-2
1		1.0112 P235S	1501-164-360B LT20	A37AP
1		1.0114 S235JU; St 37-3 U	4360-40C	E 24-3
1	A 284 Gr.D A 573 Gr.58 A 570 Gr 36;C A 611 Gr. C	1.0116 S235J2G3 (Fe 360 D 1) St 37-3	Fe 360 D1 FF 1449 37/23 CR 4360-40 D	E 24-3 E 24-4
1		1.0130 P265S	1501-164-400B LT 20	A 42 AP
1		1.0143 S275J0; St 44-3 U	4360-43C	E 28-3

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
	C 10 1 C 10	F.1511 F.151A	S 10C	SM 10C	10
	Fe 330,Fe 330 B FU		SS 330	SS 330	
	Fe 330 B FU				St2sp
1300	Fe 320	Fe 310-0			St0
1311	FE37BFU	AE 235 B			16D, 18Kp
1312		Fe 360 B			St3Kp
1311	Fe 360 B 1449 37/23 HR	AE 235 B Fe 360 B	STKM 12A;C	STKM 12A;C	
1325	Fe 330,Fe 330 B FU		SS 330	SS 330	
1412	Fe 430 B Fe 430 B FN	AE 275 B Fe 430 B FN	SM 400 A;B;C	SM 400 A;B;C	St4ps; sp
2172	Fe 510 B	AE 355 B			
1550	Fe 490	a 490-2	SS 490	SS 490	ST5ps; sp
2172		Fe 490-2 FN			
1650	Fe 60-2 Fe 590	A 590-2 Fe 590-2 FN	SM 570	SM 570	St6ps; sp
	Fe 60-2				
1655	Fe 70-2 Fe 690	A 690-2 Fe 690-2 FN			
	Fe 360 C	AE 235 C			
	Fe 360 C	AE 235 C			
1312	Fe 360 D1 FF				
1313	Fe 360 C FN Fe 360 D FF Fe 37-2	AE 235 D Fe 360 D1 FF			St3kp; ps; sp 16D
		SPH 265			
1414-01	Fe 430 D	AE 275 D			

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS EN	AFNOR
1	A 573 Gr. 70 A 611 Gr.D	1.0144 S275J2G3 (Fe 430 D 1) St 44-3	Fe 430 D1 FF 4360-43 C; 43 D	E 28-3 E 28-4
1		1.0149 S275JOH; RoSt 44-2	4360-43C	
1		1.0226 DX51D; St 02 Z	Z2	GC
1	M 1010	1.0301 C10	040 A 10 045 M 10 1449 10 CS	AF 34 C 10 XC 10
1	A 621 (1008)	1.0330 DC 01 St 2; St 12	1449 4 CR 1449 3 CS	TE
1	A 619 (1008)	1.0333 Ust 3 (DC03G1) Ust 13	1449 2 CR;3 CR	E
1	A 621 (1008)	1.0334 US1W 23 (DD12G1)		SC
1	A 622 (1008)	1.0335 DD13; StW 24	1449 1 HR	3C
1	A 620 (1008)	1.0338 DC04 St4; St 14	1449 1 CR;2 CR	ES
1	A 516 Gr. 65; 55 A 515 Gr. 65;55 A 414 Gr. C A 442 Gr.55	1.0345 P235GH HI	1501 Gr. 141-360 1501 Gr. 161-360; 151-360 1501 Gr. 161-400; 154-360 1501 Gr. 164-360; 161-360	A 37 CP;AP
1	(M) 1020 M 1023	1.0402 C22	055 M 15, 070 M 20 2C/2D 1499 22 HS, CS	AF 42 C 20; XC 25;1 C 22
1	1020	1.0402 C22	050A20 2C/2D	CC20
1	1020;1023	1.0402 C22	055 M 15, 070 M 20 2C	AF 42 C 20; XC 25;1 C 22
1		1.0425 P265GH H II	1501 Gr. 161-400;151-400 1501 Gr. 164-360; 161-400 1501 Gr. 164-400;154-400	A 42 CP; AP
1	A27 65-35	1.0443 GS-45	A1	E 23-45 M
1		1.0539 S355NH;StE 335		TSE 355-4
1		1.0545 S355N; StE 355	4360-50E	E 355 R
1		1.0546 S355NL;TSiE 355	4360-50EE	E 355 FP
1		1.0547 S355JOH	4360-50C	TSE 355-3
1		1.0549 S355 NLH;TSiE 355		
1		1.0553 S355JO;St 52-3U	4360-50C	E 36-3

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
1411, 1412 1414	Fe 430 B, Fe 430 C (FN) Fe 430 D (FF)	AE 275 D Fe 430 D1 FF	SM 400 A;B;C	SM 400 A;B;C	St4kp> ps; sp
1412-04	Fe 430 C	Fe 430 C			
1151 10	FeP 02 G	FeP 02 G			
	C 10 1 C 10	F.1511 F.151.A	S 10C	SM 10C	10
1142	FeP 00 FeP 01 FeP 02	AP 11 AP 02	SPHD SPCD	SPHD SPCD	15kp
	FeP 12 FeP 13	AP 12 AP 13	SPHE SPHE	SPHE SPHE	10kp 08kp
1147	FeP 04	AP 04	SPCE	SPCE	08jU; JUA
1331 1330	FeE235, Fe 360 1 KW;KG Fe 360 2 KW;KG	A 37 RC I RA II	SGV 410, SGV 450, SGV 48, SPV 450;SPV 480	SGV 410, SGV 450, SGV 480, SPPV 450;SPPV 480	
1450	C 20 C 21, C 25	1 C 22 F.112	S20C	SM 20C	20
1450	C20, C21	F.112	S22C	SM 22C	20
1450	C 20; C 21;C 25	1 C 22F.112	S 20 C;S 22 C	SM 20 C;SM 22C	
1431 1430 1432 1305	Fe 410 1 KW; KG; KT Fe 410 2 KW; KG	A 42 RC I A 42 RC II	SPV 315; SPV 355 SG 295; SGV 410 SGV 450; SGV 480	SPPV 315; SPPV 355 SG 295; SGV 410 SGV 450; SGV 480	16K 20K
2134-04	Fe 510 B	Fe 355 KGN			
2334-01	FeE 355 KG	AE 355 KG			
2135-01	FeE 355 KT	AE 355 KT			
2172-04	Fe 510 C	Fe 510 C			
2135	Fe 510 D Fe 510 C	FeE 355 KTM			

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS EN	AFNOR
1	A 633 Gr.C A 588	1.0562 P355N StE 355	1501 Gr.225-490A LT 20	FeE 355 KG N E 355 R/FP; A 510 AP
1		1.0565 P355NH; WStE 355	1501-225-490B LT 20	A 510 AP
1		1.0566 P355NL1; TStE 355	1501-225-490A LT 50	A 510 FP
1	1	1.0570 S355J2G3 St 52-3	Fe 510 D1 FF 1449 50/35 HR>HS 4360-50 D	E 36-3 E 36-4
1	1213	1.0715 9 SMn 28 (1SMn30)	230 M 07	S 250
1	1213	1.0715 9 SMn 28	230 M 07	S 250
1	12 L 13	1.0718 9 SMnPb 28 (11SMnPb30)		S 250 Pb
1	1108 1109	1.0721 10 S 20	(210 M 15)	10S20 10F 2
1	11 L 08	1.0722 10 SPb 20		10PbF 2
1	11 L 08	1.0722 10 SPb 20		10PbF 2
1	1215	1.0736 9 SMn 36 11SMn37)		S 300
1	12 L 14	1.0737 9 SMnPb 36 (11SMnPb37)		
1		1.0972 S315MC; QStE 300 TM	1501-40F30	E 315 D
1		1.0976 S355MC; QStE 360 TM	1501-43F35	E 355 D
1		1.0982 S460MC; QStE 460 TM	1501-50F45	
1		1.0984 S500MC; QStE 500 TM		E 490 D
1		1.0986 S500MC; QStE 500 TM	1501 - 60F55	E 560 D
1	1010	1.1121 CK 10 (C10E)	040 A 10	XC 10
1		1.1121 St 37-1	4360 40 A	
1	1015	1.1141 CK 15 (C15E)	040 A 15 32C 080 M 15	XC 12 XC 15 XC 18
1	1020 1023	1.1151 C22E CK 22	055 M 15 (070 M 20)	2 C 22 XC 18 XC 25
1	D 3	1.2080 X 210 Cr 12	BD 3	Z 200 C 12

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
2106	FeE 355 KG;KW	AEE 355 KG;DD	SM 490 A;B;C; YA;YB	SM 490 A;B;C; YA;YB	15GF
2106	FeE 355-2				
2107-01	FeE 355-3				
2132, 2133	17GS	AE 355 D	SM 490 A;B;C;	SM 490 A;B;C;	17GS
2134,	17G1S	Fe 510, D1 FF	YA;YB	YA;YB	17G1S
2174					
1912	CF SMn 28	F.2111 - 11 SMn 28	SUM 22	SUM 22	
1912	CF 9 SMn 28	11 SMn 28	SUM 22	SUM 22	
1914	CF 9 SMnPb 28	F.2112-11 SMnPb 28	SUM 22 L	SUM 22 L	
			SUM 23 L, SUM 24 L	SUM 23 L, SUM 24 L	
	CF 10 S 20	F. 2121 - 10 S 20			
	CF 10 SPb 20	F.2122-10 SPb 20			
	CF 10 SPb 20	10 SPb 20			
	CF 9 Mn 36	F.2113 - 12 SMn 35	SUM25	SUM25	
2642	FeE 355TM				
2662	FeE 490 TM				
	FeE 560 TM				
1265	C 10, 2 C 10	F-1510-C 10 K	S 9 CK	S 9 CK	
	2 C 15		S 10 C	S 10 C	08;10
1300					
1370	C 15	C 16 F.1110-C 15 F.1511-C 16 K	S 15 S 15 CK	SM 15C SM 15CK	15
1450	C 20	C 25 F.1120-C 25 K	S 20 C, S 20 CK S 22 C	SM 20 C, SM20 CK SM22 C	20
2642					

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS EN	AFNOR
1	A36	St 44-2	4360 43 A	NFA 35-501 E 28
1		StE 320-3Z	1 501 160	
1	A572-60	1.8900 StE 380	4360 55 E	
2	(M) 1025	1.0406 C 25	070 M 26	1 C 25
2		1.0416 GS-38		20-400 M
2	A 537 Cl.1 A 414 Gr. G A 612	1.0473 P355GH	19 Mn 6	A 52 CP
2	1035	1.0501 C 35	080 A 32, 080 A 35 080 M 36, 1449 40 CS	1 C 35 AF 55 C 35 XC 38
2	1045	1.0503 CF 45 (C45G)	060 A 47 080 M 46	XC 42 H 1 TS
2	1040	1.0511 C 40	080 M 40	1 C 40 AF 60 C 40
2		1.0540 C 50		
2	A27 70-36	1.0551 GS-52	A2	280-480 M
2	A148 80-40	1.0553 GS-60	A3	320-560 M
2	A738	1.0577 S355J2G4 (Fe 510 D 2)	Fe 510 D2 FF 1501 Gr.224-460 1501 Gr. 224-490	A 52 FP
2	1140	1.0726 35 S 20	212 M 36 8M	35MF 6
2	1146	1.0727 45 S 20 (46S20)		45 MF 4
2	1035 1041	1.1157 40Mn4	150 M 36 15	35 M 5 40 M 5
2	1025	1.1158 C25E CK 25	(070 M 25)	2 C 25 XC 25
2	1536	1.1166 34Mn5		
2	1330	1.1170 28Mn6	(150 M 28), (150 M 18)	20 M 5, 28 Mn 6
2	1330	1.1170 28Mn6	150 M 5	20 M 5
2	1330	1.1170 28Mn6	14A	20 M 5
2		1.1178 C30E; CK 30	080M30	XC 32

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
1411					
1421					
2145	FeE390KG		S 25C	SM 25C	
	C 25 1 C 25				
1306					
2101	Fe E 355-2	A 52 RC I RA II	SGV 410	SGV 410	
2102			SGV 450	SGV 450	
			SGV 480	SGV 480	
1572	C 35	F.113	S35C	SM35C	35
1550	1 C 35				
1672	C 43		S 45 C	SM 45 C	45
	C 46				
	C 40	1 C 40	S 40 C	SM 40 C	
1674	C 50	1 C 50			
1505					
1606					
2107		A 52 RB II AE 355 D			
1957		F.210.G			
1973					
			S 09CK	SMn 433	
C 25	F.1120 - C 25 K	S 25 C S 28 C	S 25 C	SM 25 C	
	TO.B	SMn 433 H			
1421	C 28 Mn	28 Mn 6	SCMn 1	SCMn 1	30G
2145					
	C 28 Mn		SCMn 1	SCMn 1	
	C 30	2 C 30			

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS EN	AFNOR
2	1035	1.1180 C35R Cm 35	080 A 35	3 C 35 XC 32
2	1035 1038	1.1181 C35E CK 35	080 A 35 (080 M 36)	2 C 35, XC 32 XC 38 H 1
2	1035	1.1181 C35E CK 35	080 A 35 (080 M 36)	
2	1042	1.1191 GS- Ck 45	080 A 46	XC 45
2	1049 1050	1.1206 C50E CK 50	080 M 50	2 C 50 XC 48 H 1; XC 50 H 1
2	1050 1055	1.1213 Cf 53 (C53G)	070 M 55	XC 48 H TS
2	4520	1.5423 22Mo4	1503-245-420	
3		1.0050 St50-2		
3	A 516 Gr.70 A 515 Gr. 70 A 414 Gr.F; G	1.0481 P295GH 17 Mn 4	1501 Gr. 224	a 48 Cp;AP
3	1043	1.0503 C35	060 A 47 080 M 46 1449 50 HS, CS	1 C 45 AF 65 C 45
3	1074	1.0614 C 76 D; D 75-2		XC 75
3	1086	1.0616 C 86 D; D 85-2		XC 80
3	1095	1.0618 C 92 D;D 95-2		XC 90
3	1036 1330	1.1165 30Mn5	120 M 36 (150 M 28)	35 M 5
3	1335	1.1167 30Mn5	150 M 36	40 M 5
3	1040	1.1186 C40E CK 40	060 A 40, 080 A 40 080 M 40	2 C 40 XC 42 H 1
3	1045	1.1191 C45E CK 45	080 M 46 060 A 47	2 C 45 XC 42 H 1 XC 45 XC 48 H 1

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
1572		F.1130-C 35 K-1			
1550 1572	C35	F.1130-C 35 K	S 35 C	SM 35 C	35
1572	C36		S 35 C	SM 35 C	
1660	C45	F-1140			
1674	C 50				50
1674	C 53		S 50 C	SM 50 C	50
	16 Mo 5 KG; KW	F.2602- 16 Mo 5	SB 450 M	SB 450 M	SB 480 M
	FE50				
	Fe 510 KG;KT;KW Fe 510-2 KG;KT;KW FeE 295	A 47 RC I RA II	SG 365, SGV 410 SGV 450 SGV 480	SG 365, SGV 410 SGV 450 SGV 480	14G2
1672 1650	C 45 1 C 45	F.114	S 45 C	SM 45 C	45
C 85					
		F.8211-30 Mn 5 f.8311-AM 30 Mn 5	SMn 433 H SCMn 2	SMn 433 H SCMn 2	27ChGSNMDTL 30GSL
2120		F. 1203-36 Mn 6 F. 8212-36 Mn 5	SMn 438 (H) SCMn 3	SMn 438 (H) SCMn 3	35G2 35GL
	C 40		S 40 C	SM 40 C	
1672	C 45 C 46	F.1140-C 45 K F.1142-C48 K	S 45 C S 48 C	S 45 C S 48 C	45

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS EN	AFNOR
3	1049	1.1201 C45R Cm 45	080 M 46	3 C 45 XC 42 H 1 XC 48 H 1
3		1.7242 18 CrMo 4		
3	A 387 Gr. 12 Cl	1.7337 16 CrMo 4 4		
3	A 387 Gr. 12 Cl	1.7337 16 CrMo 4 4		
3		1.7362 12 CrMo 19 5	3606-625	Z 10 CD 5.05
3	A572-60	17 MnV 6	436055 E	NFA 35-501 E 36
4	1055	1.0535 C55	070 M 55	1 C 55 AF 70 C 55
4	1060	1.0601 C60	060 A 62 43D 1449 HS,CS	1 C 60 AF 70 C 55
4	1070	1.0603 C67	080 A 67 1449 70HS	XC65
4	1074 1075	1.0605 C75	1449 80 HS	
4	1055	1.1203 C55E CK 55	060 A 57 070 M 55	2 C 5 XC 55 H 1
4	1055	1.1209 C55R Cm 55	070 M 55	3 C 55 XC 55 H 1
4	1060 1064	1.1221 C60E CK 60	060 A 62 43D	2 C 60 XC 60 H 1
4	1070	1.1231 CK 67 (C67E)	060 A 67	XC 68
4	1074 1075 1078	1.1248 CK 75 (C75E)	060 A 78	XC 75
4	1086	1.1269 CK 85 (C85E)		XC 90
4	1095	1.1274 Ck 101 (C101E)		XC 100
4	W 112	1.1663 C 125 W		Y2 120
4				
5		1.0070 St70-2		
5		1.7238 49 CrMo 4		
5		1.7701 51 CrMoV 4		

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
1660	C 45	F.1145-C 45K-1 F.1147C 48 K-1	S 50 C	SM 50 C	
18 CrMo 4	A 18 CrMo 4 5 KW A 18 CrMo 4 5 KW 16 CrMo 20 5				
2142					
1655	C 55 1 C 55		S 55 C	SM 55 C	55
	C 60 1 C 60		S 58 C	SM 58 C	60(G)
	C 67				
	C 75				75
1655	C 55	F.1150-C 55 K	S 55 C	SM 55 C	55
	C 55	F.1155-C 55 K-1			
1655 1678	C 60		S 58 C	SM 58 C	60 60G, 60GA
1770	C 70				65GA 68GA , 70
774	C 75				75(A)
	C 90				85(A)
	C 100	F-5117	SUP 4	SPS 4	
1870					
2223	FE70-2				
	51 CrMoV 4				

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS EN	AFNOR
6	A573-81 65	1.0116 St 37-3	4360 40 B	E 24-U
6	A515 65	1.0345 H1	1 501 161	A 37 CP
6	5120	1.0841 St 52-3	150 M 19	20 MC 5
6	9255	1.0904 55 Si 7	250A53 45	55S7
6	9254	1.0904 55 Si 7	250 A 53	55 S 7
6	9262	1.0961 60SiCr7	1 501 161	60SC6
6	L3	1.2067 100Cr6	BL3	Y100C6
6	L1	1.2108 90 CrSi 5		
6	L2	1.2210 115CrV3		100C3
6		1.2241 51CrV4		
6		1.2311 40 CrMnMo 7		
6	4135	1.2330 35 CrMo 4	708 A 37	34 CD 4
6		1.2419 105WCr6	BO1	105WC13
6	0 1	1.2510 100 MnCrW 4	BS1	8 MO 8
6	S1	1.2542 45 WCrV7		
6	S1	1.255 60WCrV7		55WC20
6	L6	1.2713 55NiCrMoV6		55NCDV7
6	L6	1.2721 50NiCr13		55 NCV 6
6	O2	1.2842 90MnCrV8	BO2	90 MV8
6	E 50100	1.3501 100 Cr 2		55WC20
6	52100	1.3505 100Cr6	2 S 135 31 535 A 99	100 C 6
6		1.5024 46Si7		45 S 7; Y 46 7;46 Si 7
6	9255	1.5025 51Si7		51 S 7 51 Si 7
6	9255	1.5026 55Si7	251 a 58	55 S 7
6	9260	1.5027 60Si7	251 A 60 251 H 60	60 S 7
6	9260 H	1.5028 65Si7		60 S 7
6		1.5120 38 MnSi 4		

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
1312	Fe37-3				
1330					
2172	Fe 52	F-431			
2085	55Si8	56Si7			
2090		F-431			
60SiCr8	60SiCr8				
	100Cr6				
2092	105WCr 5				
	107CrV3KU				
	35 cRmO 8 KU				
2234	35CrMo4	34CrMo4	SCM435TK	SCM435TK	
2140	10WCr6	105WCr5			
2140	10WCr6	105WCr5	SKS 31	STS 31	
2710	45 WCrV8 KU	45WCrSi8			
2710	58WCr9KU				
		F.520.S	SKT 4	STF 4	
2550		f-528			
2258	100Cr6	F.1310 - 100 Cr 6	SUJ2	STB 2	SchCh 15
		F. 1451 - 46 Si 7			
2090	48 Si 7	F.1450-50 Si 7			
	50 Si 7				
2085 2090	55 Si 7	F.1440 - 56 Si 7			55S2
	60 Si 7	F. 1441 - 60 Si 7			60S2
			50 P 7 SUP 6	SPS 6	

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS	AFNOR
6	A 204 Gr.A 4017	1.5415 16Mo3 15 Mo 3	1503-243 B	15 D 3
6	4419	1.5419 20Mo4	1503-243-430	
6	A 350-LF 5	1.5622 14Ni6		16N6
6	3415	1.5732 1 Ni1Cr10		14 NC 11
6	3310; 3314	1.5752 14Ni1Cr14	655M13	12NC15
6		1.6587 17CrNiMo6	820A16	18NCD6
6		1.6657 14NiCrMo134		
6	5515	1.7015 15 Cr 3	523 M 15	12 C 3
6	5132	1.7033 34Cr4	530A32	32C4
6	5140	1.7035 41C r4	530M40	42C4
6	5140	1.7045 42Cr41	530 A 40	42 C 4 TS
6	5115	1.7131 16MnCr5	527 M 17	16 MC 5
6		1.7139 16MnCr5		
6	5515	1.7176 55Cr3	527 A 60	55 C 3
6	4135; 4137	1.7220 34CrMo4	708 Aa 37	35 CD 4
6	4142	1.7223 41CrMo4		
6	4140	1.7225 42CrMo4	708 M 0	42 CD 4
6		1.7228 55NiCrMoV6G	823M30	
6		1.7262 15CrMo5		12 CD 4
6		1.7321 20 mOcR 4		
6	ASTM A182 F-12	1.7335 13CrMo4 4	1501-620Gr27	
6	A 182-F11;12	1.7335 13 CrMo 4 4	1 501 620 Gr. 27	15 CD 4.5
6	ASTM A 182 F.22	1.7380 10CrMo9 10	1501-622gR31; 45	
6	A182 F-22	1.7380 10 CrMo 9 10	1501-622	12 CD 9.10
6		1.7715 14MoV6 3	1503-660-440	
6	A355A	1.8509 41CrAlMo 7	905 M 39	40 CAD 6.12
7	A570.36	1.0038 S235JRG2 (Fe 360 B) RSt 37-2	Fe 360 B FU 1449 27/23 CR 4360-40 B	E 24-2NE
7	3135	1.5710 36NiCr6	640A35	35NC6

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
2912	16Mo3(KG;KW)	F. 2601 - 16 Mo 3			
-2512	G 20 Mo 5 G 22 Mo5		SCPH 11	SCPH 11	
14 Ni 6 KG;KT	F.2641 - 15 Ni 6				
16NiCr11	15NiCr11	SNC415(H)			
		SNC815(H)			
	14NiCrMo13				
	14NiCrMo131				
			SCr415(H)	SCr415(H)	
	34Cr4(KB)	35Cr4	SCr430(H)	SCr430(H)	
	41Cr4	42Cr4	SCr440(H)	SCr440(H)	
2245	41Cr4	42Cr4	SCr440	SCr440	
2511	16MnCr5	16MnCr5			
2127					
2253			SUP9(A)	SPS 9(A)	
2234					
	41CrMo4	42CrMo4	SNB 22-1	SNB 22-1	
2244					
2512	653M31				
2216		12CrMo4			
2625					
	14CrMo4 5	14CrMo45			
2216		12CrMo4	SCM415(H)	SCM415(H)	
2218	12CrMo9,10	TU.H			
		13MoCrV6			
2940	41CrAlMo7	41CrAlMo7			
1312	Fe 360 B FN	AE 235 B FN;FU Fe 360 B FN; FU			St3ps; sp

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS EN	AFNOR
7		1.5755 31 NiCr 14	653 M 31	18 NC 13
7	8620	1.6523 2 NiCrMo2	805M20 362	20 NCD 2
7	8740	1.6546 40 NiCrMo 22	311-Tyre 7	
7	4130	1.7218 25CrMo4	CDS 110	25 CD 4
7		1.7733 24 CrMoV 5 5		20 CDV 6
7		1.7755 GS-45 CrMOV 10 4		
7		1.8070 21 CrMoV 5 11		
8	4142	1.2332 47 CrMo 4	708 M 40 19A	42 CD 4
8	A128 (A)	1.3401 G-X120 Mn 12		Z 120 M 12
8	3435	1.5736 36 NiCr 10		30 NC 11
8	9840	1.6511 36CrNiMo4	816M40 110	40NCD3
8	4340	1.6582 35CrNiM 6	817 M 40 24	35 NCD 6
8		1.7361 32 CeMo12	722 M 24 40B	30 CD 12
8	6150	1.8159 50 CrV 4	735 A 50 47	50CrV4
8		1.8161 58 CrV 4		
8		1.8515 32 CrMo 12	722 M 24 40B	30 CD 12
8		1.8523 39CrMoV13 9	897M39 40C	
9		1.4882 X 50 CrMnNiNbN 21 9		Z 50 CMNNb 21.09
9	3135	1.5710 36NiCr6	640A35 111A	35NC6
9		1.5864 35 niCr 18		
9		31 NiCrMo 13 4	830 m 31	
10	A573-81	1.0144 ST 44-3	4360 43 C	E 28-3
10	A 619	1.0347 DCO3 RSt;RRSt 13	1449 3 CR 1449 2 CR	E
10	M 1015 M 1016 M 1017	1.0401 C15	080 M 15 080 M 15 1449 17 CS	AF 37 C12 XC 18
10		1.0570 ST 52-3	4360 50 B	E 36-3
10	12L13	1.0718 9SMnPb28		S250Pb
10	(12L13)	1.0718 9 SMnPb 28		S 250 Pb

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
2506	20NiCrMo2	20NiCrMo2	SNCM220(H)	SNCM220(H)	
	40NiCrMo2(KB)	40NiCrMo2	SNCM240	SNCM240	
2225	25CrMo4(KB)	55Cr3	SCM420/430	SCM420/430	
	21 CrMoV 5 11				
	35 NiCr 9				
2244	42CrMo4	42CrMo4	SCM (440)	SCM (440)	
2183	GX120Mn12	F. 8251-AM-X120Mn12	SCMnH 1, SCMn H 11	SCMnH 1, SCMn H 11	110G13L
	36NiCrMo4(KB)	35NiCrMo4	SUP 10	SPS 10	
2541	35NiCrMo6(KB)		SNCM 447	SNCM 447	
2240	30CrMo12	F.124.A			
2230	50CrV4	51CrV4			
2240	32CrMo12	F.124.A			
	36CrMoV12				
			SNC236	SNC236	
2534		f-1270			
1412			SM 400A;B;C	SM 400A;B;C	
	Fep 02	AP 02			08JU
1350	C15				
	C16	F.111	S 15 C	SM 15 C	
	1 C 15				
2132	Fe52BFN/Fe52CFN		SM490A;B;C;YA;YB	SM490A;B;C;YA;YB	
1914	CF9SMnPb28	11SMnPb28			
1914	CF 9 SMnPb 28	11 SMnPb 28	SUM 22L	SUM 22L	

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS EN	AFNOR
10		1.0723 15 S 22 15 S 20	210 A 15 210 M 15	
10		1.2083		
10	H 11	1.2343 x 38 CrMoV 5 1	BH 11	Z 38 CDV 5
10	H 13	1.2344 X 40 CrMoV 5 1	BH 13	Z 40 CDV 5
10	A 2	1.2363 X100 CrMoV 5 1	BA 2	Z 100 CDV 5
10	D 2	1.2379 X 155 CrVMo 12 1	BD2	Z 160 CDV 12
10	HNV3	1.2379 X210Cr12G	BD2	Z160CDV12
10	D 4 (D 6)	1.2436 X 210 CrW 12	BD6	Z 200 CD 12
10	H 21	1.2581 X 30 WCrV 9 3	BH 21	Z 30 WCV 9
10		1.2601 X 165 CrMoV 12		
10	H 12	1.2606 X 37 CrMoW 5 1	BH 12	Z 35 CWDV 5
10	D3	1.3343 S 6-5-2	BM2	Z200C12
10	N08028	1.4563		Z1NCDU31-27-03
10	ASTM A353	1.5662 X8Ni9	1501-509;510	
10	ASM A353	1.5662 X8Ni9	502-650	9 Ni
10	2517	1.5680 12Ni19	12Ni19	Z18N5
10	2515	1.5680 12 Ni 19		Z 18 N 5
11		1.3202 S 12-1-4-5	BT 15	
11		1.3207 S 10-4-3-10	BT 42	Z130WKCDV
11	T15	1.3243 S 6-5-2-5		KCV 06-05-05-04-02
11		1.3246 S 7-4-2-5		Z110 WKCDV 07-05-04
11		1.3247 S 2-10-1-8	BM 42	Z110 DKCWV 09-08-04
11	M 42	1.3249 S 2-9-2-8	BM 34	
11	T 4	1.3255 S 18-1-2-5	BT 4	Z 80 WKCV 18-05-04-0
11	M 2	1.3343 S6-5-2	BM2	Z 85 WDCV
11	M 7	1.3348 S2-9-2		Z 100 DCWV 09-04-02-

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
1922		F.210.F	SUM 32	SUM 32	
2314					
	X 37 CrMoV 5 1 KU				
2242	X40CrMoV511KU	F-5318	SKD61	STD61	
2260	X100CrMoV51KU	F-5227	SKD12	STD12	
2310	X165CrMoW12KU	X160CrMoW12KU			
2736					
2312	X215CrW 12 1 KU	F-5213			
	X30WCrV 9 3 KU	F-526	SKD5	STD5	
2310					
	X 35 CrMoW 05 KU	F.537			
2715	X210Cr13KU	X210Cr12	SUH3	STR3	
2584					
	14 Ni 6 KG;KT	XBNI09			
	X10Ni9	F-2645	SL9N60(53)	SL9N590(520)	
	HS 12-1-5-5	12-1-5-5			
2723	HS 6-5-2-5	6-5-2-5	SKH55	SKH55	
7-4-2-5	HS 7-4-2-5	M 35			
2-10-1-8	HS 2-9-1-8 2-9-2-8	M 41			
2722	HS 652	F-5604	SKH 51	SKH 51	
2782	HS 292	F-5607			

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS EN	AFNOR
11	T 1	1.3355 S 18-0-1	BT 1	Z 80 WCV 18-4-01
11	630	1.4548		Z7CNU17-04
11	HNV 3	1.4718 X45CrSi 9 3	401S45 52	Z45CS9
11	422	1.4935 x20 CrMoWV 12 1		
12	403	1.4000 X6Cr13	403 S 17	Z 6 C 13
12		1.4001 X6Cr14		
12	(410S)	1.4001 X7 Cr 13	(403 S 7)	Z 8 C 13
12	405	1.4002 X6CrA12	405S17	Z8CA12
12	405	1.4002 X6 CrAl 13	405 S 17	Z6CA13
12	416	1.4005 X12CrS 13	416 S 21	Z11 CF 13
12	410; CA-15	1.4006 (G-)X10 Cr 13	410S21 56A	Z10 C 13
12	430	1.4016 X8Cr17	Z8C17	430S15
12	430	1.4016 X6 Cr 17	430 S 15 60	Z 8 C 17
12		1.4027 G-X20Cr14	420 C 29	Z20 C 13M
12		1.4027 G-X 20 Cr 14	420 C 29	Z 20 C 13M
12	420	1.4028 X30 Cr 13	420 S 45	Z 30 C 13
12		1.4086 G-X120Cr29	452C11	
12	430 F	1.4104 X12CrMoS17	420 S 37	Z 10 CF 17
12	440B	1.4112 X90 CrMoV 18		
12	434	1.4113 X6CrMo 17	434 S 17	Z 8 CD 1701
12		1.4340 G-X40CrNi27 4		
12	S31500	1.4417 X2CrNiMoSi19 5		
12	S31500	1.4417 X2 CrNoMoSi 18 5 3		
12		1.4418 X4 CrNiMo16 5		Z6CND16-04-01
12	XM 8	1.4510		Z 4 CT 17
	430 Ti			
	439			
12	430tl	1.4510 X6 CrTi 17		Z 4 CT 17
12		1.4511 X 6 CrNb 17(X 6 CrNb 17		Z 4 Cnb 17
12	409	1.4512 X 6 CrTi 12 (X2CrTi12)	LW 19 409 S 19	Z 3 CT 12
12		1.4720 X20CrMo13		

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
	X45CrSi8	F322	SUH1	STR1	
2301	X6Cr13	F.3110	SUS403	STS 403	
2301		F8401			
	X6CrAl13				
2302	X6CrAl13				
2380	X12 CrSC13	F-3411	SUS 416	SUS 416	
2302	X12Cr13	F.3401	SUS 410	SUS 410	
2320	X8Cr17	F.3113			
2320	X8Cr17	F.3113	SUS 430	SUS 430	
2304					
2383	X10CrS17	F.3117	SUS430F	STS 430F	
2325	X8CrMo17		SUS434	STS 434	
2376					
2376					
2387					
	X 6 CrTi 17	F.3115-X 5 CrTi 17	SUS 430 LK	STS 430 LX	08 Ch17T
	X 6 CrNb 17	F.3122-X 5 CrNb 17	SUS 430 LK	STS 430 LX	
	X 6 CrTi 17		SUH 409	STR 409	

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS EN	AFNOR
12	405	1.4724 X10CrA113	403S17	Z10C13
12	430	1.4742 X10CrA118	439S15 60	Z10CAS18
12	HNV6	1.4747 X80CrNiSi20	443S65 59	Z80CSN20.02
12	446	1.4749 x18 cRn 28		
12	446	1.4762 X10CrA124		Z10CAS24
12	EV 8	1.4871 X 53 CrMnNiN 21 9	349 S 54	Z 52 CMN 21.09
12	302	x12 CrNi 18 9	302 S 31	Z 10 CN 18-09
12	429	X10 CrNi 15		
13	420	1.4021 X20Cr13	420S37	Z 20 C 13
13	420	1.4031 X40 Cr 13		Z 40 C 14
13		1.4034 X46Cr13	420 S 45	Z40 C 14
13	431	1.4057 X20CrNi172	431 S 29 57	Z 15 CN 16.02
13		1.4125 X 105 CrMo 17		Z 100 CD 17
13	CA6-NM	1.4313 G-X4 CrNi 13 4	425 C 11	Z 4 CND 13-04 M
13	630	1.4542 X 5 CrNiCuNb 17 4 (X5CrNiCuNb 16-4)		
13		1.4544	S. 524 S. 526	
13	348	1.4546 X5CrNiNb 18-10	347 S 31 2 S. 130 2 S. 143/144/145 S.525/527	
13		1.4922 x20cRmV12-1		
13		1.4923 X22 CrMoV12 1		
14	304	1.4301 X 5 CrNi 18 9	304 S 15	Z 5 CN 18.09
14	303	1.4305 X10 CrNiS 18 9	303 S 21 58M	Z 8 CNF 18-09
14	304L	1.4306 X2CrNi18 9	304S12	Z2CrNi18 10
14	304L	1.4306 X2 CrNi 18 10	304 S 11	Z 3 CN 19-11
14	CF-8	1.4308 X6 CrNi 18 9	304 C 15 58E	Z 6 CN 18-10 M
14	301	1.4310 X12CrN i17 7	301 S 21	Z 12 CN 17.07

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
	X10CrA112	F.311			
	X8Cr17	F.3113	SUS430	STS430	
	X80CrSiNi20	F.320B	SUH4	STR4	
2322	X16Cr26		SUH446	STR446	
	X53CrMnNiN21 9		SUH35,SUH36	STR35,STR36	
2330					
2303	14210				
-2304					
	X40Cr14	F.3405	SUS420J2	STS420J2	
2321	X16CrNi16	F.3427	SUS431	STS431	
	X 105 CrMo 17				
2385	(G)X6CrNi304		SCS5	SSC5	
	X 6 CrNiTi 18 11				08Ch 18N12T
	X 6 CrNiNb 18 11				
2317	x20cRmOnl 12 01				
2332;2333					
2346	X10CrNiS18.09	F.3508	SUS303	STS303	
2352	x2cRnl18 11	F.3503	SCS19	SSC19	
2352	X2CrNi18 11				
2333			SUS304L	STS304L	
2331	X2CrNi18 07	F.3517			

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS	AFNOR
14	304 LN	1.4311 X2 CrNiN 18 10	304 S 62	Z 2 CN18.10
14		1.4312 G-X10CrNi18 8	302C25	Z10CN18.9M
14	305	1.4312 X8 CrNi 18 12	305 S 19	
14		1.4332 X2 CrNi 18-8		
14	304	1.4350 X5CrNi18 9	304S15	Z6CN18.09
14	S32304	1.4362 X2 CrNiN 23 4		Z 2 CN 23-04 AZ
14	202	1.4371 X3 CrMnNiN 188 8 7	284 S 16	Z 8 CMN 18- 08-05
14	316	1.4401 X 5 CrNiMo 17 12 2 (X4 CrNiMo 17 -12-2)	316 S 13 316 S 17 316 S 19 316 S 31 316 S 33	Z 3 CND 17 -11-01 Z 6 CND 17-11 Z 6 CND 17-11-02 Z 7 CND 17-11-02 Z 7 CND 17-12-02
14	316L	1.4404 X2 CrNiMo 17 13 2 (X2 CrNiMo 17-12-2) GX 2 CrNiMoN 18-10	316 S 11, 316 S 13 316 S 14, 316 S 31; 316 S 42, S.537;316 C 12, T.75, S. 161	Z 2 CND 17-12 Z 2 CND 18-13 Z 3 CND 17-11-02 Z 3 CND 17-12-02 FF Z 3 CND 18-12-03 Z 3 CND 19.10 M
14	316LN	1.4406 X2 CrNiMoN 17 12 2 (X2CrNiMoN 18-10)	316 S 61 316 S 63	Z2 CND 17-12 AZ
14	CF-8M	1.4408 GX 5 CrNiMoN 7 12 2 G-X 6 CrNiMo 18 10	316 C 16 (LT 196) ANC 4 B	
14		1.4410 G-X10CrNiMo18 9		Z5CNaD20.12M
14	316 Ln	1.4429 X2 CrNiMo 17 -13-3	316 S 62	Z 2 CND 17-13 Az
14	316L	1.4435 X2 CrNiMo18 14 3	316 S 11;316 S 13 316 S 14;316 S 31 LW 22 LWCF 22	Z 3 CND 17-12-03 Z 3 CND 18-14-03
14	316	1.4436 X 5 CrNiMo 17 13 3 (X4CRNIMO 17-13-3)	316 S 19; 316 S 31 316 S 33 LW 23 LWCF 23	Z 6 CND 18-12-03 Z 7 CND 18-12-03

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
2371	X2CrNiN18 10		SUS304LN	STS304LN	
2332	X5CrNi18 10	F.3551	SUS304	STS304	
2347	X 5 CrNiMo 17 12	F.3534-X 5 CrNiMo 17 12 2	SUS 316	STS 316	
2348	X 2 CrNiMo 17 12	F.3533 - X 2 CrNiMo 17 13 2			
	G-X 2 CrNiMo 19 11	F.3537 - X 2 CrNiMo 17 13 3	SUS 316 L	STS 316 L	
	X 2 CrNiMoN 17 12	F.3542-X 2 CrNiMoN 17 12 2	SUS316LN	STS316LN	
2343		F.8414-AM-X 7 CrNiMo 20 10	SCS 14	SSC 14	07 Ch 18N10G2S2MSL
2328					
2375	X 2 CrNiMoN 17 13	F.3543-X 2 CrNiMoN 17 13 3	SUS 316 LN	STS 316 LN	
2375	X 2 CrNiMoN 17 13	F.3533-X 2 CrNiMo 17 13 2	SUS 316 L	STS 316 L	03 Ch 17N14M3
2343	X 5 CrNiMo 117 13 X 8 cRnImO 17 13	F.3543-X 5 CrNiMo 17 12 2 F.3538-X 5 CrNiMo 17 13	SUS 316	STS 316	

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS EN	AFNOR
14	317L	1.4438 X2 CrNiMo 18 16 4 (X2CrNiMo 18-15-4)	317 S 12	Z 2 CND 19-15-04 z 3 cnd 19-15-04
14	(s31726)	1.4439 X2 CrNiMoN 17 13 5		Z 3 CND 18-14-06 AZ
14		1.4440 X 2 CrNiMo 18 13		
14	317	1.4449 X5 CrNiMo 17 13 3	317 S 16	
14	329	1.4449 X 4 CrNiMo 27 5 2 1.4460 (X3CrNiMo27-5-2)		(Z 3 CND 25-07 Az) Z 5 CND 27-05 Az
14	329	1.4460 X8CrNiMo27 5		
14		1.4462 X2CrNiMoN22 5 3	318 S 13	Z 3 CND 22-05 Az (Z 2 CND 24 -08 Az) (Z 3 CND 25-06-03 Az)
14		1.4500 G-X7NiCrMoCuNb25 20		23NCDU25.20M
14	17-7PH	1.4504	316S111	
14	443 444	1.4521 X2CrMoTi18-2	317 S 16	
14	UNS N 08904	1.4539 X1NiCrMoCuN25-20-5		Z 2 NCDU 25-20
14	CN-7M	1.4539 (G-)X1 NiCrMoCu 25 20 5		Z1 NCDU 25-02 M
14	321	1.4541 Z 6 CrNiTi 18-10	321 S 31 321 S 51 (1010;1105) LW 24 LWCF 24	Z 6 CNT 18-10
14	630	1.4542 X5 CrNiCuNb 17 4 (X5 CrNiChNb 16-4)		Z 7 CNU 15-05 Z 7 CNU 17-04
14	17-4PH	1.4542		Z7CNU17-04
14	S31254	1.4547 X1 CrNiMoN 20 18 7		
14	17-4PH	1.4548		Z7CNU17-04
14	347	1.4550 X6 CrNiNb 18 10	347 S 17	58F Z 6 CNNb 18.10
14		1.4552 G-X7CrNiNb18 9		Z4CNNb19.10M
14	17-7PH	1.4568	316S111	
14	316Ti	1.4571 X6 CrNiMoTi 17 12 2	320 S 31	Z 6 CNDT 17-12002
14		1.4581 G-X 5 CrNiMoNb	318 C 17	Z 4 CNDNb 18.12 M
14	318	1.4583 X 10CrNiMoNb 18 12	303 S 21	Z15CNS20.12

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
2367	X2CrNiMo18 16	f.3539-x 2 cRnImO 18 16 4	SUS317L	STS317L	
	X 5 CrNiMo 18 15		SUS 317	STS 317	
2324		F.3309-X 8 CrNiMo 17 12 2 F.3552-X 8 CrNiMo 18 16 4	SUS 329 J 1	STS 329 J 1	
2377			SUS 329 J3L	STS 329 J3L	
	Z8CNA17-07	X2CrNiMo1712			
2326		F.3123-X 2 CrMoTiNb 18 2	SUS 444	STS 444	
2562					
2564					
2337	X 6 CrNiTi 18 11	F.3523 - X 6 CrNiTi 18 10	SUS 321	STS 321	06Ch18N10T 08Ch18N10T 09Ch18N10T 12Ch18N10T
			SCS 24 SUS 630	SSC 24 STS 630	
2378					
2338	X6CrNiNb18 11	F.3552	SUS347	STS347	
	Z8CNA17-07	X2CrNiMo1712			
2350					
	x15cRnIsI2 12				

Material Conversion Table

► According to VDI 3323 standard

					
Material group	AISI/SAE	Material No. DIN	BS	EN	AFNOR
14		1.4585 G-X7CrNiMoCuNb18 18			
14		1.4821 X20CrNiSi25 4			Z20CNS25.04
14		1.4823 G-X40CrNiSi27 4			
14	309	1.4828 X15CrNiSi20 12	309 S 24	58C	Z15CNS20.12
14	309S	1.4833 X6 CrNi 22 13	309 S 13		Z 15 CN 24-13
14	310 S	1.4845 X12 CrNi 25 21	310S24		Z 12 CN 25-20
14	321	1.4878 X6 CrNiTi 18 9	32 1 S 20	58B	Z 6 CNT 18-12 (B)
14	Ss30415	1.4891 X5 CrNiNb 18 10			Z20CNS25.04
14	S30815	1.4893 X8 CrNiNb 11			
14	304H	1.4948 X6 CrNi 18 11	304 S 51		Z 5 CN 18-09
14	660	1.498 X5 NiCrTi 25 15			Zz 8 nctv 25-15 b ff
14		X5 NiCrN 35 25			
14	S31753	X2 CrNiMoN 18 13 4			
14		X2 CrNiMoN 25 22 7			
15	CLASS20	0.6010 GG10			Ft10D
15	A48-20B	0.6010 GG-10			Ft 10 D
15	NO 25 B	0.6015 GG 15	Grade 150		Ft 15 D
15	CLASS25	0.6015 GG 15	Grade 150		Ft 15D
15	A48 25 B	0.6015 GG 15	Grade 150		Ft 15 D
15	A48-30B	0.6020 GG-20	Grade 220		Ft 20 D
15	NO 30 B	0.6020 GG 20	Grade 220		Ft 20 D
15	A436 Type 2	0.6660 GGL-NiCr202	L-NiCuCr202		L-NC 202
15	60-40-18	0.7040 GGG 40	SNG 420/12		FCS 400-12
15	No 20 B	GG 10			Ft 10 D
16	CLASS30	0.6020 GG 20	Grade 220		Ft 20D
16	CLASS45	0.6030 GG 30	Grade 300		Ft 30D
16	A48-45 B	0.6030	Grade 350		Ft 30D
16	A48-50	0.6035 GG-35	Grade 350		Ft 35 D
16	A48-60 B	0.6040 GG40	Grade 400		Ft 40 D
16	100/70/03	0.7070 GGG-70	SNG700/2		FGS 700-2

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
	X6CrNiMoTi17 12				
		F.8414	SCS17	SSC17	
2361	X6CrNi25 20	F.331	SUH310	STR310	
2337	X6CrNiTi18 11	F.3553	SUS321	STS321	
2372					
2368					
2333					
2570					
110	G 10				
0110-00					
0115-00	G 15	FG 15	FC150	GC150	
115	G 15	FG 15			
01 15-00	G 14	FG 15			
0120-00					
120	G 20		FC200	GC200	
0523-00					
0717-02	GS 370-17	FGE 38-17	FCD400	GCD400-18,15	
110			FC100	GC100	
120	G 20	FG 20			
130	G 30	FG 30	FC300	GC300	
01 30-00					
135	G 35	FG 35	FC350	GC350	
140					
07 37-01	GGG 70	GGG 70	FCD700	GCD700-2	

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS EN	AFNOR
16		1.4829 X 12 CrNi 22 12		
17		0.7033 GGG35.3		
17		0.7033 GGG-35.3	350/22 L 40	FGS 370/17
17	60-40-18	0.7040 GGG-40	SNG 420/12	FGS 400-12
17	60/40/18	0.7043 GGG-40.3	370/7	FGS 370/17
17	80-55-06	0.7050 GGG50	SNG500/7	FGS 500/7
17	65-45-12	0.7050 GGG-50	SNG 500/7	FGS 500-7
17		0.7652 GGG-NiMn 13 7	S-NiMn 137	S-Mn 137
17	A43D2	0.7660 GGG-NiCr 20 2	Grade S6	S-NC 202
17		GGG 40.3	SNG 370/17	FGS 370-17
18	A48-40 B	0.6025 GG25	Grade260	Ft 25 D
18		0.7060 GGG60	SNG600/3	FGS600-3
18	80/55/06	0.7060 GGG-60	600/3	FGS 600/3
18	A48 40 B			
19		0.8055 GTW55		
19	32510	0.8135 GTS-35-10	B 340/12	MN35-10
19	A47-32510	0.8135 GTS-35-10	B 340/2	Mn 35-10
19	A220-40010	0.8145 GTS-45-06	P 440/7	Mn 450-6
19		GTS-35	B 340/12	
19			8 290/6	MN 32-8
19	32510	GTS-35	B340/12	MN 35-10
20		0.8035 GTM-35	W340/3	MB35-7
20		0.8040 GTW-40	W410/4	MB40-10
20		0.8045		
20		0.8065 GTMW-65		
20	A220-50005	0.8155 GTS-55-04	P 510/4	Mn 550-4
20	50005	0.8155 GTS-55-04	P 510/4	MP 50-5
20	70003	0.8165 GTS-65-02	P 570/3	Mn 650-3
20	90001	0.8170 GTS-70-02	P 690/2	Mn 700-2
20	A220-90001	0.8170 GTS-70-02		Mn 700-2

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
0717-15					
0717-15					
0717-02					
0717-15					
0727-02	GGG 50				
	0727-02		FCD 500	GCD 500-7	
0772-00					
0776-00					
0717-12					
125	G 25	FG 25	FC250	GC250	
07 32-03	GGG 60	GGG 60			
0727-03			FCD600	GCD600-3	
		GTW 55			
810		GTS 35			
0815-00					
	0852-00	GMN 45			FCMW370
0810-00					
814			AC4A	AC4A	
08 15			FCMW330	FCMW330	
852		GTM 35			
	GTB40	GTM 40			
	GMB45	GTM 45			
		GTM 65			
0854-00					
0854-00	GMN 55		FCMP490	PMC 490	
0856-00	GMN 65		FCMP590	PMC 590	

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS EN	AFNOR
20		0.8170 GTS-70-02	IP 70-2	
20	1022			
	1518	1.1133 20Mn5	120 M 19	20 M 5
20	1035	1.1183 Cf 35 (C35G)	080 A 35	XC 38 H 1 TS
20	400 10	GTS-45	P440/7	
20	70003	GTS-65	P 570/3	MP 60-3
21	Al99	3.0205		
21	1000	3.0255 Al99.5	L31/34/36	A59050C
21		3.3315 AlMg1		
22		3.1325 AlCuMg 1		
22		3.1655 AlCuSiPb		
22		3.2315 AlMgSi1		
21	7050	3.4345 AlZnMgCuO,5	L 86	AZ 4 GU/9051
23		3.2381 G-AlSi 10 Mg		
23		3.2382 GD-AlSi10Mg		
23		3.2581 G-AlSi12		
23		3.3561 G-AlMg 5		
23	ZE 41	3.5101 G-MgZn4sE1Zr1	MAG 5	
23	EZ 33	3.5103 MgSE3Zn27r1	MAG 6	G-TR3Z2
23	AZ 81	3.5812 G-MgAl8Zn1	NMAG 1	
23	AZ 91	3.5912 G-MgAl9Zn1	MAG 7	
24		2.1871 G-AlCu 4 TiMg		
24		3.1754 G-AlCu5Ni1,5		
24		3.2163 G-AlSi9Cu3		
24	4218 B	3.2371 G-AlSi 7 Mg		
24	SC64D	3.2373 G-AlSi9MGWA		A-S7G
24		3.2373 G-AlSi 9 Mg		
24	QE 22	3.5106 G-MgAg3SE2Zr1	mag 12	
24	GD-AlSi12	G-ALMG5	LM5	A-SU12
23-24	A360.2	3.2383 G-AlSi0Mg(Cu)	LM9	

Material Conversion Table

► According to VDI 3323 standard

					
SS	UNI	UNE	JIS	KS	GOST
0862-00	GMN 70		FCMP690	PMC 690	
0864-00					
2132	G 22 Mn 3				
	20 Mn 7	F.1515-20 Mn 6	SMnC 420	SMnC 420	
1572	C 36; C 38		S 35 C	SM 35 C	35
08 52					
858			FCMP540	PMC 540	
811-04					
4231			C4BS	C4BS	
4252					
4253					

Material Conversion Table

► According to VDI 3323 standard

Material group				
	AISI/SAE	Material No. DIN	BS EN	AFNOR
23-24	A356-72		2789;1973	NF A32-201
23-24	356.1		LM25	
23-24	A413.2	G-AISi12	LM6	
23-24	A413.1	G-AISi 12 (Cu)	LM20	
23-24	A413.0	GD-AISi12		
23-24	A380.1	GD-AISi8Cu3	LM24	
26	C93200	2.1090 G-CuSn 7 5 pb		U-E 7 Z 5 pb 4
26	C83600	2.1096 G-CuSn5ZnPb	LG 2	
26	C83600	2.1098 G-CuSn 2 Znpb		
26	C23000	2.1182 G-CuPb15Sn	LB1	U-pb 15 E 8
26	C93800	2.1182 G-CuPb15Sn		Uu-PB 15e 8
27		2.0240 CuZn 15		
27	C27200	2.0321 CuZn 37	cz 108	CuZn 36, CuZn 37
27	C27700	2.0321 CuZn 37	cz 108	CuZn 36, CuZn 37
27		2.0590 G-CuZn40Fe		
27	C 86500	2.0592 G-CuZn 35 Al 1	U-Z 36 N 3	HTB 1
27	C 86200	2.0596 G-CuZn 34 Al 2	HTB 1	U-Z 36 N 3
27	C 18200	2.1293 CuCrZr	CC 102	U-Cr 0.8 Zr
28		2.0060 E-Cu57		
28		2.0375 CuZn36Pb3		
28	C 94100	2.0596 G-CuZn 34 Al 2	HTB 1	U-Z 36 N 3
28	C 63000	2.0966 CuAl 10 Ni 5 Fe 4	Ca 104	U-A 10 N
28	B-148-52	2.0975 G-CuAl 10 Ni		
28	C 90700	2.105 G-CuSn 10	CT1	
28	C 90800	2.1052 G-CuSn 12	pb 2	UE 12 P
28	C 81500	2.1292 G-CuCrF 35	CC1-FF	
28		2.4764 CoCr20W15Ni		
31	N 08800	1.4558 X 2 NiCrAlTi 32 20	NA 15	
31	N 08031	1.4562 X 1 NiCrMoCu 32 28 7		

► According to VDI 3323 standard

C 2700
C 2720

Material Conversion Table

► According to VDI 3323 standard

					
Material group	AISI/SAE	Material No. DIN	BS	EN	AFNOR
31	N 08028	1.4563 X 1 NiCrMoCuN 32 27 4			
31	N 08330	1.4564 X 12 NiCrSi 36 16	NA 17		Z 12 NCS 35.16
31	330	1.4564 X12 NiCrSi 36 16	NA 17		Z 12 NCS 37.18
31		1.4865 G-X40NiCrSi38 18	330 C 40		
31		1.4958 X 5 NiCrAlTi 31 20			
31	AMS 5544	LW2.4668 NiCr19NbMo			NC20K14
32		1.4977 X 40 CoCrNi 20 20			Z 42 CNKDOWNb
33	Monel 400	2.4360 NiCu30Fe	NA 13		NU 30
33	5390A	2.4603			NC22FeD
33	Hastelloy C-4	2.4610 NiMo16cR16Ti			
33	Nimonic75	2.4630 NiCr20Ti	HR 5,203-4		NC 20 T
33		2.4630 NiCr20Ti	HR5,203-4		NC20T
33	Inconel 690	2.4642 NiC29Fe			Nnc 30 Fe
33	Inconel 625	2.4856 NiCr22Mo9Nb	NA 21		NC 22 FeDNb
33	5666	2.4856 NiCr22Mo9Nb			Inconel 625
33	Incoloy 825	2.4858 NiCr21Mo	NA 16		NC 21 Fe DU
34	Monel k-500	2.4375 NiCu30 Al	NA 18		NU 30 AT
34	4676	2.4375 NiCu30Al	3072-76		
34		2.4631 NiCr20TiAl	Hr40;601		NC20TA
34	Inconel 718	2.4668 NiCr19FeNbMo			NC 19 Fe Nb
34	Inconel	2.4694 NiCr16fE7TiAl			
34		2.4955 NiFe25Cr20NbTi			
34	5383	LM2.4668 NiCr19Fe19NbMo	HR8		NC19eNB
34	5391	LW2 4670 S-NiCr13A16MoNb	3146-3		NC12AD
34	5660	LW2.4662 NiFe35Cr14MoTi			ZSNCDT42
34	5537C	LW2.4964 CoCr20W15Ni			KC20WN
34	AMS 5772	C0Cr22W14Ni			KC22WN
35	Inconel X-750	2.4669 NiCr15Fe7TiAl			NC 15 TNb A
35	Hastelloy B	2.4685 G-NiMo28			
35	Hastelloy C	2.4810 G-NiMo30			

Material Conversion Table

► According to VDI 3323 standard

 SS	 UNI	 UNE	 JIS	 KS	 GOST
2584					
			SUH330	STR 330	
	XG50NiCr39 19		SCH15	HRSC 15	

Material Conversion Table

► According to VDI 3323 standard

					
Material group	AISI/SAE	Material No. DIN	BS	EN	AFNOR
35	AMS 5399	2.4973 NiCr19Co11MoTi			NC19KDT
35		3.7115 TiAl5Sn2			
36	R 50250	3.7025 Ti 1	2 TA 1		
36	R 52250	3.7225 Ti 1 pd	TP 1		
36	AMS 5397	LW2 4674 NiCo15Cr10MoAlTi			
37		3.7124 TiCu2	2 TA 21-24		
37	R 54620	3.7145 TiAl6Sn2Zr4Mo2Si			
37		3.7165 TiAl6V4	TA 10-13;TA 28		T-A 6 V
37		3.7185 TiAl4Mo4Sn2	TA 45-51; TA 57		
37		3.7195 TiAl 3 V 2.5			
37		TiAl4Mo4Sn4Si0.5			
37	AMS R54520	TiAl5Sn2.5	TA14/17		T-A5E
37	AMS R56400	TiAl6V4	TA10-13/TA28		T-A6V
37	AMS R56401	TiAl6V4ELI	TA11		
38	W 1	1.1545 C105W1	BW 1A		Y1105
38	W210	1.1545 C105W1	BW2		Y120
38		1.2762 75 CrMoNiW 6 7			
38	440C	1.4125 X105 CrMo 17			Z 100 CD 17
38		1.6746 32 nlcRmO 14 5	832 M 31		35 NCD 14
40	Ni- Hard 2	0.9620 G-X 260 NiCr 4 2	Grade 2 A		
40	Ni- Hard 1	0.9625 G-X 330 Ni Cr 4 2	Grade 2 B		
40	Ni- Hard 4	0.9630 G-X 300 CrNiSi 9 5 2			
40		0.9640 G-X 300 CrMoNi 15 2 1			
40	A 532 III A 25% Cr	0.9650 G-X 260 Cr 27	Grade 3 D		
40	A 532 III A 25% Cr	0.9655 G-X 300 CrNMo 27 1	Grade 3 E		
40		1.2419 105 WCr 6	105WC 13		
40	310	1.4841 X15 CrNiSi 25 20	314 S31		Z 15 CNS 25-20
41		0.9635 G-X 300 CrMo 15 3			
41		0.9645 G-X 260 CrMoNi 20 2 1			
41		0.9655 G-X 300 CrNMo 27 1			

Material Conversion Table

► According to VDI 3323 standard

 SS	 UNI	 UNE	 JIS	 KS	 GOST
1880	C100KU	F-5118	SK3	STC 105(STC3)	
2900	C120KU	CF.515	SUP4	SPS 4	
	0512-00				
	0513-00				
	0466-00				
		107 WCr 5 KU			

Index

10F...WL12	Milling Cutter (Facemill, High feed)	111
12E...SD06	Milling Cutter (Endmill, High feed)	108
10F...SD10	Milling Cutter Facemill, High feed)	109
10E...SD10	Milling Cutter (Endmill, High feed)	110
43F...OF07	Milling Cutter (43° Facemill)	142
43FW...ON07	Milling Cutter (43° Facemill)	140
43F...OFS05	Milling Cutter (43° Facemill)	141
45F...SD12	Milling Cutter (45° Facemill)	135
45F...SD13	Milling Cutter (45° Facemill)	134
45F...SD15	Milling Cutter (45° Facemill)	136
45F...SE12	Milling Cutter (45° Facemill)	137
45F...SE15	Milling Cutter (45° Facemill)	138
45F...SN12-N	Milling Cutter(45° Facemill SNGU, SNKU)	131
75F...SN12-N	Milling Cutter(75° Facemill SNGU, SNKU)	130
45EW...ON05	Milling Cutter (45° Endmill)	133
45FW...ON05	Milling Cutter (45° Facemill)	132
75F...SP12	Milling Cutter (75° Facemill)	127
75F...SP15	Milling Cutter (75° Facemill)	129
90E...APM11	Milling Cutter (90° Facemill)	120
90E...APM16	Milling Cutter (90° Endmill)	121
90F...SN10	Milling Cutter (90° Facemill)	116
90F...APM11	Milling Cutter (90° Facemill)	119
90F...APM16	Milling Cutter (90° Facemill)	121
90E...AP16	Milling Cutter (90° Endmill)	124
90F...AP16	Milling Cutter (90° Facemill)	123
90F...SO12	Milling Cutter (90° Facemill)	117
90E...TO10	Milling Cutter (90° Endmill)	118
90F...TP22	Milling Cutter (90° Facemill)	125
90E...WN07	Milling Cutter (90° Endmill)	114
90E...M...WN07	Milling Cutter (Modular 90° Endmill)	115
90F...WN07	Milling Cutter (90° Facemill)	112
90F...WN10	Milling Cutter (90° Facemill)	113

A

APKT PDSR	Milling Insert	99
APMT PDER	Milling Insert	97,98
APMT T-WT	Milling Insert	99
APHT	Milling Insert	98

C

CCGT AU	ISO Turning Positive Insert	29
CCMT 32	ISO Turning Positive Insert	23
CCMT 41	ISO Turning Positive Insert	23
CCMT 51	ISO Turning Positive Insert	23
CCMT 52	ISO Turning Positive Insert	23
CKJNR/L	ISO Turning External Holder	34
CNMA	ISO Turning Negative Insert	12
CNMG 31	ISO Turning Negative Insert	12
CNMG 41	ISO Turning Negative Insert	12
CNMG 42	ISO Turning Negative Insert	12
CNMG 43	ISO Turning Negative Insert	12
CNMG 45	ISO Turning Negative Insert	12
CNMG 46	ISO Turning Negative Insert	12
CNMG 53	ISO Turning Negative Insert	12
CNMG 56	ISO Turning Negative Insert	13
CNMG 86	ISO Turning Negative Insert	12

D

DCB	D-CUT Blade Holder	70
DCER/L	D-CUT Holder	62,66

Index

DCER/L-ST	D-CUT Holder	68	DNMG 56	ISO Turning Negative Insert	15
DCEPR/L	D-CUT Holder	63	DNMG 86	ISO Turning Negative Insert	14
DCFR	D-CUT Holder	67	DRBX	Milling Cutter (Ball endmill)	143
DCFPR	D-CUT Holder	67	DSL	D-CUT Insert	74
DCIR/L	D-CUT Holder	69	DSM	D-CUT Insert	73
DCGT AU	ISO Turning Positive Insert	30			
DCMT 31	ISO Turning Positive Insert	24	<i>E</i>		
DCMT 32	ISO Turning Positive Insert	24			
DCMT 41	ISO Turning Positive Insert	24	ERP	Milling Cutter (Endmill)	145
DCMT 51	ISO Turning Positive Insert	24			
DCMT 52	ISO Turning Positive Insert	24	<i>F</i>		
DDG	D-CUT Insert	74			
DDG-G	D-CUT Insert	75	FRP	Milling Cutter (Facemill)	144
DDL	D-CUT Insert	72			
DDM	D-CUT Insert	71	<i>K</i>		
DDT	D-CUT Insert	64			
DDTR/L	D-CUT Insert	64	KNUX	ISO Turning Negative Insert	16
DEC 2XD	DEC Drill	81			
DEC 3XD	DEC Drill	83	<i>M</i>		
DEC 4XD	DEC Drill	85			
DMFN45...SE12	Milling Cutter (45° Facemill)	139	MVJNR/L	ISO Turning External Holder	35
DMFN75...SP12	Milling Cutter (75° Facemill)	128	MVQNR/L	ISO Turning External Holder	36
DMFN75...SP15	Milling Cutter (75° Facemill)	128	MVVNN	ISO Turning External Holder	36
DMFN90...TE22	Milling Cutter (90° Facemill)	126			
DNMA	ISO Turning Negative Insert	14	<i>O</i>		
DNMG 31	ISO Turning Negative Insert	14			
DNMG 41	ISO Turning Negative Insert	14	OFCN 07	Milling Insert	101
DNMG 42	ISO Turning Negative Insert	14	OFCR 07	Milling Insert	101
DNMG 43	ISO Turning Negative Insert	14	ONMU 05	Milling Insert	93
DNMG 45	ISO Turning Negative Insert	14	ONMU 07	Milling Insert	93
DNMG 46	ISO Turning Negative Insert	14	OFCT 05	Milling Insert	100
DNMG 53	ISO Turning Negative Insert	15	OFMT 05	Milling Insert	100

Index

P

PCBNR/L	ISO Turning External Holder	37
PCLNR/L	ISO Turning External Holder	38
PDJNR/L	ISO Turning External Holder	39
PDNNR/L	ISO Turning External Holder	39
PSBNR/L	ISO Turning External Holder	40
PSDNN	ISO Turning External Holder	40
PSKNR/L	ISO Turning External Holder	41
PSSNR/L	ISO Turning External Holder	41
PTFNR/L	ISO Turning External Holder	42
PTGNR/L	ISO Turning External Holder	42

R

RBET(X)	Milling Insert	102
RPMT	Milling Insert	104
RPMW	Milling Insert	104

S

SCGT AU	ISO Turning Positive Insert	30
SCLCR/L	ISO Turning External Holder	43
SCMT 41	ISO Turning Positive Insert	25
SCMT 51	ISO Turning Positive Insert	25
SDJCR/L	ISO Turning External Holder	44
SDKN MT-EM	ISO Milling Insert	104
SDKN MT-HPN	ISO Milling Insert	104
SDKT 13	Milling Insert	94
SDMT 06	Milling Insert	96
SDMT 10	Milling Insert	96

SDMT-RBE	Milling Insert	103
SEKN AFSN-EM	ISO Milling Insert	105
SEKN AFSN-HPN	ISO Milling Insert	105
SEKR AFSN-EM	ISO Milling Insert	105
SKJNR/L	ISO Turning External Holder	44
SNMA	ISO Turning Negative Insert	17
SNMG 42	ISO Turning Negative Insert	17
SNMG 45	ISO Turning Negative Insert	17
SNMG 46	ISO Turning Negative Insert	17
SNMG 53	ISO Turning Negative Insert	17
SNMG 56	ISO Turning Negative Insert	17
SNMU	Milling Insert	94
SNGU	Milling Insert	100
SNKU	Milling Insert	100
SOMX 12	Milling Insert	95
S-PCLNR/L	ISO Turning Boring Bar	50
S-PDUNR/L	ISO Turning Boring Bar	51
SPKN EDR-HPN	ISO Milling Insert	106
SPKN EDSR-EM	ISO Milling Insert	106
SPKN EDSR-HPN	ISO Milling Insert	106
SPKR EDR-EM	ISO Milling Insert	106
SPKR EDSR-EM	ISO Milling Insert	106
SPMT MD	Milling Insert	103
SPMT RBE	Milling Insert	103
SPMX MG	DEC-Drill Insert	80
S-PTFNR/L	ISO Turning Boring Bar	52
S-SCLCR/L	ISO Turning Boring Bar	53
SSDCN	ISO Turning External Holder	45
S-SDQCR/L	ISO Turning Boring Bar	54
S-SDUCR/L	ISO Turning Boring Bar	55
S-SSKCR/L	ISO Turning Boring Bar	56
S-STFCR/L	ISO Turning Boring Bar	57

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S-STFPR/L	ISO Turning Boring Bar	58
S-SVUBR/L	ISO Turning Boring Bar	59
STGCR/L	ISO Turning External Holder	45
SVJBR/L	ISO Turning External Holder	46
SVJCR/L	ISO Turning External Holder	46
SVVBN	ISO Turning External Holder	47
S-WTFNR/L	ISO Turning Boring Bar	59

T

TCGT AU	ISO Turning Positive Insert	31
TCMT 32	ISO Turning Positive Insert	26
TCMT 41	ISO Turning Positive Insert	26
TCMT 51	ISO Turning Positive Insert	26
TCMT 52	ISO Turning Positive Insert	26
TPGT	ISO Turning Positive Insert	27
TPMT 31	ISO Turning Positive Insert	26
TNGG	ISO Turning Negative Insert	19
TNMA	ISO Turning Negative Insert	18
TNMG 41	ISO Turning Negative Insert	18
TNMG 42	ISO Turning Negative Insert	18
TNMG 43	ISO Turning Negative Insert	18
TNMG 45	ISO Turning Negative Insert	18
TNMG 46	ISO Turning Negative Insert	18
TNMG 53	ISO Turning Negative Insert	18
TNMG 56	ISO Turning Negative Insert	19
TNMG 86	ISO Turning Negative Insert	18
TNMG 90	ISO Turning Negative Insert	18
TOMX 10	Milling Insert	95
TPGT	ISO Turning Positive Insert	27
TPKN PDR-HPN	Milling Insert	107
TPKN PDSR-EM	Milling Insert	107

TPKN PDSR-HPN	Milling Insert	107
TPKN PPSR-EM	Milling Insert	107
TPMT 31	ISO Turning Positive Insert	26
TPMT 32	ISO Turning Positive Insert	26

V

VBMT 31	ISO Turning Positive Insert	28
VBMT 32	ISO Turning Positive Insert	28
VBMT 41	ISO Turning Positive Insert	28
VBMT 51	ISO Turning Positive Insert	28
VBMT 52	ISO Turning Positive Insert	28
VCGT AU	ISO Turning Negative Insert	31
VNMG 31	ISO Turning Negative Insert	20
VNMG 41	ISO Turning Negative Insert	20
VNMG 45	ISO Turning Negative Insert	20
VNMG 46	ISO Turning Negative Insert	20
VNMG 53	ISO Turning Negative Insert	20

W

WCGX	Drill Insert (Grinding)	79
WCMX	Drill Insert (Pressed)	79
WLMT	Milling Insert	97
WNMA	ISO Turning Negative Insert	21
WNMG 31	ISO Turning Negative Insert	21
WNMG 41	ISO Turning Negative Insert	21
WNMG 42	ISO Turning Negative Insert	21
WNMG 43	ISO Turning Negative Insert	21
WNMG 45	ISO Turning Negative Insert	21
WNMG 46	ISO Turning Negative Insert	21
WNMG 53	ISO Turning Negative Insert	22

Index

WNMG 56	ISO Turning Negative Insert	22
WNMG 86	ISO Turning Negative Insert	21
WNMG 90	ISO Turning Negative Insert	21
WTENN	ISO Turning External Holder	47
WTG NR/L	ISO Turning External Holder	48
WTJNR/L	ISO Turning External Holder	48
WNKU 07	Milling Insert	93
WNKU 10	Milling Insert	93

