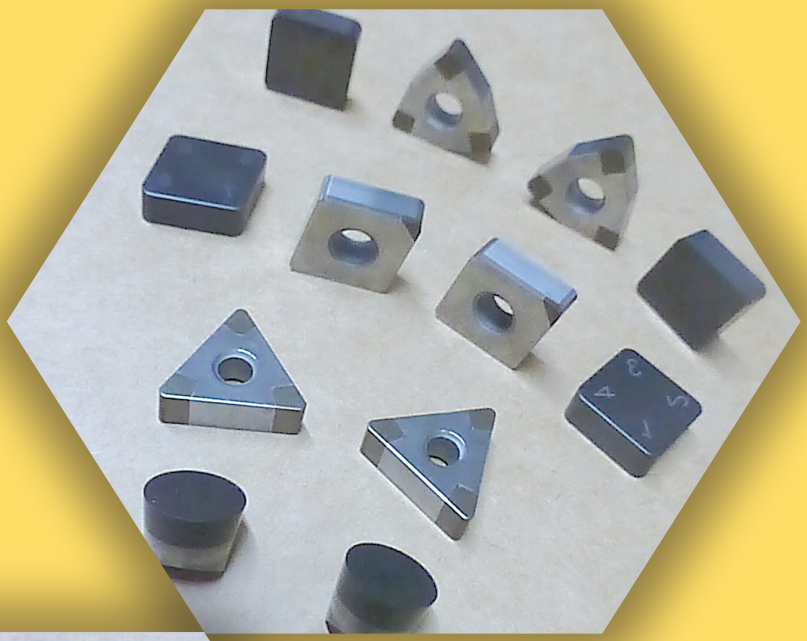
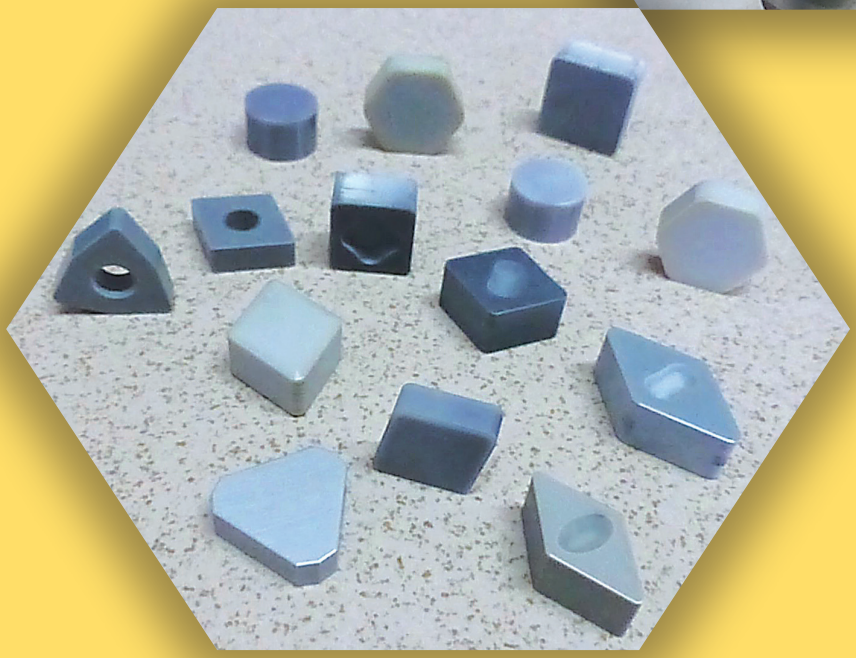
CERACARB

세라카브

ALWAYS ONE CHIP AHEAD





METRIC CATALOGUE 2018/2019

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MATERIAL CLASSIFICATION - ISO 513

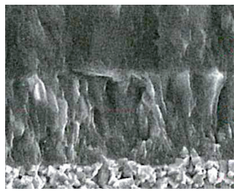
P	Carbon steel Low alloy steel High speed steel (HSS) Corrosion resistant steel	Steel
M	Corrosion resistant austenitic steel Heat resistant steel Abrasion resistant steel Inox steel	Stainless Steel
K	Grey cast iron Nodular iron	Cast iron
N	Non ferrous materials Aluminium alloys Copper alloys	Non ferrous materials
S	Heat resistant super alloys (HRSA) Nymonic Incoloy Inconel Ni-based alloys	Super alloys
H	Thermal treated and hardened steel (hardness 48-60 HrC) White cast iron (hardness 55-85 Sh)	Hardened materials

GRADES DESCRIPTION

- Chipbreakers and chamfers (for ceramics) are the most commonly used, so more likely to be available in stock.
- Parameters are suggested according ISO inserts of medium size (e.g. CNMG120412 in case of turning).
- For the same cutting material, different parameters are suggested according an optimized machining cycle.
- Feed is intended in mm/rev. for turning and in mm/tooth for milling.

TUNGSTEN CARBIDE

1005



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LEGENDA:
● = main application
❍ = alternative application

structure:
fine grain size + MTCVD coating

features:
for finishing to medium machining of steel and inox steel at high cutting speed and with very high wear resistance

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Carbon and alloyed steels	medium mach.	DM DF	120-300	0,1-0,2	1,0-2,0
Carbon and alloyed steels	finishing	DF	120-400	0,1-0,2	0,5-1,5

1010Z

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LEGENDA:
● = main application
❍ = alternative application

structure:
fine substrate + MTCVD coating

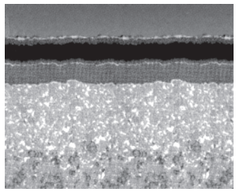
features:
multi layer coating for a great resistance to deformation for finishing to semifinishing almost of alloyed steel

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Carbon and alloyed steels	medium mach.	DM	120-300	0,1-0,25	1,0-2,0
Carbon and alloyed steels	finishing	DF	100-300	0,1-0,2	0,5-1,5

1115



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LEGENDA:
● = main application
❍ = alternative application

structure:
fine to medium grain size + new MTCVD coating

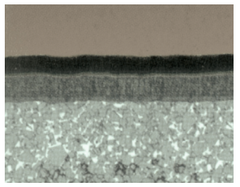
features:
improved wear resistance at high cutting speed
especially for medium turning of alloyed steels

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Carbon and alloyed steels	medium mach.	DM	100-280	0,15-0,25	1,0-2,0

1025



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LEGENDA:
● = main application
❍ = alternative application

structure:
universal grade with multi-layer MTCVD coating

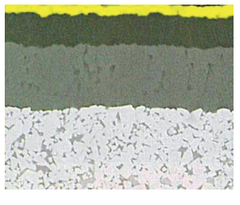
features:
general purpose for alloyed steel and stainless steel
from medium to rough machining

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Carbon and alloyed steels	roughing	HPR-LR	80-160	0,2-0,3	2,5-3,5
Carbon and alloyed steels	medium mach.	DM-PM	100-200	0,2-0,3	2,0-3,0

1025Z



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LEGENDA:
● = main application
❍ = alternative application

structure:
medium grain + MTCVD coating

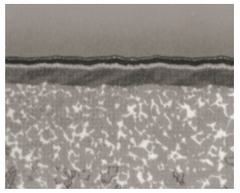
features:
for medium to roughing of steel and inox
wide application field

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Carbon and alloyed steels	roughing	DR-HPR-LR	90-180	0,2-0,35	2,5-3,5
Carbon and alloyed steels	medium mach.	DM-PM	100-220	0,2-0,3	2,0-3,0
inox steels	medium mach.	DM	90-150	0,15-0,25	1,5-2,5

1035Z



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LEGENDA:
● = main application
❍ = alternative application

structure:
high toughness + multilayer MTCVD coating

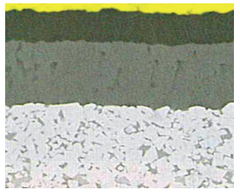
features:
thick coating for roughing steel
in unstable conditions
high cutting edge strength

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Carbon and alloyed steels	roughing	DR-HDR	70-150	0,2-0,5	3,0-4,5

1135



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LEGENDA:
● = main application
❍ = alternative application

structure:
high toughness + multilayer MTCVD coating

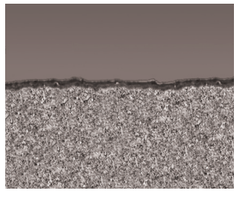
features:
improved carbide substrate with thick coating
higher strength of cutting edge for roughing steel

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Carbon and alloyed steels	roughing	DR-HDR	80-160	0,2-0,5	3,0-4,5

2015



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K	●	●	●	
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S	❍	❍		
H	❍	❍		

LEGENDA:
● = main application
❍ = alternative application

structure:
fine grain grade + PVD coating

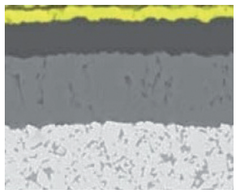
features:
multirole grade with very high wear resistance
especially suitable for stainless steel

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
inox steels	finishing	EF	110-220	0,1-0,2	0,5-1,0
grey cast iron	finishing	EM	150-300	0,1-0,2	1,0-2,0
aluminum alloys (Si>12%)	finishing	EF	450-680	0,05-0,15	0,1-0,5

2015Z



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LEGENDA:
● = main application
❍ = alternative application

structure:
fine substrate + MTCVD coating + further surface treatment

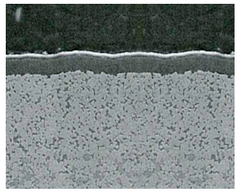
features:
strong resistance to wear and plastic deformation for semifinighing and finishing of stainless steel

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
inox steels	medium mach.	EM	110-190	0,15-0,25	1,0-2,0
inox steels	finishing	EF	120-230	0,15-0,2	0,5-1,0

2115



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LEGENDA:
● = main application
❍ = alternative application

structure:
fine grain size + MTCVD coating

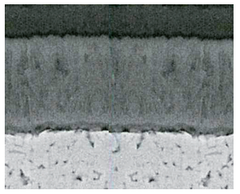
features:
best choice for finishing stainless steel
high cutting performance and good surface quality

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
inox steels	medium mach.	EM	120-200	0,1-0,2	1,0-2,0
inox steels	finishing	EF	130-250	0,1-0,2	0,5-1,0

2020



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H				

LEGENDA:
● = main application
❍ = alternative application

structure:
ultrafine substrate + MTCVD nanocoating

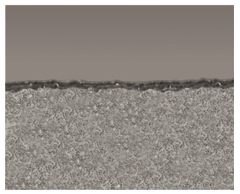
features:
for medium machining on various stainless steel
for both continuous and interrupted cut

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
inox steels	roughing	ER	70-150	0,2-0,3	2,0-3,0
inox steels	medium mach.	EM	100-180	0,2-0,3	1,5-2,5
inox steels	finishing	EF	130-250	0,1-0,2	0,5-1,0
Super Alloys, Inconel, Stellite	finishing	EM	15-25	0,1-0,25	0,5-2,0

2030



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LEGENDA:
● = main application
❍ = alternative application

structure:
tough grade + PVD coating

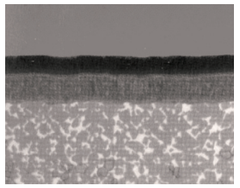
features:
good combination of wear resistance and toughness
particularly suitable for threading alloyed and stainless steel

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
inox steels	roughing	ER EM	70-140	0,2-0,3	2,0-3,0
Super Alloys, Inconel, Stellite	medium mach.	ER	10-20	0,15-0,2	1,0-3,0

2035



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S			●	● ●
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LEGENDA:
● = main application
❍ = alternative application

structure:
medium grain size + MTCVD coating

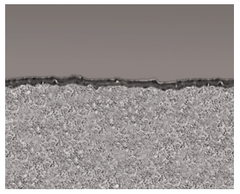
features:
light roughing of stainless steel
for both continuous and interrupted cut

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
inox steels	roughing	ER	60-130	0,2-0,4	2,5-3,5
Super Alloys, Inconel, Stellite	medium mach.	ER	10-20	0,1-0,15	1,0-3,0

2040



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S			❍	❍ ❍
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LEGENDA:
● = main application
❍ = alternative application

structure:
very good strength + PVD coating

features:
very good toughness
for roughing alloy and stainless steel

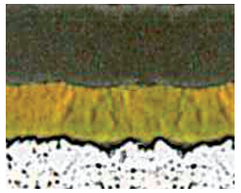
use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
inox steels	roughing	ER	50-110	0,2-0,4	2,5-3,5

TUNGSTEN CARBIDE

3005



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LEGENDA:
● = main application
❍ = alternative application

structure:
very fine grade + thick MTCVD coating

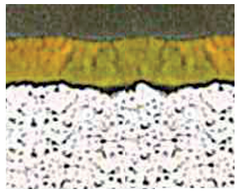
features:
excellent wear resistance for machining cast iron
best choice with high speed and dry

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
grey cast iron	finishing	WG DF	300-400	0,1-0,2	0,1-0,5

3010Z



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LEGENDA:
● = main application
❍ = alternative application

structure:
fine grain substrate + MTCVD coating

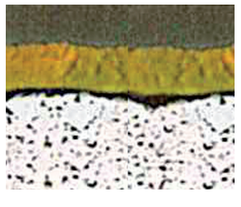
features:
optimized grade with modified CVD coating
medium machining of cast iron, especially nodular iron

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
grey cast iron	medium mach.	none-PM	190-400	0,2-0,3	1,5-3,0
grey cast iron	finishing	PM	190-400	0,1-0,2	1,0-2,0
nodular cast iron	finishing	PM	200-300	0,1-0,2	1,0-2,0

3015Z



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LEGENDA:
● = main application
❍ = alternative application

structure:
medium grain substrate + MTCVD coating

features:
for medium-low cutting speed
on cast iron and nodular iron in all the cutting conditions

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
nodular cast iron	roughing	DR	100-150	0,2-0,4	2,5-3,5
grey cast iron	medium mach.	none-PM	180-350	0,2-0,3	1,5-3,0

TUNGSTEN CARBIDE

3020

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LEGENDA:
● = main application
❍ = alternative application

structure:
high strength grade + MTCVD coating

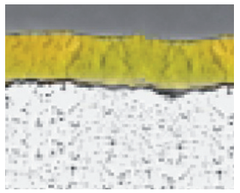
features:
thick layer coating for higher toughness
for heavy machining and even milling cast iron

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
grey cast iron	roughing	DR	180-300	0,2-0,35	2,5-3,5

3020Z



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LEGENDA:
● = main application
❍ = alternative application

structure:
strong carbide substrate + MTCVD coating

features:
medium thick layer coating for higher cutting speed than 3020
suitable on grey and nodular cast iron

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
grey cast iron	roughing	DR DM	200-300	0,2-0,3	2,0-3,0

4120

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LEGENDA:
● = main application
❍ = alternative application

structure:
fine grain size + MTCVD coating

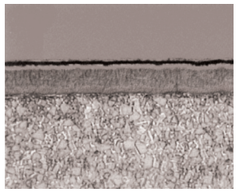
features:
high strenght substrate with multi layer coating
for light to medium machining of alloy steel

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Carbon and alloyed steels	roughing	DR	220-300	0,2-0,3	2,0-3,0
Carbon and alloyed steels	medium mach.	DM	260-320	0,15-0,3	1,0-2,0
Carbon and alloyed steels	finishing	DF	280-330	0,1-0,2	<1,0

4025



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LEGENDA:
● = main application
❍ = alternative application

structure:
high strenght substrate + MTCVD coating

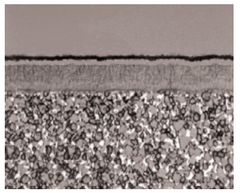
features:
multi layer coating for general purpose
on low alloy steel
also with unstable conditions

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Carbon and alloyed steels	roughing	DR	200-280	0,3-0,4	2,0-3,0
Carbon and alloyed steels	medium mach.	DM	220-300	0,15-0,3	1,0-2,0

4040



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P			● ●	● ●
M			● ●	●
K				
N				
S				
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
substrate with high toughness and multi layer MTCVD coating

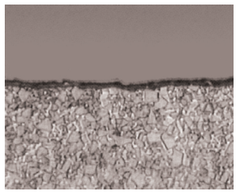
features:
tougher grade with thick coating
for heavy milling of steel and stainless steel

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Carbon and alloyed steels	roughing	DR	150-180	0,3-0,4	2,0-3,0
Carbon and alloyed steels	medium mach.	DM	170-220	0,15-0,3	1,0-2,0
inox steels	medium mach.	PM	90-160	0,1-0,2	1,5-2,0

5020



	10	20	30	40
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M	●	●	●	● ●
K				
N				
S				
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
hard carbide grade with PVD coating

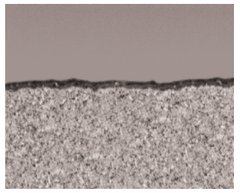
features:
good combination of wear resistance and toughness
light and medium machining of stainless steel

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
inox steels	medium mach.	EM	110-180	0,15-0,3	1,5-2,5
inox steels	finishing	EF	170-230	0,1-0,2	1,0-1,5
Super Alloys, Inconel, Stellite	medium mach.	EM	20-30	0,1-0,3	1,5-2,5
Super Alloys, Inconel, Stellite	finishing	EF	40-50	0,1-0,2	<1,0

5120



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M	●	●	● ●	●
K				
N				
S	●	●	● ●	
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
fine grain carbide + PVD coating

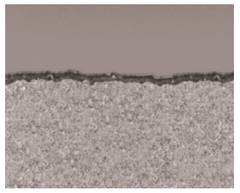
features:
high temperature resitance
suitable for high speed on stainless steel and HRSA

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
inox steels	medium mach.	EM	120-190	0,2-0,3	1,5-2,5
inox steels	finishing	EF	180-250	0,1-0,2	1,0-1,5

5040



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P		❍	❍ ❍	❍ ❍
M		●	● ●	● ●
K				
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LEGENDA:
● = main application
❍ = alternative application

structure:
medium grain size + PVD coating

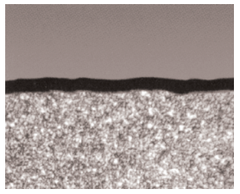
features:
combination of toughness and resistance
to plastic deformation
rough milling of steel and stainless steel

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
inox steels	roughing	DR	70-150	0,15-0,3	2,0-3,0
inox steels	medium mach.	EM	100-170	0,15-0,3	1,5-2,5

6110



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M				
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N	●	●	●	●
S				
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
very hard carbide grade + special PVD coating

features:
treated surface to improve the tool life
and the chip evacuation
high wear resistance on cast iron and aluminum alloys

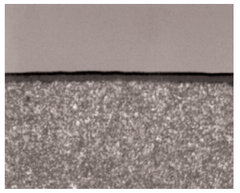
use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
aluminum alloys (Si>12%)	finishing	EF	500-750	0,05-0,15	0,1-0,5
grey and nodular cast iron	finishing	DF-EF	220-300	0,1-0,2	0,3-1,0

TUNGSTEN CARBIDE

6015



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M		❍	❍	❍
K	●	●	●	
N	●	●	●	●
S				
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
fine grain + PVD coating

features:
semifinishing of cast iron and non ferrous materials
suitable also on stainless steel with low speed

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
aluminum alloys (Si>12%)	medium mach.	LH	400-600	0,1-0,2	0,5-3,0
grey and nodular cast iron	roughing	DR	120-200	0,2-0,4	3,5-5,0
grey and nodular cast iron	medium mach.	DM	170-250	0,15-0,3	1,5-2,5

K07

	10	20	30	40
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K	●	●	●	
N	●	●	●	●
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H				

LEGENDA:
● = main application
❍ = alternative application

structure:
very hard carbide, uncoated

features:
high wear resistance for aluminum alloys
and cast iron
combined with sharp cutting edges

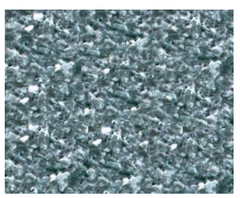
use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
grey cast iron	finishing	LH	130-280	0,1-0,2	0,1-0,5
aluminum alloys (Si>12%)	medium mach.	LH	300-500	0,1-0,2	0,5-3,0
aluminum alloys (Si>12%)	finishing	LC	350-600	0,05-0,4	0,02-0,5
aluminum alloys	finishing	LH	300-600	0,1-0,4	0,1-2,0

CERMET

CC510



	10	20	30	40
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LEGENDA:
● = main application
❍ = alternative application

structure:
TiC+TiN

features:
excellent wear resistance
superfinishing of steel

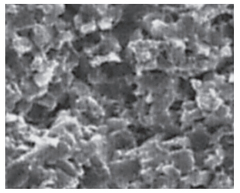
use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Carbon and alloyed steels	superfinishing	CF	100-300	0,03-0,15	0,05-1,0

CERMET

CC515



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LEGENDA:
● = main application
❍ = alternative application

structure:
TiC+TiN

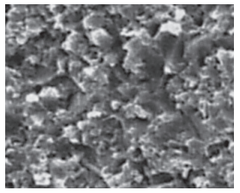
features:
wear resistance and good strength
finishing of steel

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Carbon and alloyed steels	finishing	CR-CM	60-250	0,05-0,2	0,2-1,5

CC520



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H				

LEGENDA:
● = main application
❍ = alternative application

structure:
TiC+TiN

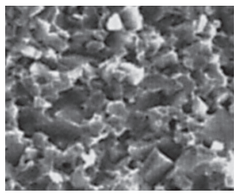
features:
excellent thermal conductivity
general machining of steel

use of coolant:
preferably no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Carbon and alloyed steels	medium mach.	CR	60-180	0,05-0,2	1,0-1,5

CC530



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LEGENDA:
● = main application
❍ = alternative application

structure:
TiC+TiN

features:
the toughest cermet grade
milling of steel

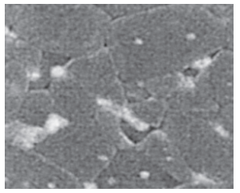
use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHIPBREAKER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Carbon and alloyed steels	medium mach.	CR	60-180	0,1-0,3	<3,0

CERAMIC

CC200



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LEGENDA:
● = main application
❍ = alternative application

structure:
Al_2O_3+ ZrO_2

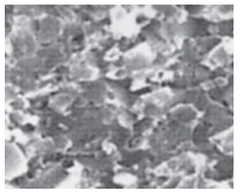
features:
extra high wear resistance
finishing and semifinishing of cast irons

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
grey cast iron	medium mach.	D200	200-350	0,15-0,30	0,5-2,0
grey cast iron	finishing	A150-B200	300-800	0,05-0,15	0,1-0,5

V200



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K	●	●	●	●
N				
S				
H	●	●		

LEGENDA:
● = main application
❍ = alternative application

structure:
TiCN+Al_2O_3

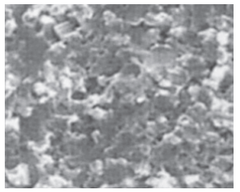
features:
high thermal shock resistance
medium cutting and finishing on ductile caat iron and hard materials

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
nodular cast iron	roughing	D200	100-300	0,1-0,2	1,0-2,0
nodular cast iron	finishing	B200	200-600	0,05-0,25	0,1-0,5
grey cast iron	medium mach.	D200	150-300	0,2-0,4	2,0-4,0

V300



	10	20	30	40
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M				
K	●	●	●	
N				
S				
H	●	●		

LEGENDA:
● = main application
❍ = alternative application

structure:
Al_2O_3+TiCN

features:
high wear resistance
general machining on cast iron and hardened steel

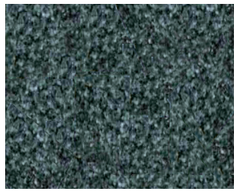
use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
hardened steel	roughing	T15B302	20-80	0,1-0,2	0,5-1,0
hardened steel	finishing	B200	40-150	0,05-0,25	0,1-0,5
grey cast iron	roughing	D200	200-400	0,2-0,3	2,5-3,5
grey cast iron	finishing	B200	300-650	0,05-0,3	0,1-0,5

CERAMIC

V900



	10	20	30	40
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M				
K	●	●	●	
N				
S				
H	●	●		

LEGENDA:
● = main application
❍ = alternative application

structure:
Al_2O_3+TiCN

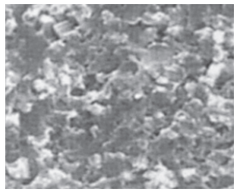
features:
excellent wear and thermal shock resistance
high speed finishing on cast iron and hardened steel

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
hardened steel	roughing	T15B302	30-90	0,1-0,2	0,5-1,0
hardened steel	finishing	B200	40-200	0,05-0,2	0,1-0,5
grey cast iron	roughing	D200	300-500	0,2-0,3	2,5-3,5
grey cast iron	finishing	B200	300-800	0,05-0,3	0,1-

VZ300



	10	20	30	40
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K		●	●	●
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S				
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LEGENDA:
● = main application
❍ = alternative application

structure:
Al_2O_3+TiCN+TiN

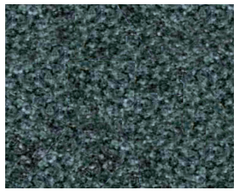
features:
high wear resistance
up to medium roughing on cast iron and hardened steel

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
hardened steel	roughing	T15B302	20-100	0,1-0,25	0,5-1,0
hardened steel	finishing	B200	40-180	0,05-0,3	0,1-0,5
grey cast iron	roughing	D200	200-400	0,2-0,4	2,5-3,5

VZ900



	10	20	30	40
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M				
K	●	●	●	
N				
S				
H		●	●	●

LEGENDA:
● = main application
❍ = alternative application

structure:
Al_2O_3+TiCN+TiN

features:
improved wear resistance
finishing of cast iron and hardened steel with bad conditions

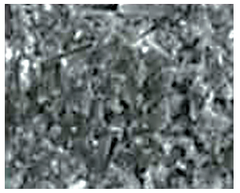
use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
hardened steel	roughing	T15B302	30-100	0,1-0,25	0,5-1,0
hardened steel	finishing	B200	40-200	0,05-0,25	0,1-0,5
grey cast iron	roughing	D200	300-500	0,25-0,45	2,5-3,5

WHISKER

WSK1



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S		●	●	●
H		●	●	

LEGENDA:
● = main application
❍ = alternative application

structure:
Al_2O_3+SiC whisker

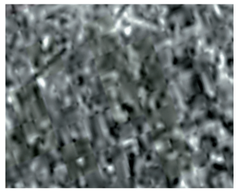
features:
excellent wear and cracking resistance
high productivity on hardened steel, Ni & Co based alloys

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Super Alloys, Inconel, Stellite	roughing	A100-B150	180-360	0,1-0,3	1,0-3,0
Super Alloys, Inconel, Stellite	finishing	sharp-H	180-450	0,1-0,25	0,5-2,0
Super Alloys, Inconel, Stellite	roughing	B201	150-300	0,2-0,35	1,0-3,0

WSK4



	10	20	30	40
P		●	●	● ●
M				
K				
N				
S		❍	❍	❍ ❍
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
Al_2O_3+SiC whisker

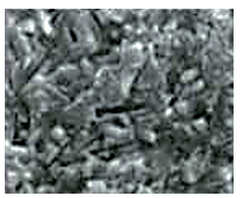
features:
suitable for HSS and Cr steel
roughing and medium cutting also with heavy interruption

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
sintered and Cr steel	roughing	H-B200	150-250	0,2-0,3	1-2
sintered and Cr steel	finishing	H-B200	170-300	0,1-0,2	0,5-1,5

WSK8



	10	20	30	40
P		❍	❍	❍ ❍
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N				
S	●	●	●	●
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
Al_2O_3+SiC whisker

features:
for Ni and Co based alloys
roughing and finishing on continuous or light interrupted cut

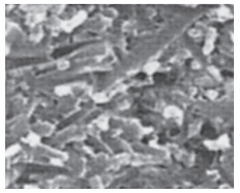
use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Super Alloys, Inconel, Stellite	roughing	A100-B150	180-360	0,1-0,3	1,0-3,0
Super Alloys, Inconel, Stellite	finishing	sharp-H	180-450	0,1-0,25	0,5-2,0

SILICON NITRIDE

DT400



	10	20	30	40
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K		●	●	● ●
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H				

LEGENDA:
● = main application
❍ = alternative application

structure:
Si_3N_4

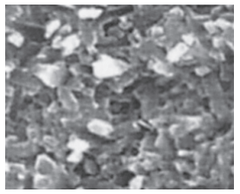
features:
roughing of cast irons also with interrupted cut
also available for milling

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
grey cast iron	roughing	D200	150-350	0,3-0,6	2,5-5,0
grey cast iron	finishing	B200	350-450	0,2-0,3	0,5-1,0
nodular cast iron	roughing	D200	190-300	0,2-0,35	3,5-5,0
nodular cast iron	finishing	B200	250-400	0,1-0,2	0,5-1,5

DT500



	10	20	30	40
P				
M				
K		●	●	● ●
N				
S				
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
Si_3N_4

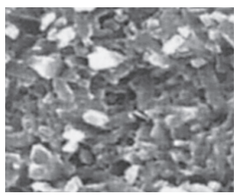
features:
general machining of cast irons
higher cutting conditions compared to DT400

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
grey cast iron	roughing	D200	450-600	0,3-0,4	2,0-3,5
grey cast iron	finishing	D200	500-650	0,2-0,3	0,2-1,0

DT850



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P				
M				
K	●	●	●	● ●
N				
S				
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
Si_3N_4

features:
the widest machining range on cast irons from roughing to finishing at high speed

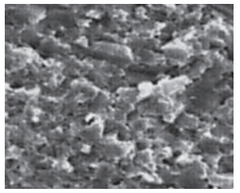
use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
grey cast iron	roughing	D200	600-900	0,2-0,3	3,5-5
grey cast iron	finishing	D200	650-1000	0,15-0,25	0,1-0,5
nodular cast iron	roughing	D200	120-450	0,25-0,4	<5,0

SILICON NITRIDE

DT900



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P				
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K		●	●	● ● ●
N				
S				
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
Si_3N_4

features:
the latest milling grade
combination of wear resistance and toughness

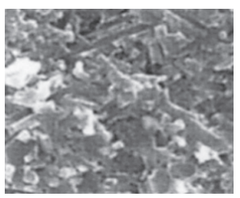
use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
grey cast iron	roughing	D200	250-400	0,25-0,4	2,0-4,0
grey cast iron	finishing	B200	400-700	0,2-0,3	0,5-1,0
nodular cast iron	roughing	D200	120-500	0,2-0,3	2,5-4,0
nodular cast iron	finishing	B200	300-700	0,1-0,2	0,3-1,0

SiAlON

VN70S



	10	20	30	40
P				
M				
K		●	●	● ●
N				
S		●	●	● ●
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
Si_3N_4 SiAlON

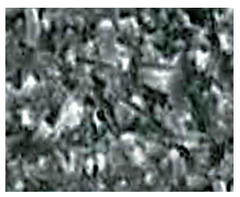
features:
superior edge strength
roughing at high speed on high temperature alloys and difficult castings

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Super Alloys, Inconel, Stellite	roughing	D200	150-230	0,2-0,4	1,5-4
Super Alloys, Inconel, Stellite	finishing	B200	250-450	0,1-0,2	0,1-1,0
Super Alloys, Inconel, Stellite	finishing	A150	600-800	0,05-0,15	0,5-1,0

VN80



	10	20	30	40
P				
M				
K				
N				
S		●	●	● ●
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
Si_3N_4 SiAlON

features:
good thermal shock resistance
suitable for nickel based alloys

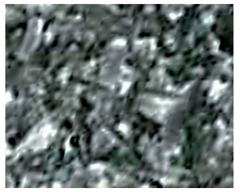
use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
high Ni-based alloys	roughing	D200	130-210	0,3-0,4	1,5-4
high Ni-based alloys	finishing	B200	190-300	0,1-0,2	0,1-1,0

SiAlON

VN80S



	10	20	30	40
P				
M				
K				
N				
S	●	●	● ●	
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
Si_3N_4 SiAlON

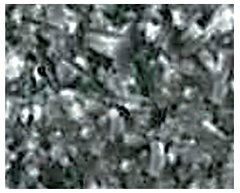
features:
high temperature resistance
suitable for Ni-based and Cr-based alloys

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
high Ni-based alloys	roughing	D200	170-250	0,2-0,3	1,5-4
high Ni-based alloys	finishing	B200	220-330	0,1-0,2	0,1-1,0

VN90



	10	20	30	40
P				
M				
K				
N				
S			● ●	● ●
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
Si_3N_4 SiAlON

features:
high thermal shock resistance
heavy machining of HRSA

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
Super Alloys, Inconel, Stellite	roughing	D200	100-180	0,25-0,4	1,5-4
Super Alloys, Inconel, Stellite	finishing	B200	170-250	0,1-0,2	0,1-1,0
Super Alloys, Inconel, Stellite	finishing	B200	450-700	0,1-0,2	0,5-1,0

Cbn

cbn 010 HS

	10	20	30	40
P				
M				
K				
N				
S				
H	●	●	●	

LEGENDA:
● = main application
❍ = alternative application

structure:
cubic boron nitride

features:
good thermal stability and crater resistance
high speed continuous machining of hardened steel

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
high alloyed steels (35-40HrC)	finishing	H-B200	100-240	0,05-0,3	0,1-1,5
hardened steel	finishing	D200	100-140	0,1-0,2	0,1-0,8

Cbn

cbn 020 CI

	10	20	30	40
P				
M				
K	●	●	●	
N				
S				
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
cubic boron nitride

features:
extreme wear resistance due to metal binder
excellent machining of various cast irons

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
grey cast iron	roughing	B200	400-600	0,1-0,3	1,0-2,5
grey cast iron	finishing	A150-B200	600-1200	0,1-0,3	0,2-1,0

cbn 020 HS

	10	20	30	40
P				
M				
K				
N				
S				
H	●	●	●	

LEGENDA:
● = main application
❍ = alternative application

structure:
cubic boron nitride

features:
combination of wear resistance and impact strength
general usage on hardened steel

use of coolant:
possible

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
sintered steel	finishing	H-B200	170-300	0,025-0,2	0,05-0,2
hardened steel	roughing	T15B302	60-140	0,15-0,4	0,7-2,5
alloyed steels (>35HrC) r	oughing	D201	100-200	0,2-0,3	0,5-1,0
hardened steel	roughing	D201	70-120	0,1-0,25	0,5-1,0
alloyed steels (>35HrC)	finishing	B150	150-200	0,1-0,2	0,1-0,5
hardened steel	finishing	B150	120-180	0,1-0,2	0,1-0,5

cbn 100 CB

	10	20	30	40
P				
M				
K				
N				
S				
H	●	●	●	

LEGENDA:
● = main application
❍ = alternative application

structure:
solid pcbn

features:
the highest resistance at high temperature machining
suitable on tungsten carbide with continuous cut

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
sintered carbide Co >15%	medium mach.	B150	15-20	0,1-0,25	0,2-0,5
sintered carbide Co >15%	finishing	B150	20-25	0,05-0,15	0,02-0,2

Cbn

cbn 100 DE

	10	20	30	40
P				
M				
K		●	●	●	●
N				
S				
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
solid pcbn

features:
rough machining of cast iron and powdered metal
especially suitable for brake discs

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
grey cast iron	roughing	D200	650-1000	0,2-0,4	2,5-4,5

cbn 100 DW

	10	20	30	40
P				
M				
K	●	●	●	●
N				
S				
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
solid pcbn

features:
finer grain size for increased wear resistance
finishing at high speed of cast iron

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
grey cast iron	finishing	B200	700-1200	0,15-0,45	0,1-2,0
nodular cast iron	finishing	B150	400-1200	0,15-0,25	<1,0

Pcd

pcd 010

	10	20	30	40
P				
M				
K				
N	●	●	●	
S				
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
pcd

features:
excellent surface finishing on non ferrous materials
best in continuous cut

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	DETAIL	CHAMFER	SPEED (m/min)	FEED (mm/rev.)	DOC (mm)
aluminum alloys (Si 9-14%)	finishing	sharp	700-1300	0,1-0,2	0,05-1,0
aluminum alloys (Si 4-8%)	finishing	sharp	1300-2500	0,1-0,2	0,05-1,0
wood	roughing	sharp	1000-1800	0,2-0,5	1,0-5,0
wood	finishing	sharp	1800-2500	0,1-0,2	0,2-1,0
plastic	medium mach.	sharp	300-600	0,15-0,25	1,5-3,0
plastic	finishing	sharp	600-1000	0,05-0,15	0,05-1,0

Pcd

pcd 020

	10	20	30	40
P				
M				
K				
N		●	●	●
S				
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
pcd

features:
general purpose grade
good surface finishing and wear resistance

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	*DETAIL*	*CHAMFER*	*SPEED (m/min)*	*FEED (mm/rev.)*	*DOC (mm)*
aluminum alloys (Si 9-14%)	medium mach.	sharp	450-600	0,2-0,3	1,0-3,0
aluminum alloys (Si 4-8%)	medium mach.	sharp	700-1300	0,2-0,3	1,0-3,0

pcd 030

	10	20	30	40
P				
M				
K				
N		●	●	●
S				
H				

LEGENDA:
● = main application
❍ = alternative application

structure:
pcd

features:
superior wear resistance with strong diamond bond
suitable for milling

use of coolant:
no

RECOMMENDED CUTTING CONDITIONS

MATERIAL	*DETAIL*	*CHAMFER*	*SPEED (m/min)*	*FEED (mm/rev.)*	*DOC (mm)*
sintered carbide Co<15%	medium mach.	B150	15-20	0,1-0,25	0,2-0,5
sintered carbide Co<15%	finishing	B150	20-25	0,05-0,15	0,02-0,2
aluminum alloys (Si 15-18%)	medium mach.	sharp	250-350	0,2-0,3	1,0-3,0
aluminum alloys (Si 15-18%)	finishing	sharp	450-600	0,1-0,2	0,05-1,0
aluminum alloys (Si <15%)	roughing	sharp	300-700	0,1-0,25	0,5-1,0
aluminum alloys (Si >15%)	roughing	sharp	100-250	0,1-0,35	0,5-1,0
aluminum alloys (Si <15%)	finishing	sharp	700-2500	0,1-0,25	0,1-0,5
aluminum alloys (Si >15%)	finishing	sharp	300-700	0,1-0,25	0,1-0,5

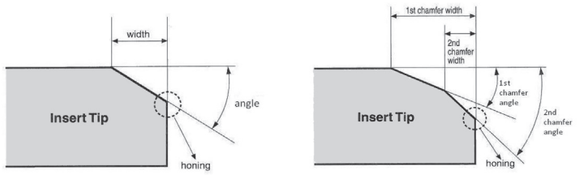
CHIPBREAKERS

CODE	PICTURE	ROUGHING	SEMI ROUGHING	FINISHING	SUPERFINISHING	P	M	K	N	S	H	POSITIVE	NEGATIVE	DETAILS
CF					●	●							●	on cermet inserts only, for the best finishing on low alloyed steels
ADF				●	●	●							●	improved geometry for finishing steel for higher Vc
DF				●		●	●						●	finishing and semi finishing of steel and stainless steel, up to feed 0,35 mm/rev.
AHF				●	●		●					●		updated and sharper finishing geometry for positive inserts on stainless steel
HF				●	●	●	●	●			●	●		suitable for finishing and semi finishing of steel and cast iron, especially for internal machining
EF				●			●			●			●	sharp and positive cutting edge suitabe for finishing stainless steel and HRSA, in continuous and light interrupted cut
					●		●			●		●		
WG					●	●	●	●					●	superfinishing with wiper on steel, stainless steel and cast iron
EL SI ER SI				●	●	●	●			●		●	●	left / right hand chipbreaker negative inserts in M tolerance positive inserts in G tolerance
LC					●				●			●		sharp cutting edge for better chip control on aluminum alloys and non ferrous materials
LH				●					●			●		on inserts with large rake angle, treated surface for fast chip evacuation of non ferrous alloys
NF				●	●				●	●		●	●	ground chipbreaker for finishing non ferrous materials and HRSA
CM				●		●						●	●	on cermet inserts only, general performing on carbon steel
DM			●			●	●						●	medium machining on steel in both continuous and interrupted cut
PM			●	●		●		●					●	suitable for various cutting conditions on steel and cast iron

CHIPBREAKERS

CODE	PICTURE	ROUGHING	SEMI ROUGHING	FINISHING	SUPERFINISHING	P	M	K	N	S	H	POSITIVE	NEGATIVE	DETAILS
EG			●	●			●			●			●	suitable for various cutting conditions on stainless steel and HRSA
EM			●	●		●	●						●	sharp cutting edge for stainless steel in various machining conditions
			●	●			●			●		●		
NM			●	●			●			●			●	sharp cutting edge for medium machining especially on HRSA
HM			●			●	●	●				●		especially for medium machining on steel and cast iron, for both internal and external machining
CR			●			●						●	●	on cermet inserts only, wider chipbreaker for feed up to 0.5 mm/rev.
HDR		●	●			●					●		●	available on single side inserts, with strong geometry for roughing of steel
DR		●	●			●		●			●		●	strong positive cutting edge for medium roughing of steel and cast iron. For double side inserts
		●	●			●		●			●		●	strong positive cutting edge for medium roughing of steel and cast iron. For single side inserts
ER		●				●	●						●	positive cutting edge first choice for roughing stainless steel For double side inserts
		●				●	●						●	positive cutting edge first choice for roughing stainless steel For single side inserts
LR			●			●	●	●					●	waved cutting edge for lighter pressure in roughing steel, stainless steel and cast iron
HR			●			●	●	●				●		reinforced cutting edge on positive inserts, light roughing of steel and cast iron
HPR		●				●		●					●	on big size single sided inserts, negative shape for heavy roughing of steel and cast iron

CHAMFERS CODES FOR CERAMIC INSERTS • READING GUIDE



SINGLE CHAMFER		
width	angle	honing
B	20	0
D	25	2

1ST CHAMFER		2ND CHAMFER		
width	angle	width	angle	honing
T	15	D	30	2
V	15	D	25	5

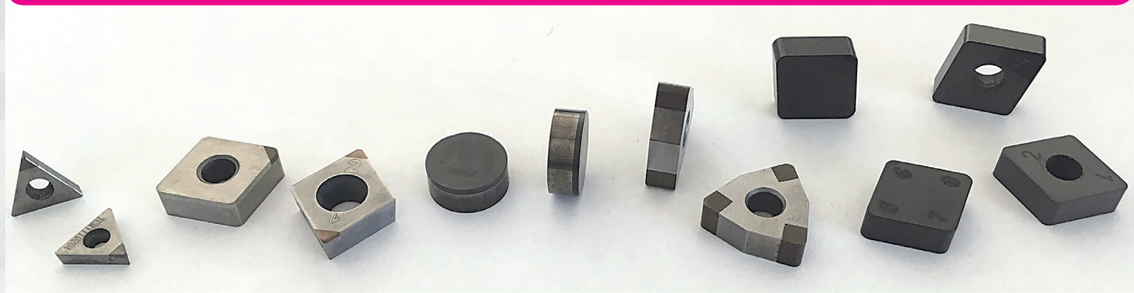
CHAMFER SIZE (in mm.) AND IDENTIFYING LETTER	
A	0,05
B	0,1
C	0,15
D	0,2
G	0,45
K	0,75
M	1
P	1,2
R	1,25
T	1,5
V	2
X	2,3

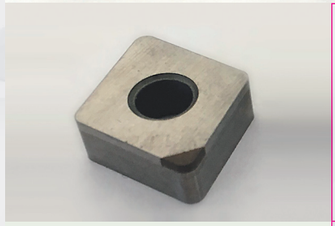
DIMPLE SHAPES

	CODE	NAME	NOTES
	DB	dog bone	the most common dimple
	RD	round	to use all the sides
	EL	ellipse	alternative to DB
	SQ	square	on S inserts only, alternative to RD

to order (e.g.): SNGX 120712 DB D200 DT850

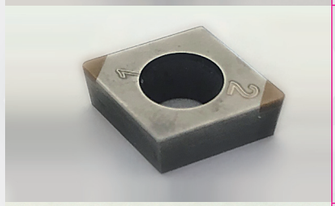
CBN INSERTS





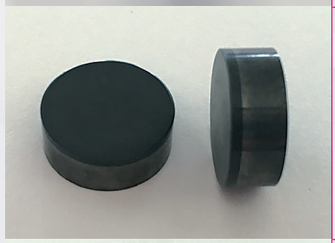
single tip

- single cutting edge brazed on a carbide base
- the standard solution for cbn and pcd
- through away after use



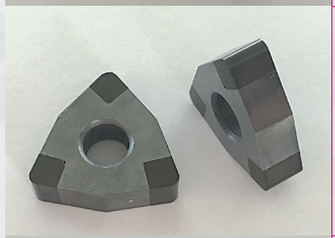
multi tip

- 2 or more cutting edges, according the shape of the insert
- save money for your volume production
- look at the numbers lasermarked not to lose new edges!



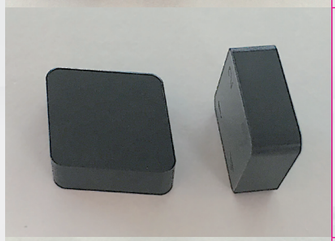
full top

- the whole top face brazed on inserts without holes
- typically available on round and square
- widely used in milling



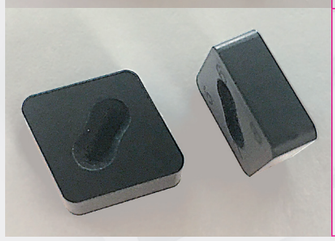
flip tip

- tipped inserts all along the thickness
- the cheapest way for solid cbn on inserts with hole
- multiple edges for higher saving



solid cbn

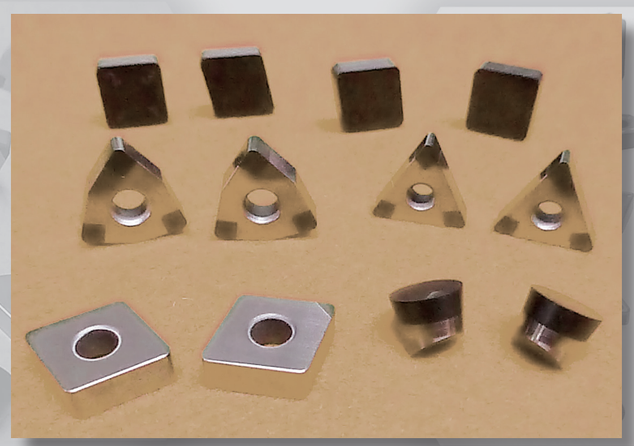
- the latest and more performing way to machine
- roughing and finishing of cast iron and finishing of tungsten carbide
- suitable for continuous cut at high parameters

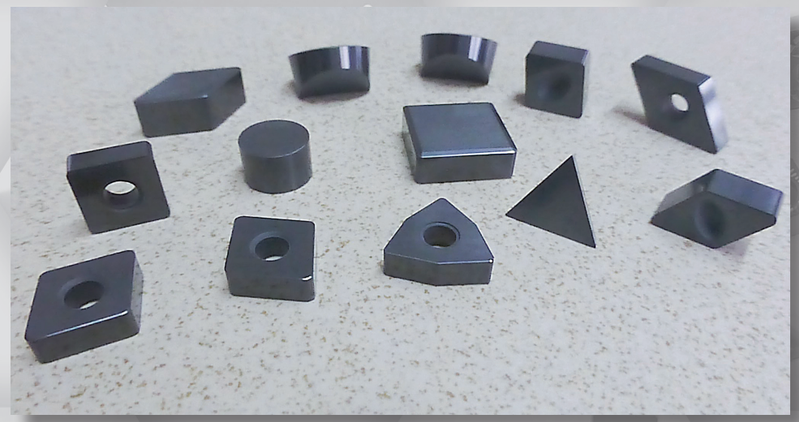


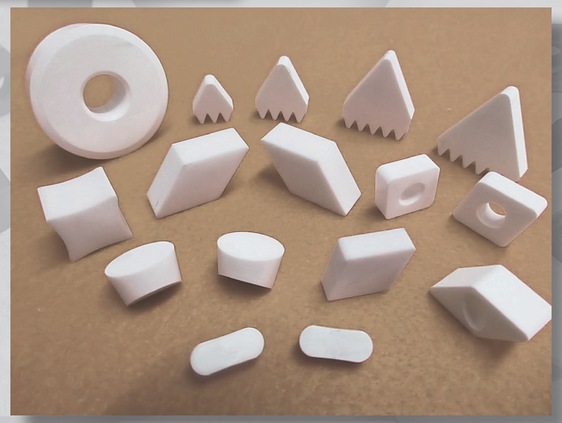
NEW

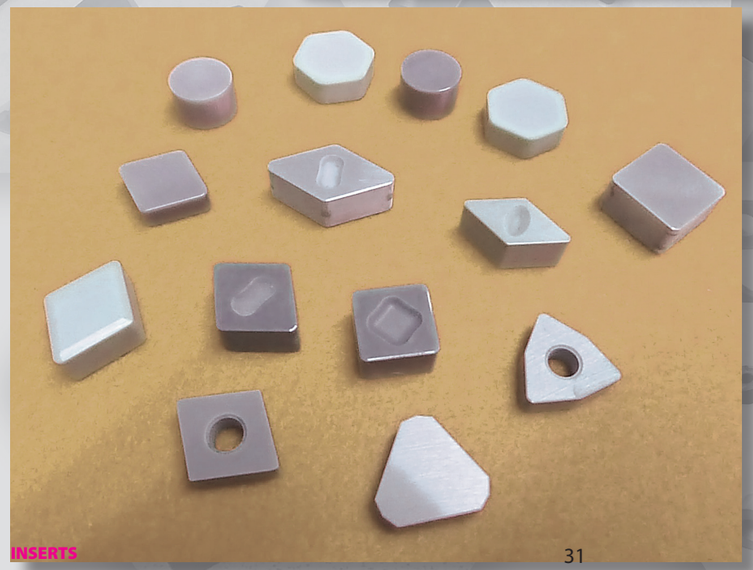
solid cbn with dimple

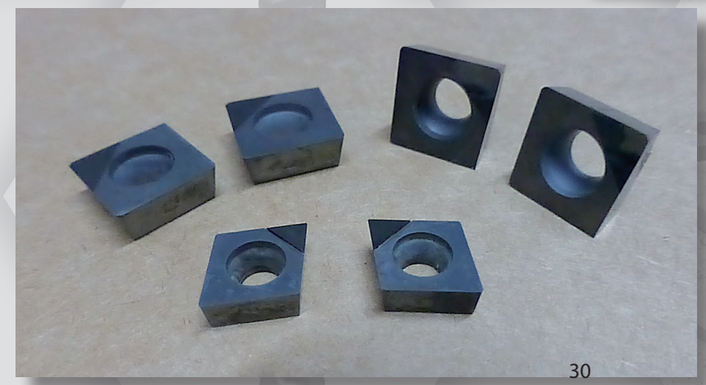
- the best clamping on solid cbn inserts





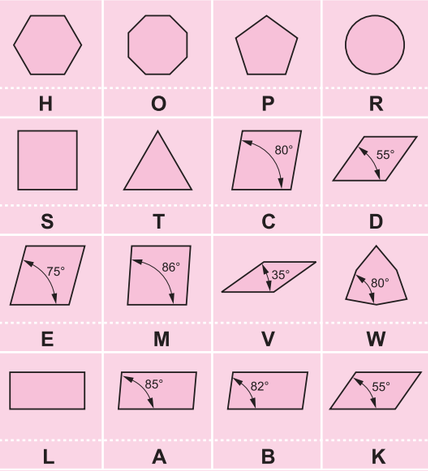






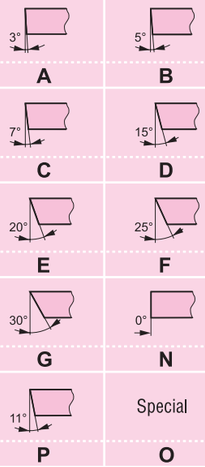
INSERTS ISO CODE

INSERT SHAPE



1

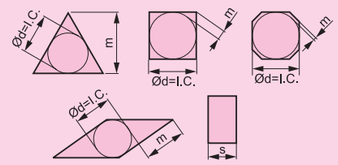
CLEARANCE ANGLE



2

TOLERANCES

Tolerance class	Tolerance (mm)		
	m (±)	s (±)	d = I.C. (±)
A	0,005	0,025	0,025
F	0,005	0,025	0,013
C	0,013	0,025	0,025
H	0,013	0,025	0,013
E	0,025	0,025	0,025
G	0,025	0,130	0,025
J	0,005	0,025	0,05 ÷ 0,13
K	0,013	0,025	0,05 ÷ 0,13
L	0,025	0,025	0,05 ÷ 0,13
M	0,08 ÷ 0,18	0,130	0,05 ÷ 0,13
N	0,08 ÷ 0,18	0,025	0,05 ÷ 0,13
U	0,05 ÷ 0,38	0,130	0,08 ÷ 0,25



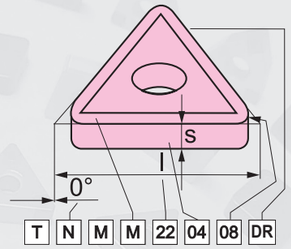
3

INSERT TYPE

Code	Hole	Insert Section	Insert Section	Code	Hole	Insert Section	Insert Section
H	✔	Single side		F	----	Double side	
W	✔	----		A	✔	----	
T	✔	Single side		M	✔	Single side	
Q	✔	----		G	✔	Double side	
N	----	----		X	----	----	Special
R	----	Single side				----	

4

INSERTS ISO CODE



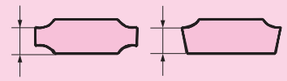
T	N	M	M	22	04	08	DR
1	2	3	4	5	6	7	8

CUTTING EDGE LENGTH

d=I.C .	R	S	T	C	D	V	W
mm							
3,97			06				
5,00	05						
5,56			09				03
6,00	06						
6,35			11	06	07		04
8,00	08						
9,525	09	09	16	09	11	16	06
10,0	10						
12,0	12						
12,7	12	12	22	12	15		08
15,875	15	15	27	16			
16,0	16						
19,05	19	19	33	19			
20,0	20						
25,0	25						
25,4	25	25		25			
31,75	31						
32,0	32						

5

INSERT THICKNESS



Code	Thickness (mm)
00	0,79
T0	0,99
01	1,59
T1	1,98
02	2,38
T2	2,58
03	3,18
T3	3,97
04	4,76
T4	4,96
05	5,56
T5	5,95
06	6,35
T6	6,75
07	7,94
09	9,52
T9	9,72
11	11,11
12	12,70

6

NOSE RADIUS

Code	Radius (mm)
00	0
02	0,2
04	0,4
08	0,8
12	1,2
16	1,6
20	2,0
24	2,4
32	3,2
X	Other
MO	Round inserts

7

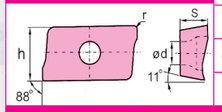
CHIPBREAKER OR EDGE PREPARATION

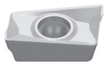
See the dedicated sections

8

INSERTS

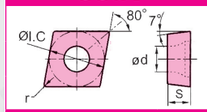
APKT



	h	6,5				9,33	
	s	3,6				5,76	
	Ød	2,8				4,4	
	r	0,4	0,8	1,2	1,6	0,8	1,6
CHIPBREAKER	**GRADE**	**11T304**	**11T308**	**11T312**	**11T316**	**160408**	**160416**
LH 	K07	●	●			●	
PM	2020		●			●	
	2035	●	●	❍	●	●	
	2040	●	●			●	
	3015Z		❍			❍	
	3020		●			●	
	4120	●	●			●	
	4025	●	●			●	
	4040	❍				❍	
	5020	●	●	●	●	●	❍
	5120		●			●	
	5040	●	●	●	●	●	
	6015	●	●	❍	❍	●	
PR	2040	●					
	5020	●					
	5040	●	❍	❍	❍	❍	

TUNGSTEN CARBIDE

CCGT

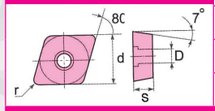


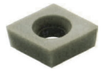
	ØI.C.	9,52			12,7
	s	3,97			4,76
	Ød	4,4			5,56
	r	0,1	0,2	0,4	0,4
CHIPBREAKER	**GRADE**	**09T301**	**09T302**	**09T304**	**120404**
EL SI	5020	❍	❍	●	
	5120				❍
ER SI	5020	❍	●	●	
	5120			●	

TUNGSTEN CAR.

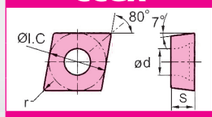
● normal production ❍ on request

CCGW



	ØI.C.	6,35		9,52			12,7	
	s	2,38		3,97			4,76	
	Ød	2,8		4,4			5,5	
	r	0,4	0,8	0,4	0,8	1,2	0,8	1,2
GROUP	**GRADE**	**060204**	**060208**	**09T304**	**09T308**	**09T312**	**120408**	**120412**
black ceramic	V200			●	●			
silicon nitride 	DT400			●	●	●	●	●
cbn	010 HS	●	❍	●	●			
	020 HS	●	●	●	●			
	020 CI	●	●	●	●			
	020 SA	❍	❍	❍	❍			
pcd	010	●	●	●	●			
	020	●	●	●	●			
	030	●	●	●	●			

CCGX

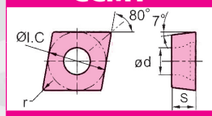


	ØI.C.	6,35			9,525			12,7		
	s	2,38			3,97			4,76		
	Ød	2,8			4,4			5,56		
	r	0,2	0,4	0,8	0,2	0,4	0,8	0,4	0,8	1,2
CHIPBREAKER	**GRADE**	**060202**	**060204**	**060208**	**09T302**	**09T304**	**09T308**	**120404**	**120408**	**120412**
LC	K07	●	●		●	●	●	●	●	
	6110	●	●		●	●	●	●	●	
LH	K07	●	●	●	●	●	●	●	●	●
	1035Z	●	●	❍	●	●	●	●	●	
	5020								❍	
	6015	❍	❍		●	●	●	●	●	

TUNGSTEN CARBIDE

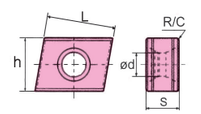
● normal production ❍ on request

CCMT



	ØI.C.	6,35			9,52			12,7			
	s	2,38			3,97			4,76			
	Ød	2,8			4,4			5,56			
	r	0,2	0,4	0,8	0,2	0,4	0,8	0,4	0,8	1,2
CHIPBREAKER	GRADE	060202	060204	060208	09T302	09T304	09T308	120404	120408	120412
TUNGSTEN CARBIDE										
AHF	1115		●	●		●	●	●	●	
	5120		❍			❍	❍	❍		
	5220		●	●		●	●	●	●	
EF	2015					❍	❍			
	2115	❍	●		❍	●	●	●	●	
	5020	●	❍		❍	❍		❍	❍	
	5120	❍	●		●	●	●	●	●	
HF	1005	●	●	❍	❍	●	●	●	●	
	1010Z							●		
	1025	●	●	●	●	●	●	❍		
	1025Z	●	●	●	●	●	●	●	❍	
	1035Z		❍			❍	❍			
	2015Z		●			●				
	3010Z					❍	❍			
	3015Z		❍			●				
	5020	❍	●	❍	●	●	●			
EM	2115		●	●		●	●	●	●	
	2020		●	❍		●	●	●	●	❍
	5020		❍	❍		❍	❍	❍		
	5120		●	●		●	●	●	●	
HM	1005		●	●		●	●	●	●	●
	1010Z			●			●		●	
	1115		●	●		●	●	●	●	
	1025		●	●		●	●	●	●	❍
	1025Z		●	●		●	●	●	●	●
	1035Z		❍	❍		●	●	●	●	●
	2015Z		●						●	
	2020		●			●	●			
	2035		●	●		●	●	●	●	
	3010Z		●	●		●	●	●	●	❍
	3015Z		●	●		●	●	●	●	
	5020		●	●		●	●	●	●	
HR	1005		●	●		●	●		●	●
	1010Z		●						●	
	1115						●			
	1025		●	●		●	●		●	●
	1025Z		●	❍		●	●		●	●
	1035Z		❍			❍	●		❍	
	2035						●		●	
	3005						●		❍	
	3010Z						●		●	❍
	3015Z			●			●		●	❍
CM-CERMET	CC510					●	●			
	CC515					●	●			
	CC520					●	●			

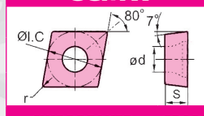
CNE



L	12,7
h	10,0
s	6,35
Ød	4,4
r	0,4

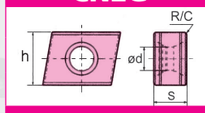
CHIPBREAKER	GRADE	121004
	2020	●

CCMW



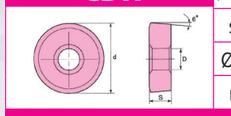
	ØI.C.	6,35	9,52		12,7	
	s	2,38	3,97		4,76	
	Ød	2,8	4,4		5,56	
	r	0,4	0,4	0,8	0,4	0,8
CHIPBREAKER	GRADE	060204	09T304	09T308	120404	120408
WC						
	K07	❍			❍	
	3020Z		●			●

CNEG



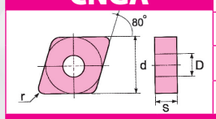
	ØI.C.	12,7		
	s	4,76		
	Ød	5,16		
	r	0,4	0,8	1,2
CHIPBREAKER	GRADE	120404	120408	120412
WC				
NF	K07	❍	❍	❍
	2015	●	●	❍
	6015	❍	❍	❍

CDH



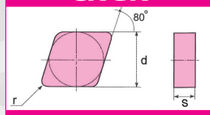
	ØI.C.	12,7	19,05		25,4		31,75	
	s	6,35	9,52	12,7	19,05	9,52	19,05
	Ød	3,18	6,35		6,75	10,00	
	r						
GROUP	GRADE	1206	1909	1912	2512	2519	3209	3219
white ceramic	CC200			●	●	●	●	●
black ceramic	V300	●	●		●		●	●
	V900		●					●
coated ceramic	VZ300	❍	❍		❍		❍	❍
	VZ900		❍					❍

CNGA



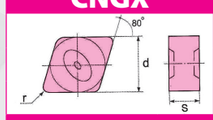
	ØI.C.	12,7							15,87					19,05		
	s	4,76				7,94			6,35			7,94		6,35		
	Ød	5,16							6,35					7,93		
	r	0,4	0,8	1,2	1,6	0,8	1,2	1,6	0,8	1,2	1,6	0,8	1,2	0,8	1,2	1,6
GROUP	GRADE	120404	120408	120412	120416	120708	120712	120716	160608	160612	160616	160708	160712	190608	190612	190616
white ceramic	CC200					●	●	●								
black ceramic	V200	●	●	●	●											
	V300	●	●	●	●	●	●					●	●			●
	V900	●	●	●												
coated ceramic	VZ300	❍	●	●	❍											
	VZ900	❍	●	●												
SiC whisker	WSK1	●	●	●	❍		●			●						
	WSK4	●	●	●	❍		●			●					●	
	WSK8	●	●	●	❍		●			●					●	
silicon nitride	DT400	●	●	●	●					●	●					
	DT500	●	●	●												
	DT850	❍	●	●	●	❍	❍	❍	❍	●	●			❍	●	●
SiAlON	VN70S	●	●	●	●		●	●						●		
	VN80		●	●			❍	❍								
	VN80S		●	●			❍									
	VN90		●	●			❍	❍								
cbn	010 HS	●	●	●	❍											
	020 HS	❍	●	●	❍											
	020 CI	❍	●	●	❍											
	020 SA	❍	●	●	❍											
	100 DE	❍	●	●	❍											
	100 DW	❍	●	●	❍											
pcd	010	❍	❍													
	020	❍	❍													
	030	❍	❍													

CNGN



		ØI.C.	12,7								15,87				19,05				25,4
		s	4,76				7,94				6,35	7,94			6,35		7,94		9,52
		Ød																	
		r	0,4	0,8	1,2	1,6	0,4	0,8	1,2	1,6	1,2	0,8	1,2	1,6	1,2	1,6	1,2	1,6	2,4
GROUP	GRADE		120404	120408	120412	120416	120704	120708	120712	120716	160612	160708	160712	160716	190612	190616	190712	190716	250924
white ceramic	CC200		●	●	●				●	●		●							
black ceramic	V200		●	●	●	●			●	●				●					
	V300		●	●	●	●			●	●			●	●	●	●	●	●	●
	V900			●	●								●	❍					
coated ceramic	VZ300			●	●				❍	❍			❍		❍	❍	❍	❍	❍
	VZ900			❍	❍								❍						
SiC whisker	WSK1			●	●	●			●	●	●								
	WSK4			●	●	●		●	●	●	●								
	WSK8			●	●	●		●	●	●	●								
silicon nitride	DT400			●	●	●			●	●	●		●	●					
	DT500			●	●	●			●	●			●						
	DT850		❍	●	●	●		●	●	●									
SiAlON	VN70S			●	●	●		●	●	●									
	VN80			●	●	❍		❍	❍	❍									
	VN80S			●	●			❍	❍	❍									
	VN90			●	●	❍		❍	❍	❍									
cbn	100 DE		●	●	●	●													
	100 DW		●	●	●	●													
	100 CB		●	●	●	❍													

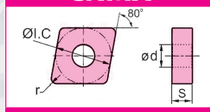
CNGX



		ØI.C.	12,7							15,87
		s	4,76			7,94				
		Ød								
		r	0,8	1,2	1,6	0,8	1,2	1,6	1,2	1,6
GROUP	GRADE		120408	120412	120416	120708	120712	120716	160712	160716
black ceramic	V300					●	●	●		
coated ceramic	VZ300					❍	❍	❍		
silicon nitride	DT400			●	●		●	●	●	●
	DT500						●	●	●	●
SiAlON	VN70S						●	●		
	VN80						❍	❍		
	VN90						❍	❍		
cbn	100 DE		❍	❍	❍					
	100 DW		❍	❍	❍					
	100 CB		❍	❍	❍					

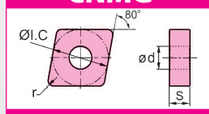
● normal production ❍ on request

CNMA



		ØI.C.	12,7				15,87					19,05	
		s	4,76				6,35						
		Ød	5,16				6,35					7,94	
		r	0,4	0,8	1,2	1,6	0,8	1,2	1,6	2,0	3,0	1,2	1,6
CHIPBREAKER	GRADE		120404	120408	120412	120416	160608	160612	160616	160620	160630	190612	190616
TUNGSTEN CARB.	3005		●	●	●	●		❍				●	❍
	3010Z		●	●	●	●	●	●	●			●	●
	3015Z		❍	●	●	●	●	●	●	❍	❍	●	●
	3020Z												●

CNMG

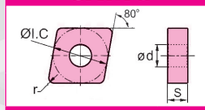


		ØI.C.	9,52		12,7				15,87			19,05			25,4
		s	3,18		4,76				6,35						9,52
		Ød	3,81		5,16				6,35			7,94			9,12
		r	0,4	0,8	0,4	0,8	1,2	1,6	0,8	1,2	1,6	0,8	1,2	1,6	2,4	2,4
CHIPBREAKER	GRADE		090304	090308	120404	120408	120412	120416	160608	160612	160616	190608	190612	190616	190624	250924
TUNGSTEN CARBIDE	ADF	1005			●	●	❍									
		1115			●	●	❍									
	DF	1005	●	●	●	●	●									
		1010Z	❍	❍	❍	❍	❍									
		1025	❍	❍	●	●	●									
		1025Z	●	●	●	●	●									
		2015Z			❍	❍										
		3020Z			❍	❍										
	EF	1025			❍	❍										
		2015Z			❍	❍										
		2115	❍	❍	●	●										
		2035			●	❍	❍									
		5020	●	●	●	●	❍									
		5120	❍	❍	❍	●	❍									
		6015			❍	●										
	WG	1005			●	●	●		❍	❍						
		1010Z			●	●	●									
		1025				❍	❍									
		1025Z				●										
		2015Z				❍										
		2020				●										
		3010Z				●										
	DM	1005	●	●	●	●	●	●	●	●	●	●	●	●		
		1010Z	❍		❍	●	●		❍	❍	❍					
		1115														
		1025	●	●	●	●	●	❍	❍	●	●	●	●	●		
		1025Z	●	●	●	●	●	●	●	●	●	●	●	●		

● normal production ❍ on request

TUNGSTEN CARBIDE

CNMG

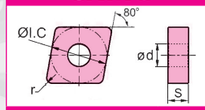


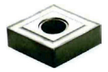
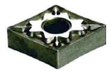
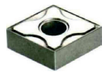
	ØI.C.	9,52		12,7				15,87			19,05				25,4
	s	3,18		4,76				6,35							9,52
	Ød	3,81		5,16				6,35			7,94				9,12
	r	0,4	0,8	0,4	0,8	1,2	1,6	0,8	1,2	1,6	0,8	1,2	1,6	2,4	2,4
CHIPBREAKER	GRADE	090304	090308	120404	120408	120412	120416	160608	160612	160616	190608	190612	190616	190624	250924
DM	1035Z			●	●	●		●	❍	●		●	●		
	2015Z			❍	●	❍									
	2115				●	❍									
	2020				●	❍									
	2035				❍	●									
	5020				❍	❍									
EG	2115			❍	●	❍									
	2020			❍	●	●									
	5120			❍	●	●									
EM	2020			●	●	●		●	●						
	2015Z				❍	❍									
	2115			●	●	●		●	●						
	2035			❍	❍	❍			❍						
	2040					❍	❍								
	5020			●	●	❍			❍						
	5120			●	●	●		●	●	❍					
	5040					❍	❍								
NM	K07				●										
	2015			●	●	●									
	5120			❍	●	❍									
	6015			❍	❍	❍									
PM	1005			●	●	●	●	❍	❍						
	1010Z			❍	❍	❍									
	1115			●	●	●		❍	❍						
	1025		●	●	●	●	❍	●	●	●	●	●	●		
	1025Z		●	●	●	●	●	●	●	❍	❍	❍	❍		
	1035Z			●	●	❍		❍	●		●	●	●		
	1135				❍	❍									
	3005			❍	●	●	●	❍	❍						
	3010Z			●	●	●	●	❍	●	●		❍	❍		
	3015Z			●	●	●	●	❍	●	●		●	●		
	3020			❍	❍	❍									
	3020Z			❍	❍	❍									
DR	1005				●	●	●	●	●	●	●	●	●	●	
	1010Z				❍	❍	❍		❍			❍	❍	❍	
	1115				●	●		❍	❍						
	1025				●	●	●	●	●	●	●	●	●	●	
	1025Z				●	●	●	●	●	●	●	●	●	●	●
	1035Z				●	❍	●	❍	❍	●	❍	●	●	●	❍
	1135				❍	❍			❍	❍					
	2035				❍	❍									
	3005				●	●									
	3010Z				●	●	●	●	●	❍	❍	❍	❍		
	3015Z				●	●	●	●	●	●	●	●	❍		

● normal production ❍ on request

TUNGSTEN C.

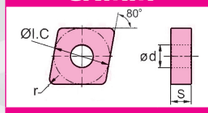
CNMG



	ØI.C.	9,52		12,7				15,87			19,05				25,4
	s	3,18		4,76				6,35							9,52
	Ød	3,81		5,16				6,35			7,94				9,12
	r	0,4	0,8	0,4	0,8	1,2	1,6	0,8	1,2	1,6	0,8	1,2	1,6	2,4	2,4
CHIPBREAKER	GRADE	090304	090308	120404	120408	120412	120416	160608	160612	160616	190608	190612	190616	190624	250924
ER	1025Z				●										
	2015Z				●	●			●						
	2020				●	●			●			❍	❍		
	5120				●	●			❍			❍	❍		
CR - cermet 	CC510			●	●	●									
	CC515			●	●	●									
	CC520			●	●	●									
CM - cermet 	CC510			●											
	CC515			●	●	●									
	CC520			●	●	●									
	CC530			●	●										
CF - cermet 	CC510			●	●										
	CC515			●	●										
	CC520			●	●										

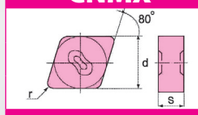
● normal production ❍ on request

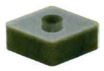
CNMM



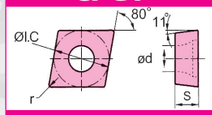
	ØI.C.	12,7			15,87				19,05				25,4				
	s	4,76			6,35								7,94		9,52		
	Ød	5,16			6,35				7,94				9,12				
	r	0,8	1,2	1,6		1,2	1,6	2,4	0,8	1,2	1,6	2,4	2,4	3,2	2,4	3,2	
CHIPBREAKER	GRADE		120408	120412	120416	160608	160612	160616	160624	190608	190612	190616	190624	250724	250732	250924	250932
TUNGSTEN CARBIDE																	
DR	1005			●			●	●		●	●	●	●			●	
	1010Z							●			❍	❍	❍			❍	
	1115			●				●			●		●				
	1025			❍			●				●	●	●			●	
	1025Z			●			●	●			●	●	❍			❍	
	1035Z							●			●	●	●			●	
	1135			●				●			●	●				●	
	2020			●							●						
	2115			●													
ER	1025Z													●	●	●	●
	2015Z													❍	❍	❍	❍
	2020													❍	❍	●	❍
	2040															●	
HDR	1005		●	●	❍		●	❍	❍	●	●	●	●			●	
	1010Z		❍	❍			❍	❍				❍	❍				
	1115		●									●					
	1025		●				●	●		❍	❍	●	●				
	1025Z		●	●	●		●	●	●		●	●	●			●	
	1035Z			●	❍		❍	❍			❍						
	1135											●					
	2035		❍	❍													
HPR	1005												❍				
	1025Z												●			●	
	1135															●	
LR	1005		●	●		●	●	●	❍		●	●	●			❍	
	1115		●	●	●		●						●				
	1025Z		●	●	●	●	●	●	❍		●	●	●			●	
	1135																
	2020		●	●	❍	●	●				●	❍					

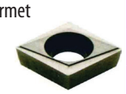
CNMX



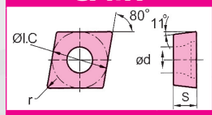
	ØI.C.	12,7		12,7		
	s	4,76		7,94		
	Ød					
	r	1,2	1,6	1,2	1,6	
GROUP	GRADE		120412	120416	120712	120716
silicon nitride 	DT850		●	●	●	●

CPGT



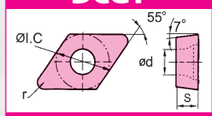
	ØI.C.	9,52		
	s	3,18		
	Ød	4,5		
	r	0,4	0,8	
CHIPBREAKER	GRADE		090304	090308
cermet 	CC510		●	●
	CC515		●	●
	CC520		●	●

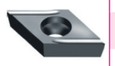
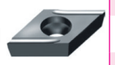
CPMT



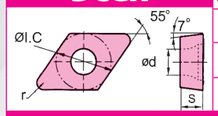
	ØI.C.	6,35		9,52		
	s	2,38		3,97		
	Ød	2,8		4,4		
	r	0,4	0,8	0,4	0,8	
CHIPBREAKER	GRADE		060204	060208	09T304	09T308
TUNGSTEN CARBIDE						
HF	1005		●			
	3015Z		❍	❍		
	5120		●	●		
HM	1025					●
	1025Z				❍	❍
	5120				●	●

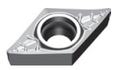
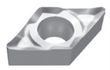
DCGT



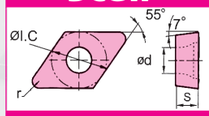
	ØI.C.	6,35			9,525	
	s	2,38			3,97	
	Ød	2,8			4,4	
	r	0,0	0,1	0,2	0,2	
CHIPBREAKER	GRADE		070200	070201	070202	11T302
TUNGSTEN C.						
EL SI 	5020			●	●	●
	6015					❍
ER SI 	5020		●	●	●	●

DCGX



	ØI.C.	6,35				9,52			
	s	2,38				3,97			
	Ød	2,8				4,4			
	r	0,1	0,2	0,4	0,8	0,2	0,4	0,8	
CHIPBREAKER	GRADE		070201	070202	070204	070208	11T302	11T304	11T308
TUNGSTEN CARBIDE									
LC 	K07		●	●	●	●	●	●	●
	6110		●		●		●	●	●
LH 	K07			●	●	●	●	●	●
	5020			❍	❍		●	●	❍
	6015			●	●	❍	●	●	●

DCGW



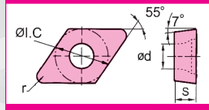
	ØI.C.	7,94	9,52	
	s	3,18	3,97	
	Ød	3,6	4,4	
	r	0,4	0,4	
CHIPBREAKER	GRADE		90304	11T304
cermet	CC520		●	●
cbn	010 HS		●	●
	020 HS		●	●
	020 CI		●	●
	020 SA		●	●
pcd	010		●	●
	020		●	●
	030		●	●

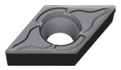
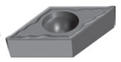
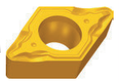
● normal production ❍ on request

● normal production ❍ on request

TUNGSTEN CARBIDE

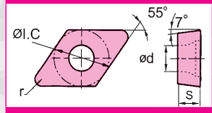
DCMT



	ØI.C.	6,35			9,52				
	s	2,38			3,97				
	Ød	2,8			4,4				
	r	0,2	0,4	0,8	0,2	0,4	0,8	1,2	
CHIPBREAKER	GRADE	070202	070204	070208	11T302	11T304	11T308	11T312	
AHF	1115		●		●	●	●		
	5120		❍		❍	❍			
	5220		●		●	●	●		
EF 	2115	❍	●		❍	●	●		
	5020	●	❍		❍		❍		
	5120	❍	●		●	●	●		
HF	1005	❍	●	●	❍	●	●		
	1010Z					●	●		
	1025	●	●	●	●	●	●		
	1025Z	●	●	❍	●	●	●		
	2015Z		●				●		
	2035					●			
	3010Z					●	●		
	3015Z					●			
	5020	●	●		●	●	●		
	5120				❍				
EM 	2020		●	●		●	●		
	2115		●	●		●	●		
	5020		❍			❍	❍		
	5120		●	●		●	●		
HM 	1005		●	●		●	●	❍	
	1010Z					●	●		
	1115		●			●	●		
	1025		●	●		●	●	●	
	1025Z		●	●		●	●	❍	
	1035Z		●	●		●	●		
	2015Z					●	●		
	2035		●	●		●	●		
	2040		●						
	3010Z		●	●		●	●		
	3015Z		●	●		●	●	❍	
	5020		●	●		●	●		
	5120		●			●	●		
HR	1005					❍	●	❍	
	1115							●	
	1025					❍	●	❍	
	1025Z					●	●	●	
	1035Z					❍	❍		
	2035					●	●		
	3010Z					●	●	❍	
	3015Z						●		

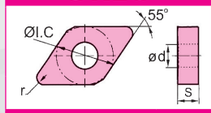
● normal production ❍ on request

DCMW



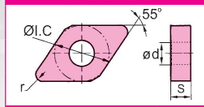
	ØI.C.	6,35	9,52		
	s	2,38	3,97		
	Ød	2,8	4,4		
	r	0,4	0,4	0,8	
CHIPBREAKER	GRADE	070204	11T304	11T308	
WC	3010Z	❍	❍	❍	
	3020Z	●	●		

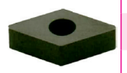
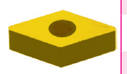
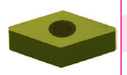
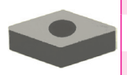
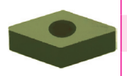
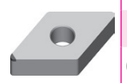
DNEG



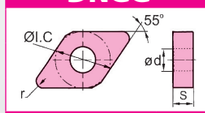
	ØI.C.	12,7			
	s	4,76		6,35	
	Ød	5,16		5,16	
	r	0,4	0,8	0,4	0,8
CHIPBREAKER	GRADE	150404	150408	150604	150608
WC NF	K07			●	
	2015	❍	●	●	●
	6015	❍	❍	❍	●

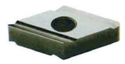
DNGA



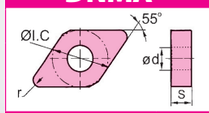
	ØI.C.	12,7											15,87	
	s	4,76				6,35				7,94			6,35	
	Ød	5,16											6,35	
	r	0,4	0,8	1,2	1,6	0,4	0,8	1,2	1,6	0,4	0,8	1,2	0,8	1,2
GROUP	GRADE	150404	150408	150412	150416	150604	150608	150612	150616	150704	150708	150712	190608	190612
black ceramic 	V200					●	●							
	V300	●	●	●		●	●	●	●	●	●	●	●	●
	V900	●	●	●		●	●	●						
coated ceramic 	VZ300	❍	❍	❍		❍	●	●						
	VZ900	❍	❍	❍		❍	●	●						
SiC whisker 	WSK1		❍	❍	❍									
	WSK4		●	●	●									
	WSK8		●	●	●									
silicon nitride 	DT400		●	●			●	●			●	●		
	DT500			●				●				●		
	DT850	❍	●	●	●	❍	❍	❍	❍		❍	❍		
SiAlON 	VN70S			●				●				●		
cbn 	010 HS					❍	●	●	❍					
	020 HS					❍	●	●	❍					
	020 CI					❍	●	●	❍					
	020 SA					❍	●	●	❍					
	100 DE						❍	❍						
	100 DW						❍	❍						

DNGG



	ØI.C.	12,7			
	s	4,76		6,35	
	Ød	5,16			
	r	0,4	0,8	0,4	0,8
CHIPBREAKER	GRADE	150404	150408	150604	150608
cermet 	CC510	❍	●		
	CC515	●	●	●	●
	CC520	●	●	●	●

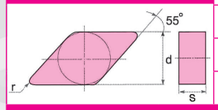
DNMA



	ØI.C.	12,7					
	s	4,76					
	Ød	5,16					
	r	0,4	0,8	0,4	0,8	1,2	1,6
CHIPBREAKER	GRADE	150404	150408	150604	150608	150612	150616
WC	3005			●	●	❍	
	3010Z		❍	●	●	●	❍
	3015Z	❍	❍	❍	●	●	❍

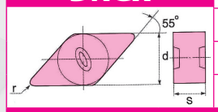
● normal production ❍ on request

DNGN



	ØI.C.	12,7								
	s	4,76			6,35			7,94		
	Ød									
	r	0,8	1,2	1,6	0,8	1,2	1,6	0,8	1,2	1,6
GROUP	GRADE	150408	150412	150416	150608	150612	150616	150708	150712	150716
white ceramic	CC200							●	●	●
black ceramic	V200	●								
	V300				●	●		●	●	●
	V900				●	●		●	●	●
coated ceramic	VZ300					●		❍	❍	
	VZ900					●		❍	❍	
SiC whisker	WSK1	●	●	●						
	WSK4	●	●	●						
	WSK8	●	●	●						
silicon nitride	DT400	●	●		●	●			●	●
	DT500	❍	❍							
	DT850	●	●							
SiAlON	VN70S				●	●		●	●	●
	VN80				●	●				
cbn	100 DE	❍	●	●	❍	❍	●			
	100 DW	❍	●	●	❍	❍	●			
	100 CB	❍	●	●	❍	❍	●			

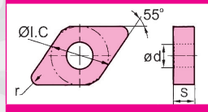
DNGX



	ØI.C.	10,0			12,7			
	s	7,94						
	Ød							
	r	0,8	1,2	1,6	0,4	0,8	1,2	1,6
GROUP	GRADE	120708	120712	120716	150704	150708	150712	150716
white ceramic	CC200	●	●	●			●	
black ceramic	V300	●	●		●	●		
	V900					●		
coated ceramic	VZ300	❍	❍		❍	●		
silicon nitride	DT400	●	●	●			●	●
	DT500		●	●			●	●
	DT850	●	●	●		●	●	●
SiAlON	VN70S		●				●	

● normal production ❍ on request

DNMG

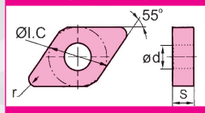


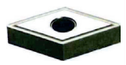
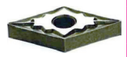
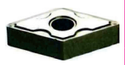
	ØI.C.	9,52			12,7							
	s	4,76							6,35			
	Ød	3,81			5,16							
	r	0,4	0,8	1,2	0,4	0,8	1,2	1,6	0,4	0,8	1,2	1,6
CHIPBREAKER	GRADE	110404	110408	110412	150404	150408	150412	150416	150604	150608	150612	150616
ADF	1115								●	●	●	
	5220								●	●	●	
DF	1005		●	●	●	●	❍	❍	●	●	●	
	1010Z		●							●		
	1025		❍			❍	❍		❍	❍		
	1025Z		●	●	❍	●	❍	❍	●	●	❍	
EF	1025								❍	❍		
	2015Z		●	●						●		
	2115		❍	❍					●	●		
	2035								●			
	5020		❍	❍					❍	❍		
	5120		●	●		●	●		●	●	●	
WG	1005		●	●			●			●	●	
	1010Z									●	●	
	1025			●								
	1025Z			●						●		
	2015Z			●							●	
DM	1005		●	●	●	●	●	❍	●	●	●	●
	1010Z		●				●		●		●	
	1115			●					❍	●	❍	
	1025		●	●		●	❍		●	●	●	●
	1025Z		●	●	●	●	●	●	●	●	●	●
	1035Z			❍						❍	❍	
	2020									●		
	2035		●	●			●		●	●		
EG	2115								●	●	●	
	2020									●	●	
	5120									●	●	
	5220								●	●	●	
EM	2115		●	●		❍	❍		●	●	●	
	2015Z									●		
	2020								●	●	●	
	2035			●								
	5020		●						❍	❍		
	5120		●	●		❍	●		●	●	●	
NM	2015							❍		●	●	
	6015									❍	❍	

TUNGSTEN CARBIDE

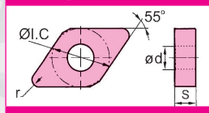
● normal production ❍ on request

DNMG



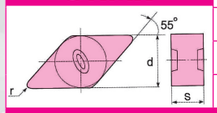
		ØI.C.	9,52			12,7							
		s	4,76							6,35			
		Ød	3,81			5,16							
		r	0,4	0,8	1,2	0,4	0,8	1,2	1,6	0,4	0,8	1,2	1,6
CHIPBREAKER	GRADE		110404	110408	110412	150404	150408	150412	150416	150604	150608	150612	150616
TUNGSTEN CARBIDE													
PM	1005			❍		❍				●	●	●	
	1010Z		●	●						●	●	●	
	1115										●		
	1025		●	●		❍	●	❍		●	●	●	●
	1025Z		●	❍	❍		●	●	❍	●	●	●	●
	1035Z										❍	❍	
	1135										●		
	2035										●		
	3005						❍			●	●	❍	❍
	3010Z		❍	●	●		●	❍		●	●	●	
	3015Z						●	❍		❍	●	●	
DR	1005										●		●
	1115											●	❍
	1025										●	●	
	1025Z										●	●	
	1035Z										❍	❍	❍
	3010Z										●	●	●
	3015Z										●	●	●
ER	2015Z										●		
	2020										●	●	
CR - cermet 	CC515					●	●	●		●	●	●	
	CC520					●	●	●		●	●		
CM - cermet 	CC515					●	●	●		●	●	●	
	CC520					●	●	●		●	●	●	
CF - cermet 	CC510					❍	●						
	CC515					●	●	●		●	●	●	
	CC520					●	●	●		●	●		

DNMM



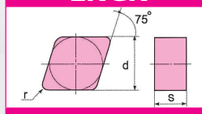
		ØI.C.	12,7		
		s	6,35		
		Ød	5,16		
		r	0,8	1,2	1,6
CHIPBREAKER	GRADE		150608	150612	150616
TUNGSTEN CARBIDE					
DR	1005		●	●	●
	1025		❍	❍	❍
	1025Z		●	●	●
	1135			●	
ER	2015Z		❍	❍	
	2115		●		
HDR	1005		●	❍	●
	1025		❍	❍	❍
	1025Z		●		
	1035Z		❍	❍	❍
LR	1005		●	●	●
	1025Z		●	●	●
	2020		●	●	●

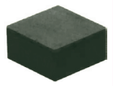
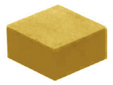
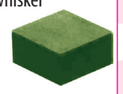
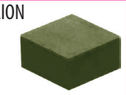
DNMX



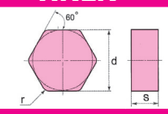
		ØI.C.	10,0			12,7		
		s	7,94					
		Ød						
		r	0,8	1,2	1,6	0,8	1,2	1,6
GROUP	GRADE		120708	120712	120716	150708	150712	150716
silicon nitride	DT850		●	●	●	●	●	●

ENGN



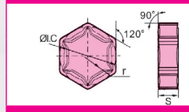
		ØI.C.	12,70					
		s	4,76		7,94			
		Ød						
		r	0,8	1,2	0,4	0,8	1,2	1,6
GROUP	GRADE		130408	130412	130704	130708	130712	130716
white ceramic	CC200					●		
black ceramic 	V200							●
	V300		●	●	●	●	●	●
	V900					●	●	
coated ceramic 	VZ300		❍	❍	❍	❍	❍	❍
	VZ900					❍	❍	
SiC whisker 	WSK4						●	
	WSK8						●	
silicon nitride	DT400		●	●		●	●	●
SiAlON 	VN70S						●	

HNEN



		ØI.C.	16,20	
		s	5,56	
		Ød		
		r	2,0	3,0
GROUP	GRADE		090520	090530
silicon nitride	DT400		●	●
	DT850		●	●
cbn	100 DE		●	●
	100 DW		●	●

HNEX

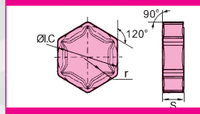


		ØI.C.	15,87
		s	5,56
		Ød	
		r	1,2
CHIPBREAKER	GRADE		090512
WC			
DR	3015Z		●
	3020		●

● normal production ❍ on request

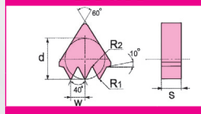
● normal production ❍ on request

HNGX



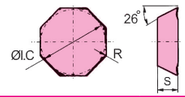
ØI.C.	15,87			
s	5,56			
Ød				
r	1,6	2,0	3,0	
CHIPBREAKER	GRADE		090520	090530
WC — HDR	3015Z			●
MR	3015Z	●	●	

INGN



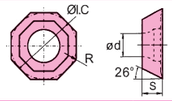
ØI.C.	9,52	12,7		
s	4,76			
Ød				
r	according profiles			
GROUP	GRADE		160435	220435
white ceramic	CC200		●	●
cermet	CC520		●	

OFKR



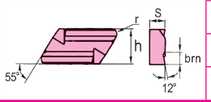
ØI.C.	17,94			
s	4,76			
Ød				
r	0,8			
CHIPBREAKER	GRADE		0704	0704W
TUNGSTEN CARBIDE — DF	5020		●	
DM	2035		●	
	2040		●	
	3020		●	●
	4025		●	●
	4040		●	
	5020		●	
	5120			●
	5040		●	

OFKT



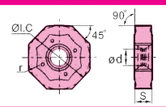
ØI.C.	12,7		
s	3,97		
Ød	4,4		
r	0,5		
CHIPBREAKER	GRADE		05T3
TUNGSTEN CARBIDE — DF	5020		●
	6015		●
DM	2035		●
	3015Z		●
	5020		●
	5040		●
	6015		●
LH	K07		●

KNUX



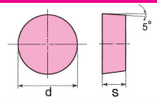
h	9,52								
s	4,76								
Ød									
r	0,5	0,5	1,0	1,0	0,5	0,5	1,0	1,0	
CHIPBREAKER	GRADE	160405L11	160405L12	160410L11	160410L12	160405R11	160405R12	160410R11	160410R12
TUNGSTEN CARBIDE	1005				❍				❍
	1010Z	●	●	●		●	●	●	
	1025	●	●	●	●	●	●	●	●
	1025Z	●				●		●	
	1035Z	❍				❍			
	2035	●	●	●		●	●	●	●
	2040					●			

ONHG



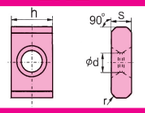
ØI.C.	15,87		
s	4,76		
Ød	4,4		
r	0,8		
CHIPBREAKER	GRADE		060408
TUNGSTEN CARBIDE — PF	2020		●
	4120		●
	5020		●
PM	2020		●
	2040		●
	3015Z		●
	4120		●
	5120		●

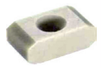
RBGN



ØI.C.	6,35		9,52		12,70	
s	3,18	4,76	4,76		7,94	
Ød						
r						
GROUP	GRADE	060300	060400	090400	120400	1207000
black ceramic	V300	●	●		●	●
coated ceramic	VZ300				❍	❍
silicon nitride	DT400				●	●
SiAlON	VN70S					●
cbn	100 DE		❍	❍	❍	
	100 DW		❍	❍	❍	
	100 CB		❍	❍	❍	

LNE

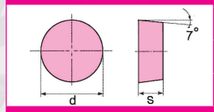


h	9,52						
s	4,76						
Ød	4,4						4,2
r	0,4	0,8	1,2		1,6		45 Fase
CHIPBREAKER	GRADE	040904	040908	040912	32.534		32.302
TUNGSTEN C.	2035						●
	2040				●		
	3020				●		●
	3015Z				●		
silicon nitride 	DT400	●	●	●			

● normal production ❍ on request

● normal production ❍ on request

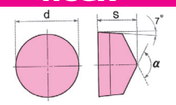
RCGN



ØI.C.	6,35		7,94	9,52	12,70	15,87	19,05	25,40	
s	4,76			7,94		10,00		12,70	
Ød									
r									

GROUP	GRADE	060400	060600	060700	070400	090700	120700	151000	191000	251200
white ceramic	CC200			●			●	●	●	●
black ceramic	V300	●	●	●	●	●	●	●	●	●
coated ceramic	VZ300	❍	❍	❍	❍	●	●	❍	❍	❍
SiAlON	VN70S	●	●	●		●	●	●	●	●
	VN90					●	●			
cbn	100 DE	❍		❍						
	100 DW	❍		❍						
	100 CB	❍		❍		●				

RCGX

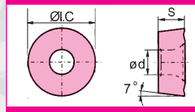


ØI.C.	6,35		9,52	12,70	15,87	19,05	25,40	
s	4,76	6,35	7,94		10,00		12,00	
Ød								
α	120°						140°	

GROUP	GRADE	060400	060600	060700	090700	120700	151000	191000	251200
white ceramic	CC200				●	●			
black ceramic	V300	●	●	●	●	●	●	●	●
	V900		●	●	●	●	●	●	●
coated ceramic	VZ300	❍	❍	●	●	●	❍	❍	●
	VZ900		❍	❍	●	●	❍	❍	❍
SiC whisker	WSK4	●			●	●			
	WSK8	●			●	●			
silicon nitride	DT500		❍	❍	●	●	❍		
SiAlON	VN70S	●	●	●	●	●	●	●	●
	VN80				●	●			
	VN90				●	●	●		
cbn	100 DE			❍	❍	❍			
	100 DW			❍	❍	❍			
	100 CB			●	●	●			

● normal production ❍ on request

RCKT

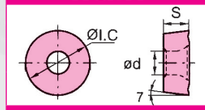


ØI.C.	10,0	12,0	16,0	20,0	
s	3,97	4,76	6,35		
Ød	4,4		5,56	6,55	
r					

TUNGSTEN CARBIDE

CHIPBREAKER	GRADE	10T3	1204	1606	2006
MO-DM	2035		●	●	●
	2040		●		
	3015Z		●		
	4025	●	●	●	●
	4040	●	●	●	●
	5020	●	●		
	5040	●	●	●	
MO-NM	2020		●		
	5220		●	●	
MO-DR	2035		●		
	2040		●	●	●
	3020			●	●
	4120			●	●
	4025		●	●	●
	4040		●	●	●
	5020		●	●	●
	5120		●		
	5220			●	
	5040				●
MO-ER	2020		●	●	●

RCMT

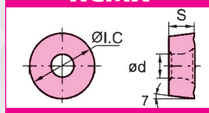


ØI.C.	8,0	10,0	12,0	16,0	20,0	25,0
s	3,18	3,97	4,76	6,35		7,94
Ød	3,36	3,6	4,4	5,5	6,5	7,7
r						

TUNGSTEN CARBIDE

CHIPBREAKER	GRADE	0803	10T3	1204	1606	2006	2507
MO	1005			●	●	●	❍
	1010Z				●	●	
	1025		●	●	●	●	●
	1025Z	●	❍	●	●	●	●
	1035Z				❍		
	2020				❍		
	2035			●			
	3005				❍		
	3010Z	●	●	●	●		
	3015Z			●			
	5020		●	●			

RCMX

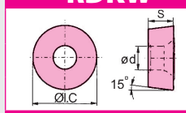


ØI.C.	8,0	10,0	12,0	16,0	20,0	25,0	32,0
s	3,18		4,76	6,35		7,94	9,52
Ød	3,36	3,6	4,4	5,5	6,5	7,2	9,5
r							

TUNGSTEN CARBIDE

CHIPBREAKER	GRADE	0803	1003	1204	1606	2006	2507	3209
MO	K07					❍		
	1005			❍	❍	●	❍	❍
	1010Z				●	●		
	1025	●	●	●	●	●	❍	●
	1025Z	●	❍		●	●	●	❍
	1035Z		❍	❍	❍	❍	❍	❍
	2020				❍			
	3015Z					●		
	3020Z				●			

RDKW



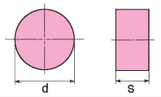
ØI.C.	7,0	8,0	10,0		12,0		16,0	20,0
s	2,38	3,18		3,97		4,76	5,56	6,35
Ød	2,7	3,4	3,9	4,4	3,9	4,4	5,2	5,5	6,5
r								

TUNGSTEN CARBIDE

CHIPBREAKER	GRADE	0702	0803	1003	10T3	12T3	1204	1604	1605	2006
MO	2015			●		●				
	2020			●		●		●		
	2035			●		●	●			
	2040	●	●	●	●	●	●	●	●	●
	3020							●		❍
	4120				●		●	●		
	4025				❍			●		●
	5020	●	●	●	●	●	●	●	●	
	5120			●		❍	●	●		●
	5220			●		●	●	●		
	5040						●	●	●	
	6015	●		●	●	●	●	●		

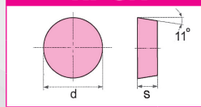
● normal production ❍ on request

RNGN



	ØI.C.	6,35		9,52		12,70			15,87	19,05		25,40		
	s	3,18	4,76	3,18	4,76	3,18	4,76	6,35	7,94	6,35	7,94			9,52
	Ød													
	r													
GROUP	GRADE	060300	060400	090300	090400	120300	120400	120600	120700	150700	190600	190700	250700	250900
white ceramic	CC200						●		●			●	●	
black ceramic	V200				●		●							
	V300	●			●		●		●		●	●		
	V900								●				●	
coated ceramic	VZ300								●					
SiC whisker	WSK4				●		●		●			●		
	WSK8				●		●		●			●		
silicon nitride	DT400						●		●					
	DT500						●							
	DT850						●							
SiAlON	VN70S				●	●	●		●		●	●		
cbn	100 DE		●	●	●	●		●		❍				
	100 DW		●	●	●	●		●		❍				
	100 CB		❍	❍	●	●		❍		❍				

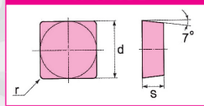
RPGN



	ØI.C.	9,52		12,70			15,87	19,05
	s	3,18	4,76	3,18	4,76	7,94		
	Ød							
	r							
GROUP	GRADE	090300	090400	120300	120400	120700	150700	190700
black ceramic	V300	●	●		●	●		●
coated ceramic	VZ300	❍	❍		❍	●		❍
SiC whisker	WSK4				●			
	WSK8				●			
silicon nitride	DT400				●			
SiAlON	VN70S	●			●	●		
cbn	100 CB		❍	❍	❍	❍		

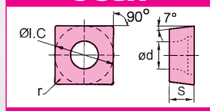
● normal production ❍ on request

SCGN



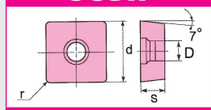
	ØI.C.	9,52	12,70			
	s	4,76				
	Ød					
	r	1,2	0,4	0,8	1,2	1,6
GROUP	GRADE	090412	120404	120408	120412	120416
black ceramic	V300		●	●		●
	V900		❍	❍		
coated ceramic	VZ300		❍	❍		❍
	VZ900		❍	❍		
silicon nitride	DT400	●			●	
SiAlON	VN70S	●		●	●	
cbn	020 CI	●				
	100 DE	●	❍	❍		
	100 DW	●	❍	❍		

SCGX



	ØI.C.	9,52			12,7	
	s	3,97			4,76	
	Ød	4,4			5,56	
	r	0,2	0,4	0,8	0,4	0,8
CHIPBREAKER	GRADE	09T302	09T304	09T308	120404	120408
TUNGSTEN C. LC	K07		●	●		●
	6110					●
LH	K07	●	●	●	❍	●
	6015	❍	❍			❍

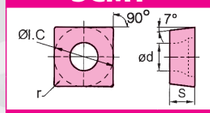
SCGW



	ØI.C.	9,52		12,70
	s	3,97		4,76
	Ød	4,40		5,50
	r	0,4	0,8	0,8
GROUP	GRADE	09T04	09T308	120408
silicon nitride	DT400	●	●	●
cbn	010 HS			❍
	020 HS			❍
	020 CI			❍
	020 SA			❍
pcd	010			●
	020			●
	030			●

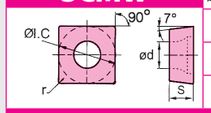
● normal production ❍ on request

SCMT



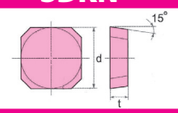
	ØI.C.	9,525				12,7		
	s	3,97				4,76		
	Ød	4,4				5,56		
	r	0,2	0,4	0,8	1,2	0,4	0,8	1,2
CHIPBREAKER	GRADE	09T302	09T304	09T308	09T312	120404	120408	120412
TUNGSTEN CARBIDE								
AHF	1115		●	●				
	5220		●	●				
EF	5020	●						
	5120	❍	●	●				
EM	2115		●	●		❍	●	
	2020			●		❍	●	❍
	5120		●	●		●	●	●
HF	1005			●				
	1010Z		●					
	1025	●	●	❍				
	1025Z		●	●				
	5020		●	●				
HM	1005		●	●		●	❍	
	1010Z		●				●	
	1115			●				
	1025		●	●		●	●	●
	1025Z		●	●		❍	●	●
	1035Z		❍	●			●	
	2035		●	●		●	●	●
	3010Z		●	●			●	
	3015Z		●	●				
	5020			●			❍	
HR	1005			●			●	
	1010Z				●			
	1025		●	●		●	●	●
	1025Z		●	●	●		●	●
	1035Z		●				●	
	3010Z			●			●	
	3015Z		●	●			●	●

SCMW



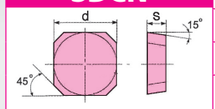
	ØI.C.	6,35	9,52		12,7
	s	2,38	3,97		4,76
	Ød	2,8	4,4		5,56
	r	0,4	0,4	0,8	0,8
CHIPBREAKER	GRADE	060204	09T304	09T308	120408
WC	3020Z	●		●	●

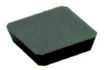
SDKN



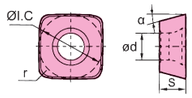
	ØI.C.	12,7	6,35
	s	3,18	4,76
	Ød		
	r	chamfered	chamfered
CHIPBREAKER	GRADE	1203	1504
cermet	CC520	●	●
	CC530	●	●

SDCN



	ØI.C.	12,70				15,87
	s	3,18	4,76			
	Ød					
	r	chamfered			1,2	chamfered
GROUP	GRADE		1203	120408	120412	1504
silicon nitride	DT400		●	●	●	●
cbn 	100 DE		●	●	❍	
	100 DW		●	●	❍	

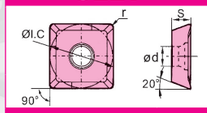
SDMT



	ØI.C.	9,52	12,7	
	s	3,97	4,76	
	Ød	4,0	4,4	
	r	1,2	1,2	
CHIPBREAKER	GRADE	09T312	120412	
TUNGSTEN CARBIDE				
DM	2040	●	●	
	3020	●	●	
	4120	●	●	
	5020	●	●	
	5040	●		
PM	2020	●	●	
	5020	●	●	
	5120	●	●	

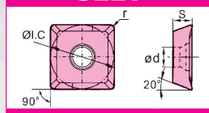
● normal production ❍ on request

SEET



	ØI.C.	9,525	13,308		13,40
	s	4,01	4,04		3,97
	Ød	3,3	4,1		
	r	0,8	0,8		chamfered
CHIPBREAKER	GRADE	09T308	120308		12T3
TUNGSTEN CARBIDE					
DF	2035				●
	2040				●
	4120				●
	4025				●
	5020				●
	5040				❍
EF	5020				●
	5040				●
PER-PF	2040			●	
	4120			●	
	4025			●	
	5020		●	●	
DM	2020				●
	2035				●
	2040				●
	4120				●
	4025				●
	4040				●
	5020				●
	5220				●
	5040				●
EM	2035				●
	2040				●
	5020				●
	5040				●

SEET

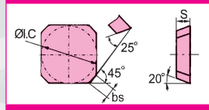


	ØI.C.	9,525	13,308	13,40
	s	4,01	4,04	3,97
	Ød	3,3	4,1	
	r	0,8	0,8	chamfered
CHIPBREAKER	GRADE	09T308	120308	12T3
TUNGSTEN CARBIDE				
PER-PM	3015Z	●	●	
	3020		●	
	4120		●	
	5020	●	●	
	5040		●	
	6015		●	
DR	2040			●
	3020			●
	4025			●
	4040			●
	5020			❍
	5040			❍
PER-PR	2035		●	
	2040		●	
	3015Z	●	●	
	3020		●	
	4120		●	
	5020		●	
	5040	●	●	
LH	6110		●	●
	6015		●	❍
	K07		●	●

● normal production ❍ on request

TUNGSTEN CARBIDE

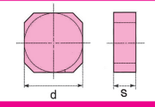
SEKN



ØI.C.	12,7		15,87
s	3,18	4,76	
Ød			
r	chamfered		

CHIPBREAKER	GRADE	1203	1204	1504
	2020	●		
	2035	●		●
	2040	●		●
	4025	❍	❍	❍
	4040		❍	●
	5020	●		
	5220			●

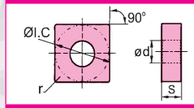
SNCN



ØI.C.	12,70	
s	4,76	
Ød		
r	chamfered	

GROUP	GRADE	1204
silicon nitride	DT400	●
	DT900	●
cbn	020 CI	❍
	100 DE	❍
	100 DW	❍

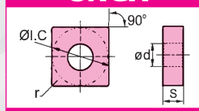
SNGG



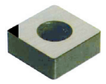
ØI.C.	12,7		
s	4,76		
Ød	5,16		
r	0,4	0,8	

CHIPBREAKER	GRADE	120404	120408
cermet R	CC515	●	●
	CC520	●	●
cermet L	CC515	●	❍
	CC520	❍	❍

SNGA

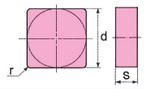


ØI.C.	9,52				12,7						15,87			
s	3,18				4,76				7,94		6,35			
Ød	3,81				5,16						6,35			
r	0,4	0,8	1,2	1,6	0,4	0,8	1,2	1,6	1,2	1,6	0,8	1,2	1,6	

GROUP	GRADE	090304	090308	090312	090416	120404	120408	120412	120416	120712	120716	150608	150612	150616
white ceramic	CC200							●						
black ceramic	V200					●	●	●	●		●			
	V300	●	●	●			●	●				●	●	●
	V900						●	●						
coated ceramic	VZ300					●	●	●						
	VZ900						❍	❍						
SiC whisker	WSK1						●							
	WSK4						●							
	WSK8						●							
silicon nitride	DT400				●			●						
	DT500						●	●						
	DT850						●	●						
SiAlON	VN70S						●	●	●		●			
	VN80						●	●						
	VN90						●	●				❍	❍	
cbn 	010 HS						●	●	●			❍	❍	
	020 HS						●	●	●			❍	❍	
	020 CI						●	●	●			❍	❍	

● normal production ❍ on request

SNGN

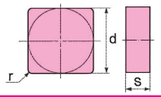


ØI.C.	9,52						12,7									
s	3,18				4,76						7,94					
Ød																
r	0,4	0,8	1,2	0,8	1,2	0,4	0,8	1,2	1,6	2,0	0,4	0,8	1,2	1,6	2,0	

GROUP	GRADE	090304	090308	090312	090408	090412	120404	120408	120412	120416	120420	120704	120708	120712	120716	120720
white ceramic	CC200					●							●	●	●	●
black ceramic	V200		●					●	●	●				●	●	●
	V300	●	●	●				●	●	●		●	●	●	●	●
	V900							●	●				●	●	●	
coated ceramic	VZ300							●	●	●		❍	●	●	❍	
	VZ900							❍	❍				❍	●	❍	
SiC whisker	WSK1							●	●				●	●		
	WSK4							●	●	●			●	●	●	
	WSK8							●	●	●			●	●	●	
silicon nitride	DT400			●		●	●		●	●	●	●	●	●	●	●
	DT500								●	●	●			●	●	
	DT850						●		●	●	●		●	●		
	DT900								●	●	●				●	
SiAlON	VN70S							●	●	●			●	●	●	
	VN80							●	●					●		
	VN90							●	●					●		
cbn	100 DE		❍	❍	●	❍	●		❍	●	●					
	100 DW		❍	❍	●	❍	●		❍	●	●					

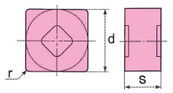
● normal production ❍ on request

SNGN



	ØI.C.	15,87							19,05						25,4			
	s	4,76				7,94			6,35			7,94					9,52	
	Ød																	
	r	0,4	0,8	1,2	1,6	0,8	1,2	1,6	0,8	1,2	1,6	1,2	1,6	2,0	2,0	2,4	2,4	
GROUP	GRADE	150404	150408	150412	150416	150708	150712	150716	190608	190612	190616	190712	190716	190720	250720	250724	250924	
white ceramic	CC200			●			●	●					●	●			●	
black ceramic	V200						●											
	V300	●	●				●						●			●		
	V900												●				●	
coated ceramic	VZ300	❍	❍				❍						❍			●		
	VZ900												❍					
SiC whisker	WSK4										●							
	WSK8										●							
silicon nitride	DT400			●			●	●		●			●				●	
	DT500							●										
	DT850																	
SiAlON	VN70S									●	●		●				●	
cbn	100 DE		●	●	●													
	100 DW		●	●	●													

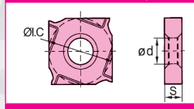
SNGX



	ØI.C.	12,70						15,87		
	s	4,76			7,94					
	Ød									
	r	0,8	1,2	1,6	0,8	1,2	1,6	0,8	1,2	1,6
GROUP	GRADE	120408	120412	120416	120708	120712	120716	150708	150712	150716
black ceramic	V300					●		●	●	
coated ceramic	VZ300					●				
	VZ900					❍			❍	
silicon nitride	DT400	●	●	●			●			
	DT500				●	●	●			
	DT850					●	●			
SiAlON	VN70S					●	●		●	
	VN80					●	●			
	VN90					●				
cbn	100 DE	❍	❍	❍						
	100 DW	❍	❍	❍						

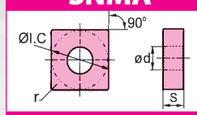
● normal production ❍ on request

SNHQ



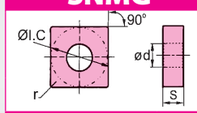
	ØI.C.	12,7					
	s	2,3	3,0	3,5	4,0	4,5	
	Ød	5,0					
	r						
CHIPBREAKER	GRADE	1202	1203	12T3	1204	12T4	
WC	2020		●				
	4120		●				
	4025			●			
	5040	●		●	●	●	

SNMA



	ØI.C.	12,7			15,87		19,05	
	s	4,76			6,35			
	Ød	5,16			6,35		7,94	
	r	0,8	1,2	1,6	0,8	1,2	1,2	1,6
CHIPBREAKER	GRADE	120408	120412	120416	150608	150612	190612	190616
WC	3005	●	●	❍			❍	
	3010Z	●	❍	❍			●	❍
	3015Z	●	●	❍	❍	●	●	

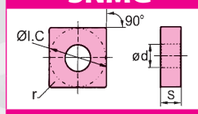
SNMG

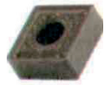
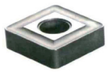
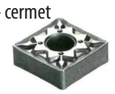


	ØI.C.	9,52			12,7				15,87			19,05			25,4
	s	3,18			4,76				6,35						9,52
	Ød	3,81			5,16				6,35			7,94			9,12
	r	0,4	0,8	1,2	0,4	0,8	1,2	1,6	0,8	1,2	1,6	1,2	1,6	2,4	2,4
CHIPBREAKER	GRADE	090304	090308	090312	120404	120408	120412	120416	150608	150612	150616	190612	190616	190624	250924
TUNGSTEN CARBIDE ADF	1115					●									
	5220					●	●								
DF	1005					●	●								
	1010Z					●	●								
	1115				●										
	1025					❍	❍								
	1025Z					●	●								
	5220				●										
EF	2015Z					●									
	2115	●	●	❍	●	●	❍		●	❍					
	5020	❍			❍	❍	❍		❍						
	5120	●	●		●	●	●								
DM	1005	●	●		●	●	●	❍	●	●		●	●		
	1010Z						●								
	1115					●	●								
	1025		●		●	●	●	❍	●	●		❍	●		
	1025Z	●	●		●	●	●	●	●	●		●	●		
	1035Z		❍			●	❍	❍				❍	●		
	1135					●									
	2035					●	●					●			
	2040						●								

● normal production ❍ on request

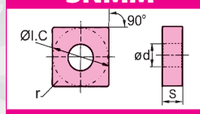
SNMG



		ØI.C.	9,52			12,7				15,87			19,05			25,4
		s	3,18			4,76				6,35						9,52
		Ød	3,81			5,16				6,35			7,94			9,12
		r	0,4	0,8	1,2	0,4	0,8	1,2	1,6	0,8	1,2	1,6	1,2	1,6	2,4	2,4
CHIPBREAKER	GRADE		090304	090308	090312	120404	120408	120412	120416	150608	150612	150616	190612	190616	190624	250924
TUNGSTEN CARBIDE																
EG 	2020						●	●								
	5120						●									
	5220						●	●								
EM	2115					●	●	●			❍					
	2020					❍	●	●	❍		●	●				
	5020						❍	❍								
	5120					●	●	●			●	●				
NM	K07						●									
	2015						●	❍								
	6015						●									
PM	1005						●	●	❍	❍	❍		❍			
	1010Z					●							●			
	1025		●	●		●	●	●	❍		●		●	❍		
	1025Z		❍	❍	❍	❍	●	●	❍	❍	●		●			
	1035Z			●			❍	●			❍		●			
	3005			❍			❍						❍			
	3010Z			●		❍	●	❍	❍		●		●			
	3015Z			●		❍	●	●	❍		●		●			
DR	1005						❍	●	❍		●	●	●	●	❍	
	1010Z						●	●							●	
	1115								●							
	1025						●	●	●		❍	●	●	●	●	
	1025Z						●	●	●		●	●	●	●	●	●
	1035Z						❍	❍			●		●	●	❍	❍
	1135							●					●	●	●	❍
	3010Z						●	●			●	❍		❍		
	3015Z						●	●	●		●	❍	●	●		
ER	2115						❍	❍		❍	❍		❍	❍		
	2015Z										●		●	●		
	2020						❍	●		❍	●		●	●		
CR - cermet 	CC515					●	●	●								
	CC520					●	●	●								
CM - cermet 	CC515					●	●	●								
	CC520					●	●	●								
	CC530						❍	❍								
CF - cermet	CC515					●	●	●								
	CC520					●	●	●								

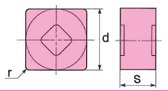
● normal production ❍ on request

SNMM



		ØI.C.	12,7			15,87				19,05				25,4							
		s	4,76			6,35								7,94			9,52				
		Ød	5,16			6,35				7,94				9,12							
		r	0,8	1,2	1,6	0,8	1,2	1,6	2,4	0,8	1,2	1,6	2,4	1,6	2,4	3,2	2,4	3,2			
CHIPBREAKER	GRADE		120408	120412	120416	150608	150612	150616	150624	190608	190612	190616	190624	250716	250724	250732	250924	250932			
TUNGSTEN CARBIDE																					
DR	1005							●	●		●	●	●		❍						
	1115							●			●	●	❍		❍						
	1025							❍			❍	●	●		●						
	1025Z						●	●		❍	●	●	●	●	●		●				
	1035Z										●	●	❍		●		●				
	1135							●			●	●					●				
ER	1005												●								
	1025Z								●						●	●	●	●			
	2015Z														●						
	2115														❍						
	2020														●	❍	●	❍			
	2040																	●			
HDR	1005						●				●	●	●				●				
	1025		●	●				●			●	●			❍						
	1025Z		●	●	❍	●	●	●	❍		●	●	●		●		●				
	1035Z		❍	❍			❍	❍							●						
	1135																●				
	2020											●									
HPR	1005												❍				●				
	1025Z											●	●				●				
	1135																●				
LR	1005		❍	❍	❍		❍	❍			❍	●	❍				●				
	1025Z		●	●	❍		●	●			●	●	●				●				
	1135																●				

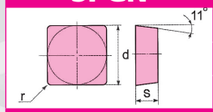
SNMX



	ØI.C.	12,70		
	s	7,94		
	Ød			
	r	1,2	1,6	
GROUP	GRADE		120712	120716
silicon nitride	DT850		●	●

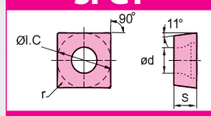
● normal production ❍ on request

SPGN



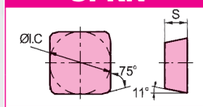
	ØI.C.	9,52			12,70							15,87		19,05		
	s	3,18			3,18			4,76								
	Ød															
	r	0,4	0,8	1,2	0,4	0,8	1,2	0,4	0,8	1,2	1,6	0,8	1,2	1,2	1,6
GROUP	GRADE	090304	090308	090312	120304	120308	120312	120404	120408	120412	120416	150408	150412	190412	190416
black ceramic	V200		●				●			●	●				
	V300	●	●		●	●	●		●	●	●		●		●
coated ceramic	VZ300				❍	❍			❍	❍					
SiC whisker	WSK1		●						●	●	●				
	WSK4		●			●			●	●	●				
	WSK8		●			●			●	●	●				
silicon nitride	DT400		●			●	●		●	●	●				●
	DT500		●							●	●				●
	DT850		●						●	●					
SiAlON	VN70S									●					
	VN80									●					
	VN90									●					
cbn	100 DE		●	●											
	100 DW		●	●											

SPGT



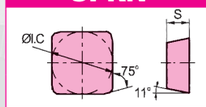
	ØI.C.	9,52		
	s	3,18		
	Ød	3,4		
	r	0,4	0,8	
CHIPBREAKER	GRADE	90304	90308	
cermet	CC510	●	●	
	CC515	●	●	

SPKN



	ØI.C.	12,7		15,87	
	s	3,18	4,76		
	Ød				
	r	chamfered			
CHIPBREAKER	GRADE	1203	1204	1504	
TUNGSTEN CARBIDE	2040	●			
	3020	●	●	●	
	4025	●	●	❍	
	4040	●	●		
	5020	●		●	
	5040	●		●	
	6015	●			
cermet	CC520	●		●	
	CC530	●		●	

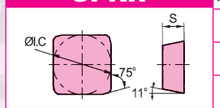
SPKN



	ØI.C.	12,70		15,87
	s	3,18		4,76
	Ød			
	r	chamfered		
GROUP	GRADE	1203		1504
SiC whisker	WSK4	●		●
	WSK8	●		●
silicon nitride	DT400	●		●
cbn	100 DE	❍		❍
	100 DW	❍		❍

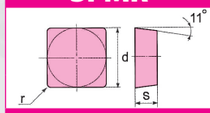
● normal production ❍ on request

SPKR



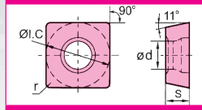
	ØI.C.	12,7		15,87
	s	3,18		4,76
	Ød			
	r			
CHIPBREAKER	GRADE	1203		1504
WC GM	2020			●
	2035		●	
	4025		●	
	5020			●

SPMR



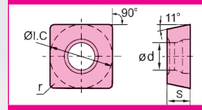
	ØI.C.	9,52			12,7		
	s	3,18		3,97	3,18		
	Ød						
	r	0,4	0,8	0,4	0,4	0,8	1,2
CHIPBREAKER	GRADE	090304	090308	09T304	120304	120308	120312
WC	1025		●	●		●	●	
	2035		●			●	●	
	2040						●	●

SPMT



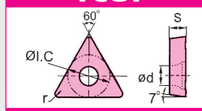
	ØI.C.	6,35	9,52	12,7	
	s	3,18	3,97	4,76	
	Ød	2,8	4,4	5,5	
	r				
CHIPBREAKER	GRADE	060304	09T308	120408	
TUNGSTEN CARBIDE PM	2020			●	
	5040			●	
	2035	●		●	
	2040			●	
	4120			●	
	4025		●	●	
	4040		❍	●	
	5040			●	

SPMW



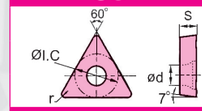
	ØI.C.	9,52	
	s	3,18	
	Ød	3,4	
	r	0,4	0,8
CHIPBREAKER	GRADE	90304	90308
cermet	CC515	●	●
	CC520	●	●

TCGT



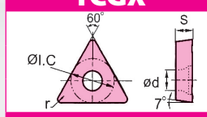
	ØI.C.	6,35		
	s	3,18		
	Ød	2,8		
	r	0,1	0,2	
CHIPBREAKER	GRADE	110301	110302	
WC EL SI	5020	❍	●	
ER SI	5020	●	●	

TCGW



	ØI.C.	6,35		
	s	2,38		
	Ød	2,80		
	r	0,4	0,8	
GROUP	GRADE	110204	110208	
pcd	010	●	●	
	020	●	●	
	030	●	●	

TCGX

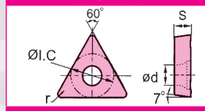


	ØI.C.	5,56		6,35			9,52			
	s	2,38					3,97			
	Ød	2,5		2,8			4,4			
	r	0,2	0,4	0,2	0,4	0,8	0,2	0,4	0,8	
CHIPBREAKER	GRADE	090202	090204	110202	110204	110208	16T302	16T304	16T308	
WC LC	K07	●	●	●	●	●		●	●	
	6110	●	●	●	●	●		●	●	
LH	K07	●	●	●	●	●	●	●	●	
	6015	❍	❍	●	●	❍	❍	❍	❍	

● normal production ❍ on request

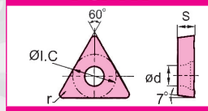
TUNGSTEN CARBIDE

TCMT



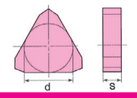
		ØI.C.	5,56			6,35				9,52			12,7
		s	2,38							3,97			4,76
		Ød	2,5			2,8				4,4			5,5
		r	0,2	0,4	0,8	0,2	0,4	0,8	1,2	0,4	0,8	1,2	0,8
CHIPBREAKER	GRADE		090202	090204	090208	110202	110204	110208	110212	16T304	16T308	16T312	220408
AHF	1115						❍	❍		●	●		
	5220						●	●		●	●		
EF	2115										●		
	5020		●	❍		❍	❍	❍		❍			
	5120			●		❍	●			●	●		
EM	2115			●	●		❍	●		●	●		
	2020										●		
	5020			❍			❍	❍	❍			❍	
	5120			❍			●	❍		●	●		
HF	1005		❍	❍	❍		●	●		●	●		
	1010Z		●	●									
	1025		●		●	●	●	❍		●	●		
	1025Z		●	●	❍	❍	●	●		●			
	2015Z			●									
	2035							●					
	3010Z							●					
	3015Z						●						
	5020					●				❍			
HM	1005			●	❍		●	●		●	●	❍	
	1010Z						●			●			
	1025			●	●		●	●		●	●	●	
	1025Z			●	❍		●	❍		●	●	●	
	1035Z						●	❍		●	●	❍	
	2035						●			●	●		
	3010Z			●			●			●	●		
	3015Z			●	❍		●	●		●	●		
	5020						●			●	●		
HR	1005									❍		❍	●
	1025			●	❍	●	●			●	●	●	●
	1025Z			❍	❍		❍	❍		●	●		●
	1035Z										●		●
	1135										●		
	3005											❍	
	3010Z									●	●	❍	
	3015Z			●							●	●	●

TCMW



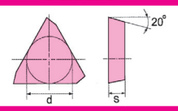
		ØI.C.	6,35	9,52			12,7
		s	2,38	3,97			4,76
		Ød	2,8	4,4			5,5
		r	0,4	0,4	0,8	1,2	0,8
CHIPBREAKER	GRADE		110204	16T304	16T308	16T312	220408
WC	1010Z		●				
	3015Z				❍		❍
	3020Z		●				

TNCN



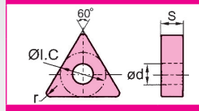
		ØI.C.	12,70
		s	4,76
		Ød	
		r	
GROUP	GRADE		2204
silicon nitride	DT400		●
	DT850		●
	DT900		●
cbn	100 DE		●
	100 DW		●

TEKN



		ØI.C.	9,52	12,70
		s	3,18	4,76
		Ød		
		r	chamfered	
GROUP	GRADE		1603	2204
silicon nitride	DT400		●	●

TNGA

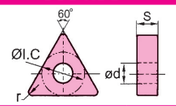


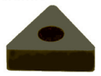
		ØI.C.	6,35		9,52							12,70			
		s	3,18					4,76							
		Ød	2,26		3,81							5,16			
		r	0,4	0,8	0,4	0,8	1,2	0,4	0,8	1,2	1,6	0,4	0,8	1,2	1,6
GROUP	GRADE		110304	110308	160304	160308	160312	160404	160408	160412	160416	220404	220408	220412	220416
white ceramic	CC200					●					●				●
black ceramic	V200							●	●	●					
	V300		●	●	●	●	●	●	●	●	●	●	●	●	●
	V900							●	●	●					
coated ceramic	VZ300					❍	❍	❍	●	●		❍	●	●	❍
	VZ900							❍	❍	❍					
SiC whisker	WSK1								●						
	WSK4								●						
	WSK8								●						
silicon nitride	DT400							●	●	●	●		●	●	●
	DT500							●	●	●	●				
	DT850								❍	❍					
SiAlON	VN70S							●	●	●	●		●	●	
	VN80								●	●					
	VN90								●	●					
cbn	010 HS							●	●	●	❍				
	020 HS							●	●	●	❍				
	020 CI							●	●	●	❍				
	020 SA							●	●	●	❍				

● normal production ❍ on request

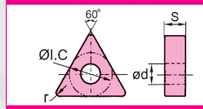
● normal production ❍ on request

TNGA



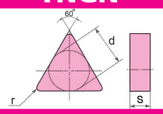
	ØI.C.	12,70		15,87		19,05	
	s	7,94		6,35		9,52	
	Ød	5,16		6,35		7,94	
	r	0,8	1,2	0,8	1,2	2,4	
GROUP	GRADE	220708	220712	270608	270612	330924	
black ceramic 	V300	●	❍	●	●	●	

TNGG



	ØI.C.	9,52			12,7	
	s	4,76				
	Ød	3,81			5,16	
	r	0,2	0,4	0,8	0,4	0,8
CHIPBREAKER	GRADE	160402	160404	160408	220404	220408
cermet R	CC510		●	●		
	CC515	●	●	●	●	●
	CC520	●	●	●	●	●
	CC530		●			
cermet L	CC510		❍	❍	❍	●
	CC515		●	●	●	●
	CC520		❍	❍	❍	❍
	CC530		●			

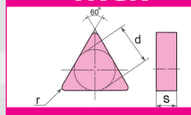
TNGN

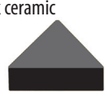


	ØI.C.	6,35		9,52							
	s	3,18		4,76				7,94			
	Ød										
	r	0,4	0,8	0,4	0,8	1,2	1,6	0,4	0,8	1,2	1,6
GROUP	GRADE	110304	110308	160404	160408	160412	1604116	160704	160708	160712	160716
white ceramic	CC200		●	●	●					●	
black ceramic	V200			●	●		●		●		
	V300	●	●	●	●	●	●		●	●	●
	V900				●	●	●				
coated ceramic	VZ300				●	●	●				
	VZ900				❍	❍	❍				
SiC whisker	WSK4					●					
	WSK8					●					
silicon nitride	DT400				●	●	●				
	DT500				●	●					
cbn	100 DE		❍	❍	●	●	●				
	100 DW		❍	❍	●	●	●				

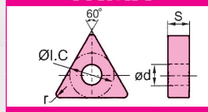
● normal production ❍ on request

TNGN



	ØI.C.	12,70							15,87			19,05	25,40
	s	4,76				7,94			6,35			9,52	
	Ød												
	r	0,4	0,8	1,2	1,6	0,8	1,2	1,6	0,8	1,2	1,6	2,4	3,2
GROUP	GRADE	220404	220408	220412	220416	220708	220712	220716	270608	270612	270616	330924	440932
black ceramic 	V300		●	●	●		●	●	●	●	●	●	●
SiC whisker	WSK4		●	●	●								
	WSK8		●	●	●								
silicon nitride	DT400		●	●	●								
SiAlON	VN70S		●	●							●		

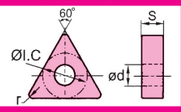
TNMA



	ØI.C.	9,52				12,7				15,87
	s	4,76								6,35
	Ød	3,81				5,16				6,35
	r	0,4	0,8	1,2	1,6	0,4	0,8	1,2	1,6	1,6
CHIPBREAKER	GRADE	160404	160408	160412	160416	220404	220408	220412	220416	270616
WC	3005	❍	●	❍	●	❍	❍	❍		
	3010Z	❍	●	●	●	❍	●		❍	❍
	3015Z	●	●	●	❍	●	●	●	❍	❍
	3020Z	●							●	

● normal production ❍ on request

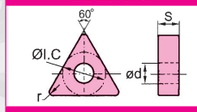
TNMG



	ØI.C.	6,35		9,52			12,7				15,87				19,05	
	s	3,18		4,76							6,35				9,52	
	Ød	2,26		3,81			5,16				6,35				7,94	
	r	0,4	0,8	0,4	0,8	1,2	0,4	0,8	1,2	1,6	0,8	1,2	1,6	3,2	1,6	2,4
CHIPBREAKER	GRADE	110304	110308	160404	160408	160412	220404	220408	220412	220416	270608	270612	270616	270632	330916	330924
TUNGSTEN CARBIDE																
ADF	1115			●	●	●										
	5220			●	●	●										
DF	1005			●	●	●		●	●							
	1025			❍	●			❍								
	1010Z			●	●	●			●							
	1025Z			●	●	●		●	❍							
	2015Z			●												
EF	2115			●	●	❍	❍	❍								
	5020			❍	❍	●		❍	❍							
	5120		●	●	●	●	●	●								
	2015Z				●											
WG	1005				●	❍										
DM	1005		●	●	●	●	●	●	●							
	1025			●	●	❍	●	●	●							
	1115				●			●	●							
	2020			❍	❍											
	2035			●	●	●	●	●								
	2040								●							
	1010Z				●	●		●								
	1025Z		●	●	●	●	●	●	●	●						
	1035Z			❍	●	❍	❍	●	●	❍						
	2015Z				●											
EG	2020				●	●										
	2115			●	●	●										
	5120				●	●										
	5220			●	●	●										
EM	2020			❍	●	●		●	●	●						
	2035				●			●								
	2115			●	●	●		●	❍							
	5020			❍	❍	❍		❍	❍							
	5120			●	●	●		●	●	●						

● normal production ❍ on request

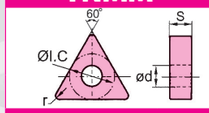
TNMG



	ØI.C.	6,35		9,52			12,7				15,87				19,05	
	s	3,18		4,76							6,35				9,52	
	Ød	2,26		3,81			5,16				6,35				7,94	
	r	0,4	0,8	0,4	0,8	1,2	0,4	0,8	1,2	1,6	0,8	1,2	1,6	3,2	1,6	2,4
CHIPBREAKER	GRADE	110304	110308	160404	160408	160412	220404	220408	220412	220416	270608	270612	270616	270632	330916	330924
TUNGSTEN CARBIDE																
PM	1005			●	●	●		●	❍							
	1025		●	●	●	●		●	●							
	2035				●											
	3005			❍	❍	❍			❍	❍						
	1010Z			●	●											
	1025Z		●	●	●	●		●	●	❍						
	1035Z			❍	❍			❍	❍	❍						
	3010Z			●	●	●		●	●	❍						
	3015Z			●	●	●		●	●	❍						
DR	1005				●	●			❍	❍						
	1010Z					●										
	1115					●			●							
	1025				●	●		●	●	●						
	1025Z				●	●		●	●	●						●
	1035Z					❍		❍			❍	●	❍	●		●
	1135								●							
	3010Z				●	❍			❍	❍						
	3015Z				●	●		❍	●	●						
ER	2015Z								●							
	2020				●	●		●								
CR - cermet	CC515			●	●	●										
	CC520			●	●	●										
CM - cermet	CC515			●	●	●										
	CC520			●	●	●										

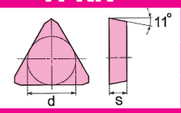
● normal production ❍ on request

TNMM



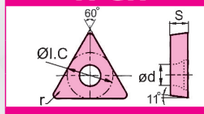
ØI.C.		9,52			12,7			15,87	
s		4,76						6,35	
Ød		3,81			5,16			6,35	
r		0,4	0,8	1,2	0,8	1,2	1,6	1,6	2,4
CHIPBREAKER	GRADE	160404	160408	160412	220408	220412	220416	270616	270624
TUNGSTEN CARBIDE									
DR	1005				●				
	1025		●	●	●	●	●		
	1025Z		●		●	●			
	1035Z		●		●	●	●		
HDR	1005					●			
	1025Z						❍	●	●
	2020								●
LR	1005		●	●					
	1025Z		●	●					
	2020		●	●					

TPKN



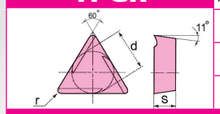
ØI.C.		9,52	12,70
s		3,18	4,76
Ød			
r		chamfered	
GROUP	GRADE	1603	2204
silicon nitride	DT400	●	●
	DT900	●	●

TPGH



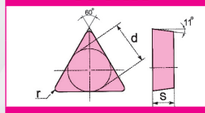
ØI.C.		5,56		6,35	
s		2,38		3,18	
Ød		2,5		2,8	
r		0,2	0,4	0,2	0,4
CHIPBREAKER	GRADE	090202	090204	110302	110304
WC	6015	●	●	●	●

TPGR



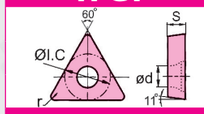
ØI.C.		6,35			9,52		
s		3,18					
Ød							
r		0,2	0,4	0,8	0,2	0,4	0,8
CHIPBREAKER	GRADE	110302	110304	110308	160302	160304	160308
cermet R	CC515	●	●	❍	●	●	●
	CC530	❍	❍	❍		❍	●
cermet L	CC515	●	●	❍	❍	❍	❍
	CC530	❍	❍	❍		❍	●

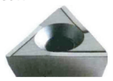
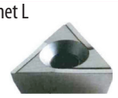
TPMR



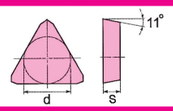
ØI.C.		5,56		6,35		9,52			12,7	19,05
s		2,38		3,18					4,76	9,52
Ød										
r		0,4	0,8	0,4	0,8	0,4	0,8	1,2	1,2	1,6
CHIPBREAKER	GRADE	090204	090208	110304	110308	160304	160308	160312	220412	330916
TUNGSTEN CARBIDE	1010Z			●		●	●			
	1025	●	●	●	●	●	●	●	●	
	1025Z						●			
	1035Z						●			
	2035	●		●	●	●	●	❍	●	
	2040					❍	●			

TPGT



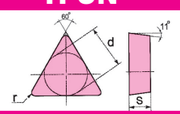
ØI.C.		6,35			9,52			
s		3,18					4,76	
Ød		3,56			4,4			
r		0,2	0,4	0,8	0,4	0,8	0,4	0,8
CHIPBREAKER	GRADE	110302	110304	110308	160304	160308	160404	160408
cermet R 	CC510	●	●	●	●	●	●	●
	CC515	❍	●	●	●	●	●	●
	CC520	❍	●	●	●	●	●	●
cermet L 	CC510	●	●	❍	●	❍	❍	❍
	CC515	❍	●	❍	●	❍	❍	❍
	CC520	❍	●	❍	❍	❍	❍	❍

TPKN



ØI.C.		9,52	12,7
s		3,18	4,76
Ød			
r		1,2	0,4
CHIPBREAKER	GRADE	1603	2204
TUNGSTEN CARBIDE	2040		●
	3020		●
	4025	●	●
	4040	●	●
	5020	●	●
	5120		●
	5040	●	●
cermet	CC520	●	●
	CC530	●	●

TPUN

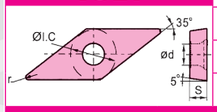


ØI.C.		6,35			9,52					12,7			
s		2,38	3,18					4,76					
Ød													
r		0,8	0,4	0,8	0,4	0,8	1,2	0,8	1,2	0,4	0,8	1,2	1,6
CHIPBREAKER	GRADE	110208	110304	110308	160304	160308	160312	160408	160412	220404	220408	220412	220416
TUNGSTEN CARBIDE	1010Z		●	●		●	●						
	1025				●								
	1035Z										●		
	2035		●	●	●	●	●				●		
	2040					❍						●	
	3020Z									●	●		●

● normal production ❍ on request

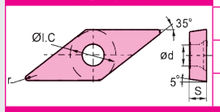
● normal production ❍ on request

VBET



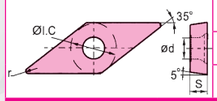
	ØI.C.	9,52			
	s	4,76			
	Ød	4,4			
	r	0,4	0,8	1,2	
CHIPBREAKER	GRADE	160404	160408	160412	
WC NF	2015	●	●		
	6015	❍	❍		

VBGW



	ØI.C.	9,52		
	s	4,76		
	Ød	4,40		
	r	0,4	0,8	
GROUP	GRADE	160404	160408	
cbn	010 HS	❍	❍	
	020 HS	❍	❍	
	020 CI	●	●	
	020 SA	❍	❍	
pcd	010	●	❍	
	020	●	❍	

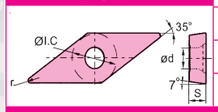
VBMT



	ØI.C.	6,35						9,52			
	s	2,38			3,18			4,76			
	Ød	2,8						4,4			
	r	0,2	0,4	0,8	0,2	0,4	0,8	0,4	0,8	1,2	
CHIPBREAKER	GRADE	110202	110204	110208	110302	110304	110308	160404	160408	160412	
TUNGSTEN CARBIDE EF	2115					●	●	●	●		
	5020				❍	❍	●				
	5120				●	●	❍	●	●		
HF	1025	●	●	●							
	2015Z		●								
	5020	●	●	●							
EM	1005						❍				
	2115					●	●	●	●		
	5120					●	●	●	●		
HM	1005							●	●	●	
	1010Z							●	●		
	1115							●	●		
	1025							●	●	●	
	1025Z							●	●	●	
	1035Z								❍	❍	
	2015Z								●		
	2115							●	●		
	2020								●		
	2035							●	●		
	3010Z							●	●		
	3015Z								●		
	5020							●	●		
HR	1005							●	●	●	
	1025								●	●	
	1025Z							●	❍	●	
	2035								●		
	3005									❍	

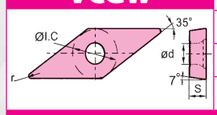
● normal production ❍ on request

VCGT



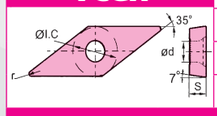
	ØI.C.	4,76		6,35			9,52		
	s	2,38		3,18			4,8		
	Ød	2,3		2,8			4,4		
	r	0,1	0,2	0,1	0,2	0,4	0,4	0,8	
CHIPBREAKER	GRADE	0802001	080202	110301	110302	110304	160404	160408	
TUNGSTEN CARBIDE HF	1025					●			
	5120					❍			
NF	2015							●	
	6015							❍	
EL SI	5020	❍	❍	●	●				
ER SI	5020	❍	❍	●	●				

VCGW



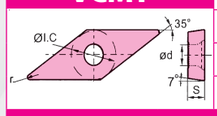
	ØI.C.	6,35			9,52		
	s	3,18			4,76		
	Ød	2,8			4,40		
	r	0,2	0,4	0,8	0,4	0,8	1,2
GROUP	GRADE	110302	110304	110308	160404	160408	1604012
cbn	010 HS		●	●	●	●	●
pcd	010		●	●	●	●	●	●
	020		❍	❍	❍	❍	❍	❍

VCGX



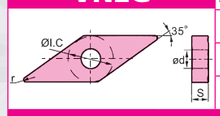
	ØI.C.	6,35						9,52				12,7
	s	2,38		3,18				4,76				5,56
	Ød	2,8						4,4				5,5
	r	0,2	0,4	0,1	0,2	0,4	0,8	0,2	0,4	0,8	1,2	3,0
CHIPBREAKER	GRADE	110202	110204	110301	110302	110304	110308	160402	160404	160408	160412	220530
TUNGSTEN CARBIDE LC	5120			●	❍							
	6110			●	●	●	●	●	●	●	❍	●
	K07			●	●	●	●	●	●	●	●	●
LH	5020			❍	●	❍		●	●			
	6015		●		●	●	❍	●	●	●	❍	❍
	K07		●	●	●	●	●	●	●	●	●	●

VCMT



	ØI.C.	9,52		
	s	4,76		
	Ød	4,4		
	r	0,4	0,8	
CHIPBREAKER	GRADE	160404	160408	
WC EM	5120	●	●	

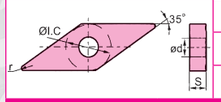
VNEG

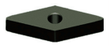
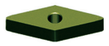
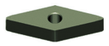
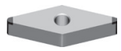


	ØI.C.	9,52		
	s	4,76		
	Ød	3,81		
	r	0,4	0,8	
CHIPBREAKER	GRADE	160404	160408	
WC NF	2015	●	●	
	6015	●	❍	
	K07	❍	❍	

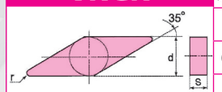
● normal production ❍ on request

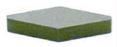
VNGA



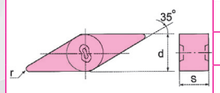
	ØI.C.	9,52						12,70				
	s	4,76			6,35			4,76				
	Ød	3,81						5,16				
	r	0,4	0,8	1,2	0,4	0,8	1,2	0,4	0,8	1,2	2,4
GROUP	GRADE	160404	160408	160412	160604	160608	160612	220404	220408	220412	220424
black ceramic 	V300		●	●	●	●	●	●	●	●	●	
	V900			●	●							
coated ceramic	VZ300			●	●	❍	❍	❍				
SiC whisker 	WSK1				❍							
	WSK4				❍							●
	WSK8				❍							●
silicon nitride	DT400			●	●					●	●	
	DT500			●	●							
SiAlON 	VN70S			●								
cbn 	010 HS		❍	●	●							
	020 HS		❍	●	●							
	020 CI		❍	●	●							
	020 SA		❍	●	●							

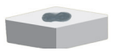
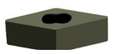
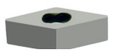
VNGN



	ØI.C.	9,52						
	s	4,76		7,94				
	Ød							
	r	0,4	0,8	0,4	0,8	1,2	1,6
GROUP	GRADE	160404	160408	160704	160708	160712	160716
black ceramic	V300		●	●	●	●		
coated ceramic	VZ300		❍	❍	❍	❍		
cbn 	100 DE		❍	❍				
	100 DW		❍	❍				

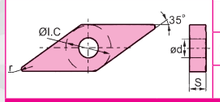
VNGX

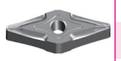


	ØI.C.	9,52			
	s	7,94			
	Ød				
	r	0,8	1,2	1,6
GROUP	GRADE	160704	160708	160712
white ceramic 	CC200		●	●	
black ceramic 	V300		●	●	
coated ceramic	VZ300		❍	❍	
silicon nitride 	020 HS		●	●	●

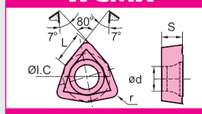
● normal production ❍ on request

VNMG



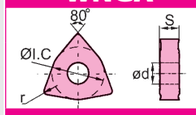
	ØI.C.	9,52			
	s	4,76			
	Ød	3,81			
	r	0,4	0,8	1,2	
CHIPBREAKER	GRADE	160404	160408	160412	
TUNGSTEN CARBIDE ADF	1115		●	●	
DF	1005		●	●	
	1025		●	●	
	1025Z		●	●	
EF 	2115		●	●	❍
	5020			❍	
	5120		●	●	
DM	1005			●	●
	1025			●	●
	1025Z			●	●
	1035Z		●		
EM	2115		●	●	
NM	2015			●	
PM	1005		●	●	●
	1025		●	●	●
	1025Z		●	●	●
	1035Z			❍	
	3005			●	❍
	3010Z		●	●	●
	3015Z		❍	●	
CR - cermet	CC515		●	●	
	CC520		●	●	

WCMX



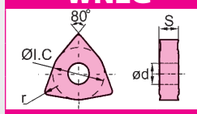
	ØI.C.	5,56	6,35	7,94	9,52	12,7
	s	2,38		3,18	3,97	4,76
	Ød	2,8	3,1	3,2	3,7	4,3
	r	0,8	0,8	0,8	0,8	1,2
CHIPBREAKER	GRADE	030208	040208	050308	06T308	080412
TUNGSTEN CARBIDE PG	3020			●		
	5020		●	●	●	●
	5120			●		
DM	2030		●	●	●	●
	5020		●	●	●	●
	K07		●			

WNGA



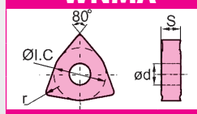
	ØI.C.	12,70		
	s	4,76		
	Ød	5,16		
	r	0,4	0,8	1,2
GROUP	GRADE	080404	080408	080412
black ceramic	V300		●	●	●
SiC whisker	WSK4			●	
	WSK8			●	
silicon nitride	DT400			●	●
	DT500			●	●
SiAlON	VN70S			●	●
cbn	010 HS			❍	❍
	020 HS			❍	❍
	020 CI			❍	❍
	020 SA			❍	❍

WNEG



	ØI.C.	12,7		
	s	4,76		
	Ød	5,16		
	r	0,4	0,8	
CHIPBREAKER	GRADE	080404	080408	
WC NF	2015		●	❍	
	6015		●		

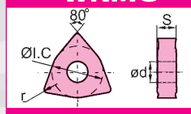
WNMA



	ØI.C.	9,52		12,7			
	s	3,97	4,76				
	Ød	3,81		5,16			
	r	0,8	0,8	0,4	0,8	1,2	1,6
CHIPBREAKER	GRADE	06T308	060408	080404	080408	080412	080416
WC	3005		❍	●		●	●	❍
	3010Z			●	❍	●	●	❍
	3015Z			●	●	●	●	

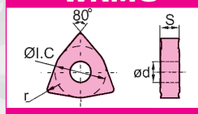
● normal production ❍ on request

TUNGSTEN CARBIDE

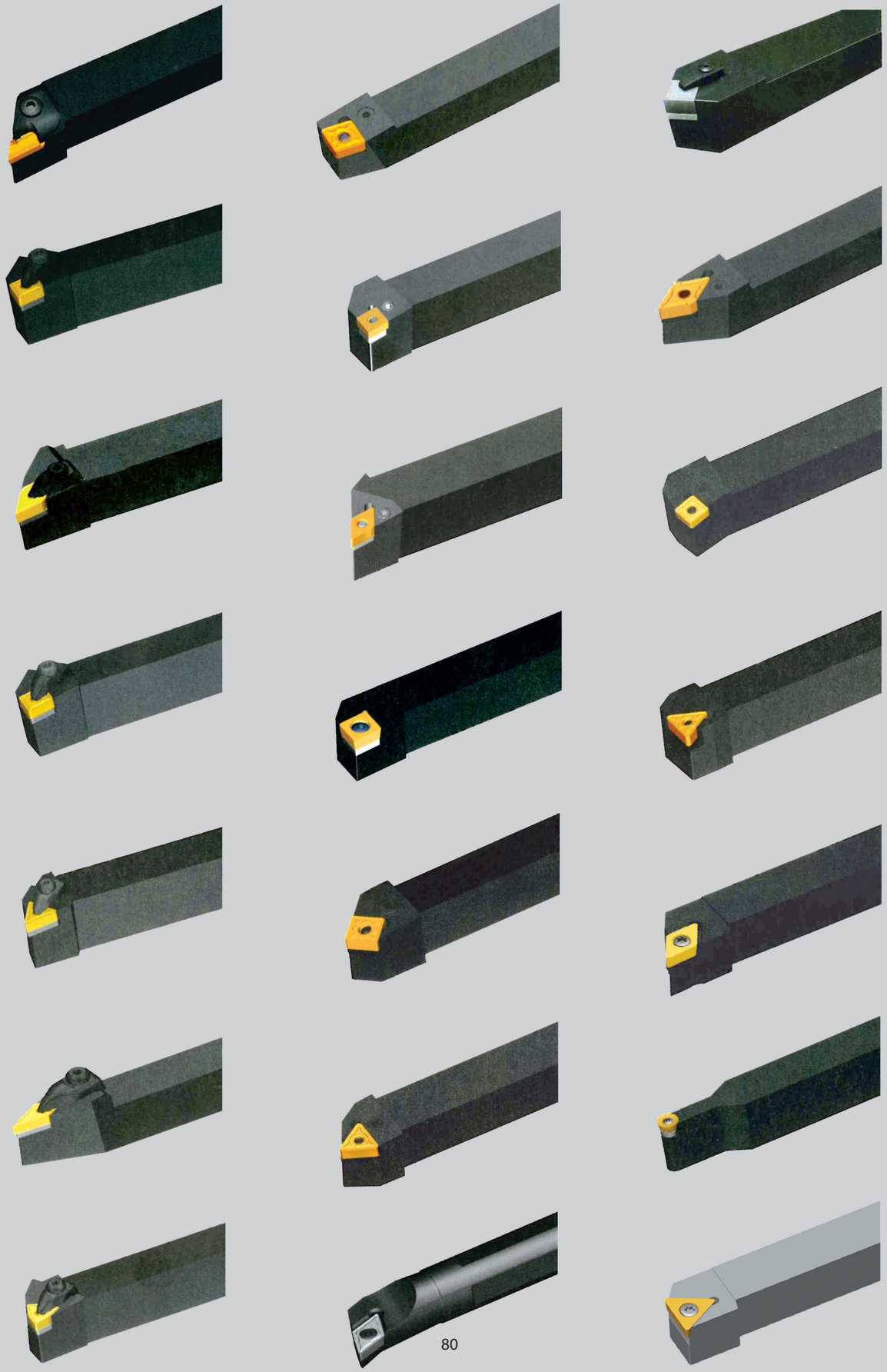
WNMG		ØI.C.	9,52						12,7			
		s	3,97			4,76						
		Ød	3,81						5,16			
		r	0,4	0,8	1,2	0,4	0,8	1,2	0,4	0,8	1,2	1,6
CHIPBREAKER	GRADE		06T304	06T308	06T312	060404	060408	060412	080404	080408	080412	080416
ADF	1115						●		●	●	●	
	5220								●	●	●	
DF	1005					●	●	●	●	●	●	
	1010Z						●	●	●	●	●	
	1025					●	●		❍	●	●	
	1025Z					●	●		●	❍	●	
	2015Z								●			
	2035						●					
	5040						●					
EF	1025								❍	❍		
	2015Z					●			●	●		
	2115					❍	❍		●	❍		
	2035								●			
	5020					❍	❍		❍	❍		
	5120			●		●	●		●	●		
	5040									●		
	6015									❍		
NF	2015						●					
	6015						❍		●			
EG	2115									●	●	
	2020									●	●	
	5120									●	●	
	5220								●	●	●	
WG	1005									●	●	
	1025Z									●	❍	
EM	2015Z								●	●		
	2115		●	●	❍	❍	●		●	●	●	
	2020					●	●		●	●	●	
	2035								●	●		
	5020					❍	❍		❍	●	❍	
	5120				●	❍	●		●	●	●	

● normal production ❍ on request

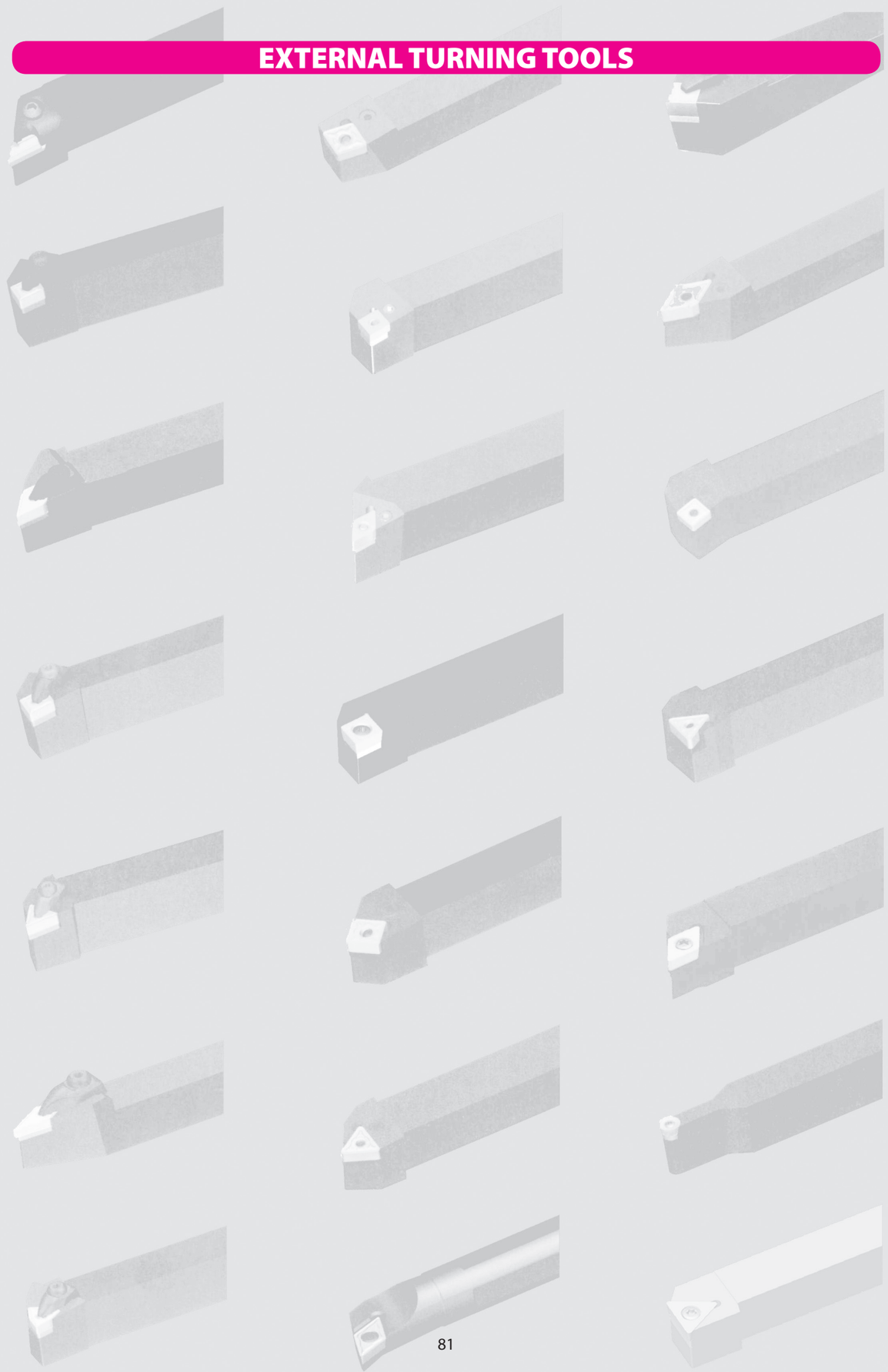
TUNGSTEN CARBIDE

WNMG		ØI.C.	9,52						12,7			
		s	3,97			4,76						
		Ød	3,81						5,16			
		r	0,4	0,8	1,2	0,4	0,8	1,2	0,4	0,8	1,2	1,6
CHIPBREAKER	GRADE		06T304	06T308	06T312	060404	060408	060412	080404	080408	080412	080416
DM	1005						●	●	●	●	●	●
	1010Z						●		●	●	●	
	1115						❍		●	●	●	
	1025			●			●	●		●	●	
	1025Z			❍			●	●	●	●	●	●
	1035Z						❍	❍	❍	●		❍
	1135									●	●	
	2015Z						●			●		
	2020									●		
	2035						●		●	●	●	
	2040						●					
	5020									❍		
	5040						●					
NM	2015								●	●	●	
	5120									❍		
	6015									●	●	
PM	1005						●	●	●		●	
	1010Z						●		●	●		
	1115									●		
	1025						●	●	●	●	●	
	1025Z						●	❍	●	●	●	●
	1035Z						●	❍	❍	●	●	❍
	1135									●		
	3005						❍		❍	❍	❍	
	3010Z						●	❍	●	●	●	●
	3015Z						●	❍	●	●	●	●
	3020									●	●	
DR	1005						●	●		●	●	❍
	1010Z						●			●	●	
	1115									●	●	
	1025						●			●	●	●
	1025Z						●	●		●	●	●
	1035Z						❍	❍		●	●	
	1135									●	●	
	3010Z						●	❍		●	●	●
	3015Z						●	❍			●	❍
CR - cermet	CC515								●	●	●	
	CC520								●	●	●	
CM - cermet	CC515								●	●		
	CC520								●	●		

● normal production ❍ on request



EXTERNAL TURNING TOOLS



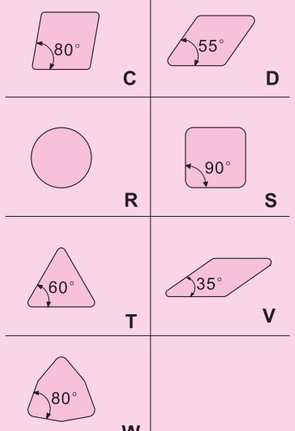
EXTERNAL TURNING TOOLS CODE

P	D	J	N	R	20	20	K	11
1	2	3	4	5	6	7	8	9

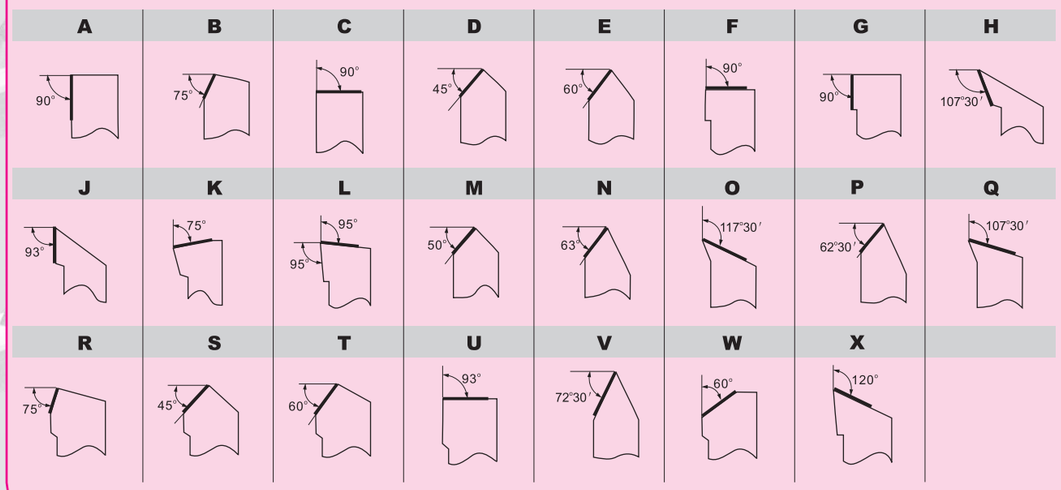
1 LOCKING SYSTEM

S	Screw
D	Double
P	Lever
C	Clamp

2 INSERT SHAPE

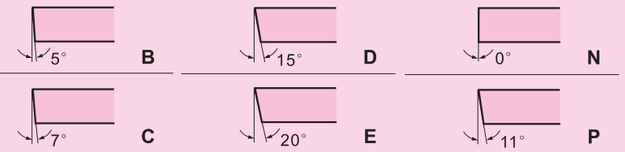


3 HOLDER STYLE AND LEAD ANGLE

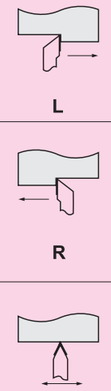


EXTERNAL TURNING TOOLS CODE

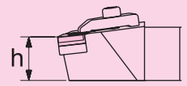
4 CLEARANCE ANGLE OF MAJOR CUTTING EDGE



5 HOLDER EXECUTION

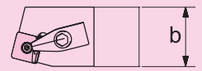


6 HEIGHT



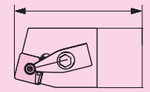
Code	Height
12	12
16	16
20	20
25	25
32	32
40	40
50	50

7 SHANK WIDTH



Code	Width
12	12
16	16
20	20
25	25
32	32
40	40
50	50

8 TOOL LENGTH



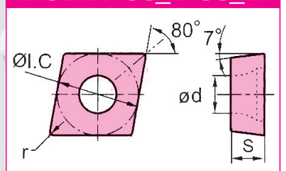
Code	Length
H	100
K	125
M	150
P	170
Q	180
R	200
S	250
T	300

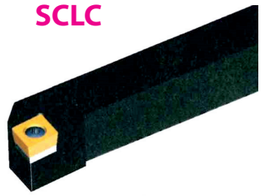
9 CUTTING EDGE LENGTH

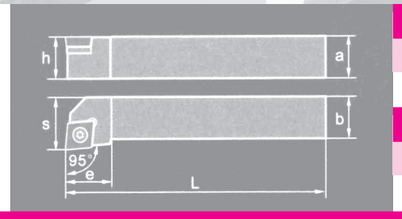
Insert shape	C	D	R	S	T	V	W
Inscribed Circle diameter	Cutting edge length						
5,556	---	---	---	---	09	---	---
6,350	06	07	---	---	11	---	---
9,525	09	11	09	09	16	16	06
12,700	12	15	12	12	22	22	08
15,875	16	19	15	15	27	---	---
19,050	19	---	19	19	33	---	---
25,400	25	---	25	25	44	---	---
32,000	---	---	32	---	---	---	---

EXTERNAL TURNING TOOLS

INSERT CC_T CC_W — SCLC



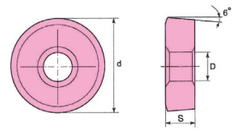


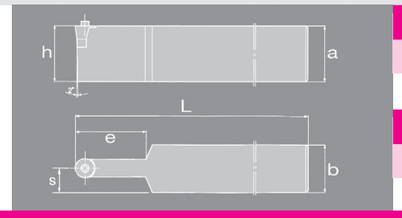


LOCKING
screw
RAKE ANGLE
95°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
CC..0602	SCLCR/L	0808D06	●	●	8	8	60	8	10	10	SXX
CC..0602	SCLCR/L	1010E06	●	●	10	10	70	10	12	10	SXX
CC..09T3	SCLCR/L	1212F09	●	●	12	12	80	12	16	16	SC1
CC..09T3	SCLCR/L	1616H09	●	●	16	16	100	16	20	16	SC1
CC..09T3	SCLCR/L	2020K09	●	●	20	20	125	20	25	25	SC3
CC..1204	SCLCR/L	1616H12	●	❍	16	16	100	16	20	18	SC1
CC..1204	SCLCR/L	2020K12	●	●	20	20	125	20	25	25	SC3
CC..1204	SCLCR/L	2525M12	●	●	25	25	150	25	32	26	SC3
CC..1204	SCLCR/L	3225P12	●	●	32	25	170	32	32	26	SC3
CC..1204	SCLCR/L	3232P12	●	❍	32	32	170	32	40	28	SC3
34-35-36-37	← insert at page						spare parts set at page →				149-150

INSERT CDH — HRCD

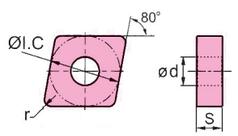


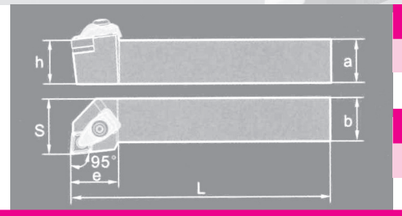


LOCKING
SCREW
RAKE ANGLE
90°

insert size	toolholder code	shank size	N	a	b	L	h	s	e	spare parts set
CDH1206	HRCDN	2525M12	●	25	25	150	25	12,5	15	HR1
CDH1909	HRCDN	2525M19	●	25	25	150	25	12,5	15	HR2
CDH1909	HRCDN	3225R19	●	32	25	200	32	12,5	38	HR2
CDH1909	HRCDN	4035S19	●	40	35	250	40	17,5	45	HR2
CDH3219	HRCDN	4035S32	❍	40	35	250	40	17,5	45	HR3
CDH3219	HRCDN	5050T32	❍	50	50	300	50	25	50	HR3
37	← insert at page					spare parts set at page →				149

INSERT CN_G CN_A — DCLN



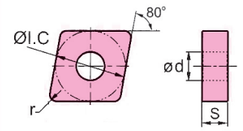


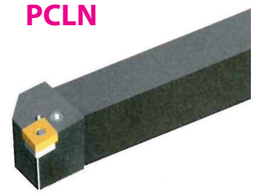
LOCKING
double lock
RAKE ANGLE
95°

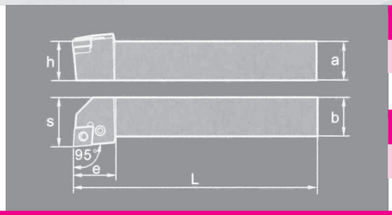
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
CN..0903	DCLNR/L	1616H09	●	❍	16	16	100	16	20	24	DC1
CN..0903	DCLNR/L	2020K09	●	●	20	20	125	20	25	24	DC1
CN..0903	DCLNR/L	2525M09	●	●	25	25	150	25	32	24	DC1
CN..1204	DCLNR/L	2020K12	●	●	20	20	125	20	25	28	DC2
CN..1204	DCLNR/L	2525M12	●	●	25	25	150	25	32	28	DC2
CN..1204	DCLNR/L	3225P12	●	●	32	25	170	32	32	28	DC2
37-39-40-41-42	← insert at page						spare parts set at page →				148

● normal production ❍ on request

INSERT CN_G CN_A — PCLN



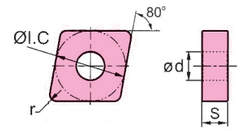


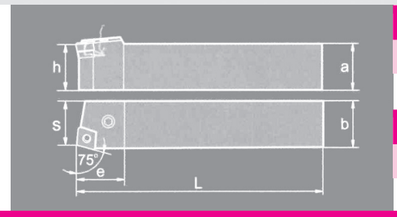


LOCKING
LEVER
RAKE ANGLE
95°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
CN..0903	PCLNR/L	1616H09	●	●	16	16	100	16	20	20	PC5
CN..0903	PCLNR/L	2020K09	●	●	20	20	125	20	25	22	PC5
CN..0903	PCLNR/L	2525M09	❍	●	25	25	150	25	32	22	PC5
CN..1204	PCLNR/L	2020K12	●	●	20	20	125	20	25	28	PC6
CN..1204	PCLNR/L	2525M12	●	●	25	25	150	25	32	28	PC6
CN..1204	PCLNR/L	3232P12	●	●	32	32	170	32	40	28	PC6
CN..1606	PCLNR/L	2525M16	●	●	25	25	150	25	32	33	PC7
CN..1606	PCLNR/L	3223P16	●	●	32	32	170	32	40	33	PC7
CN..1906	PCLNR/L	3232P19	●	●	32	32	170	32	40	38	PC1
CN..1906	PCLNR/L	4040S19	●	●	40	40	250	40	50	38	PC1
CN..2507	PCLNR/L	4040S2507	●	●	40	40	250	40	50	49	PC3
CN..2509	PCLNR/L	4040S2509	●	●	40	40	250	40	50	49	PC4
39-40-41-42	← insert at page						spare parts set at page →				149

INSERT CN_G CN_A — PCBN





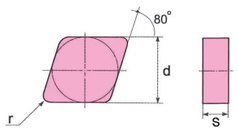
LOCKING
LEVER
RAKE ANGLE
75°

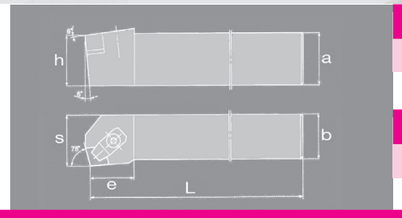
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
CN..1204	PCBNR/L	2020K12	●	●	20	20	125	20	17	27	PC6
CN..1204	PCBNR/L	2525M12	●	●	25	25	150	25	22	27	PC6
CN..1204	PCBNR/L	3232P12	●	●	32	32	170	32	27	27	PC6
CN..1606	PCBNR/L	2525M16	●	●	25	25	150	25	22	33	PC7
CN..1606	PCBNR/L	3232P16	●	●	32	32	170	32	27	33	PC7
CN..1906	PCBNR/L	3232P19	●	●	32	32	170	32	27	38	PC1
CN..1906	PCBNR/L	4040S19	●	●	40	40	250	40	35	38	PC1
CN..2507	PCBNR/L	4040S2507	●	●	40	40	250	40	35	50	PC3
CN..2509	PCBNR/L	4040S2509	●	●	40	40	250	40	35	50	PC2
39-40-41-42	← insert at page						spare parts set at page →				149

● normal production ❍ on request

INSERT CNGN

CCBN





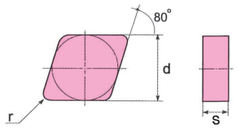
LOCKING: CLAMP

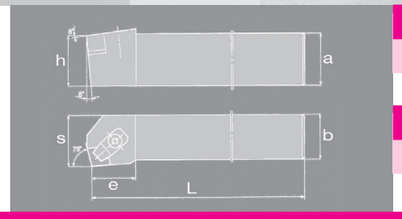
RAKE ANGLE: 75°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
CNGN1204	CCBNR/L	2525M12-A4	●	❍	25	25	150	25	22	35	CC1
CNGN1207	CCBNR/L	2525M12-A7	●	❍	25	25	150	25	22	35	CC1
CNGN1204	CCBNR/L	3225P12-A4	❍	❍	32	25	170	32	22	35	CC1
CNGN1207	CCBNR/L	3225P12-A7	❍	❍	32	25	170	32	22	35	CC1
CNGN1607	CCBNR/L	3225P16-A7	❍	❍	32	25	170	32	27	35	CC2
CNGN1907	CCBNR/L	4040S19-A7	❍	❍	40	40	250	40	36	60	CC4
CNGN2509	CCBNR/L	5050T25-A9	❍	❍	50	50	300	50	45	65	CC3
38	← insert at page						spare parts set at page →				148

INSERT CNGN

CCKN





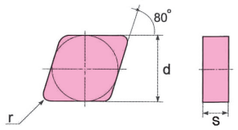
LOCKING: CLAMP

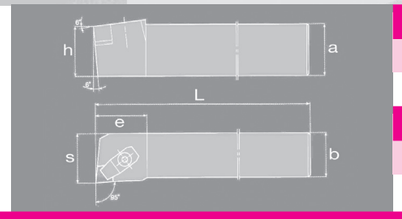
RAKE ANGLE: 75°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
CNGN1204	CCKNR/L	2525M12-A4	●	❍	25	25	150	25	32	29	CC1
CNGN1207	CCKNR/L	2525M12-A7	●	❍	25	25	150	25	32	29	CC1
CNGN1204	CCKNR/L	3225P12-A4	❍	❍	32	25	170	32	32	29	CC1
CNGN1207	CCKNR/L	3225P12-A7	●	❍	32	25	170	32	32	29	CC1
38	← insert at page						spare parts set at page →				148

INSERT CNGN

CCLN





LOCKING: CLAMP

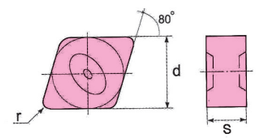
RAKE ANGLE: 95°

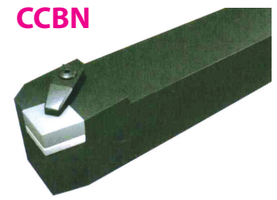
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
CNGN1204	CCLNR/L	2525M12-A4	●	●	25	25	150	25	32	35	CC1
CNGN1207	CCLNR/L	2525M12-A7	●	●	25	25	150	25	32	35	CC1
CNGN1204	CCLNR/L	3225P12-A4	●	●	32	25	170	32	32	35	CC1
CNGN1207	CCLNR/L	3225P12-A7	●	●	32	25	170	32	32	35	CC1
CNGN1607	CCLNR/L	3225P16-A7	❍	❍	32	25	170	32	32	35	CC2
CNGN1907	CCLNR/L	4040S19-A7	❍	❍	40	40	250	40	50	60	CC4
CNGN2509	CCLNR/L	5050T25-A9	❍	❍	50	50	300	50	60	65	CC3
38	← insert at page						spare parts set at page →				148

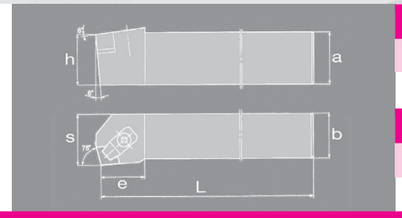
● normal production ❍ on request

INSERT CNGX

CCBN







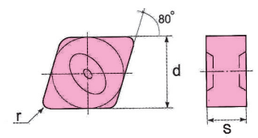
LOCKING: CLAMP

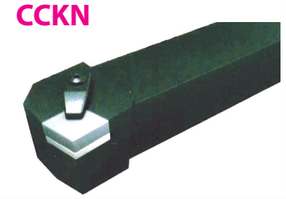
RAKE ANGLE: 75°

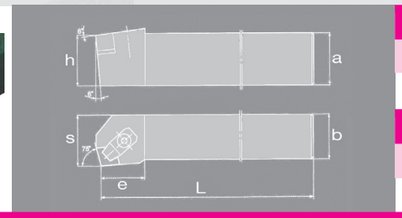
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
CNGX1207	CCBNR/L	2525M12-X7	●	❍	25	25	150	25	22	35	CX1
CNGX1207	CCBNR/L	3225P12-X7	●	❍	32	25	170	32	22	35	CX1
CNGX1607	CCBNR/L	3225P16-X7	❍	❍	32	25	170	32	27	35	CX2
CNGX1207	CCBNR/L	2525M12-X7	●	❍	25	25	150	25	32	29	CX1
CNGX1207	CCBNR/L	3225P12-X7	●	●	32	25	170	32	32	29	CX1
38-42	← insert at page						spare parts set at page →				148

INSERT CNGX

CCKN







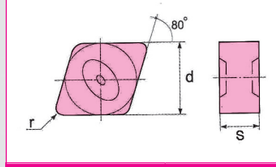
LOCKING: CLAMP

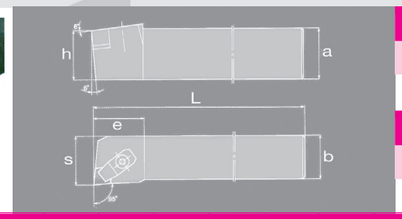
RAKE ANGLE: 75°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
CNGX1207	CCKNR/L	2525M12-X7	●	❍	25	25	150	25	22	35	CX1
CNGX1207	CCKNR/L	3225P12-X7	●	❍	32	25	170	32	22	35	CX1
CNGX1607	CCKNR/L	3225P16-X7	❍	❍	32	25	170	32	27	35	CX2
CNGX1207	CCKNR/L	2525M12-X7	●	❍	25	25	150	25	32	29	CX1
CNGX1207	CCKNR/L	3225P12-X7	●	●	32	25	170	32	32	29	CX1
38-42	← insert at page						spare parts set at page →				148

INSERT CNGX

CCLN





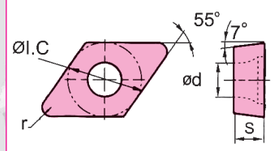
LOCKING: CLAMP

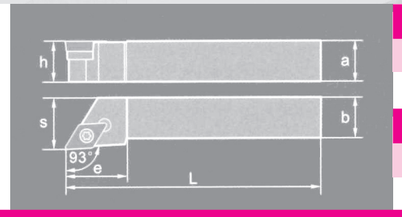
RAKE ANGLE: 95°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
CNGX1207	CCLNR/L	2525M12-X7	●	●	25	25	150	25	32	35	CX1
CNGX1207	CCLNR/L	3225P12-X7	●	●	32	25	170	32	32	35	CX1
CNGX1607	CCLNR/L	3225P16-X7	●	❍	32	25	170	32	32	35	CX2
38-42	← insert at page						spare parts set at page →				148

● normal production ❍ on request

INSERT DC_T DC_W — SDJC



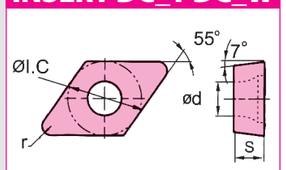


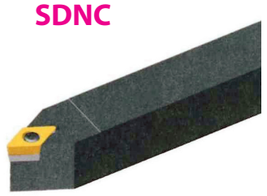
LOCKING: SCREW

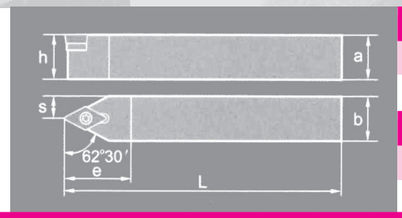
RAKE ANGLE: 93°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
DC..0702	SDJCR/L	1010E07	●	●	10	10	70	10	12	15	SXX
DC..0702	SDJCR/L	1212F07	●	●	12	12	80	12	16	15	SXX
DC..0702	SDJCR/L	1616H07	●	●	16	16	100	16	20	18	SXX
DC..11T3	SDJCR/L	1616H11	●	●	16	16	100	16	20	24	SD1
DC..11T3	SDJCR/L	2020K11	●	●	20	20	125	20	25	24	SD1
DC..11T3	SDJCR/L	2525M11	●	●	25	25	150	25	32	29	SD1
DC..11T3	SDJCR/L	3225P11	●	●	32	25	170	32	32	29	SD1
43-44-45	← insert at page						spare parts set at page →				149-150

INSERT DC_T DC_W — SDNC





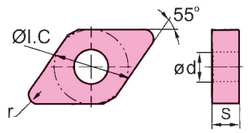


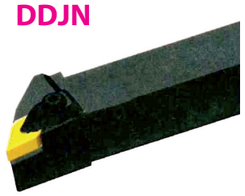
LOCKING: SCREW

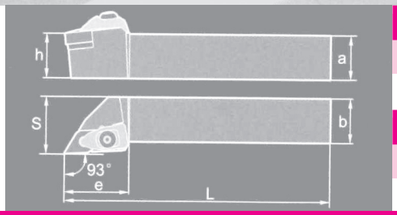
RAKE ANGLE: 62° 30'

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
DC..0702	SDNCR/L	1010E07	●		10	10	70	10	5	20	SXX
DC..0702	SDNCR/L	1212F07	●		12	12	80	12	6	20	SXX
DC..11T3	SDNCR/L	1616H11	●		16	16	100	16	8	30	SD1
DC..11T3	SDNCR/L	2020K11	●		20	20	125	20	10	30	SD1
DC..11T3	SDNCR/L	2525M11	●		25	25	150	25	12,5	30	SD1
DC..11T3	SDNCR/L	1212H11	●		12	12	100	12	6	30	SC1
43-44-45	← insert at page						spare parts set at page →				149-150

INSERT DN_G DN_A — DDJN







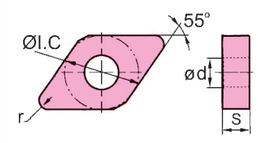
LOCKING: DOUBLE LOCK

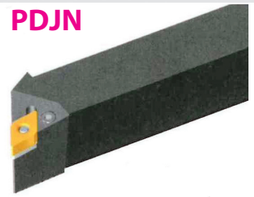
RAKE ANGLE: 93°

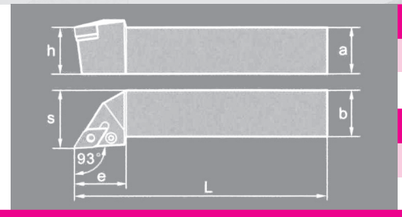
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
DN..1104	DDJNR/L	1616H11	❍	❍	16	16	100	16	20	30	DD1
DN..1104	DDJNR/L	2020K11	●	●	20	20	125	20	25	30	DD1
DN..1104	DDJNR/L	2525M11	●	●	25	25	150	25	32	30	DD1
DN..1104	DDJNR/L	3225P11	❍	❍	32	25	170	32	32	30	DD1
DN..1506	DDJNR/L	2020K15	●	●	20	20	125	20	25	35	DD2
DN..1506	DDJNR/L	2525M15	●	●	25	25	150	25	32	35	DD2
DN..1506	DDJNR/L	3232P15	●	●	32	32	170	32	40	35	DD2
45-47-48-49	← insert at page						spare parts set at page →				148

● normal production ❍ on request

INSERT DN_G DN_A — PDJN





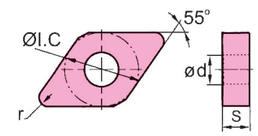


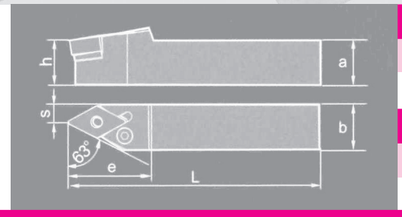
LOCKING: LEVER

RAKE ANGLE: 93°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
DN..1104	PDJNR/L	1616H11	●	●	16	16	100	16	20	25	PD1
DN..1104	PDJNR/L	2020K11	●	●	20	20	125	20	25	25	PD1
DN..1104	PDJNR/L	2525M11	●	●	25	25	150	25	32	30	PD1
DN..1504	PDJNR/L	2020K15-3	●	●	20	20	125	20	25	35	PD3
DN..1504	PDJNR/L	2525M15-3	●	●	25	25	150	25	32	35	PD3
DN..1504	PDJNR/L	3232P15-3	●	●	32	32	170	32	40	35	PD3
DN..1506	PDJNR/L	2020K15	●	●	20	20	125	20	25	35	PD2
DN..1506	PDJNR/L	2525M15	●	●	25	25	150	25	32	35	PD2
DN..1506	PDJNR/L	3232P15	●	●	32	32	170	32	40	35	PD2
45-47-48-49	← insert at page						spare parts set at page →				149

INSERT DN_G DN_A — PDNN



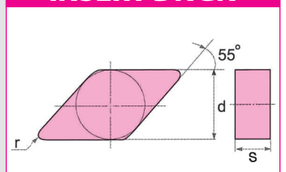


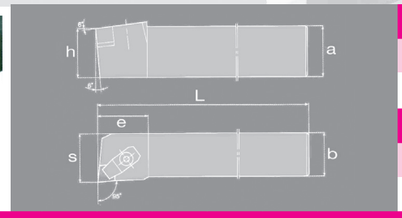
LOCKING: LEVER

RAKE ANGLE: 63°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
DN..1504	PDNNR/L	2020K15-3	●	●	20	20	125	20	8	37	PD3
DN..1504	PDNNR/L	2525M15-3	●	●	25	25	150	25	12.5	37	PD3
DN..1504	PDNNR/L	3232P15-3	●	●	32	32	170	32	16	37	PD3
DN..1506	PDNNR/L	2020K15	●	●	20	20	125	20	8	37	PD2
DN..1506	PDNNR/L	2525M15	●	●	25	25	150	25	12,5	37	PD2
DN..1506	PDNNR/L	3232P15	●	●	32	32	170	32	16	37	PD2
45-47-48-49	← insert at page						spare parts set at page →				149

INSERT DNGN — CDHN





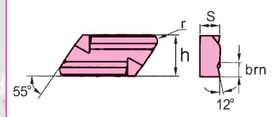
LOCKING: CLAMP

RAKE ANGLE: 107° 30'

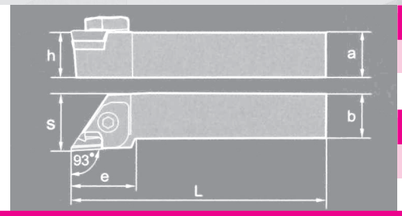
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
DNGN1504	CDHNR/L	2525M15-A4	●	❍	25	25	150	25	32	33	CD1
DNGN1507	CDHNR/L	2525M15-A7	●	●	25	25	150	25	32	33	CD1
DNGN1504	CDHNR/L	3225P15-A4	❍	❍	32	25	170	32	32	33	CD1
DNGN1507	CDHNR/L	3225P15-A7	❍	❍	32	25	170	32	32	33	CD1
46	← insert at page						spare parts set at page →				148

● normal production ❍ on request

INSERT KNUX



CKJN

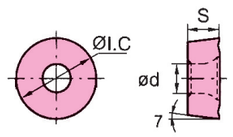


LOCKING: CLAMP

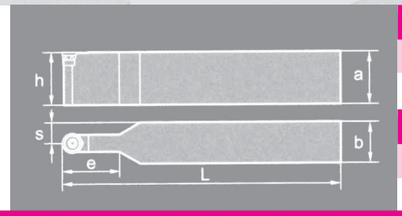
RAKE ANGLE: 93°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
KN..1604..L	CKJNR/L	2525M16	●		25	25	150	25	32	32	CKL
KN..1604..L	CKJNR/L	3232P16	●		32	32	170	32	40	32	CKL
KN..1604..L	CKJNR/L	4040R16	●		40	40	200	40	50	32	CKL
KN..1604..R	CKJNR/L	2525M16	●		25	25	150	25	32	32	CKR
KN..1604..R	CKJNR/L	3232P16	●		32	32	170	32	40	32	CKR
KN..1604..R	CKJNR/L	4040R16	●		40	40	200	40	50	32	CKR
50	← insert at page						spare parts set at page→				148

INSERT RC_T RC_W



SRDC



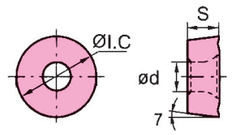
LOCKING: SCREW

RAKE ANGLE

insert size	toolholder code	shank size	N	a	b	L	h	s	e	spare parts set
RC..0803	SRDCN	2020K08	●	20	20	125	20	10	16	SR1
RC..0803	SRDCN	1616H08	❍	16	16	100	16	8	16	SR4
RC..10T3	SRDCN	2020K10	●	20	20	125	20	10	25	SR1
RC..10T3	SRDCN	2525M10	●	25	25	150	25	12,5	25	SR1
RC..1204	SRDCN	2020K12	●	20	20	125	20	10	35	SR3
RC..1204	SRDCN	2525M12	●	25	25	150	25	12,5	35	SR3
RC..1204	SRDCN	3225P12	●	32	25	170	32	12,5	35	SR3
RC..1606	SRDCN	3225P16	●	32	25	170	32	12,5	35	SR5
RC..1606	SRDCN	3232P16	●	32	32	170	32	16	40	SR5
RC..1606	SRDCN	4040S16	●	40	40	250	40	20	50	SR5
RC..2006	SRDCN	4040S20	●	40	40	250	40	20	50	SR2
53	← insert at page						spare parts set at page→			149

● normal production ❍ on request

INSERT RC_T RC_W



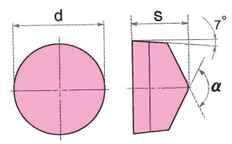
SRGC

LOCKING: SCREW

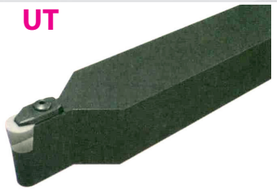
RAKE ANGLE

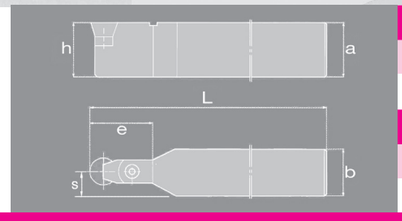
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
RC..0803	SRGCR/L	1616H08	●	●	16	16	100	16	20		SR4
RC..10T3	SRGCR/L	1616H10	❍	❍	16	16	100	16	20		SR1
RC..10T3	SRGCR/L	2020K10	●	●	20	20	125	20	25		SR1
RC..10T3	SRGCR/L	2525M10	●	❍	25	25	100	25	32		SR1
RC..1204	SRGCR/L	2020K12	●	●	20	20	125	20	27		SR3
RC..1204	SRGCR/L	2525M12	●	❍	25	25	150	25	32		SR3
53	← insert at page						spare parts set at page→				149

INSERT RCGX



UT



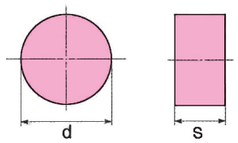


LOCKING: CLAMP

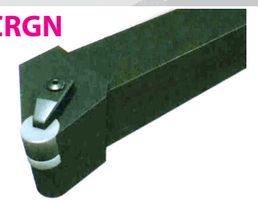
RAKE ANGLE: 90°

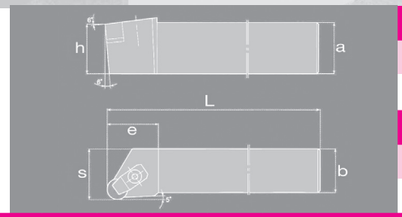
insert size	toolholder code	shank size	avail.	a	b	L	h	s	e	spare parts set
RCGX0406	UT	UT101	❍	25	25	250	25	12,5	35	XR1
RCGX0607	UT	UT102	●	32	25	250	32	12,5	35	XR2
RCGX0907	UT	UT103	●	32	25	300	32	12,5	35	XR3
RCGX1207	UT	UT104	●	50	50	350	50	25	37	XR4
RCGX1510	UT	UT105	●	50	50	350	50	25	47	XR5
RCGX1910	UT	UT106	❍	50	50	350	50	25	50	XR6
RCGX2512	UT	UT108	●	50	50	350	50	25	65	XR8
52	← insert at page						spare parts set at page→			150

INSERT RNGN



CRGN





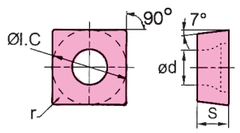
LOCKING: CLAMP

RAKE ANGLE: 5°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
RNGN0904	CRGNR/L	2525M09-A4	❍	❍	25	25	150	25	32	32	CR3
RNGN0907	CRGNR/L	2525M09-A7	●	❍	25	25	150	25	32	32	CR3
RNGN1204	CRGNR/L	2525M12-A4	●	❍	25	25	150	25	32	35	CR4
RNGN1207	CRGNR/L	2525M12-A7	●	❍	25	25	150	25	32	35	CR4
RNGN1204	CRGNR/L	3225P12-A4	●	❍	32	25	170	32	32	35	CR4
RNGN1207	CRGNR/L	3225P12-A7	●	❍	32	25	170	32	32	35	CR4
RNGN1507	CRGNR/L	3225P15-A7	●	❍	32	25	170	32	32	37	CR5
RNGN1907	CRGNR/L	3225P19-A7	●	❍	32	25	170	32	32	45	CR8
54	← insert at page						spare parts set at page→				148

● normal production ❍ on request

INSERT SC_T SC_W — SSSC

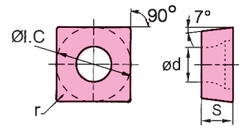


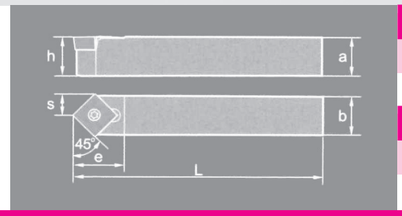
LOCKING: SCREW

RAKE ANGLE: 45°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SC..09T3	SSSCR/L	1616H09	●	●	16	16	100	16	17	16	SS1
SC..1204	SSSCR/L	2020K12	●	●	20	20	125	20	21	24	SS3
56	← insert at page						spare parts set at page →				149

INSERT SC_T SC_W — SSDC



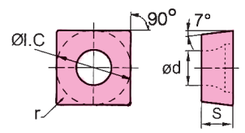


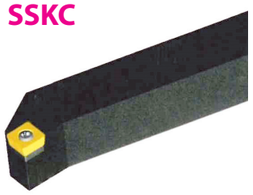
LOCKING: SCREW

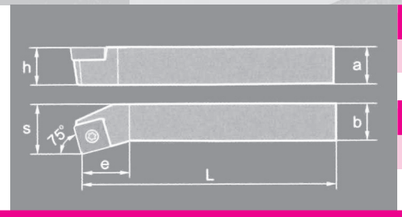
RAKE ANGLE: 45°

insert size	toolholder code	shank size	N	a	b	L	h	s	e	spare parts set
SC..09T3	SSDCN	1616H09	●	16	16	100	16	8	15,5	SS2
SC..09T3	SSDCN	1212F09	●	12	12	80	12	6	15,5	SC1
56	← insert at page						spare parts set at page →			149

INSERT SC_T SC_W — SSKC





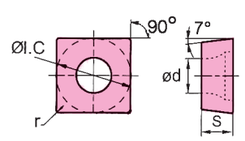


LOCKING: SCREW

RAKE ANGLE: 75°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SC..09T3	SSKCR/L	1616H09	●	●	16	16	100	16	20	13	SS2
56	← insert at page						spare parts set at page →				149

INSERT SC_T SC_W — SSBC



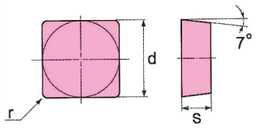
LOCKING: SCREW

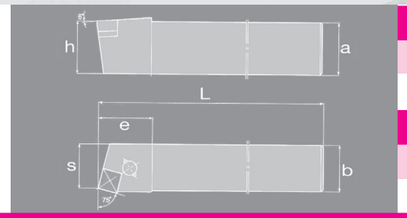
RAKE ANGLE: 75°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SC..09T3	SSBCR/L	1212F09	●	●	12	12	80	12	11	16	SC1
SC..09T3	SSBCR/L	1616H09	●	●	16	16	100	16	13	16	SC2
SC..1204	SSBCR/L	2020K12	●	●	20	20	125	20	17	25	SS3
56	← insert at page						spare parts set at page →				149

● normal production ❍ on request

INSERT SCGN — CSRC



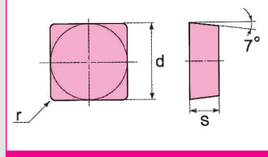


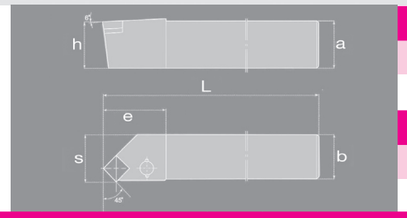
LOCKING: CLAMP

RAKE ANGLE: 75°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SCGN1204	CSRCR/L	2525M12-A4	●	❍	25	25	150	25	27	32	CS2
SCGN1204	CSRCR/L	3225P12-A4	❍	❍	32	25	170	32	27	32	CS2
55	← insert at page						spare parts set at page →				148

INSERT SCGN — CSSC



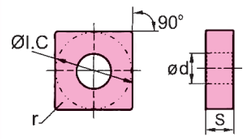


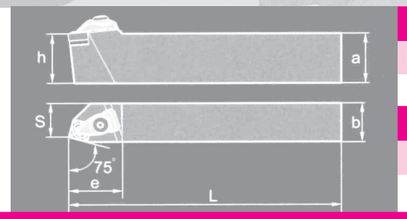
LOCKING: CLAMP

RAKE ANGLE: 45°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SCGN1204	CSSCR/L	2525M12-A4	●	❍	25	25	150	25	32	35	CS2
SCGN1206	CSSCR/L	2525M12-A6	❍	❍	25	25	150	25	32	35	CS2
SCGN1204	CSSCR/L	3225P12-A4	❍	❍	32	25	170	32	32	35	CS2
SCGN1206	CSSCR/L	3225P12-A6	❍	❍	32	25	170	32	32	35	CS2
55	← insert at page						spare parts set at page →				148

INSERT SN_G SN_A — DSBN





LOCKING: DOUBLE LOCK

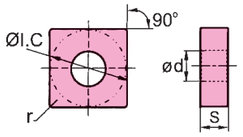
RAKE ANGLE: 75°

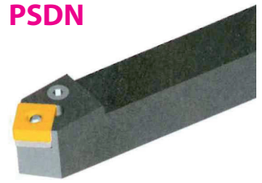
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SN..0903	DSBNR/L	1616H09	●	❍	16	16	100	16	13	26	DS1
SN..1204	DSBNR/L	2020K12	●	●	20	20	125	20	17	34	DS2
SN..1204	DSBNR/L	2525M12	●	●	25	25	150	25	22	34	DS2
SN..1204	DSBNR/L	3225P12	●	●	32	25	170	32	22	34	DS2
SN..1506	DSBNR/L	3232P15	●	●	32	32	170	32	27	41	DS3
58-59-61-62-63	← insert at page						spare parts set at page →				148

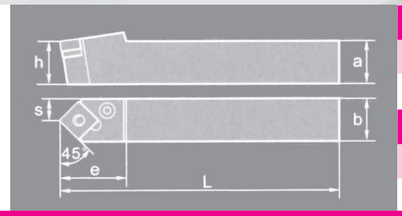
● normal production ❍ on request

INSERT SN_G SN_A

PSDN





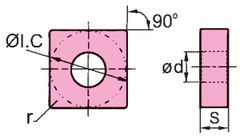


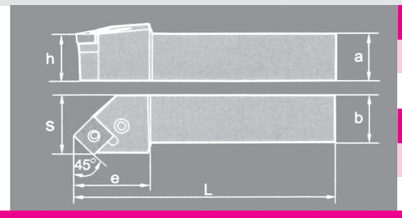
LOCKING
LEVER
RAKE ANGLE
45°

insert size	toolholder code	shank size	N	a	b	L	h	s	e	spare parts set
SN..0903	PSDNN	1212F09	❍	12	12	80	12	6	21	PS4
SN..0903	PSDNN	1616H09	●	16	16	100	16	8	23	PS5
SN..1204	PSDNN	2020K12	●	20	20	125	20	10	30	PS6
SN..1204	PSDNN	2525M12	●	20	20	150	20	12,5	30	PS6
SN..1204	PSDNN	3232P12	●	32	32	170	32	16	40	PS6
SN..1506	PSDNN	2525M15	●	25	25	150	25	12,5	40	PS7
SN..1506	PSDNN	3232P15	●	32	32	170	32	16	40	PS7
SN..1906	PSDNN	3232P19	●	32	32	170	32	16	40	PS1
SN..1906	PSDNN	4040S19	●	40	40	250	40	20	40	PS1
61-62-63	← insert at page					spare parts set at page→				149

INSERT SN_G SN_A

PSSN





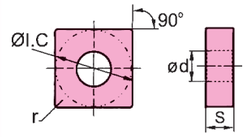
LOCKING
LEVER
RAKE ANGLE
45°

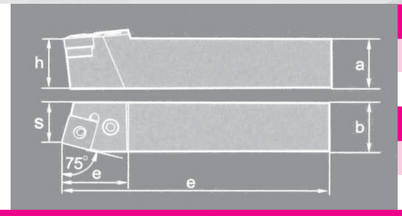
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SN..0903	PSSNR/L	1616H09	●	●	16	16	100	16	20	25	PS5
SN..1204	PSSNR/L	2020K12	●	●	20	20	125	20	25	30	PS6
SN..1204	PSSNR/L	2525M12	●	●	25	25	150	25	32	30	PS6
SN..1204	PSSNR/L	3232P12	●	●	32	32	170	32	40	40	PS6
SN..1506	PSSNR/L	2525M15	●	●	25	25	150	25	32	30	PS7
SN..1506	PSSNR/L	3232P15	●	●	32	32	170	32	40	40	PS7
SN..1906	PSSNR/L	3232P19	●	●	32	32	170	32	40	40	PS1
SN..1906	PSSNR/L	4040S19	●	●	40	40	250	40	50	50	PS1
SN..2507	PSSNR/L	4040S2507	●	●	40	40	250	40	50	50	PS2
SN..2509	PSSNR/L	4040S2509	●	●	40	40	250	40	50	50	PS3
61-62-63	← insert at page						spare parts set at page→				149

● normal production ❍ on request

INSERT SN_G SN_A

PSBN



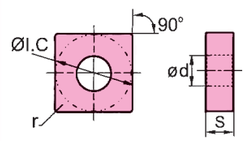


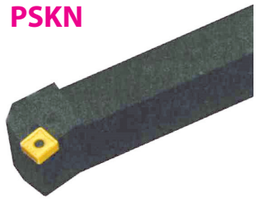
LOCKING
LEVER
RAKE ANGLE
75°

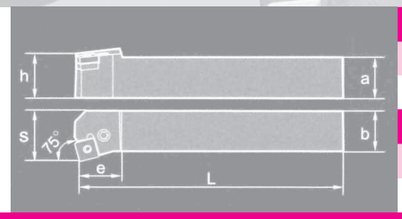
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SN..0903	PSBNR/L	1616H09	●	●	16	16	100	16	13	21	PS5
SN..0903	PSBNR/L	2020K09	●	●	20	20	125	20	17	23	PS5
SN..1204	PSBNR/L	2020K12	●	●	20	20	125	20	17	28	PS6
SN..1204	PSBNR/L	2525M12	●	●	25	25	125	25	22	28	PS6
SN..1204	PSBNR/L	3225P12	●	❍	32	25	170	32	22	28	PS6
SN..1204	PSBNR/L	3232P12	●	●	32	32	170	32	27	28	PS6
SN..1506	PSBNR/L	2525M15	●	❍	25	25	150	25	22	35	PS7
SN..1506	PSBNR/L	3232P15	●	●	32	32	170	32	27	35	PS7
SN..1906	PSBNR/L	3232P19	●	●	32	32	170	32	27	40	PS1
SN..1906	PSBNR/L	4040S19	●	●	40	40	250	40	35	40	PS1
SN..2507	PSBNR/L	4040S2507	❍	❍	40	40	250	40	35	48	PS2
SN..2509	PSBNR/L	4040S2509	❍	❍	40	40	250	40	35	48	PS3
61-62-63	← insert at page						spare parts set at page→				149

INSERT SN_G SN_A

PSKN





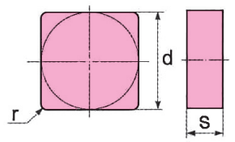


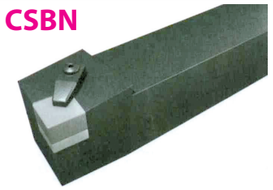
LOCKING
LEVER
RAKE ANGLE
75°

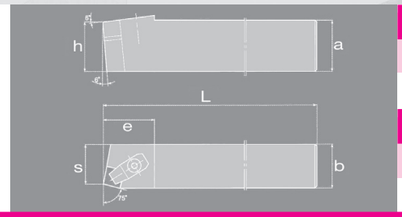
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SN..0903	PSKNR/L	1616H09	❍	●	16	16	100	16	20	17	PS5
SN..0903	PSKNR/L	2020K09	●	●	20	20	125	20	25	20	PS5
SN..1204	PSKNR/L	2020K12	●	●	20	20	125	20	25	26	PS6
SN..1204	PSKNR/L	2525M12	●	●	25	25	150	25	32	26	PS6
SN..1204	PSKNR/L	3232P12	●	●	32	32	170	32	40	26	PS6
SN..1506	PSKNR/L	2525M15	●	❍	25	25	150	25	32	32	PS7
SN..1506	PSKNR/L	3232P15	●	●	32	23	170	32	40	32	PS7
SN..1906	PSKNR/L	3232P19	●	●	32	23	170	32	40	36	PS1
SN..1906	PSKNR/L	4040S19	❍	❍	40	40	250	40	50	40	PS1
61-62-63	← insert at page						spare parts set at page→				149

● normal production ❍ on request

INSERT SNGN — CSBN





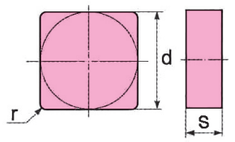


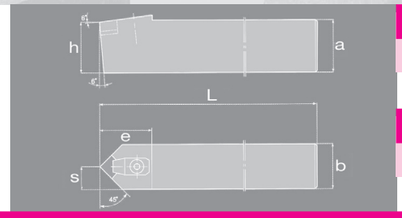
LOCKING: CLAMP

RAKE ANGLE: 75°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SNGN1204	CSBNR/L	2525M12-A4	●	●	25	25	150	25	22	34	CS3
SNGN1207	CSBNR/L	2525M12-A7	●	●	25	25	150	25	22	34	CS3
SNGN1507	CSBNR/L	2525M15-A7	❍	❍	25	25	150	25	22	34	CS4
SNGN1207	CSBNR/L	3225P12-A7	●	●	32	25	170	32	22	34	CS3
SNGN1507	CSBNR/L	3225P15-A7	●	❍	32	25	170	32	22	40	CS4
SNGN1907	CSBNR/L	4040S19-A7	❍	❍	40	40	250	40	35	54	CS9
SNGN2509	CSBNR/L	5050T25-A9	❍	❍	50	50	300	50	45	65	CS8
59-60	← insert at page						spare parts set at page →				148

INSERT SNGN — CSDN



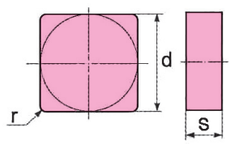


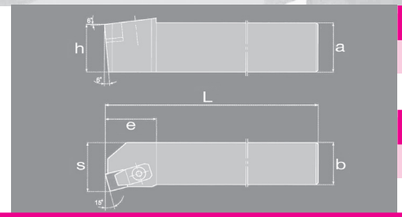
LOCKING: CLAMP

RAKE ANGLE: 45°

insert size	toolholder code	shank size	N	a	b	L	h	s	e	spare parts set
SNGN1204	CSDNN	2525M12-A4	●	25	25	150	25	12,5	35	CS3
SNGN1207	CSDNN	2525M12-A7	●	25	25	150	25	12,5	35	CS3
SNGN1507	CSDNN	2525M15-A7	❍	25	25	150	25	12,5	38	CS4
SNGN1507	CSDNN	3223P15-A7	●	32	25	170	32	12,5	38	CS4
SNGN1207	CSDNN	3225P12-A7	●	32	25	170	32	12,5	35	CS3
SNGN1907	CSDNN	4040S19-A7	●	40	40	250	40	20	60	CS9
SNGN2509	CSDNN	5050T25-A9	●	50	50	300	50	25	60	CS8
59-60	← insert at page						spare parts set at page →			148

INSERT SNGN — CSKN





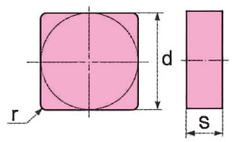
LOCKING: CLAMP

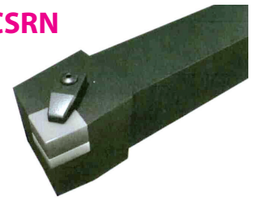
RAKE ANGLE: 15°

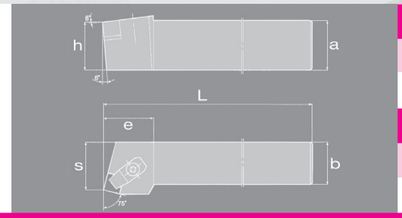
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SNGN1204	CSKNR/L	2525M12-A4	❍	❍	25	25	150	25	32	34	CS3
SNGN1207	CSKNR/L	2525M12-A7	●	●	25	25	150	25	32	34	CS3
SNGN1507	CSKNR/L	2525M15-A7	❍	❍	25	25	150	25	32	40	CS4
SNGN1207	CSKNR/L	3225P12-A7	❍	❍	32	25	170	32	32	34	CS3
SNGN1507	CSKNR/L	3225P15-A7	●	●	32	25	170	32	32	40	CS4
59-60	← insert at page						spare parts set at page →				148

● normal production ❍ on request

INSERT SNGN — CSRN





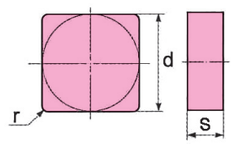


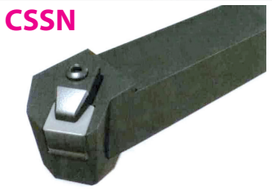
LOCKING: CLAMP

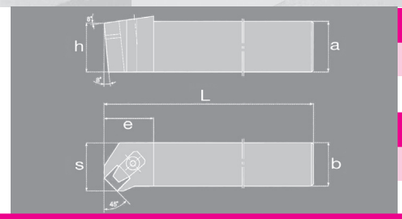
RAKE ANGLE: 75°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SNGN1204	CSRNR/L	2525M12-A4	●	●	25	25	150	25	27	32	CS3
SNGN1207	CSRNR/L	2525M12-A7	●	●	25	25	150	25	27	32	CS3
SNGN1507	CSRNR/L	2525M15-A7	❍	❍	25	25	150	25	27	34	CS4
SNGN1207	CSRNR/L	3225P12-A7	❍	❍	32	25	170	32	27	32	CS3
SNGN1507	CSRNR/L	3225P15-A7	●	●	32	25	170	32	27	34	CS4
SNGN1907	CSRNR/L	4040S19-A7	❍	❍	40	40	250	40	43	54	CS9
SNGN2509	CSRNR/L	5050T25-A9	❍	❍	50	50	300	50	53	70	CS8
59-60	← insert at page						spare parts set at page →				148

INSERT SNGN — CSSN





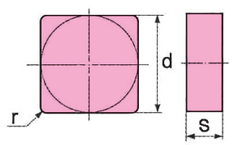


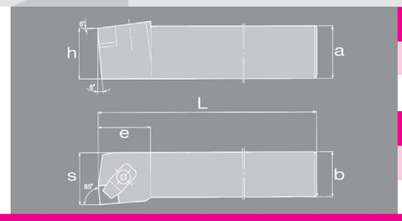
LOCKING: CLAMP

RAKE ANGLE: 45°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SNGN1204	CSSNR/L	2525M12-A4	❍	❍	25	25	150	25	32	35	CS3
SNGN1207	CSSNR/L	2525M12-A7	●	●	25	25	150	25	32	35	CS3
SNGN1507	CSSNR/L	2525M15-A7	●	❍	25	25	150	25	32	37	CS4
SNGN1207	CSSNR/L	3225P12-A7	●	❍	32	25	170	32	32	35	CS3
SNGN1507	CSSNR/L	3225P15-A7	❍	❍	32	25	170	32	32	37	CS4
59-60	← insert at page						spare parts set at page →				148

INSERT SNGN — CSYN





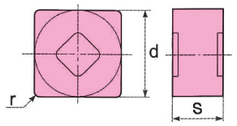
LOCKING: CLAMP

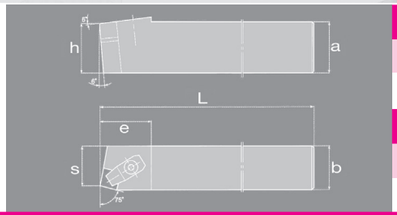
RAKE ANGLE: 85°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SNGN1204	CSYNR/L	2525M12-A4	●	❍	25	25	150	25	32	27	CS3
SNGN1207	CSYNR/L	2525M12-A7	●	❍	25	25	150	25	32	27	CS3
SNGN1507	CSYNR/L	2525M15-A7	❍	❍	25	25	150	25	32	27	CS4
SNGN1207	CSYNR/L	3225P12-A7	●	❍	32	25	170	32	32	27	CS3
SNGN1507	CSYNR/L	3225P15-A7	❍	❍	32	25	170	32	32	27	CS4
59-60	← insert at page						spare parts set at page →				148

● normal production ❍ on request

INSERT SNGX — CSBN



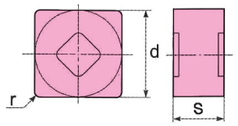


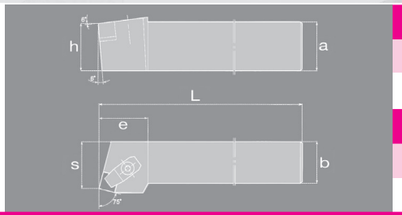
LOCKING: CLAMP

RAKE ANGLE: 75°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SNGX1207	CSBNR/L	2525M12-X7	●	❍	25	25	150	25	22	34	SX1
SNGX1507	CSBNR/L	2525M15-X7	❍	❍	25	25	150	25	22	40	SX2
SNGX1207	CSBNR/L	3225P12-X7	●	❍	32	25	170	32	22	34	SX1
SNGX1507	CSBNR/L	3225P15-X7	❍	❍	32	25	170	32	22	40	SX2
60-63	← insert at page						spare parts set at page →				150

INSERT SNGX — CSRN



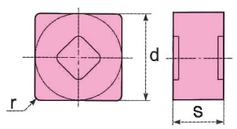


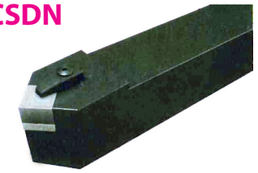
LOCKING: CLAMP

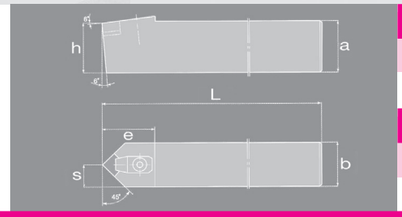
RAKE ANGLE: 75°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SNGX1207	CSRNR/L	2525M12-X7	●	❍	25	25	150	25	27	32	SX1
SNGX1507	CSRNR/L	2525M15-X7	❍	❍	25	25	150	25	27	34	SX2
SNGX1207	CSRNR/L	3225P12-X7	❍	❍	32	25	170	32	27	32	SX1
SNGX1507	CSRNR/L	3225P15-X7	●	❍	32	25	170	32	27	34	SX2
60-63	← insert at page						spare parts set at page →				150

INSERT SNGX — CSDN





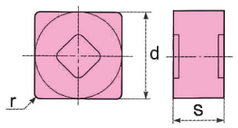


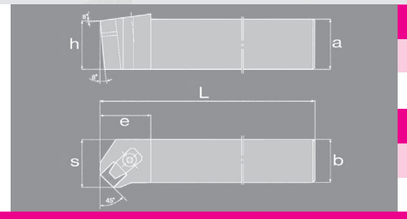
LOCKING: CLAMP

RAKE ANGLE: 45°

insert size	toolholder code	shank size	N	a	b	L	h	s	e	spare parts set
SNGX1207	CSDNN	2525M12-X7	❍	25	25	150	25	12,5	35	SX1
SNGX1507	CSDNN	2525M15-X7	❍	25	25	150	25	12,5	38	SX2
SNGX1207	CSDNN	322512-X7	❍	32	25	170	32	12,5	35	SX1
SNGX1507	CSDNN	3225P15-X7	❍	32	25	170	32	12,5	38	SX2
60-63	← insert at page						spare parts set at page →			150

INSERT SNGX — CSSN



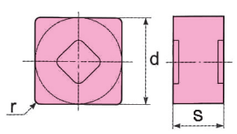


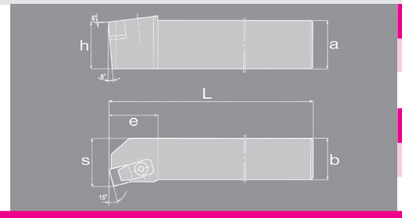
LOCKING: CLAMP

RAKE ANGLE: 45°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SNGX1207	CSSNR/L	2525M12-X7	❍	●	25	25	150	25	32	35	SX1
SNGX1507	CSSNR/L	2525M15-X7	❍	❍	25	25	150	25	32	37	SX2
SNGX1207	CSSNR/L	3225P12-X7	❍	❍	32	25	170	32	32	35	SX1
SNGX1507	CSSNR/L	3225P15-X7	❍	❍	32	25	170	32	32	37	SX2
60-63	← insert at page						spare parts set at page →				150

INSERT SNGX — CSKN



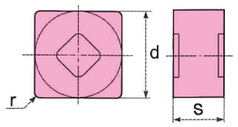


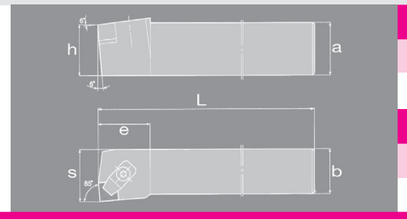
LOCKING: CLAMP

RAKE ANGLE: 15°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SNGX1207	CSKNR/L	2525M12-X7	●	●	25	25	150	25	32	34	SX1
SNGX1507	CSKNR/L	2525M15-X7	❍	❍	25	25	150	25	32	40	SX2
SNGX1207	CSKNR/L	3225P12-X7		●	32	25	170	32	32	34	SX1
SNGX1507	CSKNR/L	3225P15-X7	❍	❍	32	25	170	32	32	40	SX2
60-63	← insert at page						spare parts set at page →				150

INSERT SNGX — CSYN





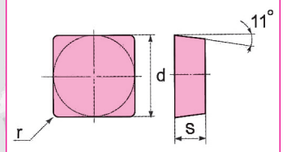
LOCKING: CLAMP

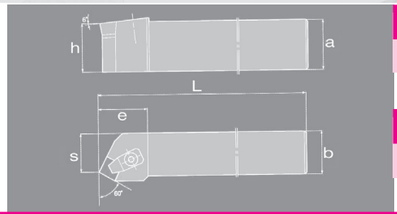
RAKE ANGLE: 85°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SNGX1207	CSYNR/L	2525M12-X7	●	❍	25	25	150	25	32	27	SX1
SNGX1507	CSYNR/L	2525M15-X7	●	❍	25	25	150	25	32	27	SX2
SNGX1207	CSYNR/L	3225P12-X7	●	●	32	25	170	32	32	27	SX1
SNGX1507	CSYNR/L	3225P15-X7	●	❍	32	25	170	32	32	27	SX2
60-63	← insert at page						spare parts set at page →				150

INSERT SPGN

CSTP





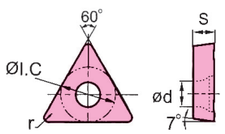
LOCKING: CLAMP

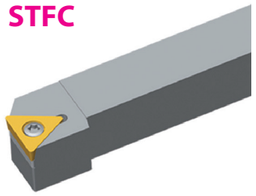
RAKE ANGLE: 60°

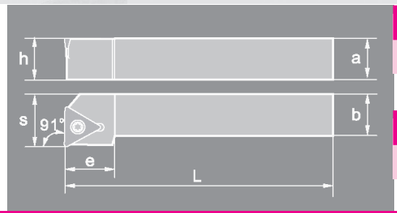
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
SPGN0903	CSTPR/L	2020K09-A3	●	❍	20	20	125	20	17	24	CS1
SPGN1203	CSTPR/L	2020K12-A3	●	❍	20	20	125	20	17	30	CS2
SPGN1204	CSTPR/L	2020K12-A4	❍	❍	20	20	125	20	17	30	CS2
SPGN1203	CSTPR/L	2525M12-A3	●	❍	25	25	150	25	22	30	CS2
SPGN1204	CSTPR/L	2525M12-A4	❍	❍	25	25	150	25	22	30	CS2
64	← insert at page						spare parts set at page →				148

INSERT TC_T TC_W

STFC







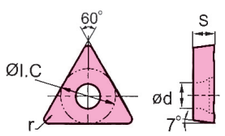
LOCKING: SCREW

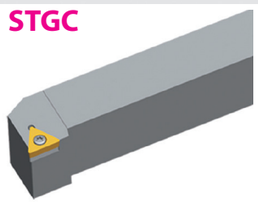
RAKE ANGLE: 91°

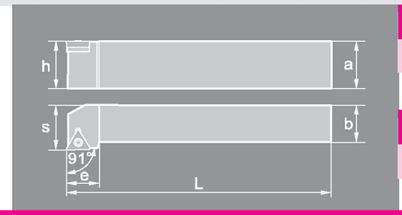
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
TC..1102	STFCR/L	1212F11	●	❍	12	12	80	12	16	14	SXX
TC..1102	STFCR/L	1616H11	●	❍	16	16	100	16	20	14	SXX
TC..16T3	STFCR/L	1616H16	●	❍	16	16	100	16	20	19	ST2
TC..16T3	STFCR/L	2020K16	●	●	20	20	125	20	25	19	ST2
65-66-67	← insert at page						spare parts set at page →				150

INSERT TC_T TC_W

STGC







LOCKING: SCREW

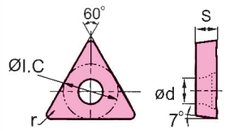
RAKE ANGLE: 91°

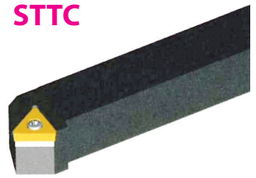
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
TC..0902	STGCR/L	0808D09	●	●	8	8	60	8	10	11	ST1
TC..0902	STGCR/L	1010E09	●	●	10	10	70	10	12	11	ST1
TC..1102	STGCR/L	1212F11	●	●	12	12	80	12	16	14	SXX
TC..1102	STGCR/L	1616H11	●	●	16	16	100	16	20	16	SXX
TC..16T3	STGCR/L	2020K16	●	●	20	20	125	20	25	21	ST2
TC..16T3	STGCR/L	2525M16	●	●	25	25	150	25	25	21	ST2
65-66-67	← insert at page						spare parts set at page →				150

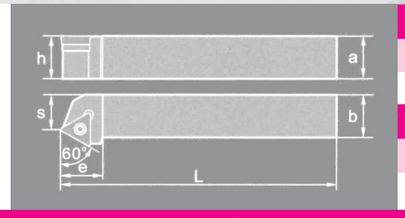
● normal production ❍ on request

INSERT TC_T TC_W

STTC







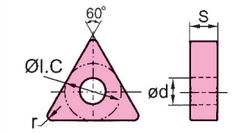
LOCKING: SCREW

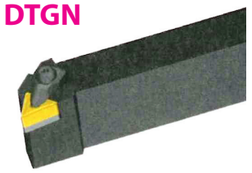
RAKE ANGLE: 60°

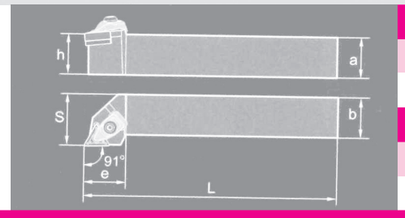
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
TC..1102	STTCR/L	1616H11	●	❍	16	16	100	16	13	14	SXX
TC..16T3	STTCR/L	1616H16	●	●	16	16	100	16	13	19	ST2
TC..16T3	STTCR/L	2020K16	●	●	20	20	125	20	17	19	ST2
65-66-67	← insert at page						spare parts set at page →				150

INSERT TN_G TN_A

DTGN







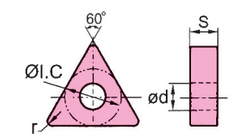
LOCKING: DOUBLE LOCK

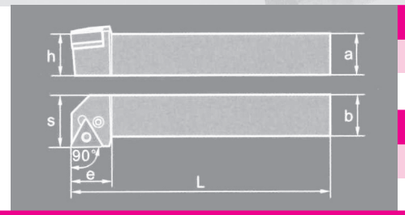
RAKE ANGLE: 91°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
TN..1604	DTGNR/L	1616H16	●	●	16	16	100	16	20	25	DT1
TN..1604	DTGNR/L	2020K16	●	●	20	20	125	20	25	25	DT1
TN..1604	DTGNR/L	2525M16	●	●	25	25	150	25	32	25	DT1
67-68-69-70-71-72	← insert at page						spare parts set at page →				150

INSERT TN_G TN_A

PTGN





LOCKING: LEVER

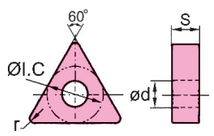
RAKE ANGLE: 90°

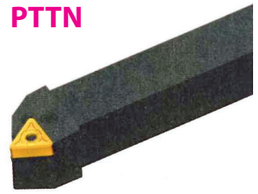
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
TN..1103	PTGNR/L	1010E11	❍	❍	10	10	70	10	14	16	PT1
TN..1103	PTGNR/L	1212F11	❍	❍	12	12	80	12	16	14	PT1
TN..1103	PTGNR/L	1616H11	●	●	16	16	100	16	20	18	PT1
TN..1103	PTGNR/L	2020K11	●	●	20	20	125	20	25	19	PT1
TN..1103	PTGNR/L	2525M11	❍	●	25	25	150	25	32	20	PT1
TN..1604	PTGNR/L	1616H16	●	●	16	16	100	16	20	20	PT2
TN..1604	PTGNR/L	2020K16	●	●	20	20	125	20	25	20	PT2
TN..1604	PTGNR/L	2525M16	●	●	25	25	150	25	32	20	PT2
TN..1604	PTGNR/L	3232P16	●	●	32	32	170	32	40	20	PT2
TN..2204	PTGNR/L	2525M22	●	●	25	25	150	25	32	28	PT3
TN..2204	PTGNR/L	3232P22	●	●	32	32	170	32	40	28	PT3
TN..2706	PTGNR/L	3232P27	●	●	32	32	170	32	40	33	PT4
TN..2706	PTGNR/L	4040S27	❍	●	40	40	250	40	50	33	PT4
69-70-71-72	← insert at page						spare parts set at page →				149

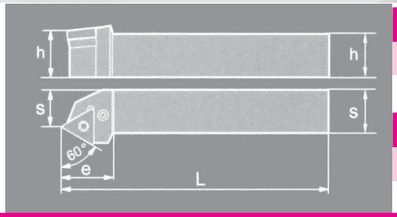
● normal production ❍ on request

INSERT TN_G TN_A

PTTN





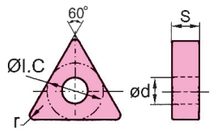


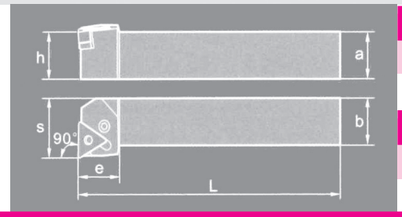
LOCKING
LEVER
RAKE ANGLE
60°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
TN..1604	PTTNR/L	1616H16	●	●	16	16	100	16	13	25	PT2
TN..1604	PTTNR/L	2020K16	●	●	20	20	125	20	17	25	PT2
TN..2204	PTTNR/L	2525M22	●	●	25	25	150	22	22	32	PT3
69-70-71-72	← insert at page						spare parts set at page →				149

INSERT TN_G TN_A

PTFN



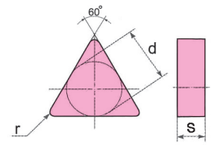


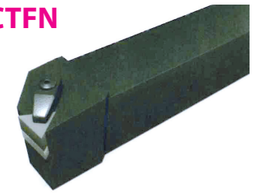
LOCKING
LEVER
RAKE ANGLE
90°

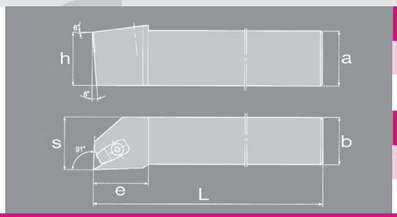
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
TN..1604	PTFNR/L	1616H16	●	●	16	16	100	16	20	20	PT2
TN..1604	PTFNR/L	2020K16	●	●	20	20	125	20	25	20	PT2
TN..1604	PTFNR/L	2525M16	●	●	25	25	150	25	32	20	PT2
TN..2204	PTFNR/L	2525M22	●	●	25	25	150	25	32	25	PT3
TN..2204	PTFNR/L	3232P22	●	●	32	32	170	32	40	25	PT3
TN..2706	PTFNR/L	3232P27	●	❍	32	32	170	32	40	34	PT4
TN..2706	PTFNR/L	4040S27	❍	❍	40	40	250	40	50	34	PT4
69-70-71-72	← insert at page						spare parts set at page →				149

INSERT TNGN

CTFN







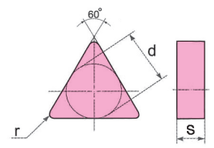
LOCKING
CLAMP
RAKE ANGLE
91°

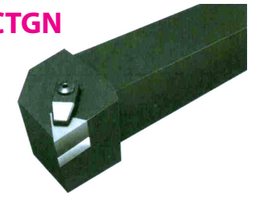
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
TNGN1604	CTFNR/L	2525M16	●	●	25	25	150	25	32	29	CT2
TNGN1607	CTFNR/L	2525M16-A7	❍	❍	25	25	150	25	32	29	CT2
TNGN2204	CTFNR/L	2525M22-A4	●	❍	25	25	150	25	32	32	CT3
TNGN2207	CTFNR/L	2525M22-A7	❍	❍	25	25	150	25	32	32	CT3
TNGN1604	CTFNR/L	3225P16-A4	●	❍	32	25	170	32	32	29	CT2
TNGN1607	CTFNR/L	3225P22-A7	❍	❍	32	25	170	32	32	29	CT2
TNGN2204	CTFNR/L	3225P22-A4	●	❍	32	25	170	32	32	32	CT3
TNGN2207	CTFNR/L	3225P22-A7	❍	❍	32	25	170	32	32	32	CT3
68-69	← insert at page						spare parts set at page →				148

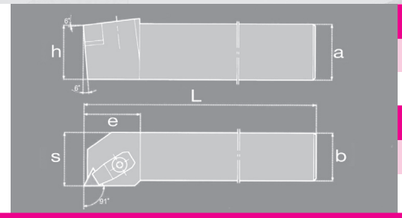
● normal production ❍ on request

INSERT TNGN

CTGN





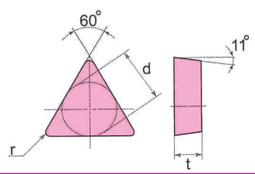


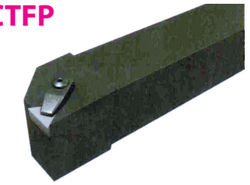
LOCKING
CLAMP
RAKE ANGLE
91°

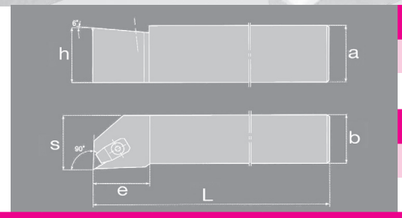
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
TNGN1604	CTGNR/L	2525M16-A4	●	●	25	25	150	25	32	26	CT2
TNGN1607	CTGNR/L	2525M16-A7	❍	❍	25	25	150	25	32	26	CT2
TNGN2204	CTGNR/L	2525M22-A4	●	❍	25	25	150	25	32	26	CT3
TNGN2207	CTGNR/L	2525M22-A7	❍	❍	25	25	150	25	32	26	CT3
TNGN1604	CTGNR/L	3225P16-A4	●	●	32	25	170	32	32	26	CT2
TNGN1607	CTGNR/L	3225P16-A7	❍	❍	32	25	170	32	32	26	CT2
TNGN2204	CTGNR/L	3225P22-A4	●	❍	32	25	170	32	32	26	CT3
TNGN2207	CTGNR/L	3225P22-A7	❍	❍	32	25	170	32	32	26	CT3
68-69	← insert at page						spare parts set at page →				148

INSERT TPGN

CTFP





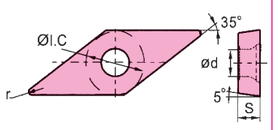


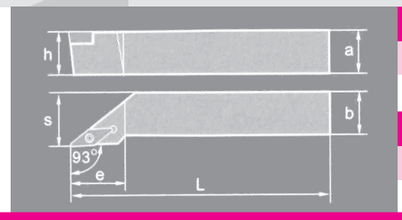
LOCKING
CLAMP
RAKE ANGLE
90°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
TPGN1603	CTFPR/L	2020K16	●	●	20	20	125	20	25	20	CT1
TPGN1603	CTFPR/L	2525M16	●	●	25	25	150	25	32	20	CT1
72-73	← insert at page						spare parts set at page →				148

INSERT VB_T VB_W

SVJB





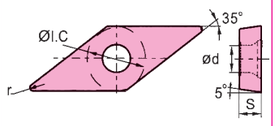
LOCKING
SCREW
RAKE ANGLE
93°

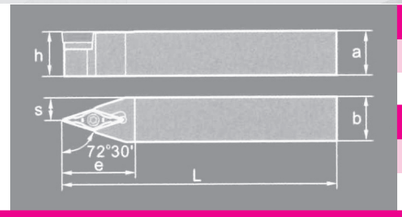
insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
VB..1102	SVJBR/L	1212F11	●	●	12	12	80	12	16	27	SXX
VB..1102	SVJBR/L	1616H11	●	●	16	16	100	16	20	27	SXX
VB..1102	SVJBR/L	2020K11	●	●	20	20	125	20	25	27	SXX
VB..1102	SVJBR/L	2525M11	●	●	25	25	150	25	32	27	SXX
VB..1604	SVJBR/L	1616H16	●	●	16	16	100	16	20	36	SV1
VB..1604	SVJBR/L	2020K16	●	●	20	20	125	20	25	41	SV1
VB..1604	SVJBR/L	2525M16	●	●	25	25	150	25	32	41	SV1
VB..1604	SVJBR/L	3225P16	●	●	32	25	170	32	32	41	SV1
74	← insert at page						spare parts set at page →				150

● normal production ❍ on request

INSERT VB_T VB_W

SVVB



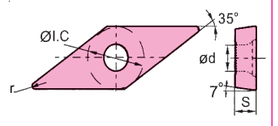


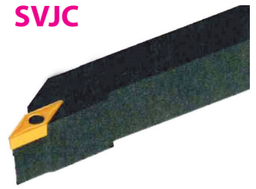
LOCKING
SCREW
RAKE ANGLE
72° 30'

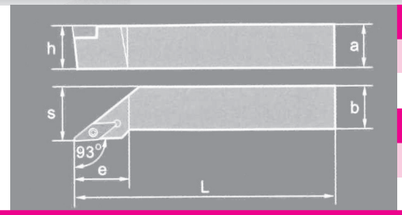
insert size	toolholder code	shank size	N	a	b	L	h	s	e	spare parts set
VB..1102	SVVBN	1212F11	●	12	12	80	12	6	27	SXX
VB..1102	SVVBN	1616H11	●	16	16	100	16	8	27	SXX
VB..1102	SVVBN	2020K11	●	20	20	125	20	10	30	SXX
VB..1604	SVVBN	1616H16	●	16	16	100	16	8	33	SV1
VB..1604	SVVBN	2020K16	●	20	20	125	20	10	33	SV1
VB..1604	SVVBN	2525M16	●	25	25	150	25	12,5	38	SV1
74	← insert at page					spare parts set at page →				150

INSERT VC_T VC_W

SVJC





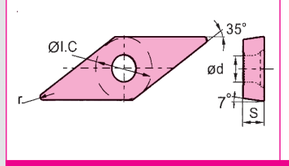


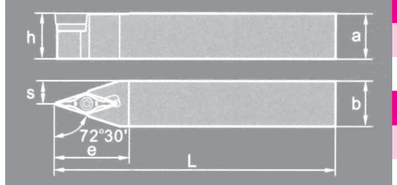
LOCKING
SCREW
RAKE ANGLE
93°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
VC..1103	SVJCR/L	101E11	●	❍	10	10	70	10	12	22	SXX
VC..1103	SVJCR/L	1212F11	●	●	12	12	80	12	16	27	SXX
VC..1103	SVJCR/L	1616H11	●	●	16	16	100	16	20	27	SXX
VC..1103	SVJCR/L	2020K11	●	●	20	20	125	20	25	27	SXX
VC..1103	SVJCR/L	2525M11	●	●	25	25	150	25	32	27	SXX
VC..1604	SVJCR/L	1616H16	●	●	16	16	100	16	20	36	SV1
VC..1604	SVJCR/L	2020K16	●	●	20	20	125	20	25	41	SV1
VC..1604	SVJCR/L	2020M16	●	●	20	20	150	20	25	41	SV1
VC..1604	SVJCR/L	2525M16	●	●	25	25	150	20	32	41	SV1
VC..1604	SVJCR/L	3225P16	❍	❍	32	25	170	32	32	41	SV1
75	← insert at page					spare parts set at page →				150	

INSERT VC_T VC_W

SVVC





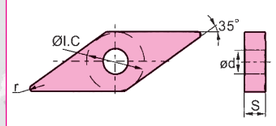
LOCKING
SCREW
RAKE ANGLE
72° 30'

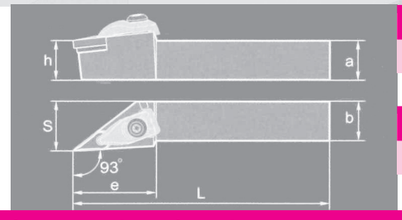
insert size	toolholder code	shank size	N	a	b	L	h	s	e	spare parts set
VC..1103	SVVCN	1212F11	●	12	12	80	12	6	27	SXX
VC..1103	SVVCN	1212M11	●	12	12	150	12	6	27	SXX
VC..1103	SVVCN	1616H11	●	16	16	100	16	8	27	SXX
VC..1103	SVVCN	2020K11	●	20	20	125	20	10	30	SXX
VC..1103	SVVCN	2525M11	●	25	25	150	25	12,5	38	SXX
VC..1604	SVVCN	1616H16	●	16	16	100	16	8	33	SV1
VC..1604	SVVCN	2020K16	●	20	20	125	20	10	33	SV1
VC..1604	SVVCN	2525M16	●	25	25	150	25	12,5	38	SV1
75	← insert at page					spare parts set at page →				150

● normal production ❍ on request

INSERT VN_G VN_A

DVJN



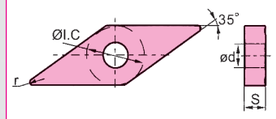


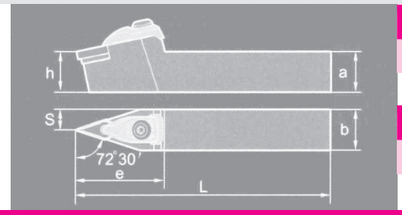
LOCKING
DOUBLE LOCK
RAKE ANGLE
93°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
VN..1604	DVJNR/L	2020K16	●	●	20	20	125	20	25	41	DV1
VN..1604	DVJNR/L	2525M16	●	●	25	25	150	25	32	41	DV1
75-76-77	← insert at page						spare parts set at page →				148

INSERT VN_G VN_A

DVVN



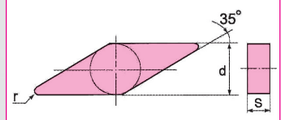


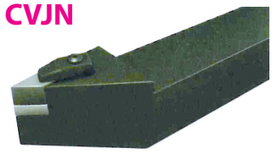
LOCKING
DOUBLE LOCK
RAKE ANGLE
72° 30'

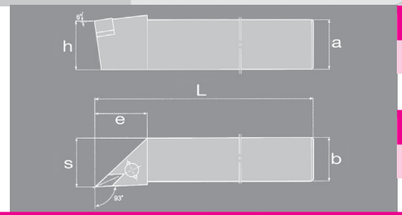
insert size	toolholder code	shank size	N	a	b	L	h	s	e	spare parts set
VN..1604	DVVNN	2020K16	●	20	20	125	20	10	44	DV1
VN..1604	DVVNN	2525M16	●	25	25	150	25	12,5	44	DV1
75-76-77	← insert at page					spare parts set at page →				148

INSERT VNGN

CVJN





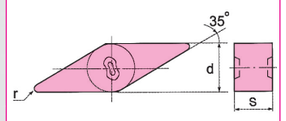


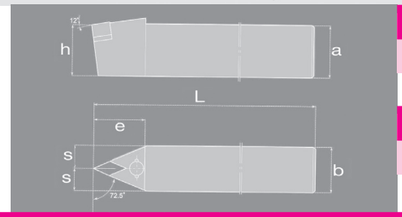
LOCKING
CLAMP
RAKE ANGLE
93°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
VNGN1604	CVJNR/L	2525M16-A4	●	●	25	25	150	25	32	41	CV1
VNGN1607	CVJNR/L	2525M16-A7	●	●	25	25	150	25	32	41	CV1
VNGN1607	CVJNR/L	3225P16-A7	●	❍	32	25	170	32	32	41	CV1
76	← insert at page						spare parts set at page →				148

INSERT VNGX

CVVN





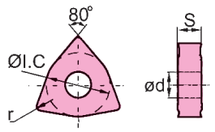
LOCKING
CLAMP
RAKE ANGLE
72° 30'

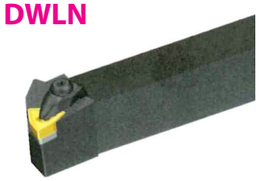
insert size	toolholder code	shank size	N	a	b	L	h	s	e	spare parts set
VNGX1607	CVVNN	2525M16-X7	❍	25	25	150	25	12.5	45	CV1
VNGX1607	CVVNN	3225P16-X7	●	32	25	170	32	12.5	45	CV1
76	← insert at page					spare parts set at page →				148

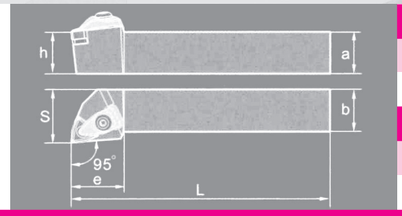
● normal production ❍ on request

INTERNAL TURNING TOOLS

INSERT WN_G WN_A — DWLN





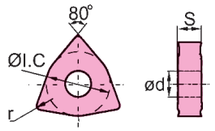


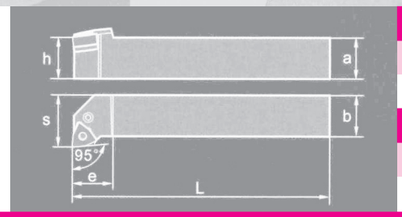
LOCKING: DOUBLE LOCK

RAKE ANGLE: 93°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
WN..0604	DWLNR/L	1616H06	●	●	16	16	100	16	20	24	DW1
WN..0604	DWLNR/L	2020K06	●	●	20	20	125	20	25	24	DW1
WN..0604	DWLNR/L	2525M06	●	●	25	25	150	25	32	24	DW1
WN..0804	DWLNR/L	2020K08	●	●	20	20	125	20	25	31	DW2
WN..0804	DWLNR/L	2525M08	●	●	25	25	150	25	32	31	DW2
WN..0804	DWLNR/L	3225P08	●	●	32	25	170	23	32	31	DW2
77-78-79	← insert at page						spare parts set at page →				148

INSERT WN_G WN_A — PWLN





LOCKING: LEVER

RAKE ANGLE: 95°

insert size	toolholder code	shank size	R	L	a	b	L	h	s	e	spare parts set
WN..0604	PWLNR/L	1616H06	●	●	16	16	100	16	20	20	PW1
WN..0604	PWLNR/L	2020K06	●	●	20	20	125	20	25	20	PW1
WN..0604	PWLNR/L	2525M06	●	●	25	25	150	25	32	20	PW1
WN..0804	PWLNR/L	2020K08	●	●	20	20	125	20	25	26	PW2
WN..0804	PWLNR/L	2525M08	●	●	25	25	150	250	32	26	PW2
77-78-79	← insert at page						spare parts set at page →				149

● normal production ❍ on request

INTERNAL TURNING TOOLS CODE

S	25	T	P	S	K	N	R	12
1	2	3	4	5	6	7	8	9

1 SHANK TYPE

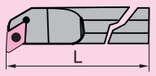
code	Type
S	Steel shank

✔ *Coolant hole and/or carbide shank on request*

2 SHANK DIAMETER

code	diameter
16	16
20	20
25	25
32	32
40	40
50	50

3 TOOL LENGTH



code	length
H	100
K	125
M	150
N	160
Q	180
R	200
S	250
T	300
U	350
V	400

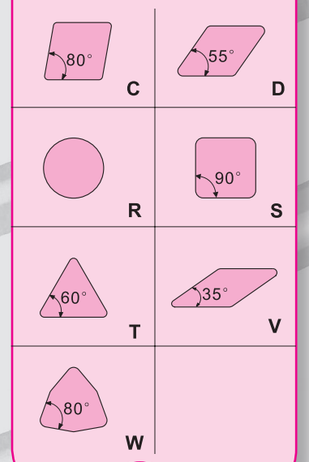
4 LOCKING SYSTEM

P Lever

S Screw

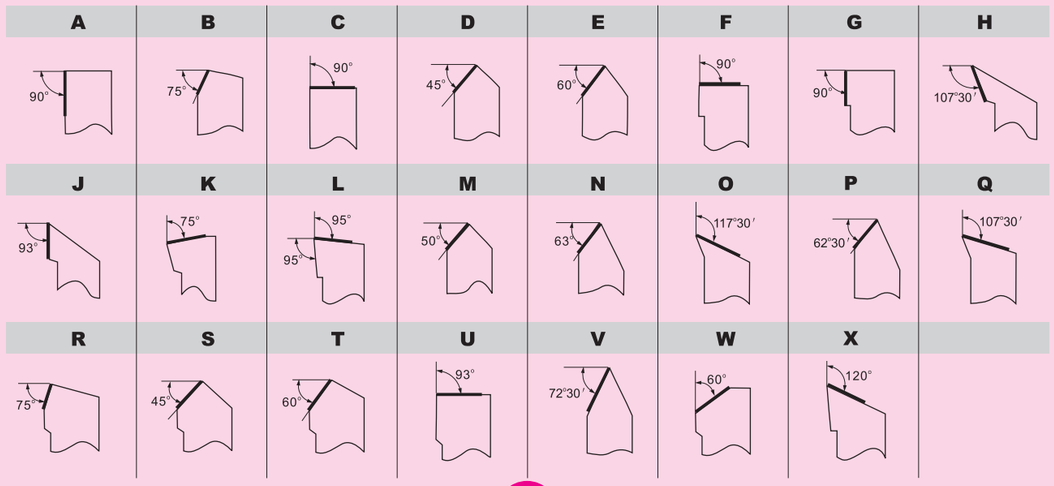
C Clamp

5 INSERT SHAPE

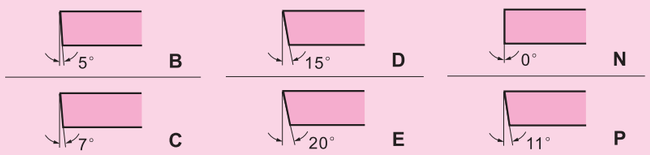


INTERNAL TURNING TOOLS CODE

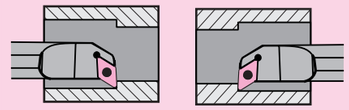
6 HOLDER STYLE AND LEAD ANGLE



7 CLEARANCE ANGLE OF MAJOR CUTTING EDGE



8 HOLDER EXECUTION



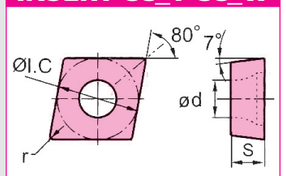
L R

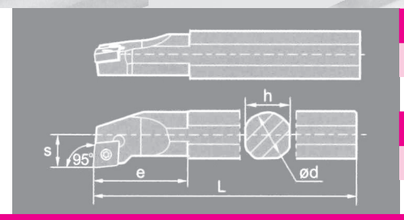
9 CUTTING EDGE LENGTH

insert shape	C	D	R	S	T	V	W
Inscribed circle diameter (mm)	Cutting edge length						
5,556	---	---	---	---	09	---	---
6,350	06	07	---	---	11	---	---
9,525	09	11	09	09	16	16	06
12,700	12	15	12	12	22	22	08
15,875	16	19	15	15	27	---	---
19,050	19	---	19	19	33	---	---
25,400	25	---	25	25	44	---	---

INTERNAL TURNING TOOLS

INSERT CC_T CC_W — SCLC



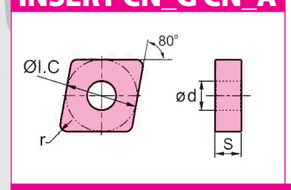


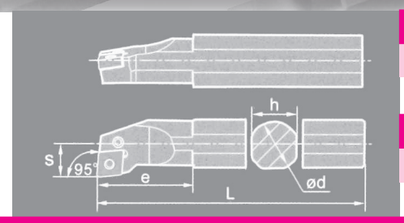
LOCKING: SCREW

RAKE ANGLE: 95°

insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
CC..0602	S10K SCLCR/L06	●	●	10	10	7	125	5	-15	14	SYY
CC..0602	S10M SCLCR/L06	●	●	12	10	9	150	6	-13	14	SYY
CC..0602	S12M SCLCR/L06	●	●	16	12	11	150	9	-10	25	SYY
CC..09T3	S25Q SCLCR/L09	●	❍	32	25	23	180	17	-6	45	SC1
CC..09T3	S25T SCLCR/L09	●	●	32	25	23	300	17	-6	45	SC1
CC..09T3	S12M SCLCR/L09	●	●	16	12	11	150	9	-10	25	SC1
CC..09T3	S16M SCLCR/L09	●	❍	20	16	15	150	11	-12	32,5	SC1
CC..09T3	S16R SCLCR/L09	●	●	20	16	15	200	11	-12	32,5	SC1
CC..09T3	S20Q SCLCR/L09	●	●	25	20	18	180	13	-8	38	SC1
CC..09T3	S20S SCLCR/L09	●	●	25	20	18	250	13	-8	38	SC1
CC..1204	S32R SCLCR/L12	●	●	40	32	30	200	22	-10	50	SC3
CC..1204	S32U SCLCR/L12	●	●	40	32	30	350	22	-10	50	SC3
CC..1204	S40V SCLCR/L12	●	●	50	40	37	400	27	-8	60	SC3
CC..1204	S25Q SCLCR/L12	●	❍	32	25	23	180	17	-6	45	SCS
CC..1204	S25T SCLCR/L12	●	●	32	25	23	300	17	-6	45	SCS
34-35-36-37	← insert at page						spare parts set at page →				149-150

INSERT CN_G CN_A — PCLN





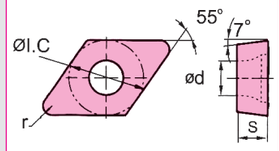
LOCKING: LEVER

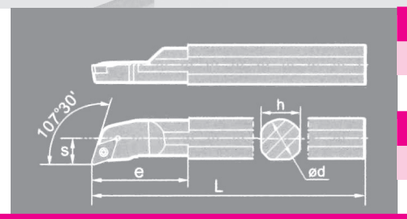
RAKE ANGLE: 95°

insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
CN..0903	S16M PCLNR/L09	●	●	20	16	15	150	11	-12	28	PC8
CN..0903	S16R PCLNR/L09	●	●	20	16	15	200	11	-12	28	PC8
CN..0903	S20Q PCLNR/L09	●	●	25	20	18	180	13	-11	31	PC8
CN..0903	S20S PCLNR/L09	●	●	25	20	18	250	13	-11	31	PC8
CN..0903	S25Q PCLNR/L09	❍	❍	32	25	23	180	17	-10	35	PC8
CN..0903	S25T PCLNR/L09	●	●	32	25	23	300	17	-10	35	PC8
CN..1204	S25Q PCLNR/L12	❍	❍	32	25	23	180	17	-12	40	PC9
CN..1204	S25T PCLNR/L12	●	●	32	25	23	300	17	-12	40	PC9
CN..1204	S32R PCLNR/L12	●	●	44	32	30	200	22	-10	50	PC6
CN..1204	S32U PCLNR/L12	●	●	44	32	30	350	22	-10	50	PC6
CN..1204	S40S PCLNR/L12	❍	❍	54	40	37	250	27	-10	55	PC6
CN..1204	S40V PCLNR/L12	●	●	54	40	37	400	27	-10	55	PC6
CN..1204	S50S PCLNR/L12	❍	●	63	50	47	250	35	-10	56	PC6
CN..1204	S50W PCLNR/L12	●	●	63	50	47	450	35	-10	56	PC6
CN..1907	S50S PCLNR/L19	❍	❍	63	50	47	250	35	-10	63	PC1
CN..1907	S50W PCLNR/L19	●	●	63	50	47	450	35	-10	63	PC1
37-39-40-41-42	← insert at page						spare parts set at page →				149

● normal production ❍ on request

INSERT DC_T DC_W — SDQC



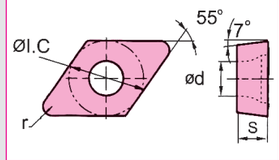


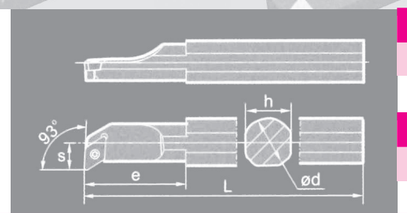
LOCKING: SCREW

RAKE ANGLE: 107° 30'

insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
DC..0702	S10M SDQCR/L07	●	●	13	10	9	150	7	-8	20	SYY
DC..0702	S12M SDQCR/L07	●	●	16	12	11	150	9	-8	22	SXX
DC..0702	S16M SDQCR/L07	❍	●	20	16	15	150	11	-6	27	SXX
DC..0702	S16Q SDQCR/L07	●	●	20	16	15	150	11	-6	27	SXX
DC..0702	S16R SDQCR/L07	●	●	20	16	15	200	11	-6	27	SXX
DC..11T3	S25Q SDQCR/L11	●	❍	32	25	23	180	17	-6	32	SR1
DC..11T3	S25T SDQCR/L11	●	●	32	25	23	300	17	-6	32	SR1
DC..11T3	S20Q SDQCR/L11	●	❍	25	20	18	180	13	-6	32	SC1
DC..11T3	S20S SDQCR/L11	●	●	25	20	18	250	13	-6	32	SC1
43-44-45	← insert at page						spare parts set at page →				149-150

INSERT DC_T DC_W — SDUC



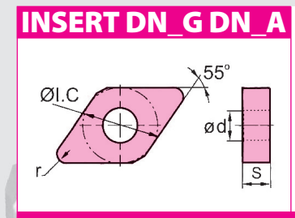


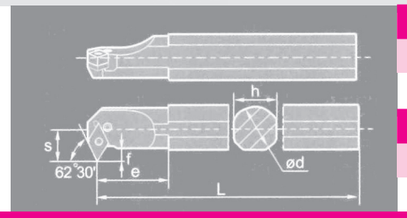
LOCKING: SCREW

RAKE ANGLE: 93°

insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
DC..0702	S10M SDUCR/L07	●	●	13	10	9	150	7	-8	0	SYY
DC..0702	S12M SDUCR/L07	●	●	16	12	11	150	9	-8	22	SYY
DC..0702	S16M SDUCR/L07	●	●	20	16	15	150	11	-6	27	SYY
DC..0702	S16R SDUCR/L07	●	●	20	16	15	200	11	-6	27	SYY
DC..11T3	S25Q SDUCR/L11	●	❍	32	25	23	180	17	-6	46	SR1
DC..11T3	S25T SDUCR/L11	●	●	32	25	23	300	17	-6	46	SR1
DC..11T3	S20Q SDUCR/L11	●	●	25	20	18	180	13	-6	40	SC1
DC..11T3	S20S SDUCR/L11	●	●	25	20	18	250	13	-6	40	SC1
43-44-45	← insert at page						spare parts set at page →				149-150

INSERT DN_G DN_A — PDSN





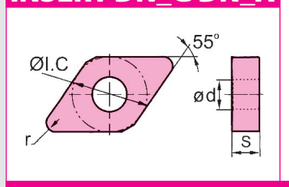
LOCKING: LEVER

RAKE ANGLE: 62° 30'

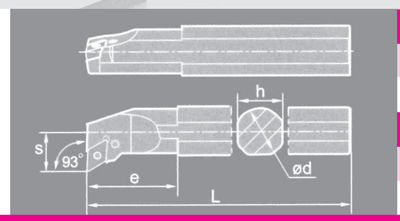
insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
DN..1506	S32R PDSNR/L15	●	●	40	32	30	200	22	-11	45	PD2
DN..1506	S32U PDSNR/L15	●	●	40	32	30	350	22	-11	45	PD2
DN..1506	S40S PDSNR/L15	●	●	50	40	37	250	27	-11	43	PD2
DN..1506	S40V PDSNR/L15	●	●	50	40	37	400	27	-11	43	PD2
45-47-48	← insert at page						spare parts set at page →				149

● normal production ❍ on request

INSERT DN_G DN_A



PDUN

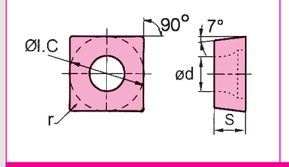


LOCKING: LEVER

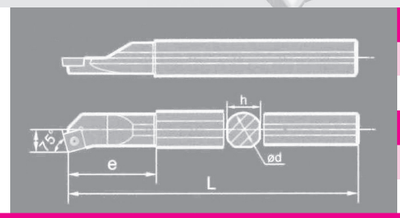
RAKE ANGLE: 93°

insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
DN..1104	S32R PDUNR/L11	●	●	40	32	30	200	22	-16	40	PD5
DN..1104	S32U PDUNR/L11	●	●	40	32	30	350	22	-16	40	PD5
DN..1104	S20Q PDUNR/L11	●	❍	25	20	18	180	13	-16	30	PD4
DN..1104	S20S PDUNR/L11	●	●	25	20	18	250	13	-16	30	PD4
DN..1104	S25Q PDUNR/L11	❍	❍	32	25	23	180	17	-13	35	PD4
DN..1104	S25T PDUNR/L11	●	●	32	25	23	300	17	-13	35	PD4
DN..1506	S32R PDUNR/L15	●	●	40	32	30	200	22	-16	50	PD2
DN..1506	S32U PDUNR/L15	●	●	40	32	30	350	22	-16	50	PD2
DN..1506	S40S PDUNR/L15	●	●	50	40	37	250	27	-11	50	PD2
DN..1506	S40V PDUNR/L15	●	●	50	40	37	400	27	-11	50	PD2
45-47-48	← insert at page							spare parts set at page→			149

INSERT SC_T SC_W



SSKC

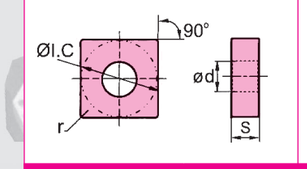


LOCKING: SCREW

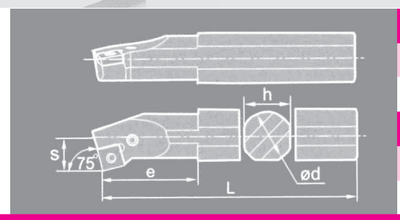
RAKE ANGLE: 75°

insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
SC..09T3	S12M SSKCR/L09	●	●	16	12	11	150	9	-10	26	SC1
SC..09T3	S16M SSKCR/L09	●	●	20	16	15	150	11	-11	32,5	SC1
SC..09T3	S16R SSKCR/L09	●	●	20	16	15	200	11	-11	32,5	SC1
SC..09T3	S20Q SSKCR/L09	●	●	25	20	18	180	13	-6	34,5	SC1
SC..09T3	S20S SSKCR/L09	●		25	20	18	250	13	-6	34,5	SC1
SC..1204	S25Q SSKCR/L12	●	●	32	25	23	180	17	-8	36,3	SCS
SC..1204	S25T SSKCR/L12	●	●	32	25	23	300	17	-8	36.3	SCS
SC..1204	S32R SSKCR/L12	●	●	40	32	30	200	22	-10	43,5	SS3
SC..1204	S32U SSKCR/L12	●		40	32	30	350	22	-10	43,5	SS3
56	← insert at page							spare parts set at page→			149

INSERT SN_G SN_A



PSKN



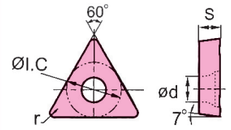
LOCKING: LEVER

RAKE ANGLE: 75°

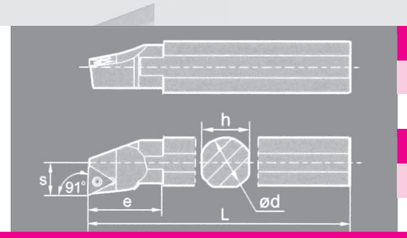
insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
SN..1204	S25T PSKNR/L12	●	❍	32	25	23	300	17	-12	42	PC9
SN..1204	S32U PSKNR/L12	●	●	44	32	30	350	22	-10	45	PS6
SN..1204	S40V PSKNR/L12	●	❍	54	40	37	400	27	-10	50	PS6
61-62	← insert at page							spare parts set at page→			149

● normal production ❍ on request

INSERT TC_T TC_W



STFC

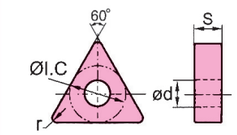


LOCKING: SCREW

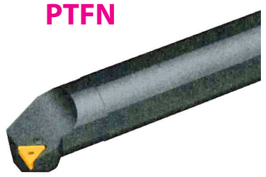
RAKE ANGLE: 91°

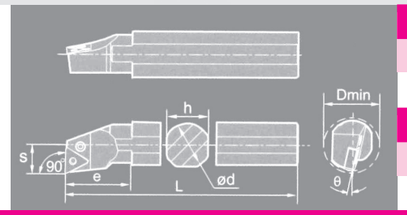
insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
TC..1102	S12M STFCR/L11	●	●	16	12	11	150	9	-10	30	SXX
TC..1102	S16M STFCR/L11	❍	❍	20	16	15	150	11	-6	35	SXX
TC..1102	S16R STFCR/L11	●	●	20	16	15	200	11	-6	35	SXX
TC..1102	S20Q STFCR/L11	❍	❍	25	20	18	180	13	-3	36	SXX
TC..1102	S20S STFCR/L11	●	●	25	20	18	250	13	-3	36	SXX
TC..16T3	S25Q STFCR/L16	❍	❍	32	25	23	180	17	-6	49	SR1
TC..16T3	S25T STFCR/L16	●	●	32	25	23	300	17	-6	49	SR1
TC..16T3	S32R STFCR/L16	❍	❍	40	32	30	200	22	-10	50	ST2
TC..16T3	S32U STFCR/L16	●	●	40	32	30	350	22	-10	50	ST2
TC..16T3	S40S STFCR/L16	❍	❍	50	40	37	250	27	-8	60	ST2
TC..16T3	S40V STFCR/L16	●	●	50	40	37	400	27	-8	60	ST2
65-66-67	← insert at page							spare parts set at page→			149-150

INSERT TN_G TN_A



PTFN



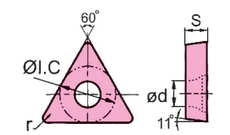


LOCKING: LEVER

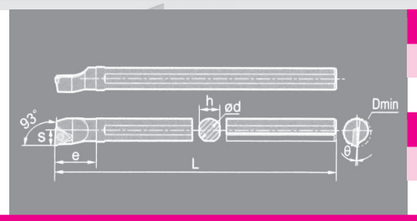
RAKE ANGLE: 90°

insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
TN..1103	S16R PTFNR/L11	●	●	20	16	15	200	11	-14	28	PT1
TN..1103	S20S PTFNR/L11	●	●	25	20	18	250	13	-12	31	PT1
TN..1103	S25T PTFNR/L11	❍	❍	32	25	23	300	17	-10	35	PT1
TN..1604	S25T PTFNR/L16	●	●	32	25	23	300	17	-12	42	PS4
TN..1604	S32R PTFNR/L16	❍	❍	44	32	30	200	22	-10	50	PT5
TN..1604	S32U PTFNR/L16	●	●	44	32	30	350	22	-10	50	PT5
TN..1604	S40S PTFNR/L16	❍	❍	54	40	37	250	27	-10	55	PT5
TN..1604	S40V PTFNR/L16	●	●	54	40	37	400	27	-10	55	PT5
69-70-71-72	← insert at page							spare parts set at page→			149

INSERT TP_T TP_W



STUP



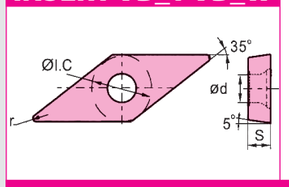
LOCKING: SCREW

RAKE ANGLE: 93°

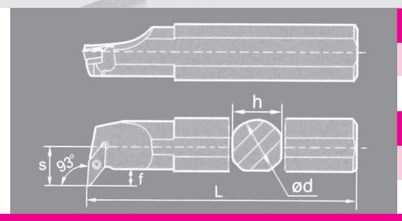
insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
TP..0902	S10K STUPR/L09	●	●	12	10	9	125	6	-6	20	SYY
TP..0902	S12M STUPR/L09	●	●	16	12	11	150	8	-4	22	SYY
TP..1103	S12M STUPR/L11	●	●	16	12	11	150	8	-4	25	SXX
TP..1103	S16Q STUPR/L11	●	●	20	16	15	180	10	-3	27	SXX
72	← insert at page							spare parts set at page→			150

● normal production ❍ on request

INSERT VB_T VB_W



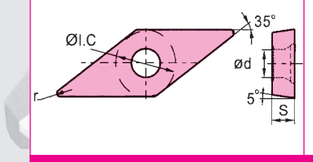
SVUB



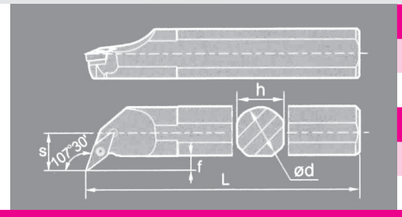
LOCKING
SCREW
RAKE ANGLE
93°

insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
VB..1604	S32R SVUBR/L16	●	●	40	32	30	200	22	-8	49	SV1
VB..1604	S32U SVUBR/L16	●	●	40	32	30	350	22	-8	49	SV1
VB..1604	S40S SVUBR/L16	●	●	50	40	37	250	27	-8	56,5	SV1
VB..1604	S40V SVUBR/L16	●	●	50	40	37	400	27	-8	56,5	SV1
74	← insert at page							spare parts set at page→			150

INSERT VB_T VB_W



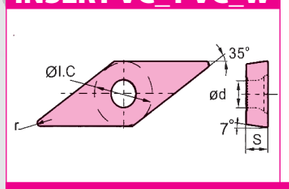
SVQB



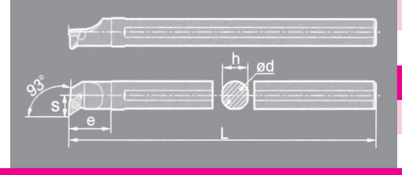
LOCKING
SCREW
RAKE ANGLE
107° 30'

insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
VB..1604	S32R SVQBR/L16	❍	❍	40	32	30	200	22	-8	56	SV1
VB..1604	S32U SVQBR/L16	●	●	40	32	30	350	22	-8	56	SV1
VB..1604	S40V SVQBR/L16	●	●	50	40	37	400	27	-8	64	SV1
74	← insert at page							spare parts set at page→			150

INSERT VC_T VC_W



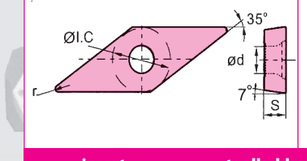
SVUC



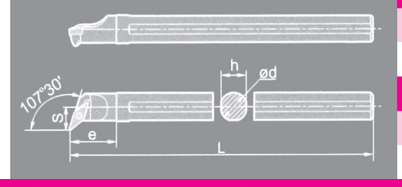
LOCKING
SCREW
RAKE ANGLE
93°

insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
VC..1103	S16Q SVUCR/L11	●	●	24	16	15	180	15	-6	25	SXX
VC..1103	S20R SVUCR/L11	●	●	28	20	18	200	17	-4	30	SXX
75	← insert at page							spare parts set at page→			150

INSERT VC_T VC_W



SVQC

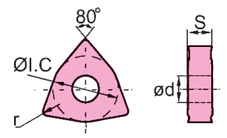


LOCKING
SCREW
RAKE ANGLE
107° 30'

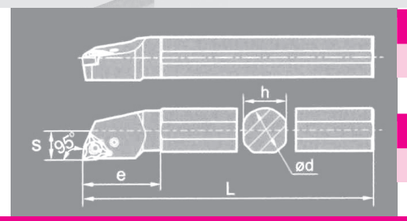
insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
VC..1103	S16Q SVQCR/L11	●	●	22	16	15	180	13	-6	28	SXX
VC..1103	S20R SVQCR/L11	●	❍	26	20	18	200	15	-4	32	SXX
75	← insert at page							spare parts set at page→			150

● normal production ❍ on request

INSERT WN_G WN_A



PWLN



LOCKING
LEVER
RAKE ANGLE
95°

insert	toolholder code	R	L	Dmin	d	h	L	s	angle	e	spare parts set
WN..0604	S16M PWLNR/L06	●	●	20	16	15	150	11	-13	25	PS4
WN..0604	S20Q PWLNR/L06	●	●	25	20	18	180	13	-13	35	PS4
WN..0604	S25Q PWLNR/L06	❍	❍	32	25	23	180	17	-13	35	PS4
WN..0604	S25T PWLNR/L06	❍	❍	32	25	23	300	17	-13	35	PS4
WN..0804	S20Q PWLNR/L08	●	●	25	20	18	180	13	-13	32	PC9
WN..0804	S25Q PWLNR/L08	●	❍	32	25	23	180	17	-13	45	PC9
WN..0804	S25T PWLNR/L08	●	❍	32	25	23	300	17	-13	45	PC9
WN..0804	S32R PWLNR/L08	●	●	40	32	30	200	22	-15	50	PW2
WN..0804	S32U PWLNR/L08	●	●	40	32	30	350	22	-15	50	PW2
77-78-79	← insert at page							spare parts set at page→			149

● normal production ❍ on request

MILLING CUTTERS

MILLING CUTTERS CODES

F	SA	080	04	75	S	P	12	03
1	2	3	4	5	6	7	8	9

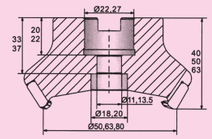
CUTTER STYLE

- **F** Face milling
- **N** Shoulder face milling
- **H** Helix endmill
- **D** Side and face milling
- **DSK** Side flat milling
- **C** Chamfering endmill
- **HF** High feed milling
- **DM** Drill and mill

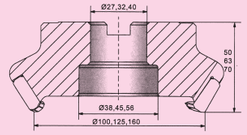
1

STRUCTURE SHAPE AND SIZE OF POSITIONING

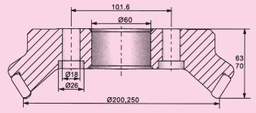
SA



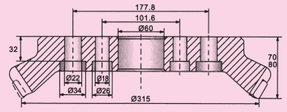
SB



SC



SD



CY Cylindrical Shank

WE Weldon

2

CUTTER DIAMETER 3

NUMBER OF TEETH (Z) 4

APPROACH 5

INSERT TYPE

SHAPE 6

RAKE ANGLE 7

SIDE LENGTH 8

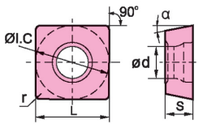
THICKNESS 9

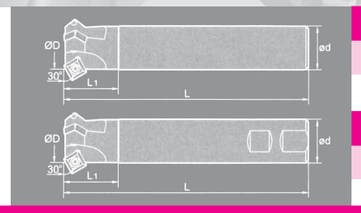
- *milling cutters to be intended always RIGHT HAND (where appliable LEFT HAND cutters on request)*
- ***C** means INTERNAL COOLANT HOLE on request*
- ***AW** means ADJUSTABLE WEDGES on request*

MILLING CUTTERS

CHAMFERING ENDMILL

INSERT SPMT — **CCY / CWE**





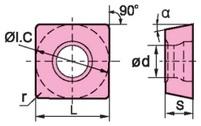
LOCKING: screw

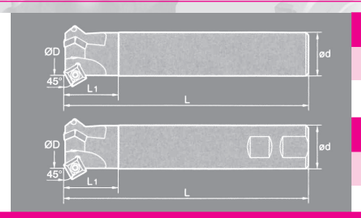
RAKE ANGLE: 30°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L	L1	spare parts set
SPMT 1204	CCY0120130SP1204	cylindrical	●	1	12	20	100	40	SP6
SPMT 1204	CCY0250230SP1204	cylindrical	●	2	25	25	120	40	SP6
SPMT 1204	CCY0320330SP1204	cylindrical	●	3	32	32	180	40	SP6
SPMT 1204	CWE0120130SP1204	weldon	●	1	12	20	100	40	SP6
SPMT 1204	CWE0250230SP1204	weldon	●	2	25	25	120	40	SP6
SPMT 1204	CWE0320330SP1204	weldon	●	3	32	32	180	40	SP6
65	← insert at page					spare parts set at page →			149

CHAMFERING ENDMILL

INSERT SPMT — **CCY / CWE**





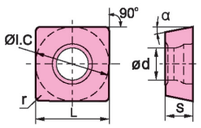
LOCKING: screw

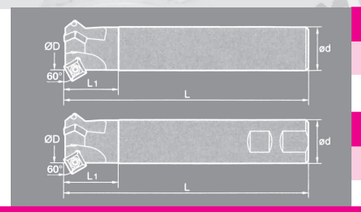
RAKE ANGLE: 45°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L	L1	spare parts set
SPMT 1204	CCY0120145SP1204	cylindrical	❍	1	12	20	100	40	SP6
SPMT 1204	CCY0250245SP1204	cylindrical	●	2	25	25	120	40	SP6
SPMT 1204	CCY0320345SP1204	cylindrical	●	3	32	32	180	40	SP6
SPMT 1204	CWE0120145SP1204	weldon	●	1	12	20	100	40	SP6
SPMT 1204	CWE0250245SP1204	weldon	●	2	25	25	120	40	SP6
SPMT 1204	CWE0320345SP1204	weldon	●	3	32	32	180	40	SP6
65	← insert at page					spare parts set at page →			149

CHAMFERING ENDMILL

INSERT SPMT — **CCY / CWE**





LOCKING: screw

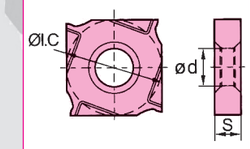
RAKE ANGLE: 60°

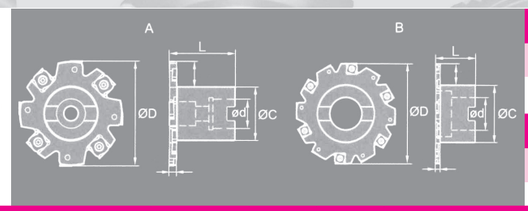
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L	L1	spare parts set
SPMT 1204	CCY0120160SP1204	cylindrical	❍	1	12	20	100	40	SP6
SPMT 1204	CCY0250260SP1204	cylindrical	●	2	25	25	120	40	SP6
SPMT 1204	CCY0320360SP1204	cylindrical	●	3	32	32	180	40	SP6
SPMT 1204	CWE0120160SP1204	weldon	❍	1	12	20	100	40	SP6
SPMT 1204	CWE0250260SP1204	weldon	●	2	25	25	120	40	SP6
SPMT 1204	CWE0320360SP1204	weldon	●	3	32	32	180	40	SP6
65	← insert at page					spare parts set at page →			149

● normal production ❍ on request

SIDE AND FACE MILLING

INSERT SNHQ — **DSA / DSB**





LOCKING: screw

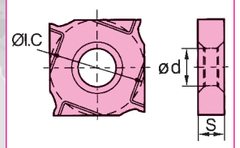
RAKE ANGLE: 90°

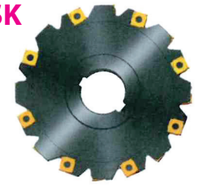
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L	Ø C	spare parts set
SNHQ 1202	DSA0630690SN1202	type A	●	6	63	22	40	32	SQ1
SNHQ 1203	DSA0630690SN1203	type A	❍	6	63	22	40	32	SQ2
SNHQ 1204	DSA0630690SN1204	type A	❍	6	63	22	40	32	SQ4
SNHQ 12T3	DSA0630690SN12T3	type A	❍	6	63	22	40	32	SQ3
SNHQ 12T4	DSA0630690SN12T4	type A	❍	6	63	22	40	32	SQ5
SNHQ 1202	DSA0800890SN1202	type A	●	8	80	22	40	40	SQ1
SNHQ 1203	DSA0800890SN1203	type A	●	8	80	22	40	40	SQ2
SNHQ 1204	DSA0800890SN1204	type A	❍	8	80	22	40	40	SQ4
SNHQ 12T3	DSA0800890SN12T3	type A	●	8	80	22	40	40	SQ3
SNHQ 12T4	DSA0800890SN12T4	type A	●	8	80	22	40	40	SQ5
SNHQ 1202	DSA1001090SN1202	type A	●	10	100	27	50	48	SQ1
SNHQ 1203	DSA1001090SN1203	type A	●	10	100	27	50	48	SQ2
SNHQ 1204	DSA1001090SN1204	type A	❍	10	100	27	50	48	SQ4
SNHQ 12T3	DSA1001090SN12T3	type A	●	10	100	27	50	48	SQ3
SNHQ 12T4	DSA1001090SN12T4	type A	●	10	100	27	50	48	SQ5
SNHQ 1204	DSB1251290SN1204	type B	❍	12	125	40	50	70	SQ4
SNHQ 12T3	DSB1251290SN12T3	type B	❍	12	125	40	50	70	SQ3
SNHQ 12T4	DSB1251290SN12T4	type B	●	12	125	40	50	70	SQ5
SNHQ 1204	DSB1601690SN1204	type B	❍	16	160	40	60	70	SQ4
SNHQ 12T3	DSB1601690SN12T3	type B	❍	16	160	40	60	70	SQ3
SNHQ 12T4	DSB1601690SN12T4	type B	❍	16	160	40	60	70	SQ5
61	← insert at page					spare parts set at page →			149

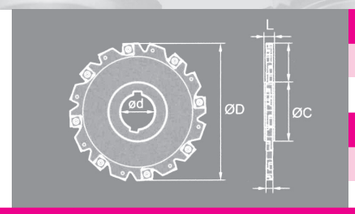
● normal production ❍ on request

SIDE FLAT MILLING

INSERT SNHQ — DSK







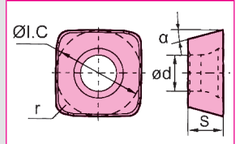
LOCKING: screw

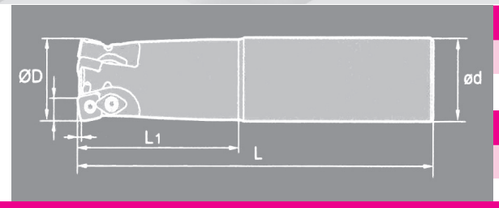
RAKE ANGLE: 90°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L	ØC	spare parts set
SNHQ 1202	DSK1001090SN1202	disk	❍	10	100	27	12	45	SQ1
SNHQ 1203	DSK1001090SN1203	disk	●	10	100	27	12	45	SQ2
SNHQ 1204	DSK1001090SN1204	disk	●	10	100	27	12	45	SQ4
SNHQ 12T3	DSK1001090SN12T3	disk	●	10	100	27	12	45	SQ3
SNHQ 12T4	DSK1001090SN12T4	disk	●	10	100	27	12	45	SQ5
SNHQ 1202	DSK1251290SN1202	disk	❍	12	125	40	12	56	SQ1
SNHQ 1203	DSK1251290SN1203	disk	❍	12	125	40	12	56	SQ2
SNHQ 1204	DSK1251290SN1204	disk	●	12	125	40	12	56	SQ4
SNHQ 12T3	DSK1251290SN12T3	disk	●	12	125	40	12	56	SQ3
SNHQ 12T4	DSK1251290SN12T4	disk	❍	12	125	40	12	56	SQ5
SNHQ 1202	DSK1601690SN1202	disk	●	16	160	40	12	67	SQ1
SNHQ 1203	DSK1601690SN1203	disk	●	16	160	40	12	67	SQ2
SNHQ 1204	DSK1601690SN1204	disk	●	16	160	40	12	67	SQ4
SNHQ 12T3	DSK1601690SN12T3	disk	●	16	160	40	12	67	SQ3
SNHQ 12T4	DSK1601690SN12T4	disk	●	16	160	40	12	67	SQ5
SNHQ 1204	DSK2001890SN1204	disk	❍	18	200	50	12	71	SQ4
SNHQ 12T3	DSK2001890SN12T3	disk	●	18	200	50	12	71	SQ3
SNHQ 12T4	DSK2001890SN12T4	disk	●	18	200	50	12	71	SQ5
SNHQ 1204	DSK2502490SN1204	disk	●	24	250	50	12	71	SQ4
SNHQ 12T3	DSK2502490SN12T3	disk	●	24	250	50	12	71	SQ3
SNHQ 12T4	DSK2502490SN12T4	disk	❍	24	250	50	12	71	SQ5
61	← insert at page					spare parts set at page →			149

HIGH FEED MILLING

INSERT SDMT — HFY





LOCKING: screw

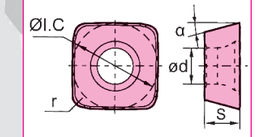
RAKE ANGLE: 75°

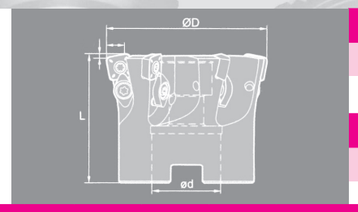
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L	L1	spare parts set
SDMT 09T3	HFY0250275SD09T3C	cylindrical	●	2	25	25	140	60	SD2
SDMT 1204	HFY0320275SD1204C	cylindrical	●	2	32	32	150	70	SD3
SDMT 09T3	HFY0320375SD09T3C	cylindrical	●	3	32	32	150	70	SD2
SDMT 1204	HFY0400375SD1204C	cylindrical	●	3	40	40	150	70	SD3
56	← insert at page					spare parts set at page →			150

● normal production ❍ on request

HIGH FEED MILLING

INSERT SDMT — HFA / HFB





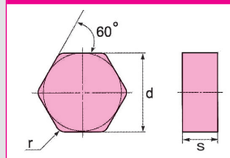
LOCKING: screw

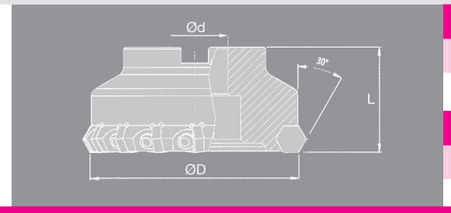
RAKE ANGLE: 75°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L	spare parts set
SDMT 09T3	HFA0500475SD09T3C	type A	●	4	50	22	40	SD2
SDMT 1204	HFA0630575SD1204C	type A	●	5	63	22	40	SD3
SDMT 09T3	HFA0630675SD09T3C	type A	●	6	63	22	40	SD2
SDMT 1204	HFA0800575SD1204C	type A	●	5	80	27	63	SD3
SDMT 1204	HFB1000675SD1204C	type B	●	6	100	32	50	SD3
56	← insert at page					spare parts set at page →		150

FACE MILLING

INSERT HNEN — FSA / FSB / FSC





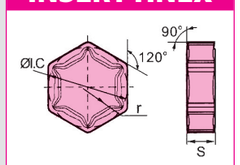
LOCKING: wedge

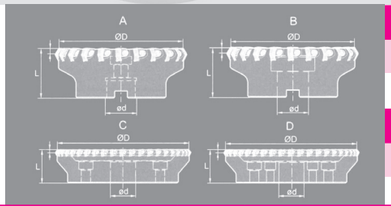
RAKE ANGLE: 60°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L	spare parts set
HNEN 0905	FSA0800860HN0905	type A	❍	8	80	27	50	HN2
HNEN 0905	FSB1001060HN0905	type B	❍	10	100	32	50	HN2
HNEN 0905	FSB1251660HN0905	type B	❍	16	125	40	63	HN2
HNEN 0905	FSB1602060HN0905	type B	●	20	160	40	63	HN2
HNEN 0905	FSC2002660HN0905	type C	●	26	200	60	63	HN2
49	← insert at page					spare parts set at page →		150

FACE MILLING

INSERT HNEX — FSA / FSB / FSC / FSD





LOCKING: wedge

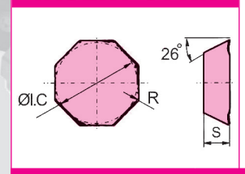
RAKE ANGLE: 55°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L	spare parts set
HNEX 0905	FSA0801055HX0905	type A	●	10	80	27	50	HN1
HNEX 0905	FSB1001455HX0905	type B	●	14	100	32	63	HN1
HNEX 0905	FSB1251855HX0905	type B	●	18	125	40	70	HN1
HNEX 0905	FSB1602255HX0905	type B	❍	22	160	40	63	HN1
HNEX 0905	FSC2002855HX0905	type C	❍	28	200	60	63	HN1
HNEX 0905	FSC2503655HX0905	type C	❍	36	250	60	63	HN1
HNEX 0905	FSD3154455HN0905	type D	❍	44	315	60	63	HN1
49-50	← insert at page					spare parts set at page →		150

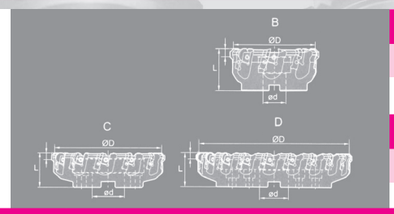
● normal production ❍ on request

FACE MILLING

INSERT OFKR



FSB / FSC / FSD

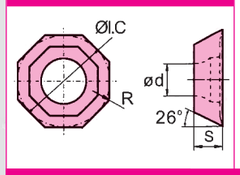


LOCKING
wedge
RAKE ANGLE
45°

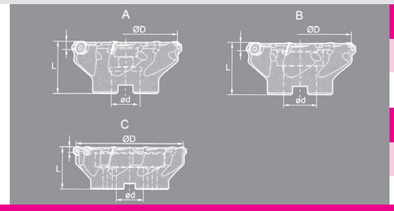
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
OFKR 0704	FSB1250845OF0704	type B	❍	8	125	40	63		OF1
OFKR 0704	FSB1601045OF0704	type B	❍	10	160	40	63		OF1
OFKR 0704	FSC2001245OF0704	type C	❍	12	200	60	63		OF1
OFKR 0704	FSC2501645OF0704	type C	❍	16	250	60	63		OF1
OFKR 0704	FSD3152045OF0704	type D	❍	20	315	60	63		OF1
51	← insert at page				spare parts set at page →				150

FACE MILLING

INSERT OFKT



FSA / FSB

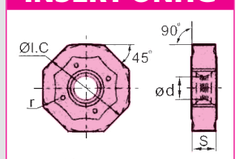


LOCKING
screw
RAKE ANGLE
45°

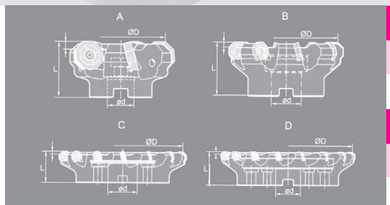
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
OFKT 05T3	FSA0500445OF05T3C	type A	●	4	50	22	40		OAR
OFKT 05T3	FSA0500545OF05T3C	type A	●	5	50	22	40		OAR
OFKT 05T3	FSA0630545OF05T3C	type A	●	5	63	22	40		OAR
OFKT 05T3	FSA 0800645OF05T3C	type A	●	6	80	27	50		OX1
OFKT 05T3	FSB1000745OF05T3C	type B	●	7	100	32	50		OX1
OFKT 05T3	FSB1250845OF05T3C	type B	●	8	125	40	63		OX1
OFKT 05T3	FSB1601045OF05T3	type B	●	10	160	40	63		OX1
51	← insert at page				spare parts set at page →				149

FACE MILLING

INSERT ONHG



FSA / FSB / FSC / FSD



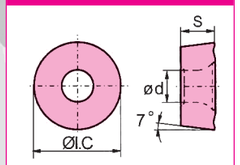
LOCKING
screw
RAKE ANGLE
45°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
ONHG 0604	FSA0500545ON0604C	type A	●	5	50	22	40		OX1
ONHG 0604	FSA0630645ON0604C	type A	●	6	63	22	40		OX1
ONHG 0604	FSA0800745ON0604C	type A	●	7	80	27	50		OX1
ONHG 0604	FSB1000845ON0604C	type B	●	8	100	32	63		OX1
ONHG 0604	FSB1250945ON0604C	type B	●	9	125	40	63		OX1
ONHG 0604	FSC1601145ON0604	type C	●	11	160	40	63		OX1
ONHG 0604	FSC2001345ON0604	type C	❍	13	200	60	63		OX1
ONHG 0604	FSC2501545ON0604	type C	❍	15	250	60	63		OX1
ONHG 0604	FSD3151745ON0604	type D	❍	17	315	60	80		OX1
51	← insert at page				spare parts set at page →				149

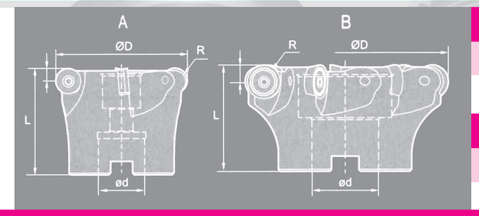
● normal production ❍ on request

FACE MILLING

INSERT RCKT



FSA / FSB / FSC

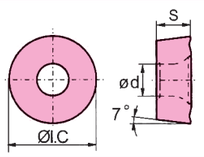


LOCKING
screw
RAKE ANGLE
00°

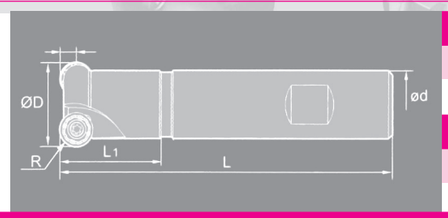
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
RCKT 1204	FSA0500500RC1204	type A	❍	5	50	22	50		SR1
RCKT 1204	FSA0630400RC1204C	type A	●	4	63	22	50		SR1
RCKT 1606	FSA0630400RC1606	type A	●	4	63	22	50		RC2
RCKT 1204	FSA0630600RC1204C	type A	●	6	63	22	50		SR1
RCKT 2006	FSA0800400RC2006C	type A	●	4	80	27	50		SR2
RCKT 1204	FSA0800700RC1204C	type A	●	7	80	27	50		SR1
RCKT 2006	FSB1000500RC2006C	type B	●	5	100	32	63		SR2
RCKT 1606	FSB1000600RC1606C	type B	●	6	100	32	63		RC2
RCKT 2006	FSB1000600RC2006C	type B	●	6	100	32	63		SR2
RCKT 2006	FSB1250600RC2006C	type B	●	6	125	40	63		SR2
RCKT 2006	FSB1250700RC2006C	type B	●	7	125	40	63		SR2
RCKT 2006	FSC1600800RC2006C	type C	●	8	160	40	63		SR2
53	← insert at page				spare parts set at page →				149

FACE MILLING

INSERT RCKT



FWE

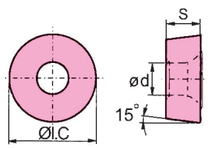


LOCKING
screw
RAKE ANGLE
00°

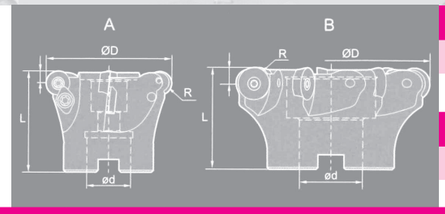
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L	L1	spare parts set
RCKT 10T3	FWE0250200RC10T3C	weldon	●	2	25	20	100	30	OAR
RCKT 10T3	FWE0320200RC10T3C	weldon	●	2	32	25	120	35	OAR
RCKT 1204	FWE0400300RC1204C	weldon	●	3	40	32	120	40	SR1
RCKT 1204	FWE0500300RC1204C	weldon	●	3	50	32	120	40	SR1
53	← insert at page				spare parts set at page →				149

FACE MILLING

INSERT RDKW



FSA / FSB



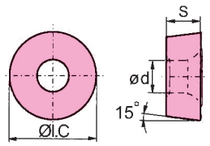
LOCKING
screw
RAKE ANGLE
00°

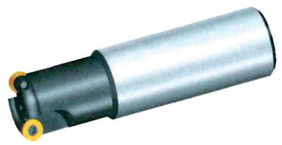
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
RDKW 1204	FSA0500300RD1204C	type A	●	3	50	22	40		SR1
RDKW 1204	FSA0630400RD1204C	type A	●	4	63	22	50		SR1
RDKW 1605	FSB0800500RD1605C	type B	●	5	80	27	50		RC2
RDKW 1605	FSB1000600RD1605C	type B	●	6	100	32	50		RC2
RDKW 2006	FSB1250600RD2006C	type B	❍	6	125	40	63		SR2
RDKW 2006	FSB1600700RD2006C	type B	❍	7	160	40	63		SR2
53	← insert at page				spare parts set at page →				149

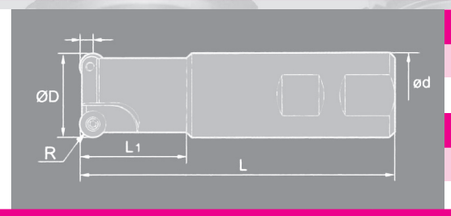
● normal production ❍ on request

FACE MILLING

INSERT RDKW — FWE





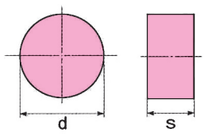


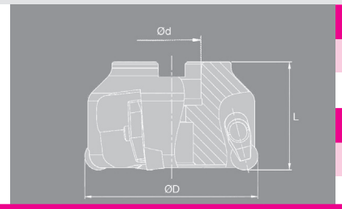
LOCKING
screw
RAKE ANGLE
00°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L	L1	spare parts set
RDKW 0803	FWE0250200RD0803C	weldon	●	2	25	25	100	30	SR4
RDKW 1003	FWE0320200RD1003C	weldon	●	2	32	32	120	40	OX1
RDKW 1204	FWE0400300RD1204C	weldon	●	3	40	32	120	40	OX1
RDKW 1204	FWE0500400RD1204C	weldon	●	4	50	32	120	40	OX1
53	← insert at page				spare parts set at page →				149

FACE MILLING

INSERT RNGN — FSA / FSB



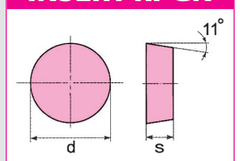


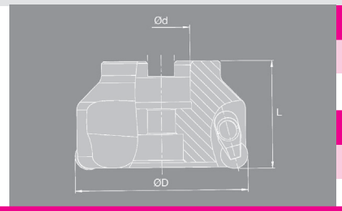
LOCKING
clamp
RAKE ANGLE
00°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
RNGN 1204	FSA0500400RN1204	type A	●	4	50	22	50		RN1
RNGN 1207	FSA0500400RN1207	type A	●	4	50	22	50		RN1
RNGN 1204	FSA0630400RN1204	type A	●	4	63	22	50		RN1
RNGN 1207	FSA0630400RN1207	type A	●	4	63	22	50		RN1
RNGN 1204	FSA0800500RN1204	type A	●	5	80	27	50		RN1
RNGN 1207	FSA0800500RN1207	type A	❍	5	80	27	50		RN1
RNGN 1204	FSB1000600RN1204	type B	❍	6	100	32	50		RN1
RNGN 1207	FSB1000600RN1207	type B	❍	6	100	32	50		RN1
54	← insert at page				spare parts set at page →				149

FACE MILLING

INSERT RPGN — FSA / FSB





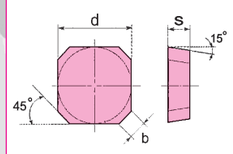
LOCKING
clamp
RAKE ANGLE
00°

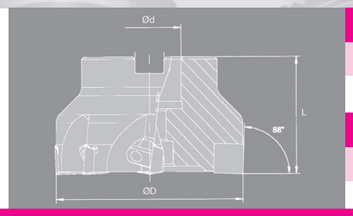
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
RPGN 1204	FSA0500400RP1204	type A	●	4	50	22	50		RN1
RPGN 1204	FSA0630400RP1204	type A	●	4	63	22	50		RN1
RPGN 1204	FSA0800500RP1204	type A	❍	5	80	27	50		RN1
RPGN 1204	FSB1000600RP1204	type A	❍	6	100	32	50		RN1
54	← insert at page				spare parts set at page →				149

● normal production ❍ on request

FACE MILLING

INSERT SDCN — FSA / FSB



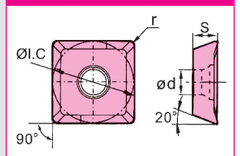


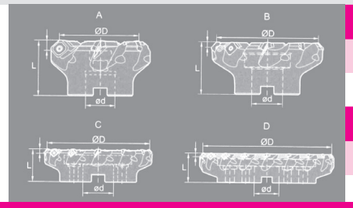
LOCKING
wedge
RAKE ANGLE
88°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
SDCN 1204	FSA0500588SD1204	type A	●	5	50	22	40		SR1
SDCN 1204	FSA0630688SD1204	type A	●	6	63	22	50		SR1
SDCN 1204	FSA0800888SD1204	type B	●	8	80	27	50		RC2
SDCN 1204	FSB1001088SD1204	type B	❍	10	125	40	63		SR2
SDCN 1204	FSB1251288SD1204	type B	❍	12	160	40	63		SR2
56	← insert at page				spare parts set at page →				149

FACE MILLING

INSERT SEET — FSA / FSB / FSC / FSD



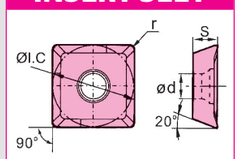


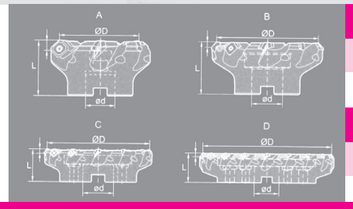
LOCKING
screw
RAKE ANGLE
45°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
SEET 12T3	FSA0500445SE12T3C	type A	●	4	50	22	40		SR1
SEET 12T3	FSA0630545SE12T3C	type A	●	5	63	22	40		SR1
SEET 12T3	FSA0800645SE12T3C	type A	●	6	80	27	50		SR1
SEET 12T3	FSB1000745SE12T3C	type B	●	7	100	32	50		SR1
SEET 12T3	FSB1250845SE12T3C	type B	●	8	125	40	63		SE1
SEET 12T3	FSB1601045SE12T3	type B	❍	10	160	40	63		SE1
SEET 12T3	FSC2001245SE12T3	type C	❍	12	200	60	63		SE1
SEET 12T3	FSC2501445SE12T3	type C	❍	14	250	60	63		SE1
SEET 12T3	FSD3151845SE12T3	type D	❍	18	315	60	70		SE1
57	← insert at page				spare parts set at page →				149

FACE MILLING

INSERT SEET — FSA / FSB





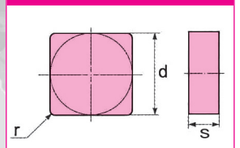
LOCKING
screw
RAKE ANGLE
45°

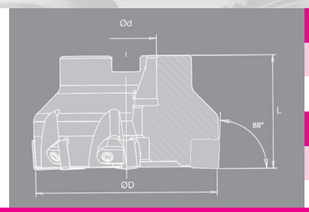
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
SEET 12T3	FSA0500345SE12T3C	type A	●	3	50	22	40		SR1
SEET 12T3	FSA0630445SE12T3C	type A	●	4	63	22	40		SR1
SEET 12T3	FSA0800445SE12T3C	type A	●	4	80	27	50		SR1
SEET 12T3	FSB1000545SE12T3C	type B	●	5	100	32	50		SR1
SEET 12T3	FSB1250645SE12T3C	type B	❍	6	125	40	63		SE1
57	← insert at page				spare parts set at page →				149

● normal production ❍ on request

FACE MILLING

INSERT SNGN — FSA / FSB





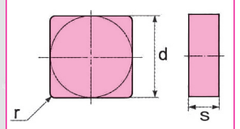
LOCKING: wedge

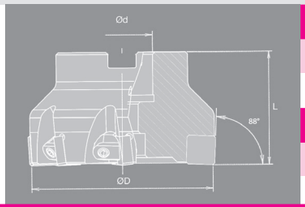
RAKE ANGLE: 75°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
SNGN 1204	FSA0500575SN1204	type A	●	5	50	22	40		SN1
SNGN 1204	FSA0630675SN1204AW	type A	❍	6	63	22	40		SN2
SNGN 1204	FSA0800875SN1204AW	type A	❍	8	80	27	50		SN2
SNGN 1204	FSB1001075SN1204AW	type B	❍	10	100	32	50		SN2
SNGN 1204	FSB1251275SN1204AW	type B	❍	12	125	40	63		SN2
59	← insert at page				spare parts set at page →				150

FACE MILLING

INSERT SNGN — FSA / FSB





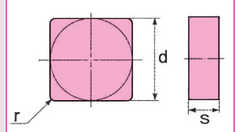
LOCKING: wedge

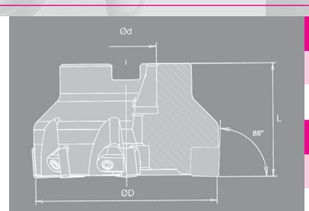
RAKE ANGLE: 88°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
SNGN 1204	FSA0630688SN1204AW	type A	❍	6	63	22	40		SN2
SNGN 1204	FSA0800888SN1204AW	type A	❍	8	80	27	50		SN2
SNGN 1204	FSB1001088SN1204AW	type B	❍	10	100	32	50		SN2
SNGN 1204	FSB1251288SN1204AW	type B	❍	12	125	40	63		SN2
59	← insert at page				spare parts set at page →				150

FACE MILLING

INSERT SNGN — FSA / FSB





LOCKING: wedge

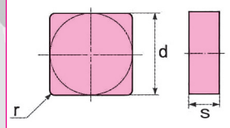
RAKE ANGLE: 45°

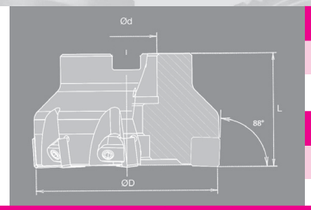
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
SNGN 1204	FSA0500545SN1204	type A	❍	5	50	22	40		SN1
SNGN 1204	FSA0630645SN1204	type A	●	6	63	22	40		SN2
SNGN 1204	FSA0800845SN1204	type A	●	8	80	27	50		SN2
SNGN 1204	FSB1001045SN1204	type B	●	10	100	32	50		SN2
SNGN 1204	FSB1251245SN1204	type B	❍	12	125	40	63		SN2
59	← insert at page				spare parts set at page →				150

● normal production ❍ on request

FACE MILLING

INSERT SNGN — FSA





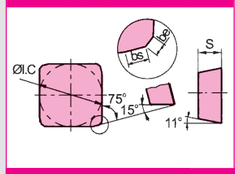
LOCKING: wedge

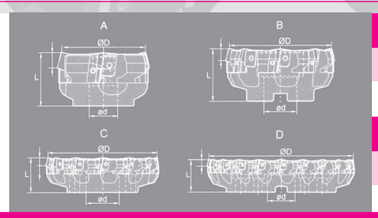
RAKE ANGLE: 88°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
SNGN 0904	FSA0400488SN0904	type A	●	4	40	16	40		SN1
SNGN 0904	FSA0500588SN0904	type A	●	5	50	22	40		SN1
59	← insert at page				spare parts set at page →				150

FACE MILLING

INSERT SPKN — FSA / FSB





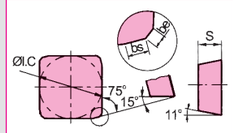
LOCKING: wedge

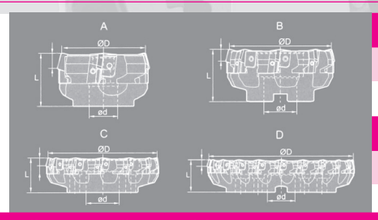
RAKE ANGLE: 75°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
SPKN 1204	FSA0500575SP1204	type A	●	5	50	22	40		SN1
SPKN 1204	FSA0630675SP1204	type A	●	6	63	22	40		SN2
SPKN 1204	FSA0800875SP1204	type A	●	8	80	27	50		SN2
SPKN 1204	FSB1001075SP1204	type B	❍	10	100	32	50		SN2
SPKN 1204	FSB1251275SP1204	type B	❍	12	125	40	63		SN2
64	← insert at page				spare parts set at page →				150

FACE MILLING

INSERT SPKN — FSB / FSC / FSD





LOCKING: wedge

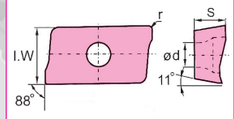
RAKE ANGLE: 75°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
SPKN 1203	FSB1000675SP1203	type B	●	6	100	32	50		SP3
SPKN 1504	FSB1000675SP1504	type B	●	6	100	27	50		SP5
SPKN 1203	FSB1250875SP1203	type B	❍	8	125	40	63		SP4
SPKN 1504	FSB1250875SP1504	type B	❍	8	125	40	63		SP5
SPKN 1203	FSB1601075SP1203	type B	❍	10	160	40	63		SP4
SPKN 1504	FSB1601075SP1504	type B	❍	10	160	40	63		SP5
SPKN 1203	FSC2001275SP1203	type C	❍	12	200	60	63		SP4
SPKN 1504	FSC2001275SP1504	type C	❍	12	200	60	63		SP5
SPKN 1203	FSC2501675SP1203	type C	❍	16	250	60	63		SP4
SPKN 1504	FSC2501675SP1504	type C	❍	16	250	60	63		SP5
SPKN 1203	FSD3152075SP1203	type D	❍	20	315	60	70		SP4
SPKN 1504	FSD3152075SP1504	type D	❍	20	315	60	70		SP5
64	← insert at page				spare parts set at page →				150

● normal production ❍ on request

SHOULDER FACE MILLING

INSERT APKT



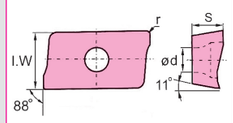
NCY

LOCKING
screw
RAKE ANGLE
90°

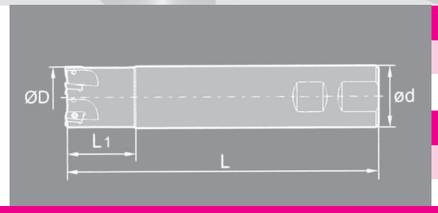
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L	L1	spare parts set
APKT 11T3	NCY0120190AP11T3C	cylindrical	●	1	12	16	85	25	AP1
APKT 11T3	NCY0160290AP11T3C	cylindrical	●	2	16	16	90	25	AP1
APKT 11T3	NCY0200290AP11T3C	cylindrical	●	2	20	20	100	30	AP1
APKT 11T3	NCY0200390AP11T3C	cylindrical	●	3	20	20	100	30	AP1
APKT 1604	NCY0250290AP1604C	cylindrical	●	2	25	25	115	35	OAR
APKT 11T3	NCY0250390AP11T3C	cylindrical	●	3	25	25	115	35	AP1
APKT 11T3	NCY0250490AP11T3C	cylindrical	●	4	25	25	115	35	AP1
APKT 1604	NCY0320390AP1604C	cylindrical	●	3	32	32	125	40	OAR
APKT 11T3	NCY0320490AP11T3C	cylindrical	●	4	32	32	125	40	AP1
APKT 1604	NCY0400390AP1604C	cylindrical	●	3	40	32	130	42	OAR
APKT 1604	NCY0400490AP1604C	cylindrical	●	4	40	32	130	42	OAR
APKT 1604	NCY0500590AP1604C	cylindrical	●	5	50	32	135	45	OAR
APKT 1604	NCY0630690AP1604C	cylindrical	●	6	63	32	135	45	OAR
34	← insert at page				spare parts set at page →				148-149

SHOULDER FACE MILLING

INSERT APKT



NWE



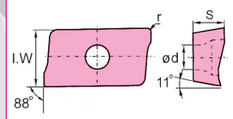
LOCKING
screw
RAKE ANGLE
90°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L	L1	spare parts set
APKT 11T3	NWE0120190AP11T3C	weldon	●	1	12	16	85	25	AP1
APKT 11T3	NWE0160290AP11T3C	weldon	●	2	16	16	90	25	AP1
APKT 11T3	NWE0200290AP11T3C	weldon	●	2	20	20	100	30	AP1
APKT 11T3	NWE0200390AP11T3C	weldon	●	3	20	20	100	30	AP1
APKT 1604	NWE0250290AP1604C	weldon	●	2	25	25	115	35	OAR
APKT 11T3	NWE0250390AP11T3C	weldon	●	3	25	25	115	35	AP1
APKT 11T3	NWE0250490AP11T3C	weldon	●	4	25	25	115	35	AP1
APKT 11T3	NWE0320490AP11T3C	weldon	●	4	32	32	125	40	AP1
APKT 1604	NWE0400490AP1604C	weldon	●	4	40	32	130	42	OAR
APKT 1604	NWE0500590AP1604C	weldon	●	5	50	32	135	45	OAR
APKT 1604	NWE0630690AP1604C	weldon	●	6	63	32	135	45	OAR
34	← insert at page				spare parts set at page →				148-149

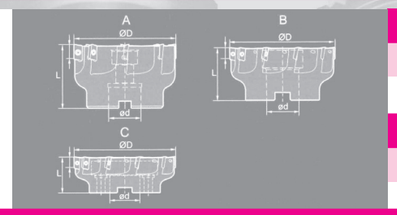
● normal production ❍ on request

SHOULDER FACE MILLING

INSERT APKT



NSA / NSB / NSC

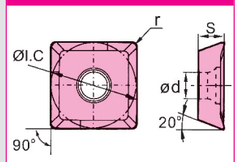


LOCKING
screw
RAKE ANGLE
90°

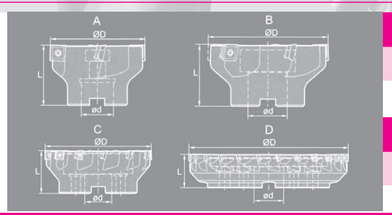
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
APKT 1604	NSA0500590AP1604C	type A	●	5	50	22	40		OX1
APKT 11T3	NSA0500690AP11T3C	type A	●	6	50	22	40		AP1
APKT 1604	NSA0630690AP1604C	type A	●	6	63	22	40		OX1
APKT 11T3	NSA0630890AP11T3C	type A	●	8	63	22	40		AP1
APKT 1604	NSA0800790AP1604C	type A	●	7	80	27	50		OX1
APKT 11T3	NSA0800890AP11T3C	type A	●	8	80	27	50		AP1
APKT 1604	NSB1000890AP1604C	type B	●	8	100	32	50		OX1
APKT 11T3	NSB1001090AP11T3C	type B	●	10	100	32	50		AP1
APKT 1604	NSB1251090AP1604C	type B	●	10	125	40	63		OX1
APKT 1604	NSB1601090AP1604C	type B	●	10	160	40	63		OX1
APKT 1604	NSC2001290AP1604	type C	●	12	200	60	63		OX1
APKT 1604	NSC2501290AP1604	type C	❍	12	250	60	63		OX1
34	← insert at page				spare parts set at page →				148-149

SHOULDER FACE MILLING

INSERT SEET



NSA / NSB



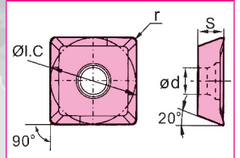
LOCKING
screw
RAKE ANGLE
90°

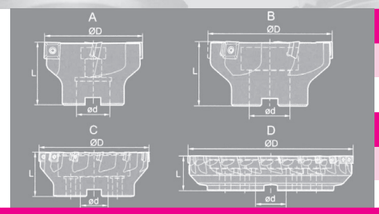
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
SEET 1203	NSA0500390SE1203C	type A	❍	3	50	22	40		SR1
SEET 1203	NSA0500490SE1203C	type A	●	4	50	22	40		SR1
SEET 09T3	NSA0500590SE09T3C	type A	●	5	50	22	40		SR4
SEET 1203	NSA0500590SE1203C	type A	●	5	50	22	40		SR1
SEET 1203	NSA0630490SE1203C	type A	❍	4	63	22	40		SE2
SEET 1203	NSA0630590SE1203C	type A	●	5	63	22	40		SE2
SEET 09T3	NSA0630690SE09T3C	type A	●	6	63	22	40		SR4
SEET 1203	NSA0630690SE1203C	type A	●	6	63	22	40		SE2
SEET 1203	NSA0800490SE1203C	type A	●	4	80	27	50		SE2
SEET 1203	NSA0800690SE1203C	type A	●	6	80	27	50		SE2
SEET 09T3	NSA0800890SE09T3C	type A	●	8	80	27	50		SR4
SEET 1203	NSA0800890SE1203C	type A	●	8	80	27	50		SE2
SEET 1203	NSB1000590SE1203C	type B	●	5	100	32	50		SE2
SEET 1203	NSB1000790SE1203C	type B	●	7	100	32	50		SE2
SEET 09T3	NSB1000890SE09T3C	type B	❍	8	100	32	50		SR4
SEET 09T3	NSB1001090SE09T3C	type B	❍	10	100	32	50		SR4
SEET 1203	NSB1001090SE1203C	type B	●	10	100	32	50		SE2
SEET 1203	NSB1250690SE1203C	type B	❍	6	125	40	63		SE2
SEET 1203	NSB1250890SE1203C	type B	●	8	125	40	63		SE2
SEET 09T3	NSB1251290SE09T3C	type B	❍	12	125	40	63		SR4
SEET 1203	NSB1251290SE1203C	type B	●	12	125	40	63		SE2
57	← insert at page				spare parts set at page →				149

● normal production ❍ on request

SHOULDER FACE MILLING

INSERT SEET — NSC / NSD



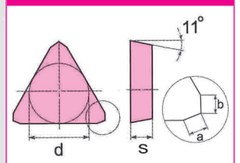


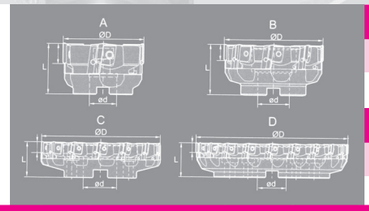
LOCKING
screw
RAKE ANGLE
90°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
SEET 1203	NSC1600890SE1203	type C	❍	8	160	40	63		SE2
SEET 1203	NSC1601290SE1203	type C	●	12	160	40	63		SE2
SEET 1203	NSC2001690SE1203	type C	●	16	200	60	63		SE2
SEET 1203	NSC2501290SE1203	type C	❍	12	250	60	63		SE2
SEET 1203	NSC2501890SE1203	type C	●	18	250	60	63		SE2
SEET 1203	NSD3152490SE1203	type D	❍	24	315	60	63		SE2
57	← insert at page				spare parts set at page →				149

SHOULDER FACE MILLING

INSERT TPKN — NSA / NSB / NSC / NSD





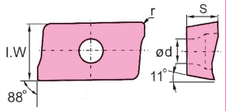
LOCKING
wedge
RAKE ANGLE
90°

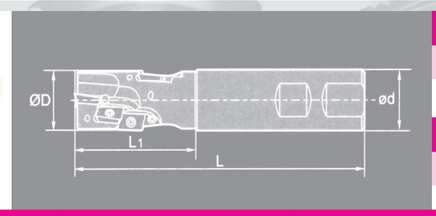
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
TPKN 2204	NSA0800490TP2204	type A	●	4	80	27	50		TP1
TPKN 2204	NSB1000690TP2204	type B	●	6	100	32	50		TP1
TPKN 2204	NSB1250890TP2204	type B	●	8	125	40	63		TP2
TPKN 2204	NSB1601090TP2204	type B	●	10	160	40	63		TP2
TPKN 2204	NSC2001290TP2204	type C	●	12	200	60	63		TP2
TPKN 2204	NSC2501690TP2204	type C	❍	16	250	60	63		TP2
TPKN 2204	NSD3152090TP2204	type D	❍	20	315	60	70		TP2
72-73	← insert at page				spare parts set at page →				150

● normal production ❍ on request

HELIX ENDMILL

INSERT APKT — HWE



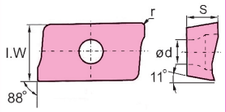


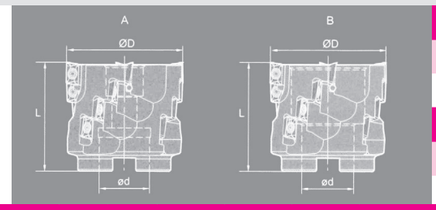
LOCKING
screw
RAKE ANGLE
90°

insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L	L1	spare parts set
APKT 11T3	HWE0200190AP11T3C	weldon	●	1	20	20	120	45	AP1
APKT 11T3	HWE0250290AP11T3C	weldon	●	2	25	25	130	55	AP1
APKT 11T3	HWE0320290AP11T3C	weldon	●	2	32	32	140	65	AP1
APKT 11T3	HWE0400290AP11T3C	weldon	●	2	40	40	150	75	AP1
34	← insert at page				spare parts set at page →				148

HELIX ENDMILL

INSERT APKT — HSA / HSB



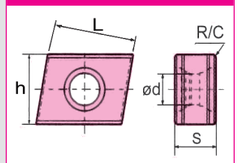


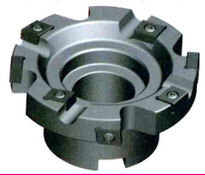
LOCKING
screw
RAKE ANGLE
90°

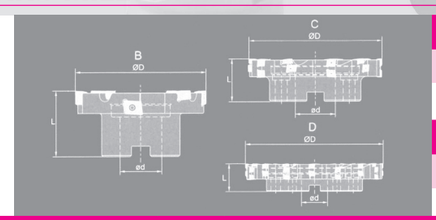
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
APKT 11T3	HSA0500490AP11T3C	type A	●	4	50	22	58		AP1
APKT 11T3	HSA0630490AP11T3C	type A	●	4	63	27	58		AP1
APKT 11T3	HSB0800590AP11T3C	type B	●	5	80	32	63		AP1
APKT 11T3	HSB1000690AP11T3	type B	❍	6	100	40	63		AP1
APKT 11T3	HSB1000690AP11T3	type B	❍	6	100	40	63		AP1
34	← insert at page				spare parts set at page →				148

DRILL AND MILL

INSERT CNE — DMB / DMC / DMD





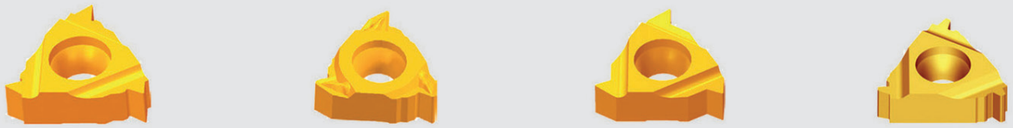


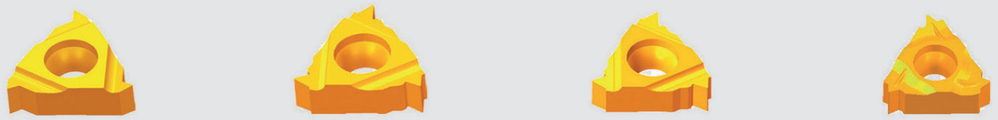
LOCKING
wedge
RAKE ANGLE
90°

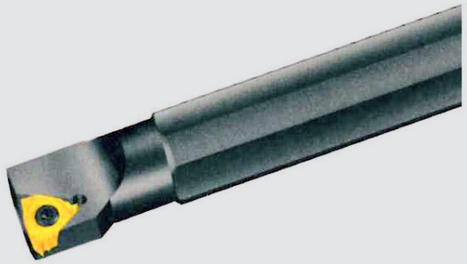
insert size	cutter code	shank	avail.	Z	Ø D	Ø d	L		spare parts set
CNE 1210	DMB08008CNE121	type B	●	8	80	27	50		CN1
CNE 1210	DMB10008CNE121	type B	●	8	100	32	50		CN1
CNE 1210	DMB12515CNE121	type B	●	15	125	40	63		CN1
CNE 1210	DMC16018CNE121	type C	●	18	160	40	63		CN1
CNE 1210	DMC20021CNE121	type C	●	21	200	60	63		CN1
CNE 1210	DMC25032CNE121	type C	❍	32	250	40	63		CN1
CNE 1210	DMD31542CNE121	type D	❍	42	315	60	63		CN1
CNE 1210	DMD40052CNE121	type D	❍	52	400	60	63		CN1
36	← insert at page				spare parts set at page →				148

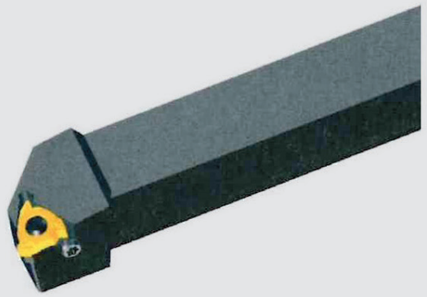
● normal production ❍ on request

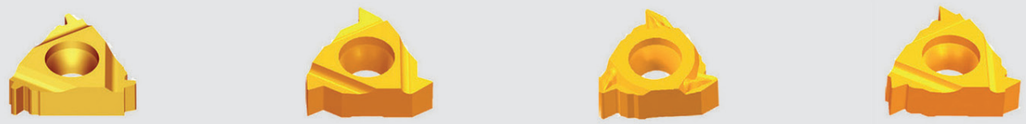
THREADING INSERTS

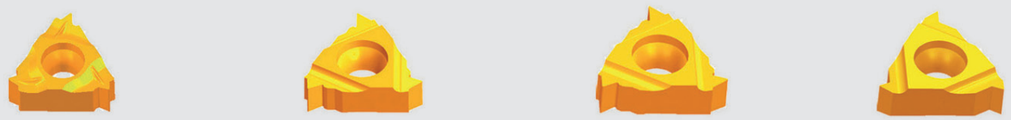


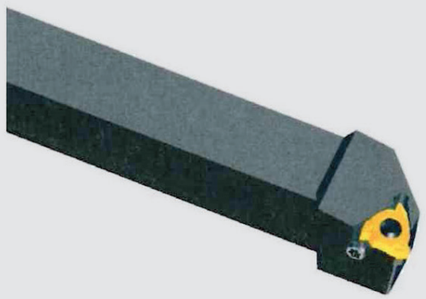


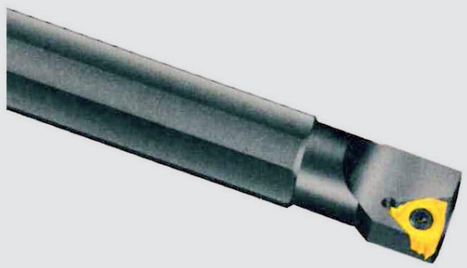












THREADING INSERTS CODE

T	N	16	E	R	175	M
1	2	3	4	5	6	7

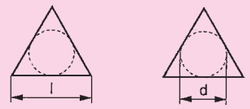
1 INSERT SHAPE

T

2 RAKE ANGLE

N

3 SIDE LENGTH



l	d
11	6,35
16	9,525
22	12,7

4 THREAD

E external

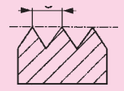
N internal

5 HAND

R right

L left

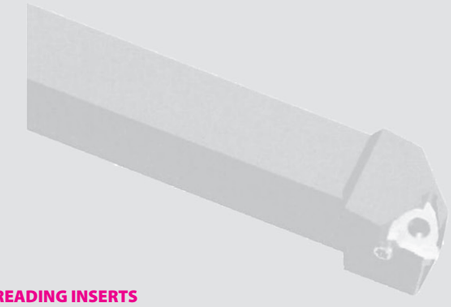
6 PITCH RANGE

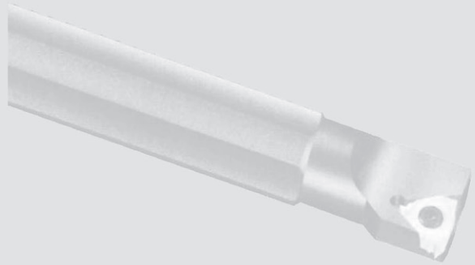


threads per inch

7 THREAD PROFILE

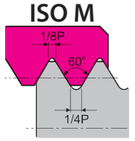
M	60° ISO
W	Whitworth 55°
UN	American UN
TR	trapezoid
60	partial profile 60°
55	partial profile 55°



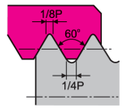


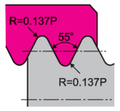
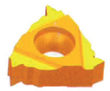
THREADING INSERTS

INSERTS

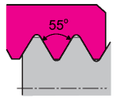
THREAD TYPE		DIMENSIONS					
ISO M 	ØI.C.	6,35		9,52		12,7	
	s	3,18		3,97		5,56	
	Ød	2,8		4,4		5,5	
		side length 11	av.	side length 16	av.	side length 22	av.
	ext R			TN16ER050 M 2030	●	TN22ER350 M 2030	●
				TN16ER100 M 2030	●	TN22ER400 M 2030	●
				TN16ER125 M 2030	●	TN22ER400 M 5120	❍
				TN16ER150 M 2030	●	TN22ER450 M 2030	●
				TN16ER150 M 5120	❍	TN22ER500 M 2030	●
				TN16ER175 M 2030	●	TN22ER550 M 2030	●
				TN16ER200 M 2030	●	TN22ER600 M 2030	❍
				TN16ER200 M 5120	❍	TN22ER600 M 5120	❍
				TN16ER250 M 2030	●		
				TN16ER300 M 2030	●		
				TN16ER300 M 5120	❍		
	ext L			TN16EL050 M 2030	●	TN22EL350 M 2030	●
				TN16EL100 M 2030	●	TN22EL400 M 2030	●
				TN16EL125 M 2030	●	TN22EL500 M 2030	❍
				TN16EL150 M 2030	●	TN22EL600 M 2030	❍
				TN16EL175 M 2030	●		
				TN16EL200 M 2030	❍		
				TN16EL250 M 2030	❍		
				TN16EL300 M 2030	❍		
	int R	TN11NR050 M 2030	●	TN16NR050 M 2030	●	TN22NR350 M 2030	●
		TN11NR075 M 2030	●	TN16NR100 M 2030	●	TN22NR400 M 2030	●
		TN11NR100 M 2030	●	TN16NR125 M 2030	●	TN22NR400 M 5120	●
		TN11NR100 M 5120	❍	TN16NR150 M 2030	●	TN22NR450 M 2030	●
		TN11NR125 M 2030	●	TN16NR150 M 5120	❍	TN22NR550 M 2030	❍
		TN11NR150 M 2030	●	TN16NR175 M 2030	●	TN22NR600 M 2030	❍
		TN11NR150 M 5120	❍	TN16NR200 M 2030	●		
		TN11NR175 M 2030	●	TN16NR200 M 5120	❍		
		TN11NR200 M 2030	●	TN16NR250 M 2030	●		
		TN11NR200 M 5120	❍	TN16NR300 M 2030	●		
				TN16NR300 M 5120	❍		
	int L	TN11NL100 M 2030	●	TN16NL100 M 2030	●	TN22NL350 M 2030	●
		TN11NL125 M 2030	●	TN16NL125 M 2030	●	TN22NL400 M 2030	❍
		TN11NL150 M 2030	●	TN16NL150 M 2030	●	TN22NL450 M 2030	❍
		TN11NL175 M 2030	●	TN16NL175 M 2030	●	TN22NL500 M 2030	❍
		TN11NL200 M 2030	●	TN16NL200 M 2030	●	TN22NL600 M 2030	❍
				TN16NL250 M 2030	❍		
				TN16NL300 M 2030	❍		

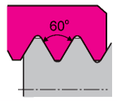
● normal production ❍ on request

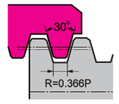
THREAD TYPE		DIMENSIONS					
UN AMERICAN STANDARD 	ØI.C.	6,35		9,52		12,7	
	s	3,18		3,97		5,56	
	Ød	2,8		4,4		5,5	
		side length 11	av.	side length 16	av.	side length 22	av.
	ext R			TN16ER8 UN 2030	●		
				TN16ER10 UN 2030	●		
				TN16ER12 UN 2030	●		
				TN16ER14 UN 2030	●		
				TN16ER16 UN 2030	❍		
				TN16ER18 UN 2030	❍		
				TN16ER20 UN 2030	❍		
	ext L			TN16EL10 UN 2030	●		
				TN16EL12 UN 2030	●		
				TN16EL 14 UN 2030	●		
	int R			TN16NR8 UN 2030	●		
				TN16NR12 UN 2030	●		
				TN16NR14 UN 2030	●		
				TN16NR16 UN 2030	●		
				TN16NR18 UN 2030	●		
	int L			TN16NL12 UN 2030	❍		

THREAD TYPE		DIMENSIONS					
WHITWORTH 	ØI.C.	6,35		9,52		12,7	
	s	3,18		3,97		5,56	
	Ød	2,8		4,4		5,5	
		side length 11	av.	side length 16	av.	side length 22	av.
	ext R			TN16ER8 W 2030	●		
				TN16ER10 W 2030	●		
				TN16ER11 W 2030	●		
				TN16ER11 W 5120	❍		
				TN16ER12 W 2030	●		
				TN16ER14 W 2030	●		
				TN16ER14 W 5120	❍		
				TN16ER16 W 2030	●		
	ext L			TN16EL8 W 2030	❍		
				TN16EL11 W 2030	❍		
				TN16EL14 W 2030	❍		
	int R			TN16NR8 W 2030	●		
				TN16NR11 W 2030	●		
				TN16NR11 W 5120	❍		
				TN16NR14 W 2030	●		
				TN16NR14 W 5120	❍		
				TN16NR16 W 2030	●		
	int L			TN16NL8 W 2030	●		

● normal production ❍ on request

THREAD TYPE		DIMENSIONS					
PARTIAL PROFILE 55° 	ØI.C.	6,35		9,52		12,7	
	s	3,18		3,97		5,56	
	Ød	2,8		4,4		5,5	
		side length 11	av.	side length 16	av.	side length 22	av.
	ext R			TN16ER050-150 55 2030	●		
				TN16ER050-300 55 2030	●		
				TN16ER175-300 55 2030	●		
	ext L			TN16EL050-150 55 2030	●		
				TN16EL050-300 55 2030	●		
				TN16EL175-300 55 2030	●		
	int R			TN16NR050-150 55 2030	●		
				TN16NR050-300 55 2030	●		
				TN16NR175-300 55 2030	●		
	int L			TN16NL050-300 55 2030	●		

THREAD TYPE		DIMENSIONS					
PARTIAL PROFILE 60° 	ØI.C.	6,35		9,52		12,7	
	s	3,18		3,97		5,56	
	Ød	2,8		4,4		5,5	
		side length 11	av.	side length 16	av.	side length 22	av.
	ext R			TN16ER050-150 60 2030	●		
				TN16ER050-300 60 2030	●		
				TN16ER050-300 60 5120	❍		
				TN16ER175-300 60 2030	●		
	ext L			TN16EL050-150 60 2030	●		
				TN16EL050-300 60 2030	●		
				TN16EL175-300 60 2030	●		
	int R			TN16NR050-150 60 2030	●		
				TN16NR175-300 60 2030	●		
	int L			TN16NL050-150 60 2030	❍		
				TN16NL050-300 60 2030	❍		
				TN16NL175-300 60 2030	❍		

THREAD TYPE		DIMENSIONS					
TRAPEZOID 	ØI.C.	6,35		9,52		12,7	
	s	3,18		3,97		5,56	
	Ød	2,8		4,4		5,5	
		side length 11	av.	side length 16	av.	side length 22	av.
	ext R			TN16ER150 TR 5120	❍		
				TN16ER200 TR 2030	●		
				TN16ER200 TR 5120	❍		
				TN16ER300 TR 2030	●		

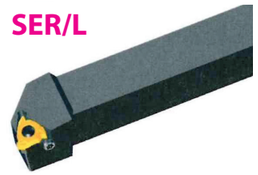
● normal production ❍ on request

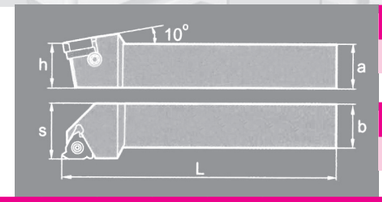
TOOLHOLDERS FOR THREADING

EXTERNAL TOOLHOLDERS

INSERT TN_

SER/L





LOCKING
screw

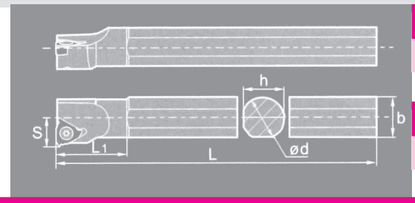
RAKE ANGLE
90°

insert size	toolholder code	R	L	a	h	b	L	s	spare parts set
TN16ER/L..	SER/L 1616 H 16	●	●	16	16	16	100	20	TH2
TN16ER/L..	SER/L 2020 K 16	●	●	20	20	20	125	25	TH2
TN16ER/L..	SER/L 2525 M 16	●	●	25	25	25	150	32	TH2
TN16ER/L..	SER/L 3225 P 16	●	●	32	32	25	170	32	TH2
TN16ER/L..	SER/L 3232 P 16	●	❍	32	32	32	170	40	TH2
TN22ER/L..	SER/L 2525 M 22	●	❍	25	25	25	150	32	TH4
TN22ER/L..	SER/L 3225 P 22	❍	❍	32	32	25	170	32	TH4
TN22ER/L..	SER/L 3232 P 22	●	❍	32	32	32	170	40	TH4
TN22ER/L..	SER/L 4040 S 22	❍	❍	40	40	40	250	50	TH4

INTERNAL TOOLHOLDERS

INSERT TN_

SIR/L

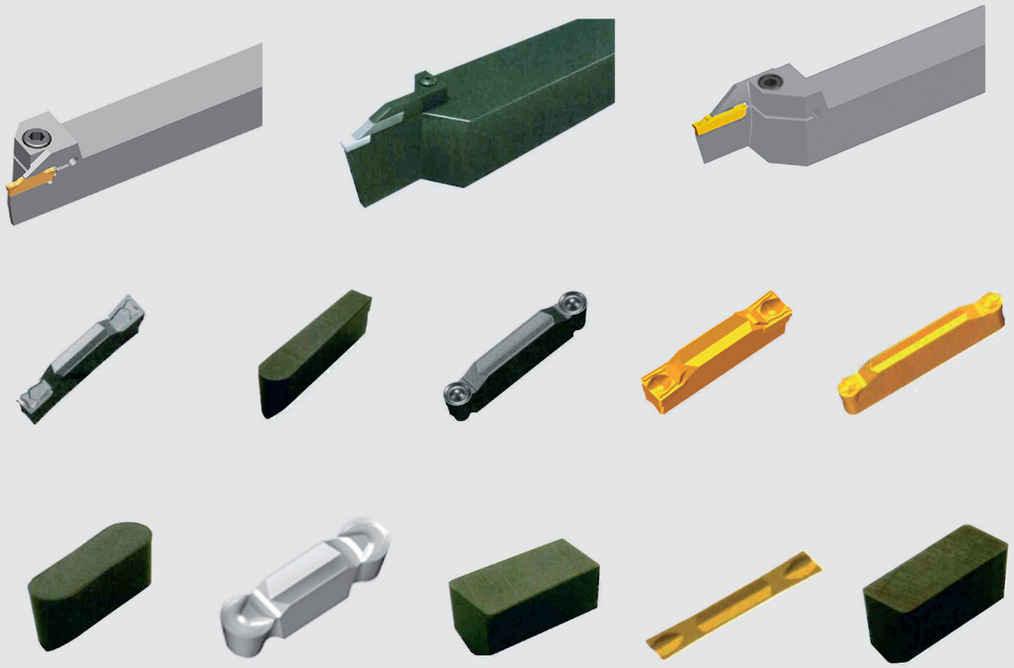


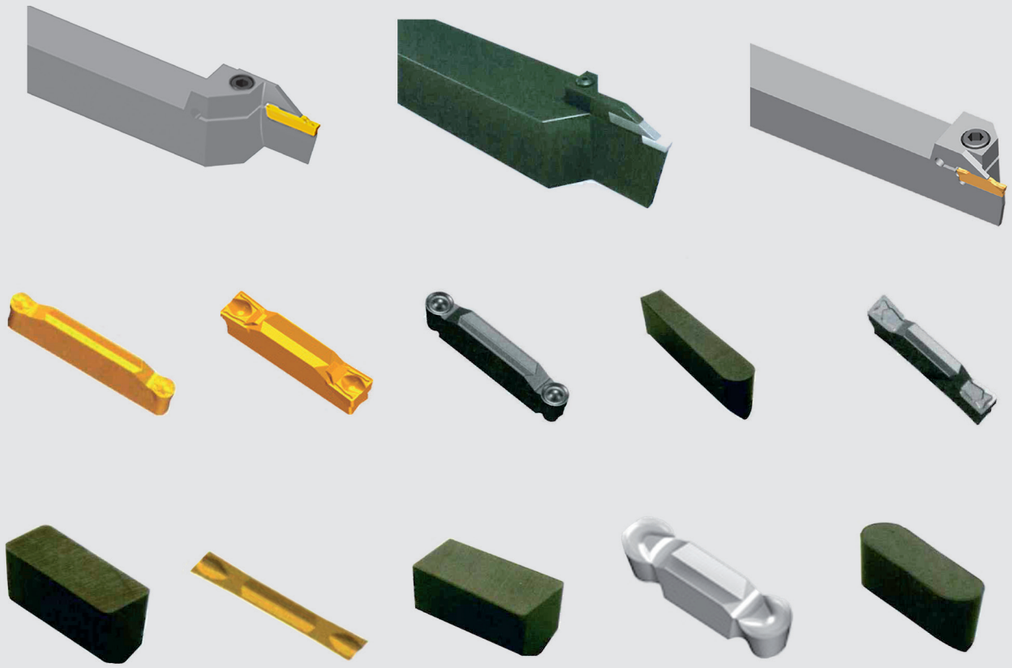
LOCKING
screw

RAKE ANGLE
90°

insert size	toolholder code	R	L	d	L	b	Dmin	s	h	L1	spare parts set
TN11NR/L..	SIR/L 0016 K 11	●	●	16	125	16	12	10	15	20.9	SXX
TN11NR/L..	SIR/L 0016 M 11	●	●	16	150	15.5	16	10.5	15	25.9	SXX
TN16NR/L..	SIR/L 0016 M 16	●	●	16	150	15.5	20	12	15	27	TH1
TN16NR/L..	SIR/L 0020 M 16	●	❍	20	150	19	25	14	18	28.7	TH2
TN16NR/L..	SIR/L 0020 Q 16	●	●	20	180	19	25	14	18	34	TH2
TN16NR/L..	SIR/L 0025 M 16	●	●	25	150	24	32	17	23	28.8	TH2
TN16NR/L..	SIR/L 0032 R 16	●	●	32	200	31	40	22	30	30.9	TH2
TN16NR/L..	SIR/L 0032 S 16	●	❍	32	250	31	40	22	30	30.9	TH2
TN16NR/L..	SIR/L 0040 T 16	●	●	40	300	38.5	50	27	37	31.5	TH2
TN16NR/L..	SIR/L 0050 U 16	❍	❍	50	350	49.5	63	35	49	40.2	TH2
TN22NR/L..	SIR/L 0020 Q 22	●	●	20	180	21.5	25	15	18	35	TH3
TN22NR/L..	SIR/L 0025 R 22	●	❍	25	200	24	32	19	23	39	TH4
TN22NR/L..	SIR/L 0032 S 22	●	●	32	250	31	40	22	30	36.4	TH4
TN22NR/L..	SIR/L 0040 T 22	●	❍	40	300	38.5	50	27	37	37.2	TH4
TN22NR/L..	SIR/L 0050 U 22	❍	❍	50	350	48.5	63	35	47	42.6	TH4

● normal production ❍ on request





INSERTS CODE

GF	S	40	060	05	-	-
1	2	3	4	5	6	7

1 PURPOSE
GF = flat groove
GR = round groove
PA = part off

2 SIDES
D = double
S = single

3 WIDTH
mm x 10

4 TYPICAL DEPTH*
mm x 10

5 RADIUS
mm x 10

6 CHIPBREAKER
where appliable

7 HAND + ANGLE
where appliable

** The typical depth size is conventional and depends on the features of the toolholder.*

TOOLHOLDERS CODE

C	GF	S	3225	C	40	R/L	-
1	2	3	4	5	6	7	8

1 LOCKING
C

2 PURPOSE
GF = external flat groove
GR = external round groove
PG = part & groove
FF = front groove

3 SIDES
D = double
S = single

4 SHANK SIZE

5 C / W
C = for ceramic insert
W = for carbide insert

6 INSERT WIDTH

7 HAND
R = right
L = left

8 MAX DEPTH (ar)

GROOVING AND PARTING OFF

INSERTS

GFD — FLAT GROOVE DOUBLE SIDE

width	radius	depth	chipbr	code	1010Z	1025	5020	5120	5220	5040	6015	V300	CC200	DT400	toolholder
2,5	0,2	17,0	EG	GFD2517002EG			❍			●					CPGD_ _W25_ _
	0,3		MG	GFD2517003MG	●		●		❍	●					CPGD_ _W25_ _
3,0	0,2		EG	GFD3017002EG						●					CPGD_ _W30_ _ CFFD_ _W30_ _
	0,3		MG	GFD3017003MG	●		●	●	❍	●	●				
4,0	0,2	22,0	EG	GFD4022002EG						●					CPGD_ _W40_ _ CFFD_ _W40_ _
	0,3		EG	GFD4022003EG						●					
	0,4		EG	GFD4022004EG						●					
	0,4		MG	GFD4022004MG	●	●	●	❍	❍	●					
	0,8	6,0		GFD4006008								●	●	❍	CGFD 3225C40R/L
5,0	0,4	22,0	MG	GFD5022004MG	●		●	●	❍	●					CPGD_ _W50_ _ CFFD_ _W50_ _
	0,8	6,0		GFD5006008								●	●	❍	CGFD 3225C50R/L
6,0		22,0	MG	GFD6022008MG	●		●		❍	●	●				CPGD_ _W60_ _ CFFD_ _W60_ _
		7,5		GFD6007508								●	●	❍	CGFD 3225C60R/L
7,0				GFD7007508								●			CGFD 3225C70R/L
8,0				GFD8007508								●			CGFD 3225C80R/L
10,0				GFD10007508								●			CGFD 3225C100R/L

GFS — FLAT GROOVE SINGLE SIDE

width	radius	depth	code	V300	CC200	DT400	toolholder
4,0	0,5	6,0	GFS4006005	●	●	●	CGFS 3225C40R/L
5,0	0,8		GFS5006008	●	●	●	CGFS 3225C50R/L
6,0		7,5	GFS6007508	●	●		CGFS 3225C60R/L
7,0			GFS7007508	●	●		CGFS 3225C70R/L
8,0			GFS8007508	●	●		CGFS 3225C80R/L
10,0			GFS10007508	●	●		CGFS 3225C100R/L

● normal production ❍ on request

GRD — ROUND GROOVE DOUBLE SIDE

width	radius	depth	chipbr	code	1010Z	1025	5020	5120	5220	5040	V300	CC200	DT400	toolholder
2,5	1,3	20,0	MG	GRD2520013MG			●		❍	●				CPGD_ _W25_ _
3,0	1,5		EG	GRD3020015EG					●	●				CPGD_ _W30_ _ CFFD_ _W30_ _
			MG	GRD3020015MG	●		●	❍	●	●				
4,0	2,0	25,0	EG	GRD4025020EG					●					CPGD_ _W40_ _ CFFD_ _W40_ _
			MG	GRD4025020MG		●	●	❍	❍	●				
		6,0		GRD4006020							●	●	●	CGRD 3225C40R/L
														CGRD 4040C40N
														CGRD 5040C40N
5,0	2,5	25,0	EG	GRD5025025EG						●				CPGD_ _W50_ _
			MG	GRD5025025MG			●	❍	❍	●				
		6,0		GRD5006025							●	●	●	CGRD 3225C50R/L
6,0	3,0	25,0	MG	GRD6025030MG			●	❍	❍	●				CPGD_ _W60_ _ CFFD_ _W60_ _
		7,5		GRD6007530							●	●	❍	CGRD 3225C60R/L
7,0	3,5			GRD7007535							●	●		CGRD 3225C70R/L
8,0	4,0			GRD8007540							●	●		CGRD 3225C80R/L
10,0	5,0			GRD10007550							●	●		CGRD 3225C100R/L

GRS — ROUND GROOVE SINGLE SIDE

width	radius	depth	code	V300	CC200	DT400	toolholder
4,0	2,0	6,0	GRS4006020	●	●	●	CGRS 3225C40R/L
5,0	2,5		GRS5006025	●	●	●	CGRS 3225C50R/L
6,0	3,0	7,5	GRS6007530	●	●	❍	CGRS 3225C60R/L
7,0	3,5		GRS7007535	●	●		CGRS 3225C70R/L
8,0	4,0		GRS8007540	●	●		CGRS 3225C80R/L
10,0	5,0		GRS10007550	●	●		CGRS 3225C100R/L

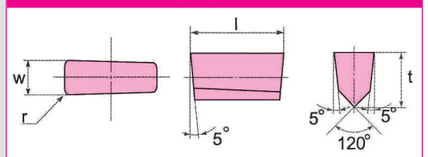
PAD — PART OFF SINGLE SIDE

width	radius	depth	chipbr	hand+angle	code	1010Z	1025	5020	5220	5040	toolholder
2,5	0,2	17,0	MG		PAD2517002MG		●	●	●	●	CPGD_ _W25_ _
				L15	PAD2517002MG L15			●	❍	●	
				L6	PAD2517002MG L6					●	
				R15	PAD2517002MG R15			●	❍	●	
				R6	PAD2517002MG R6				●	●	
3,0					PAD3017002MG		●	●	●	●	CPGD_ _W30_ _
				L15	PAD3017002MG L15					●	
				L6	PAD3017002MG L6	●		●	❍	●	
				R15	PAD3017002MG R15			●	❍	●	
				R6	PAD3017002MG R6				●	●	
4,0		22,0			PAD4022002MG		●	●	●	●	CPGD_ _W40_ _
5,0	0,3				PAD5022003MG			●		●	CPGD_ _W50_ _
6,0	0,4				PAD6022004MG		●	●		●	CPGD_ _W60_ _

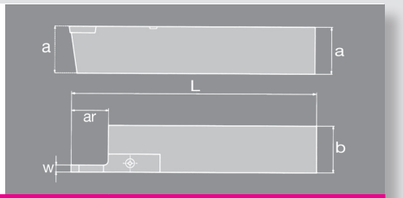
● normal production ❍ on request

TOOLHOLDERS

GFS ceramic

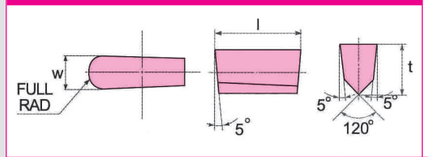


CGFS

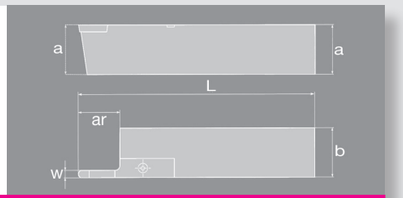


toolholder code	R	L	a	b	L	w	ar	spare parts set
CGFS 3225C40R/L	●	❍	32	25	170	4,0	19	CG1
CGFS 3225C50R/L	●	❍	32	25	170	5,0	19	CG2
CGFS 3225C60R/L	●	●	32	25	170	6,0	19	CG2
CGFS 3225C70R/L	●	❍	32	25	170	7,0	19	CG3
CGFS 3225C80R/L	●	●	32	25	170	8,0	19	CG4
CGFS 3225C100R/L	❍	❍	32	25	170	10,0	19	CG4

GRS ceramic

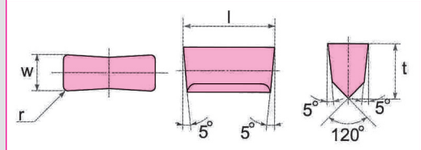


CGRS

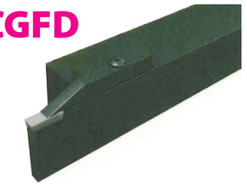


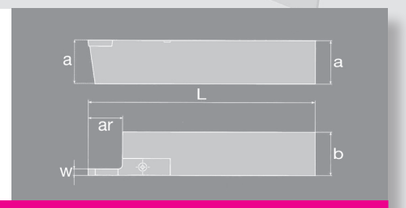
toolholder code	R	L	a	b	L	w	ar	spare parts set
CGRS 3225C40R/L	❍	●	32	25	170	4,0	19	CG1
CGRS 3225C50R/L	●	❍	32	25	170	5,0	19	CG2
CGRS 3225C60R/L	❍	❍	32	25	170	6,0	19	CG2
CGRS 3225C70R/L	❍	❍	32	25	170	7,0	19	CG3
CGRS 3225C80R/L	❍	❍	32	25	170	8,0	19	CG4
CGRS 3225C100R/L	❍	❍	32	25	170	10,0	19	CG4

GFD ceramic



CGFD

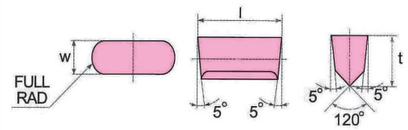




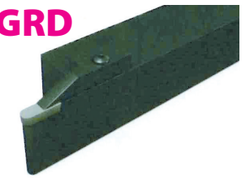
toolholder code	R	L	a	b	L	w	ar	spare parts set
CGFD 3225C40R/L	●	●	32	25	170	4,0	19	CG1
CGFD 3225C50R/L	●	❍	32	25	170	5,0	19	CG2
CGFD 3225C60R/L	●	❍	32	25	170	6,0	19	CG2
CGFD 3225C70R/L	❍	❍	32	25	170	7,0	19	CG3
CGFD 3225C80R/L	❍	❍	32	25	170	8,0	19	CG4
CGFD 3225C100R/L	❍	❍	32	25	170	10,0	19	CG4

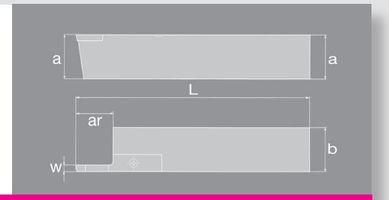
● normal production ❍ on request

GRD ceramic



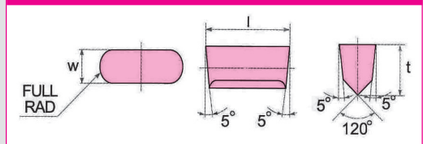
CGRD



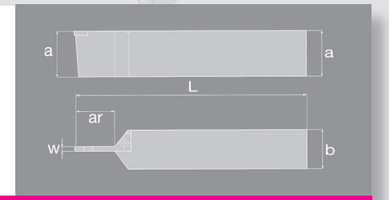


toolholder code	R	L	a	b	L	w	ar	spare parts set
CGRD 3225C40R/L	❍	❍	32	25	170	4,0	19	CG1
CGRD 3225C50R/L	●	❍	32	25	170	5,0	19	CG2
CGRD 3225C60R/L	●	❍	32	25	170	6,0	19	CG2
CGRD 3225C70R/L	❍	❍	32	25	170	7,0	19	CG3
CGRD 3225C80R/L	●	❍	32	25	170	8,0	19	CG4
CGRD 3225C100R/L	❍	❍	32	25	170	10,0	19	CG4

GRD ceramic



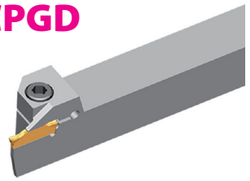
CGRD

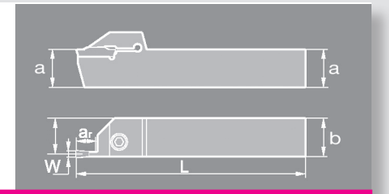


toolholder code	N	a	b	L	w	ar	spare parts set
CGRD 4040C40N	●	40	40	200	4,0	5	CG5
CGRD 5040C40N	●	50	40	170	4,0	19	CG5

PAD / GRD / GFD 25 carbide

CPGD



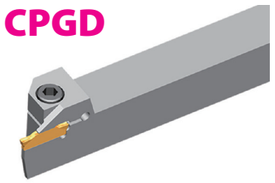
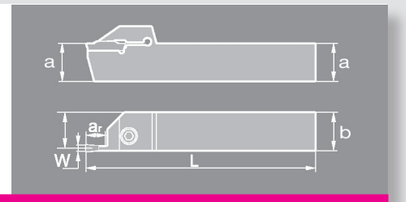


toolholder code	R	L	a	b	L	w	ar	spare parts set
CPGD1616W25R/L10	●	●	16	16	125	2,5	10	GP1
CPGD1616W25R/L17	●	●	16	16	125	2,5	17	GP1
CPGD2020W25R/L10	●	●	20	20	125	2,5	10	GP2
CPGD2020W25R/L17	●	●	20	20	125	2,5	17	GP2
CPGD2525W25R/L10	●	❍	25	25	150	2,5	10	GP2
CPGD2525W25R/L17	●	❍	25	25	150	2,5	17	GP2

● normal production ❍ on request

PAD / GRD / GFD 30 carbide

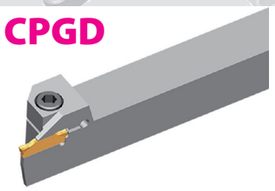
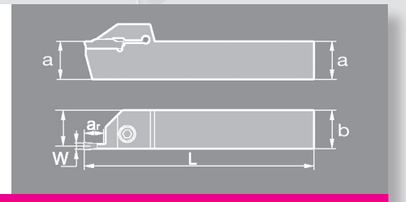
CPGD

toolholder code	R	L	a	b	L	w	ar	spare parts set
CPGD1616W30R/L10	●	●	16	16	125	3,0	10	GP1
CPGD1616W30R/L17	●	●	16	16	125	3,0	17	GP1
CPGD2020W30R/L10	●	●	20	20	125	3,0	10	GP2
CPGD2020W30R/L17	●	●	20	20	125	3,0	17	GP2
CPGD2525W30R/L10	●	❍	25	25	150	3,0	10	GP2
CPGD2525W30R/L17	●	❍	25	25	150	3,0	17	GP2

PAD / GRD / GFD 40 carbide

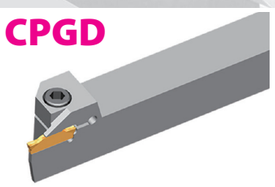
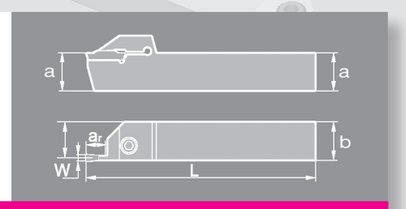
CPGD

toolholder code	R	L	a	b	L	w	ar	spare parts set
CPGD2020W40R/L13	●	●	20	20	140	4,0	13	GP2
CPGD2020W40R/L22	●	●	20	20	140	4,0	22	GP2
CPGD2525W40R/L13	●	●	25	25	150	4,0	13	GP2
CPGD2525W40R/L22	●	●	25	25	150	4,0	22	GP2
CPGD3232W40R/L13	●	❍	32	32	170	4,0	13	GP2
CPGD3232W40R/L22	●	❍	32	32	170	4,0	22	GP2

PAD / GRD / GFD 50 carbide

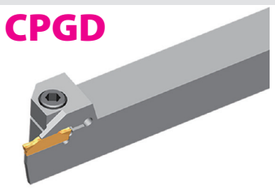
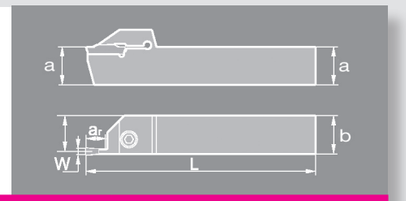
CPGD

toolholder code	R	L	a	b	L	w	ar	spare parts set
CPGD2525W50R/L13	●	●	25	25	150	5,0	13	GP2
CPGD2525W50R/L22	●	●	25	25	150	5,0	22	GP2

PAD / GRD / GFD 60 carbide

CPGD

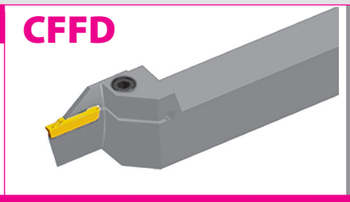
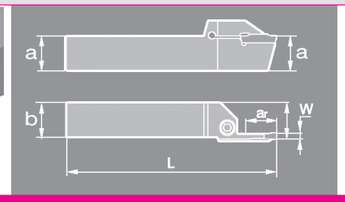



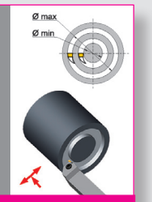
toolholder code	R	L	a	b	L	w	ar	spare parts set
CPGD2525W60R/L13	●	❍	25	25	150	6,0	13	GP2
CPGD2525W60R/L22	●	❍	25	25	150	6,0	22	GP2

● normal production ❍ on request

GFD / GRD 30 carbide

CFFD

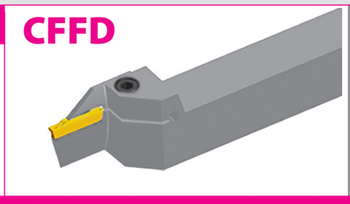
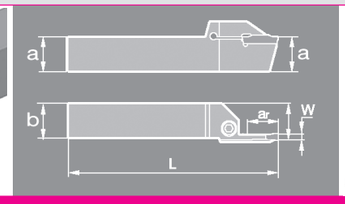





toolholder code	R	L	a	b	L	w	ar	Ømin-max	spare parts set
CFFD2020W30R/L7-48H	❍	❍	20	20	150	3,0	7	48-66	GP2
CFFD2020W30R/L10-48H	❍	❍	20	20	150	3,0	10	48-66	GP2
CFFD2525W30R/L10-48H	●	●	25	25	150	3,0	10	48-66	GP2
CFFD2525W30R/L17-48H	●	●	25	25	150	3,0	17	48-66	GP2
CFFD2020W30R/L7-60H	❍	❍	20	20	150	3,0	7	60-80	GP2
CFFD2020W30R/L10-60H	❍	❍	20	20	150	3,0	10	60-80	GP2
CFFD2525W30R/L10-60H	●	●	25	25	150	3,0	10	60-80	GP2
CFFD2525W30R/L17-60H	●	●	25	25	150	3,0	17	60-80	GP2
CFFD2020W30R/L7-74H	❍	❍	20	20	150	3,0	7	74-110	GP2
CFFD2020W30R/L10-74H	❍	❍	20	20	150	3,0	10	74-110	GP2
CFFD2525W30R/L10-74H	●	●	25	25	150	3,0	10	74-110	GP2
CFFD2525W30R/L17-74H	●	●	25	25	150	3,0	17	74-110	GP2
CFFD2020W30R/L7-100H	❍	❍	20	20	150	3,0	7	100-150	GP2
CFFD2020W30R/L10-100H	❍	❍	20	20	150	3,0	10	100-150	GP2
CFFD2525W30R/L10-100H	●	●	25	25	150	3,0	10	100-150	GP2
CFFD2525W30R/L17-100H	●	●	25	25	150	3,0	17	100-150	GP2

GFD / GRD 40 carbide

CFFD

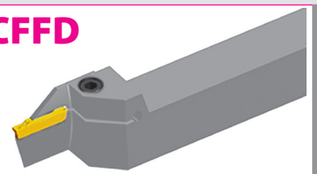



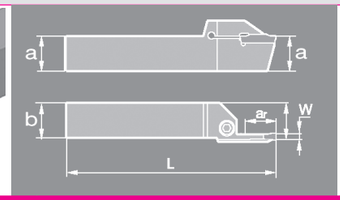
toolholder code	R	L	a	b	L	w	ar	Ømin-max	spare parts set
CFFD2020W40R/L10-52H	❍	❍	20	20	150	4,0	10	52-72	GP2
CFFD2525W40R/L13-52H	●	●	25	25	150	4,0	13	52-72	GP2
CFFD2020W40R/L15-52H	❍	❍	20	20	150	4,0	15	52-72	GP2
CFFD2525W40R/L22-52H	●	●	25	25	150	4,0	22	52-72	GP2
CFFD2020W40R/L10-64H	❍	❍	20	20	150	4,0	10	64-100	GP2
CFFD2525W40R/L13-64H	●	●	25	25	150	4,0	13	64-100	GP2
CFFD2020W40R/L15-64H	❍	❍	20	20	150	4,0	15	64-100	GP2
CFFD2525W40R/L22-64H	●	●	25	25	150	4,0	22	64-100	GP2
CFFD2020W40R/L10-90H	❍	❍	20	20	150	4,0	10	90-140	GP2
CFFD2525W40R/L13-90H	●	●	25	25	150	4,0	13	90-140	GP2
CFFD2020W40R/L15-90H	❍	❍	20	20	150	4,0	15	90-140	GP2
CFFD2525W40R/L22-90H	●	●	25	25	150	4,0	22	90-140	GP2
CFFD2020W40R/L10-130H	❍	❍	20	20	150	4,0	10	130-230	GP2
CFFD2525W40R/L13-130H	●	●	25	25	150	4,0	13	130-230	GP2
CFFD2020W40R/L15-130H	❍	❍	20	20	150	4,0	15	130-230	GP2
CFFD2525W40R/L22-130H	●	●	25	25	150	4,0	22	130-230	GP2

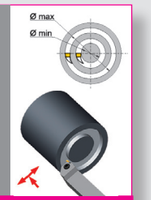
● normal production ❍ on request

GFD / GRD 50 carbide

CFFD



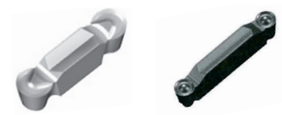


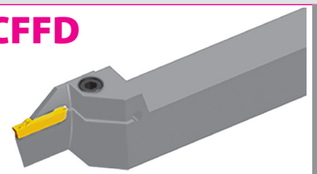


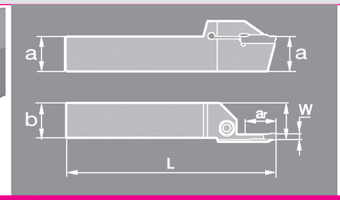
toolholder code	R	L	a	b	L	w	ar	Ømin-max	spare parts set
CFFD2525W50R/L13-58H	❍	❍	25	25	150	5,0	13	58-96	GP2
CFFD2525W50R/L22-58H	●	●	25	25	150	5,0	22	58-96	GP2
CFFD2525W50R/L13-86H	❍	❍	25	25	150	5,0	13	86-140	GP2
CFFD2525W50R/L22-86H	●	●	25	25	150	5,0	22	86-140	GP2
CFFD2525W50R/L13-130H	❍	❍	25	25	150	5,0	13	130-200	GP2
CFFD2525W50R/L22-130H	●	●	25	25	150	5,0	22	130-200	GP2
CFFD2525W50R/L13-185H	❍	❍	25	25	150	5,0	13	185-400	GP2
CFFD2525W50R/L22-185H	●	●	25	25	150	5,0	22	185-400	GP2

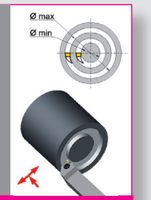
GFD / GRD 60 carbide

CFFD

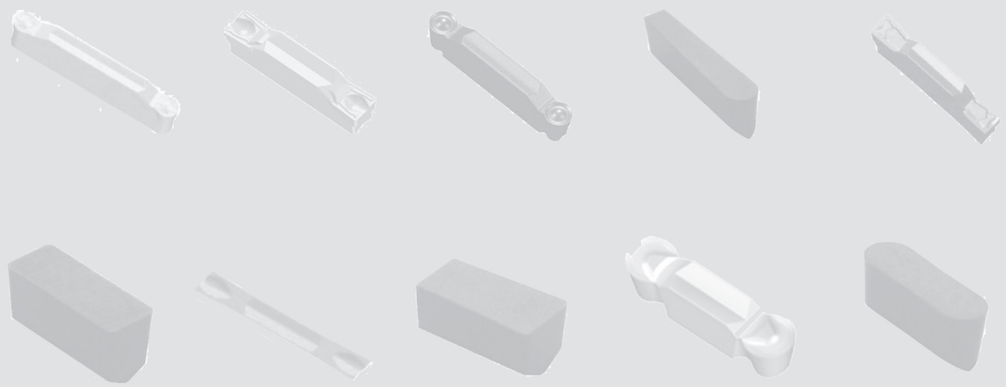








toolholder code	R	L	a	b	L	w	ar	Ømin-max	spare parts set
CFFD2525W60R/L13-60H	❍	❍	25	25	150	6,0	13	60-100	GP2
CFFD2525W60R/L22-60H	●	●	25	25	150	6,0	22	60-100	GP2
CFFD2525W60R/L13-88H	❍	❍	25	25	150	6,0	13	88-180	GP2
CFFD2525W60R/L22-88H	●	●	25	25	150	6,0	22	88-180	GP2
CFFD2525W60R/L13-160H	❍	❍	25	25	150	6,0	13	160-400	GP2
CFFD2525W60R/L22-160H	●	●	25	25	150	6,0	22	160-400	GP2



● normal production ❍ on request

SPARE PARTS

SPARE PARTS SET	SCREW / CLAMP SCREW	CLAMP	SHIM	SHIM SCREW / PIN	WRENCH		SPRING	LEVER
AP1	I60M2.5x6.5T				WT08IP			
CC1		UH1	SHCN4A	BM510	LW4			
CC2		UH1	SHCN5A	FM510	LW4			
CC3		UH25	SHCN8	FM815	LW6			
CC4		UH4	SHCN6A	FM615	LW6			
CD1		UH1	SHDN4A	BM510	LW4			
CE1		UH1	SHEN4A	BM510	LW4			
CF1		UH25	SHF10	BM510	LW6			
CF2		UH25	SHF13	BM510	LW6			
CF3		UH4	SHF25	BM510	LW4			
CG1	BM518	SGL4			LW3			
CG2	BM518	SGL5			LW4			
CG3	BM618	SGL7			LW5			
CG4	BM618	SGL8			LW5			
CG5	BM518	GRW4012			LW3			
CI1	SUH1	UH1	SHIN33F3	TM3008	LW4			
CI2	SUH1	UH1	SHIN43F4	TM4010	LW4			
CKL	CM6x25A	C6L1T	K16CCL	SM3x10B	WH20L	WH40L	SPR1+2	
CKR	CM6x25A	C6R1T	K16CC	SM3x10B	WH20L	WH40L	SPR1+2	
CL1		UH25	SHLJ65	BM510	LW6			
CL2		UH25	SHLJ66	BM510	LW6			
CN1	I60M4x12				WT15IP			
CR1		UH1	SHRB12	SH3015	LW4			
CR2		UH1	SHRB16	SH3515	LW4			
CR3		UH1	SHRN3A	TM3507	LW4			
CR4		UH1	SHRN4A	BM510	LW4			
CR5		UH1	SHRN5A	BM510	LW4			
CR6		UH4	SHRB20	SH5015	LW6			
CR7		UH4	SHRB26	SH6015	LW6			
CR8		UH4	SHRN6	FM512	LW6			
CS1		UH1	SHSC3A	SP3	LW4			
CS2		UH1	SHSC4A	SP3	LW4			
CS3		UH1	SHSN4A	BM510	LW4			
CS4		UH1	SHSN5A	FM512	LW4			
CS5		UH1	SHSV3440	FM510	LW4			
CS6		UH1	SHSV3826	FM510	LW4			
CS7		UH1	SHSV3832	FM510	LW4			
CS8		UH25	SHSN8	FM815	LW6			
CS9		UH4	SHSN6A	FM612	LW6			
CT1		UH1	SHTC3A	SP3	LW4			
CT2		UH1	SHTN3A	BM408	LW4			
CT3		UH1	SHTN4	FM410	LW4			
CV1		SM4	SHVN3A	TM412	LW4			
CX1		UH5	SHCN4A	BM510	LW4			
CX2		UH5	SHCN5A	FM510	LW4			
DC1	CM5x22C	C1RA	C09BM	SM5x8,65XA1	WH30L		SPR6	
DC2	CM6x25C	C2RA	C12BM	SM6x10XA1	WH40L		SPR4	
DD1	CM5x22C	C1RA	D11BM	SM5x8,65XA1	WH30L		SPR6	
DD2	CM6x25C	C2RA	D15BM	SM6x10XA1	WH40L		SPR4	
DS1	CM5x22C	C1RA	S09BM	SM5x8,65XA1	WH30L		SPR6	
DS2	CM6x25C	C2RA	S12BM	SM6x10XA1	WH40L		SPR4	
DS3	CM6x25C	C3RA	S15BM	SM6x10XA2	WH40L		SPR4	
DT1	CM5x22C	C1RA	T16BM	SM5x8,65XA1	WH30L		SPR6	
DV1	CM5x22C	C6RA	V16BM	SM5x8,65XA1	WH30L		SPR6	
DW1	CM5x22C	C1RA	W06BM	SM5x8,65XA1	WH30L		SPR6	
DW2	CM6x25C	C2RA	W08BM	SM6x10XA1	WH40L		SPR4	
DX1		UH5	SHDN3A	TM3507	LW4			
DX2		UH5	SHDN4A	BM510	LW4			
GP1	GB7085-M5x20				WH40L			
GP2	GB7085-M6x20				WH50L			

SPARE PARTS SET	SCREW / CLAMP SCREW	CLAMP	SHIM	SHIM SCREW / PIN	WRENCH		SPRING	LEVER
HR1		HB2	SHCD22		LW2.5			
HR2		HB3	SHCD33		LW5			
HR3		HB5	SHCD53		LW6			
OAR	I60M4x8.4				WT15IS			
OX1	I60M4x10				WT15IP			
PC1	LEM10x27		C19AP	SP6	WH40L			L6
PC2	LEM12x36A		C25AP	SP8	WH50L			L8
PC3	LEM12x36A		C25AP07	SP8	WH50L			L8
PC4	LEM12x36A		C25AP09	SP8	WH50L			L8
PC5	LEM6x13.4A		C09AP	SP10	WH25L			L3
PC6	LEM8x21		C12AP	SP4	WH30L			L4
PC7	LEM8x25		C16AP	SP5	WH30L			L5
PC8	LEM5x9B				WH20L			L3C
PC9	LEM6X13.4A				WH25L			L4A
PD1	LEM6x13.4A		D11AP	SP3	WH25L			L3
PD2	LEM8x21		D15AP	SP4	WH30L			L4B
PD3	LEM8x21		D15AP	SP4	WH30L			L4
PD4	LEMx12B				WH20L			L3D
PD5	LEM6x17		D11AP	SP3	WH25L			L3
PS1	LEM10x27		S19AP	SP6	WH40L			L6
PS2	LEM12x36A		S25AP07	SP8	WH50L			L8
PS3	LEM12x36A		S25AP09	SP8	WH50L			L8
PS4	LEM5X12B				WH20L			L3B
PS5	LEM6x13.4A		S09AP	SP10	WH25L			L3
PS6	LEM8x21		S12AP	SP4	WH30L			L4
PS7	LEM8x25		S15AP	SP5	WH30L			L5
PT1	LEM5x9B				WH20L			L2
PT2	LEM6x13.4A		T16AP	SP3	WH25L			L3
PT3	LEM8x21		T22AP	SP4	WH30L			L4
PT4	LEM8x25		T27AP	SP5	WH30L			L5
PT5	LEM6x17	SP3	T16APB		WH25L			L3
PW1	LEM6x13.4A		W06AP	SP3	WH25L			L3
PW2	LEM8x21		W08AP	SP4	WH30L			L4
RC2	I60M5x13				WT20IT			
RN1	AOB-6S	AMS6T			LW3		SP5	
RX1		UH5	SHRN4A	BM510	LW4			
RX2	SLS4	SCL5M			LW3		SP4	
SC1	I60M3.5x8				WT15IP			
SC2	I60M3.5x8		S09BS	SM5x8,65XA	WH35L	WT15IP		
SC3	I60M4x11X		C12BS	SM6x10XA	WH40L	WT15IP		
SCS	I60M4x11X				WT15IP			
SD1	I60M3.5x12		D11BS	SM5x8,65XA	WH35L	WT15IP		
SE1	I60M3.5x12		S13BS	SM5x7XA	WT15IS	WH35L		
SE2	I60M3.5x12		S12BSX	SM5x7XA	WT15IS	WH35L		
SP1	C94010				T15			
SP2	C95012				T20			
SP6	I43M5x11				WT20IS			
SQ1	I91M4x3.2X				WT10S			
SQ2	I91M4x4.2X				WT10S			
SQ3	I91M4x5.1X				WT10S			
SQ4	I91M4x6.1X				WT10S			
SQ5	I91M4x7.1X				WT10S			
SR1	I60M3.5x10				WT15IP			
SR2	I43M6x16				WT25IT			
SR3	I60M3.5x12		R12BS	SM5x8,65XA	WH35L	WT15IP		
SR4	I60M3x7				WT09IS			
SR5	I60M4x15X		R16BS	SM6x10XA	WH40L	WT15IP		
SS1	I60M3.5x12				WT15IP			
SS2	I60M3.5x12		S09BS	SM5x8,65XA	WH35L	WT15IP		
SS3	I60M4x11X		S12BS	SM6x10XA	WH40L	WT15IP		

SPARE PARTS SET	SCREW / CLAMP SCREW	CLAMP	SHIM	SHIM SCREW / PIN	WRENCH		SPRING	LEVER
ST1	I60M2.2x5.5				WT06IP			
ST2	I60M3.5x12		T16BS	SM5x8,65XA	WH35L	WT15IP		
SV1	I60M3.5x12		V16BS	SM5x8,65XA	WH35L	WT15IP		
SX1		UH5	SHSN4A	BM510	LW4			
SX2		UH5	SHSN5A	FM512	LW4			
SXX	I60M2.5x6.5				WT07IP			
SYY	I60M2.5x5.5				WT07IP			
TH1	I60M3.5x8				WT15IP			
TH2	I60M3.5x12		MT16-M	SM4x8C	WT15IP			
TH3	I60M5x10				WT20IP			
TH4	I60M5x17		MT22-M	SM5x8.5C	WT15IP			
WX1		UH5	SHWN4A	TM4010	LW4			
WX1		UH5	SHWN4A	TM4010	LW4			
XR1	VTM5x25	ST101	SU101		CHM4			
XR2	VT4MAx20	ST102	SU102		CHM3			
XR3	VT4MAx20	ST103	SU103		CHM3			
XR4	VTM6x20	ST104	SU104		CHM5			
XR5	VTM8x40	ST105	SU105		CHM6			
XR6	VTM8x40	ST106	SU106		CHM6			
XR8	VTM10x40	ST108	SU108		CHM8			

SPARE PARTS SET	SCREW / CLAMP SCREW	WRENCH		CARTRIDGE	WEDGE	WEDGE SCREW	LOC SCREW
HN1			WT15IT		W18N	DM6x20A	
HN2			LW3		DT-SW16	WS6	
OF1		WT20T	WH40T	LOF07R/L	W02R/L	DM8x21X	LOM5x15.1
SD2	I60M3.5x08TT	WT10IP	WT15IP		WD-204	I60M4x8.4	
SD3	I60M4x8.4	WT15IP			WD-204		
SN1			LW3		SSW9	WS6	
SN2			LW3		SSW10	WS6	
SP3		WT20T	WT25T	LP12R/L	W04R/L	WM8x17	LOM5x15.1
SP4		WT20T	WT25T	LP12R/L	W04R/L	WM8x22	LOM5x15.1
SP5		WT20T	WT25T	LSP15R/L	W04R/L	WM8x22	LOM5x15.1
TP1		WT20T	WT25T	LTP4R1/L1	W04R/L	WM8x17	LOM5x15.1
TP2		WT20T	WT25T	LTP4R/L	W04R/L	WM8x22	LOM5x15.1

GRADES CROSS TABLE

Coated Cemeted Carbide CVD

ISO	P Steel				M Stainless Steel				K Cast iron		
	P01-05	P10-15	P20-25	P30-35	M10	M20	M30	M40	K01-05	K10-15	K20-25
CERACARB	1005	1115 1005 1025Z	1025Z 1025	1135 1035Z	2015Z 2115	2020 2035	2040 2020	2040	3005	3010Z 3015Z	3015Z
Sandvik	GC4205 GC4305	GC4315 GC4215	GC4325 GC4225 GC4025	GC4335 GC4235 GC4035	GC2015 GC1515	GC2015 GC2025	GC2025 GC2035	GC2035	GC3005 GC3205	GC3215	GC3225
Kennametal	KCP05 KC9105	KCP10 KC9110	KCP25 KC9125	KCP30 KC8050	KCM15	KCM25 KC9225	KCM25 KCM35 KC9225	KCM35 KC9240 KC9245	KCK05	KCK15 KC9315	KCK20 KC9320
Sumitomo	AC805P	AC810P AC700G	AC820P AC8020P AC900G AC2000	AC830P AC3000	AC610M	AC610M AC630M	AC630M AC6030M AC830P AC3000	AC630M AC6030M AC830P AC3000	AC405K AC410K	AC410K AC415K AC420K AC700G	AC420K AC900G
Mitsubishi	UE6005 UE6105	UC6110 MY5015	UE6020 MC6025	UE6035 UE6400	MC7015	US7020 MC7015 MC7025	US735 US7025	US735	UC5005 UC5105	MC5015 UC5115 MY5015	MC5015 UC5115 UE6110 MY5015
Toshiba Tungaloy	T9005 T9105	T9015 T9115	T9025 T9125	T903 T9135	T9115	T6020 T6120 T9125	T6030 T6130	T6030 T6130	T5105	T5105 T5115	T5125 T9125
Kyocera	CA5505	CA510 CA5515 CA510	CA5525 CA525 CR9025	CA530 CA5535 CA535		CA6515	CA6525	CA6525	CA4505	CA4010 CA4515 CA4115	CA4125
Walter	WPP01 WPP05	WPP10 WPP10S	WPP20 WPP20S	WPP30 WPP30S		WAM20	WAM30			WAK10 WAK10S	WAK20 WKK20S
Iscar	IC8150 IC9150 IC428	IC8150 IC8250 IC9150 IC9250 IC9015	IC8150 IC8250 IC9250 IC9025	IC8250 IC8350 IC9350	IC8250 IC9250 IC6015	IC8250 IC9350 IC9025 IC6025	IC8350 IC9350 IC9025	IC6025 IC9350	IC5005 IC9007	IC9015 IC9007 IC8150 IC5010 IC428 IC4028 IC9150	IC5010 IC428 IC4028 C9150
SECO	TP0500 TP0501	TP1500 TP1501	TP2501 TP2500 TP200	TP3500		TM 2000 TP200 TP2500	TP3500 TM4000	TP40		TK1001 TK1000	TK2000 TK2001
Korloy		NC3010	NC3220 NC3120	NC3030 NC5330 NC500H		NC9025			NC6205	NC6210	NC5330
Ingersoll TaeguTec		TT8115 TT8125	TT8125 TT3500	TT5100 TT8135	TT9215	TT5100 TT9225	TT5100 TT7100 TT9235	TT5100 TT7100 TT9235	TT1300 TT7005	TT1300 TT7310 T7015	
Widia		WP15CT	WP25CT	WP35CT	WM15CT	WM25CT	WM35CT		WK05CT		WK20CT

Coated Cemeted Carbide PVD

ISO	P Steel				M Stainless Steel			S Heat resist. super all. & Ti-alloys				N Non ferrous materials
	P01-05	P10-15	P20-25	P30-35	M10	M20	M30	S05	S10	S20	S30	N10
CERACARB		6110 6015 2015	5120 5020	5040	6110 6015 2015	5120 5020	5040		6015 2015 5020 5120	5120 5020	5040	6110 6015 2015
Sandvik	GC1105	GC1515 GC1115 GC1025	GC1515 GC1125 GC1025	GC1125 GC2035	GC1105 GC1115 GC1025 GC1125 GC1515	GC1025 GC1125	GC2035	S05F	GC1105 GC1115	GC1025 GC1125 GC1515		GC1515
Kennametal		KC5010 KC5510 KC7215 KC7315	KC5025 KC5525 KU25T	KC7335	KCU10 KC5010 KC5510 KC6005 KC6015	KC501 KCU25	KC5025 KCU25		KC5010 KCU10 KC5510 KCS10	KC5010 KCU10 KC5025 KCU25 KC5525		KC5410
Sumitomo		AC510U	AC520U	AC530U	EH10Z AC510U AC530U	AC520U AC530U			AC510U EH510Z	AC520U EH520Z	AC520U	
Mitsubishi		VP10MF VP15TF	VP20RT VP20MF		VP10MF	VP10RT VP15TF VP20RT VP20MF	VP10RT VP15TF VP20RT VP20MF MP7035	MP9005	MP9015 VP10RT	MP9015 MT9015 VP20RT	VP15TF	
Toshiba Tungaloy		AH710	AH725 AH120	SH730 J740 GH130 AH740	AH710	AH120 AH725 SH730 AH710 AH630 GH330	AH12 AH725 SH730 AH710 AH630 GH330 J740	AH905	AH905 SH730 AH110 AH120	AH120 AH725	AH725	
Kyocera	PR1005	PR930 PR1005 PR930 PR115	PR930 PR1025 PR1225	PR660	PR915 PR1005	PR1025 PR1125 PR1225	PR1025 PR1125			PR1125	PR1125	
Walter		WSM10 WXN10	WSM20 WM-P20S WSM21	WSM30	WSM10	WSM10 WM-P20S WSM20 WSM21	WSM20 WSM21 WSM30		WSM10	WSM20 WSM21 WSM30	WSM30	WXN10
Iscar		IC520N IC507 IC570 IC807 IC907 IC908	IC228 IC250 IC308 IC828 IC350 IC354 IC507 IC807 IC808 IC907 IC908 IC928 IC1008 IC1028 IC3028	IIC228 IC250 IC328 IC330 IC354 IC528 IC1008 IC1028 IC3028	IC330 IC354 IC507 IC520 IC570 IC807 IC1028 IC3028	IC228 IC250 IC354 IC808 IC908 IC1008 IC1028 IC3028	IC228 IC250 IC328 IC330 IC1008 IC1028 IC3028	IC507 IC907	IC507 IC807 IC808 IC806 IC907	IC507 IC807 IC907	IC3028 IC808 IC830	IC520
SECO			CP200 CP250 TP2000 TS2500	CP500	CP500 TS2000	TS2000 TS2500 CP200 CP250	CP500 TS2500		CP200 CP250 TS2000 TS2500	CP250 TS2500 CP500		
Korloy				PC5300	PC8110		PC5300 PC9030		NC6210	PC5300	PC5400	
Ingersoll TaeguTec			TT8020 TT9020		TT5080	TT8020 TT9020 TT9080			TT1300 TT7310 T7015	TT5080 TT8020 TT9080	TT8020	
Widia					WS10PT	WS25PT				WS25PT		

Uncoated carbide

ISO	N Non ferrous materials		
	N01	N10	N20
CERACARB	K07	K07	K07
Sandvik	H10 H13A	H10 H13A	H10 H13A
Kennametal	KF1	K313 K68 KF1 THM-F	K313 K68 KF1 THM-F
Sumitomo	H1	H1	
Mitsubishi		HTi10	
Toshiba Tungaloy	AKS05F	KS15F	KS15F
Kyocera		KW10	KW15
Walter		WK01 WK10	
Iscar		IC20	IC20
SECO	883 890	890 KX HX	KX HX
Korloy		H01	
Ingersoll TaeguTec		K10	
Widia		THM	

CVD milling grades

Material / Class	P Steel					M Stainless Steel				K Cast iron			
	P05	P10	P20	P30	P40	M10	M20	M30	M40	K05	K10	K20	K30
CERACARB			4025 4120 1025	4025 4120 2020 2040	4040 2040		2035 2020	2040		3015Z	3015Z 3020	3020	
Sandvik	K20W GC4220	K20W GC3040 GC4220 GC4230	GC3040 GC4230	GC2040 GC4240	GC2040 GC4240	GC4230	GC4230	GC2040 GC4240	GC2040 GC4240		K20W	K20W	
Kennametal				KC930M KC935M				KC930M KC935M		KCK15	KCK15		KC930M KC935M
Sumitomo		ACP100	CS3000	CS3000							ACK200	ACK200	
Mitsubishi	F7010	F7010	FH7020	F7030		F7010	F7020	F7030		F7010 MC5020	F7010 MC5020		
Toshiba Tungaloy			T3130	T3130			T3130	T3130			T1115	T1115	
Kyocera													
Walter			WKP25 WKP25S	WKP35 WKP35S WTP35				WTP35			WAK15	WKP25 WKP25S	WKP35 WKP35S
Iscar		IC4100 IC5100	IC4050 IC4100 IC5100 IC5400	IC4050 IC5400			IC4050			DT7150 IC4100	DT7150 IC4100 IC4010	DT7150 IC4100	IC4050
SECO		MP1500	MP1500 MP2500 MS2500 T25M	MK3000 T25M T350M	T350M	MP1500	MP1500 MP2500 MS2500 T25M	MP2500 MS2500 T25M T350M	T350M		MP1500 MK1500	MP1500 MP2500 MS2500 T25M MK1500	MK3000 MP2500 MS2500
Korloy		NC5330 NCM325	NC5330 NCM325	NCM325		NCM325 NC5330	NCM325 NCM335	NCM335			NC5330	NC5330	
Ingersoll TaeguTec		IN6505 IN6520	IN6505 IN6520 IN7035	IN7035 IN6530	IN6530	IN6520	IN7035 IN6520 IN6505	IN6530 IN7035 IN6505	IN6530		IN6520	IN6530 IN6515 IN6520	IN6530 IN6515

PVD milling grades

Material / Class	P Steel					M Stainless Steel				K Cast iron			
	P05	P10	P20	P30	P40	M10	M20	M30	M40	K05	K10	K20	K30
CERACARB		6015	5020	5040			5020 5120	5040			6015		
Sandvik		GC1010 GC1025 GC1020	GC1020 GC1025 GC1010 GC2030	GC1030 GC2030	GC1030	GC1020	GC1020 GC1025 GC1030 GC203	GC1040 GC203	GC1040	GC1010	GC1010	GC1020	GC1020
Kennametal		KC522M KC525M KC610M KC643M KC715M	KC522M KC525M KC643M KC715M KC725M	KC530M KC725M KC735M	KC735M	KC522M KC610M KC643M KC715M	KC522M KC525M KC610M KC715M KC725M	KC525M KC530M KC725M KC735M	KC530M KC735M	KC510M	KC510M KC520M KC620M KC643M	KC520M KC620M KC725M	KC620M KC725M
Sumitomo	ACZ120	ACZ10M ACZ20W	ACP200 ACZ330 ACX70 ACW30 AC350 ACZ50M	ACP200 ACP300 ACZ50M ACZ330 ACZ350 ACX70 ACW30 AC350	ACP300 ACZ350	ACZ20W ACZ350 EH20Z	ACP200 ACZ50M ACZ20M ACZ350 EH20Z AC350	ACP300 ACZ50M ACX80 AC350	ACP300 ACX80	ACZ10M ACZ120 ACZ310	EH20Z ACZ310	ACK300 EH20Z ACX80 ACW30	ACK300 ACZ50M
Mitsubishi	VP05HT	VP10H	VP15TF VP20M VP20RT	VP30RT			VP15TF VP20RT	VP30RT				VP15TF	
Toshiba Tungaloy	GH130	AH120 GH130	AH725 AH120 AH130 AH330 AH725 AH730 GH330	AH740 AH130 AH140	AH140 AH750	AH330 GH110 GH130	AH725 AH730 GH110	AH740 AH120 AH130 GH330 GH340	AH140 AH750 GH330 GH340	AH330	AH120 AH330 AH725	GH130	
Kyocera		PR730 PR1225 PR1525	PR630 PR830 PR730 PR1225 PR1230 PR1525	PR630 PR660 PR830 PR1230		PR730 PR1225 PR660 PR1525	PR730 PR1025 PR660 PR1225 PR1525			PR905 PR1210 PR1510	PR905 PR1210 PR1510		
Walter		WHX15 WHH15 WXM15	WXM15	WXM35	WXP45 WSP45 WSP46		WXM15		WSM35 WSM36 WXM35		WXH15 WHH15 WXM15	WKK25	WKP35S
Iscar	IC903	IC903 IC950 IC1008	IC810 IC380 IC830 IC900 IC908 IC910 IC950 IC1008	IC300 IC328 IC830 IC900 IC928 IC350 IC808 IC908	IC300 IC328 IC928	PR730 PR660 PR1225 PR1525	PR730 PR660 PR1025 PR1225 PR1525				IC810 IC950 IC1008	IC328 IC830 IC950 IC350 IC808 IC908 IC1008	IC328 IC830 IC900 IC908 IC350 IC808 IC908
SECO		F15M	F25M MP3000	F30M MP3000	F40M	F15M	F25M MP3000	F30M MP3000	F40M	MH1000	F15M MK2000	F25M MK2000 MO3000	F30M F40M MP3000
Korloy			PC3500 PC3600	PC3500 PC3600 PC5300 PC3545 PC9570T	PC5300 PC3545	PC8110	PC5300 PC8110 PC9530	PC9530 PC3545 PC9570T	PC3545	PC8110	PC6510	PC6510 PC5300	PC5300 PC9570T
Ingersoll TaeguTec		IN2004 IN2006	IN2006 IN1030 IN2004 IN2005 IN2015 IN2030 IN2505 IN2540	IN1030 IN2005 IN2015 IN2030 IN2035 IN2040 IN2505 IN2530 IN4035	IN2035 IN2040	IN2505	IN2005 IN2015 IN2505	IN1030 IN2015 IN2030 IN2035 IN2530 IN4035	IN1030 IN2030 IN2035 IN2530 IN4035	IN2510	IN2004 IN2010 IN2510	IN1030 IN2004 IN2010 IN2015 IN2030 IN2505	IN2005 IN2015 IN2030 IN2505

PVD milling grades

Material / Class	S Super alloys				N Non ferrous materials			H Hardened materials		
	S05	S10	S20	S30	N05	N10	N20	H05	H10	H20
CERACARB	6015	6015 5020 5120	5020 5120			5020			6015	5020
Sandvik			S30T GC1025 GC1030 GC2030	GC2030		GC1025 GC1030	GC1025 GC1030		GC1010	GC1010 GC1025 GC1030
Kennametal		KC525M KC643M	KC525M KC643M	KC725M KC735M	KC510M	KC510M KC620M KC522M	KC620M KC522M KC525M KC651M		KC643M	
Sumitomo		ACZ20W	ACZ20W	ACZ50M		EH20Z				
Mitsubishi		VP15TF						VP05HT	VP10MF	VP15TF
Toshiba Tungaloy										
Kyocera		PR905 PR1210 PR1510	PR905 PR1210 PR1510							
Walter				WSM35 WSM36 WSP45 WSP46 WXM35 WXP45		WXN15			WXH15 WHH15	
Iscar		IC808	IC908 IC380 IC900 IC903 IC908 IC928 IC830 IC808	IC328 IC928 IC830				IC903	IC900 IC808	IC810 IC908
SECO	MH1000 F15M	NH1000 F15M F25M	F25M F30M	F40M	MH1000 F15M	MH1000 F15M	F25M F30M F40M MP3000	MH1000 F15M	MK2000 F30M MP3000	F30M F40M MK2000 MP3000
Korloy	PC8110	PC5300	PC5300 PC3545	PC3545				PC210F	PC210F	
Ingersoll TaeguTec			IN2005 IN2505	IN1030 IN2030 IN2035 IN2530 IN4035				IN2004 IN2006	IN2004 IN2005 IN2006	

Uncoated milling grades

ISO	N Non ferrous materials		
	N01	N10	N20
CERACARB		K07	
Sandvik	H10		H13A H10F
Kennametal	K115M K110M	K313	KMF
Sumitomo		EH520	EH520
Mitsubishi		HTi10	TF15
Toshiba Tungaloy			
Kyocera		GW25	
Walter	WK10	WKM	KMG40
Iscar	IC20N	IC08	IC28
SECO		H15	H25
Korloy	H01	G10	
Ingersoll TaeguTec	IN04S	IN10K IN05S	IN15K

Cermet

ISO	P Steel				
	05	10	15	20	30
CERACARB	CC510	CC510	CC515	CC520	CC530
Sandvik			CT5015	CT1525	CT530
Kennametal		KT125	KT315	KT325	KZ20S
Sumitomo		T110A	T1200A	T2000A	
Mitsubishi		NX2525	NX3035		NX335
Tungaloy		NS520		NS520 NS730	NS530 NS740
Kyocera		TN30 TN6010	TN40	TN60 TN6020	TN90
Iscar			IC20N IC520N		IC30N IC530N
SECO			C15M		
Korloy		CN1000	CN1500	CN2000	
Ingersoll TaeguTec		PV3010		CT3000	
Spk CeramTec		SC35	SC15	SC40	SC60
Ntk		T3N XT3	T15 C30	T7X C50	N40 C45
SsangYong			TX515	TX520	

Silicon nitride

Material / Class	K Cast iron					S Super alloys			
	05	10	20	30	40	10	20	30	40
CERACARB	DT850	DT500 DT850 **VN70S**	DT400 DT500 DT850 DT900 **VN70S**	DT400 DT500 DT850 DT900 **VN70S**	DT400 DT900	**VN70S** **VN80** **VN80S**	**VN70S** **VN80** **VN80S**	**VN70S** **VN80** **VN90**	**VN90**
Sandvik			CC6090 **CC6080**					**CC6060**	
Kennametal			KY1320 **KY1310**	KY3500 **KY1540**				**KY2100**	
Sumitomo			NS30	NS260					
Mitsubishi			XD515	XD520					
Tungaloy			CX710	FX90					
Kyocera		KS7000	KS6000 **KS6040**						
Spk CeramTec		SL500 **SL800**	SL506 **SL806**	SL508					
Ntk		SX1 **SX9**	SX6 **SX7**	SX2 **SX8**					
SsangYong		SN500	SN600 **SN800**	SN400				**SN900**	
Greenleaf			GSN						

Legenda:
SiAlON

Ceramic

Material / Class	K Cast iron				S Super alloys				H Hardened materials		
	05	10	20	30	10	20	30	40	05	10	20
CERACARB	CC200 V300 V900 VZ900	CC200 V300 V900 V200 VZ900 VZ300	V300 V200 VZ300	V200	WSK8	WSK1 WSK4 WSK8	WSK1 WSK4 WSK8	WSK4	V300 V900	V300 V900 V200 VZ900	WSK1 VZ900
Sandvik	CC620	CC650				CC670					
Kennametal	AC5	KY1615	KY4400			KY1525	KY4300				
Sumitomo	W80	NB90S	NB100C			WX120	WX2000				
Mitsubishi	XD202	XD805									
Tungaloy	LXA	LX21	LX11								
Kyocera	AZ5000	A65	A66N								
Spk CeramTec	SN60	SH2	SH2C								
Ntk	HC1	HC2 HC6	ZC7			WA1					
SsangYong	SZ200	ST300				SW400	SW800				
Greenleaf	GEM9	GEM6				WG300	WG600				

Legenda:
black ceramic
white ceramic
coated ceramic
SiC - whisker

FIND CERACARB WORLDWIDE

세라카브

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