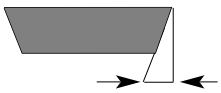
1 Shape

Symbol	Shape	Nose Angle	Figure
H	Hexagonal	120°	
O	Octagonal	135°	
P	Pentagonal	108°	
S	Square	90°	
T	Triangular	60°	
C	Rhombic	80°	
D		55°	
E		75°	
F		50°	
M		86°	
V		35°	
W	Trigon	80°	
L	Rectangular	90°	
A	Parallelogram	85°	
B		82°	
K		55°	
R	Round	-	

2 Relief Angle

Symbol	Relief Angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0
P	11°
O	Others



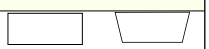
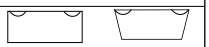
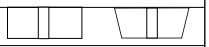
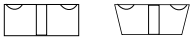
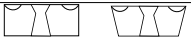
3 Accuracy

Symbol (class)	Tolerance (mm)		
	Corner Height (m)	Thickness (s) (s)	I.C. Dia. (d)
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	±0.13	±0.025
J	±0.025	±0.13	±0.05 / ±0.13 *
K	±0.01	±0.025	±0.05 / ±0.13 *
L	±0.025	±0.025	±0.05 / ±0.13 *
M	±0.08 / ±0.18 *	±0.13	±0.05 / ±0.13 *
N	±0.08 / ±0.18 *	±0.025	±0.05 / ±0.13 *
U	±0.13 / ±0.38 *	±0.13	±0.08 / ±0.25 *

* Details of accuracy will vary according to shape and size of insert - futher details are available on request.

1	2	3	4	5
T	N	M	G	16

4 Groove and Hole

Symbol	Shape of Hole	Chipbreaker	Shape
N	Without Hole	Without	
R		Single-sided	
F		Double-sided	
A	Cylindrical Hole	Without	
M		Single-sided	
G		Double-sided	
W	With partly cylindrical hole, double-side 40° - 60°	Without	
T		Single-sided	
Q	With partly cylindrical hole, double-side 40° - 60° Countersink	Without	
U		Double-sided	
B	With partly cylindrical hole, single-side 70° - 90° Countersink	Without	
H		Single-sided	
C	With partly cylindrical hole, single-side 70° - 90° Countersink	Without	
J		Double-sided	
X	Special Type		

5 Cutting Edge Length

R		S		C		W		T		D		V		K		I.C. dia. (mm)
Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	
03	3.97	03	3.97	03	4.0	02	2.7	06	6.9	04	4.8	-	-	-	-	3.97
-	-	04	4.76	04	4.8	L3	-	08	8.2	05	5.8	-	-	-	-	4.76
05	5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.0
-	-	05	5.56	05	5.6	03	3.8	09	9.6	06	6.8					5.56
06	6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.0
-	-	06	6.35	06	6.5	04	4.3	11	11.0	07	7.8	-	-	-	-	6.35
-	-	07	7.94	08	8.1	05	5.4	13	13.8	09	9.7	-	-	-	-	7.94
08	8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.0
09	9.525	09	9.525	09	9.7	06	6.5	16	16.5	11	11.6	16	16.6	16	19.7	9.525
10	10.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.0
12	12.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.0
12	12.7	12	12.7	12	12.9	08	8.7	22	22.0	15	15.5	22	22.1			12.70
15	15.875	15	15.875	16	16.1	10	10.9	27	27.5	19	19.4					15.875
16	16.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.0
19	19.05	19	19.05	19	19.3	13	13.0	33	33.0	23	23.3					19.05
20	20.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.0
-	-	22	22.225	22	22.6			38	38.5	27	27.1					22.225
25	25.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.0
25	25.4	25	25.4	25	25.8			44	44.0	31	31.0	-	-	-	-	25.4
31	31.75	31	31.75	32	32.2			55	55.0	38	38.8	-	-	-	-	31.75
32	32.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32.0

Note: For the insert shape "K", the rule for the relationship between the symbol and the dimension differs from those of other shapes.

Detailed accuracy for **J, K, L, M, N,** and **U** classes
For inserts whose corner angle is larger than 55°

Inscribed circle	Tolerance on inscribed circle dia. (d)		Tolerance on corner height (m)		Insert Shapes applied
	J, K, L, M, N	U	J, K, L, M, N	U	
6.35	±0.05	±0.08	±0.08	±0.13	H M O R P S T C E M
9.525					
12.70	±0.08	±0.13	±0.13	±0.20	
15.875	±0.10	±0.18	±0.15	±0.27	
19.05					
25.40	±0.13	±0.25	±0.18	±0.38	

For D-type inserts whose corner angles are 55°

Inscribed circle	Tolerance on inscribed circle dia. (d)	Tolerance on corner height (m)	Insert Shapes applied
6.35	±0.05	±0.011	D
9.525			
12.70	±0.08	±0.15	
15.875	±0.10	±0.11	
19.05			

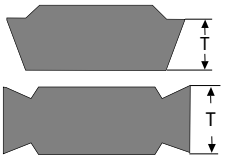
Note: The tolerance for shape V may be increased more than the value above.

7a Edge Preparation (Milling Inserts)

Rake Angle	χ_r
A	14°
D	60°
E	75°
F	85°
P	90°
Special	

Relief Angle	α_o
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
Z	Special

Note on insert thickness
For chipbreaker inserts, the thickness is defined as 'T' (height from the bottom face to the cutting edge) shown in the figure below



6 Thickness

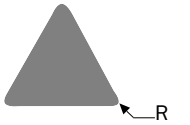
Symbol	Thickness
01	1.59
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52

6 04 7 08 7a T 8 N 9 - 10 XX

(Optional Symbols)

7 Corner Radius

Symbol	Corner Radius (mm)
00	0.03
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0
24	2.4
28	2.8
32	3.2



Radius (Turning Inserts)

8 Symbols of major cutting edge (Milling Inserts)

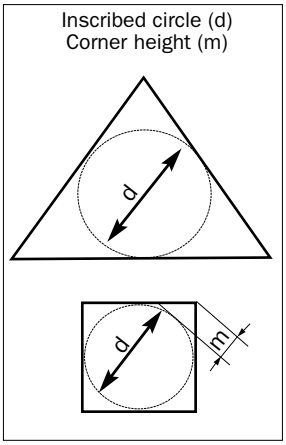
Symbol	Condition of Cutting Edge	Shape
F	Sharp Edge	
E	Honed Rounded edge	
T	Chamfered edge	
S	Combination Chamfered & honed edge	

9 Hand of Insert

Symbol	Hand
R	Right
L	Left
N	Neutral

10 Chipbreaker

Chipbreakers are not part of ISO designation.
Each manufacturer designates a chipbreaker in their own way.



YAMALOY
YAMALOY TOOLING · JAPAN

YAMALOY YAMALOY TOOLING · JAPAN

Q-Series Grade Descriptions

QX500 (ISO **P10-P25**) Cerment. For high speed finishing and light cutting. Will remain a high class surface finish. Mainly used on steels and can be applied to finish some Stainless steels and Cast Irons.

QX505 (ISO **K05-K15**) Coated. Used for finishing, semi finishing and medium roughing of Cast Irons including Malleable and Nodular Irons, at high speed.

QX510 (ISO **P01-P15 M10-M15 K01-K20**) Coated. Used for finishing on Steels and Stainless Steels, suitable also for turning Cast Irons including Malleable irons at high speeds.

QX5020 (ISO **P10-P35 M10-M30 K10-K30**) CVD Coated. An excellent general purpose grade for medium roughing on Steels, Stainless and Cast Irons.

QX530 (ISO **P25-P35 M15-M25**) Coated. Turning grade for Steels, Cast Steels and Stainless Steels. A good general purpose Steel grade for roughing.

QX5030 (ISO **P20-P40 M20-M30**) CVD Coated.
Medium / rough turning and intermediate cutting of steel / stainless steel. Combination of toughest substrate and alumina coating (MT-TiCN + TiC + AL203 + TiN) having superior chipping resistance provide wide coverage.

QX535S (ISO **M10-M30**) CVD Coated. For roughing and finishing turning applications on a wide variety of Stainless Steels.

QX8010 (ISO **M10 S10**) Coated. Excellent grade giving superior results on heat resistant super alloys, especially for the aerospace industry. TiAln based coating ensures high wear resistance on these demanding materials.

K10 (ISO **K05-K20**) Uncoated. Used in combination with a high rake geometry for matching Aluminiums, Plastics and other soft Non-Ferrous materials.

Material Group	Material Description Like Colour defines similar machineability	Brinell Hardness HB	Rockwell Hardness HRC	Tensile Strength N/mm²	QX500	QX505	QX510	QX5020	QX530	QX5030	QX535S	QX8010	K10
					Speed - m/min								
1.1	Mild, soft & free machining non-alloy low carbon steels	-130	- -	-400	200-270		200-300	180-350	150-200	150-200			
1.2	Non-alloy, case hardening, structural & low to medium carbon steels	-200		-700	180-250		200-300	150-320	130 180	130-180			
1.3	Non alloy, plain & medium carbon steels & castings	-260	-26	-850	150-220		200-300	130-280	110 150	120-150			
1.4	Generally low to medium alloy steels & castings	-260	-26	-850	140-210		170-250	140 210	110 140	120 140			
1.5	Medium to high alloy steels, tool steels & steel	260 -340	26 -48	850 -1200	140-200		140-200	130-200	100 120	100-120			
1.6	Heat treated high alloy steels & castings	340 -450	36 -48	1200 -1500	110-180		90-180	100-170	70 90	70-90			
2.1	Soft, generally easy to machine Ferritic & Martensitic steels & castings	-230	-20	-800	90-190			110-220		70-120	170-220	80-120	
2.2	Medium, reasonable to machine Austenitic stainless steels & castings	-290	-30	-1000	70-160	100-220		70-140	60-100	70-120	120-170	80-120	30-60
2.3	Hard, difficult to machine Ferritic & Austenitic (duplex) stainless & castings	-340	-36	-1200					50 90	50-90	70-120	80-120	30-70
3.1	Grey cast iron - soft to medium	-180			175-280	200-420	150-250	190-400					
3.2	Grey cast iron - medium to hard	180 -300			160-250	160-340	100-180	150-300					
3.3	Malleable & Nodular iron - soft to medium	-220			175-280	110-300	150-250	120-250					
3.4	Malleable & Nodular irons - medium to hard	220 -300			160-250	100-280	100-180	100-200					
4.1	Pure Titanium (also pure Nickel)											30-70	
4.2	Titanium alloys of a medium & hard nature											30-70	
4.3	Titanium alloys of a hard & very hard nature											30-50	
5.1	Heat resistant super alloys including iron based high temperature alloys											30-50	
5.2	Heat resistant super alloys, cobalt or nickel based, medium to hard to machine											30-50	
5.3	Heat resistant super alloys, cobalt or nickel based, hard or very hard to machine											30-50	
6.1	Copper			-500	200-250								200-500
6.2	Brass (Alpha - long chip)			-800	200-250								200-500
6.3	Brass (Beta - short chip) & soft Bronze			-800	200-250								100-500
6.4	High strength Bronze			-1200									
7.1	Unalloyed: Aluminium, Magnesium & Zinc			-150	300-500								400-700
7.2	Aluminium alloys less than 5% Si Magnesium & Zinc alloys (long chip)			150 -300	300-500								400-700
7.3	Aluminium alloys 5% to 10% Si			200 -500	300-500								400-600
7.4	Aluminium alloys above 10% Si (short chip)			200 -500									300-500
8.1	Thermoplastics												400-700
8.2	Thermo-setting plastics												400-700
8.3	Reinforced plastics & composite materials												200-500

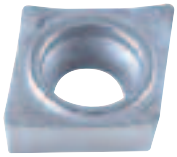
PRODUCTS ARE ONLY AVAILABLE VIA YOUR DISTRIBUTOR

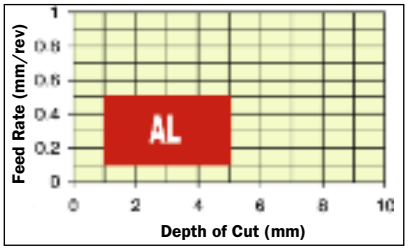
YAMALOY YAMALOY TOOLING · JAPAN

Think *POSITIVE*... and NEGATIVE

YAMALOY YAMALOY TOOLING · JAPAN

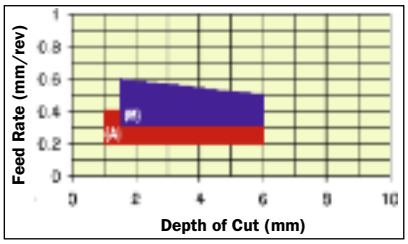
AL - High positive breaker specifically for Aluminium Alloys.



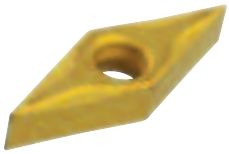


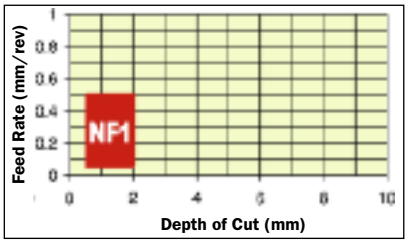
L11 / R11 - General purpose breaker for copy turning.

(A): 05 L/R11
(B): 10 L/R11

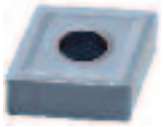


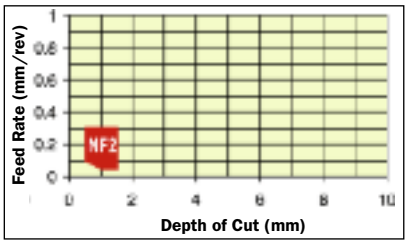
NF1 - Finishing breaker used on small VNMG 12 inserts.



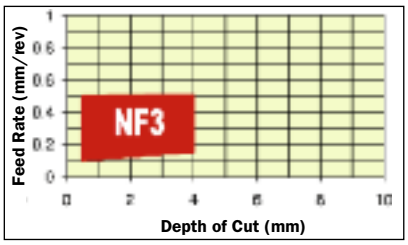


NF2 - A finishing chipbreaker associated with QX500 cermet will provide excellent surface finishes at high speeds on the majority of ferrous materials.

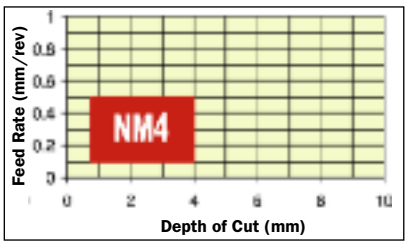




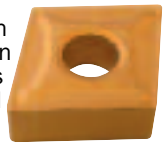
NF3 - Finishing chipbreaker for negative inserts used with QX510 for finishing Steel or finish and medium cutting on Cast Iron.

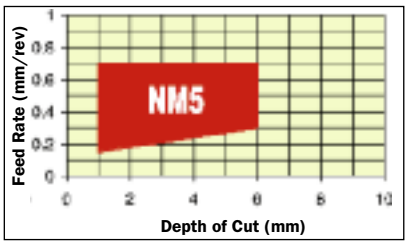


NM4 - Medium breaker used on negative inserts for light to medium roughing.

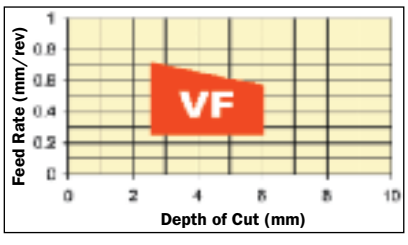


NM5 - General chipbreaker for medium roughing or semi finishing on Steels and Stainless in combination with grades QX510 and QX520.

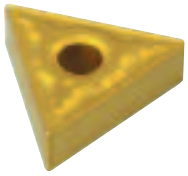


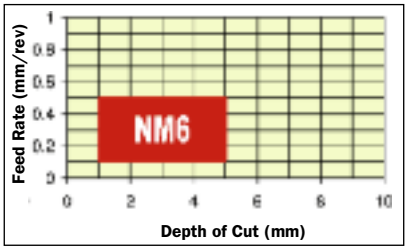


VF - General purpose chipbreaker with a radius groove, used with negative inserts. For light to medium cutting across a wide application band.

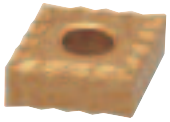


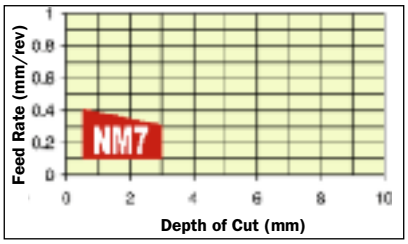
NM6 - General application medium breaker used on negative inserts with tougher grades.



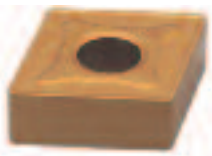


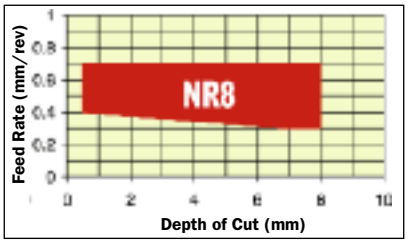
NM7 - A ripple edge breaker ideal for copy turning where cut depth varies and chip control is very important. Use with grade QX520 on Steels, Stainless and Malleable Irons.



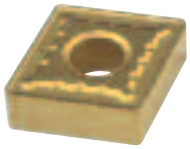


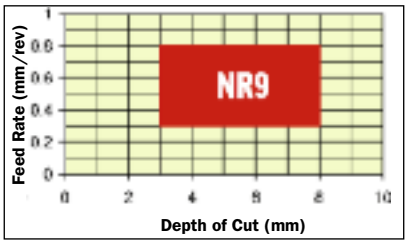
NR8 - Roughing breaker for Steels and Stainless with grades QX520.



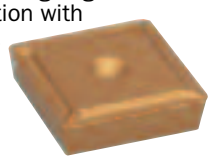


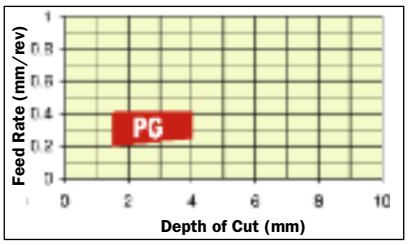
NR9 - General application roughing breaker, suitable for intermittent cuts on negative inserts.



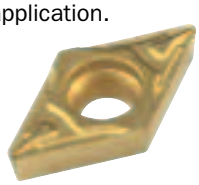


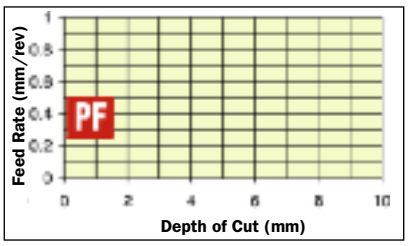
PG - General application finishing and light to medium roughing in conjunction with SPMR & TPMR positive inserts.



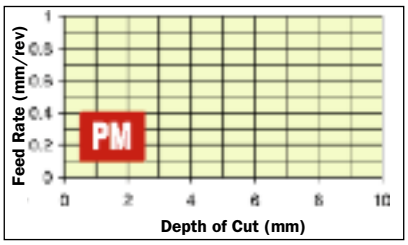


PF - Finishing breaker used on positive inserts for general application.

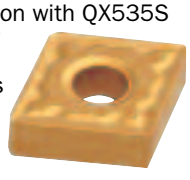


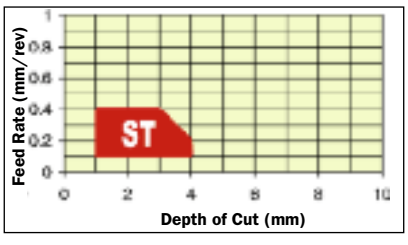


PM - Medium breaker used on positive inserts for general application.



ST - Light to medium roughing breaker used in conjunction with QX535S grade for turning Stainless Steels.



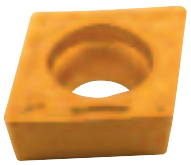


YAMALOY YAMALOY TOOLING • JAPAN — Think *POSITIVE*... and NEGATIVE — YAMALOY YAMALOY TOOLING • JAPAN

CCGT

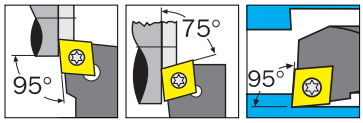
P	STEEL
M	STAINLESS STEEL
K	CAST IRON
N	ALUMINIUM
S	SUPER ALLOYS
H	HARDENED STEEL

Chip Breaker	Application
PF	Finish
AL	Med Cut (Alum)



Grade	ISO Designation P	M	K	P	M	K	N	S	H
K10	-	-	05 - 20			✓			
QX500	10 - 25	-	-	✓	✓	✓	✓		
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX530	20 - 40	20 - 30	-	✓	✓				

Suitable for External/Internal Toolholders:

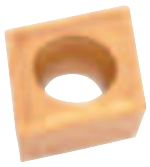


SCLC- SCKC- S_ _ _SCLC-

Insert Size CCGT	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
060202	AL	K10	-0121N	385.00
060204	PF	QX500	-0223A	385.00
	PF	QX520	-0223D	468.00
	AL	K10	-0131N	385.00
09T302	AL	K10	-0151N	456.00
09T304	PF	QX500	-0263A	415.00
	PF	QX520	-0263D	562.00
	AL	K10	-0161N	403.00
09T308	AL	K10	-0169N	456.00
120402	AL	K10	-0171N	567.00
120404	AL	K10	-0181N	592.00
120408	AL	K10	-0191N	534.00

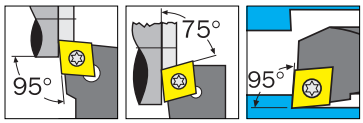
CCMT

Chip Breaker	Application
PM	Med Cut



Grade	ISO Designation P	M	K	P	M	K	N	S	H
K10	-	-	05 - 20			✓			
QX500	05 - 15	-	-	✓	✓	✓	✓		
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX5020	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX5030	25 - 35	15 - 25	-	✓	✓				

Suitable for External/Internal Toolholders:

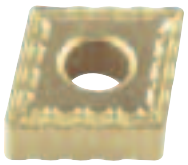


SCLC- SCKC- S_ _ _SCLC-

Insert Size CCMT	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
060202	PM	QX500	-0351A	267.00
	PM	QX5020	-0351G	338.00
060204	PM	QX500	-0355A	267.00
	PM	QX520	-0355D	267.00
	PM	QX5030	-0355H	267.00
09T304	PM	QX500	-0403A	267.00
	PM	QX520	-0403D	267.00
	PM	QX5030	-0403H	361.00
09T308	PM	QX500	-0406A	349.00
	PM	QX5020	-0406G	349.00
120404	PM	QX5020	-0410G	409.00

CNMG

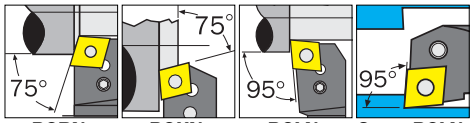
Chip Breaker	Application
NF3	Finish
NSA	Light Cut
NM5	Med Cut
NM6	Med Cut
NM7	Med/Rough



EXTENDED RANGE

Grade	ISO Designation P	M	K	P	M	K	N	S	H
QX510	01 - 15	10 - 15	01 - 20	✓		✓			
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX530	20 - 40	20 - 30	-	✓	✓				
QX5030	25 - 35	15 - 25	-	✓	✓				
QX535S	-	10 - 30	-		✓				
QX8010	10	10	10	✓	✓	✓	✓		

Suitable for External/Internal Toolholders:

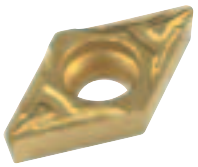


PCBN- PCKN- PCLN- S_ _ _PCLN-

Insert Size CNMG	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
120404	NF3	QX520	-0707D	409.00
	NSA	QX8010	-0712K	409.00
	NM5	QX520	-0709D	409.00
120408	NF3	QX520	-0717D	397.00
	NSA	QX8010	-0724K	397.00
	NM5	QX520	-0720D	397.00
	NM6	QX5030	-0716H	409.00
	NM7	QX520	-0718D	397.00

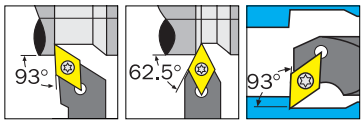
DCGT

Chip Breaker	Application
PF	Finish
AL	Med Cut (Alum)



Grade	ISO Designation P	M	K	P	M	K	N	S	H
K10	-	-	05 - 20			✓			
QX500	10 - 25	-	-	✓	✓	✓	✓		
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX530	20 - 40	20 - 30	-	✓	✓				

Suitable for Internal/External Toolholders:

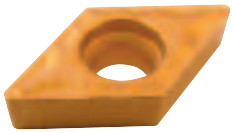


SDJC- SDNC- SDUC-

Insert Size DCGT	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
070204	AL	K10	-1031N	399.00
11T302	AL	K10	-1051N	415.00
11T304	PF	QX530	-1263E	534.00
	AL	K10	-1061N	415.00
11T308	AL	K10	-1071N	456.00

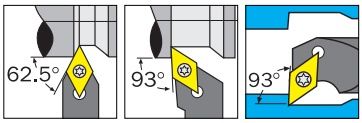
DCMT

Chip Breaker	Application
PM	Med Cut



Grade	ISO Designation P	M	K	P	M	K	N	S	H
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX5030	25 - 35	15 - 25		✓	✓				

Suitable for Internal/External Toolholders:

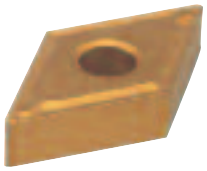


SDNC- SDJC- S_ _ _SDUC-

Insert Size DCMT	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
070204	PM	QX520	-1314D	385.00
11T304	PM	QX520	-1328D	415.00
	PM	QX5030	-1328H	415.00
11T308	PM	QX5020	-1335G	420.00
	PM	QX5030	-1335H	420.00

DNMG

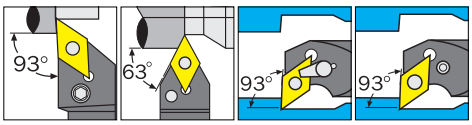
Chip Breaker	Application
NM4	Med Cut
NM5	Med Cut
NM6	Med Cut



EXTENDED RANGE

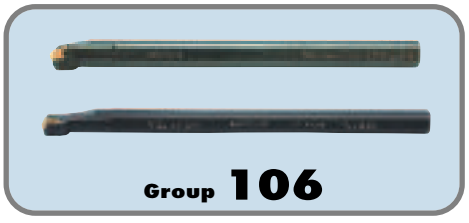
Grade	ISO Designation P	M	K	P	M	K	N	S	H
QX505	-	-	05 - 15	✓		✓			
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX530	20 - 40	20 - 30	-	✓	✓				
QX5030	25 - 35	15 - 25	-	✓	✓				
QX535S	-	10 - 30	-		✓				
QX8010	10	10	10	✓	✓	✓	✓		

Suitable for Internal/External Toolholders:



PDJN PDNN S_ _ _MDUN- S_ _ _PDUN-

Insert Size DNMG	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
110404	NM4	QX5020	-1574G	438.00
110408	NM4	QX5020	-1575G	438.00
150404	NM5	QX520	-1627D	438.00
150408	NM5	QX520	-1637D	456.00
150604	NM5	QX520	-1695D	575.00
	NM6	QX530	-1696E	575.00
150608	NM6	QX5030	-1716H	575.00



PRODUCTS ARE ONLY AVAILABLE VIA YOUR DISTRIBUTOR

YAMALOY YAMALOY TOOLING · JAPAN — Think *POSITIVE*... and NEGATIVE — YAMALOY YAMALOY TOOLING · JAPAN

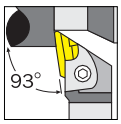
CUTTING TOOLS

KNUX

Chip Breaker	Application
R11	Rough

Grade	ISO Designation P	M	K	P	M	K	N	S	H
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX530	20 - 40	20 - 30	-	✓	✓				

Suitable for External Toolholders:

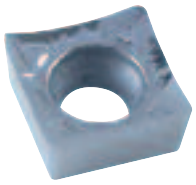


CKJN-

Insert Size KNUX	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
160405	R11	QX520	-2213D	433.00
	R11	QX530	-2213E	415.00

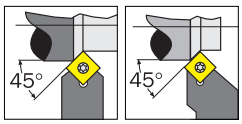
SCGT

Chip Breaker	Application
AL	Medium (Alum)



Grade	ISO Designation P	M	K	P	M	K	N	S	H
K10	-	-	05 - 20				✓		

Suitable for External Toolholders:

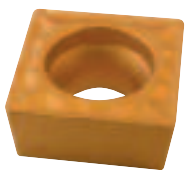


SSDC- SSSC-

Insert Size SCGT	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
09T308	AL	K10	-4169N	373.00

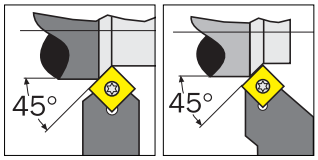
SCMT

Chip Breaker	Application
PM	Medium



Grade	ISO Designation P	M	K	P	M	K	N	S	H
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓			

Suitable for External Toolholders:

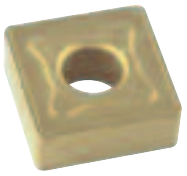


SSDC- SSSC-

Insert Size SCMT	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
09T304	PM	QX520	-0425D	349.00

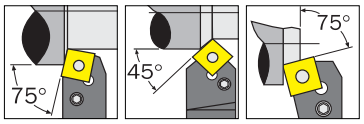
SNMG

Chip Breaker	Application
NM6	Med Cut
NM7	Med/Rough
NR8	Rough

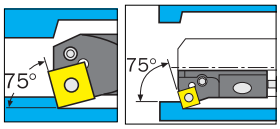


Grade	ISO Designation P	M	K	P	M	K	N	S	H
QX510	01 - 15	10 - 15	01 - 20	✓		✓			
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX530	20 - 40	20 - 30	-	✓	✓				
QX5030	25 - 35	15 - 25		✓	✓				
QX535S		10 - 30			✓				

Suitable for Internal/External Toolholders:



PSBN- PSDN- PSKN-



S_ _ _PSKN- PSKN-

Insert Size SNMG	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
120404	NM7	QX520	-5293D	420.00
120408	NM6	QX5030	-5336H	420.00
	NM7	QX520	-5340D	420.00
	NR8	QX520	-5339D	420.00

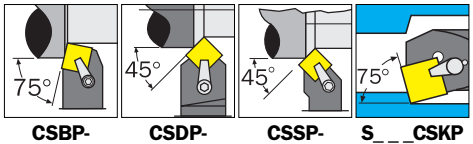
SPMR

Chip Breaker	Application
PG	Medium

EXTENDED RANGE

Grade	ISO Designation P	M	K	P	M	K	N	S	H
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX530	20 - 40	20 - 30	-	✓	✓				
QX5020	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX5030	25 - 35	15 - 25		✓	✓				

Suitable for Internal/External Toolholders:

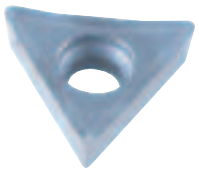


CSBP- CSDP- CSSP- S_ _ _CSKP

Insert Size SPMR	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
120304	PG	QX520	-6642D	385.00
120308	PG	QX5020	-6662G	385.00
	PG	QX5030	-6662H	385.00

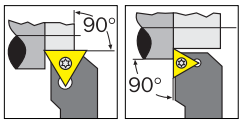
TCGT

Chip Breaker	Application
PF	Finish
AL	Medium

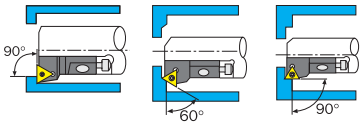


Grade	ISO Designation P	M	K	P	M	K	N	S	H
K10	-	-	05 - 20				✓		
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX5020	10 - 35	10 - 30	10 - 30	✓	✓	✓			

Suitable for Internal/External Toolholders:



STFC- STGC-

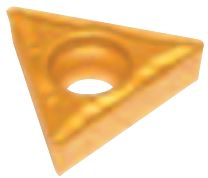


STFC- STTC- STGC-

Insert Size TCGT	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
110202	AL	K10	-6931N	394.00
110204	AL	K10	-6941N	394.00
16T304	PF	QX5020	-7073G	551.00
	AL	K10	-6971N	425.00
16T308	AL	K10	-6981N	435.00

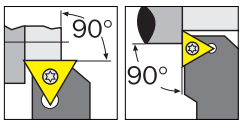
TCMT

Chip Breaker	Application
PM	Med Cut

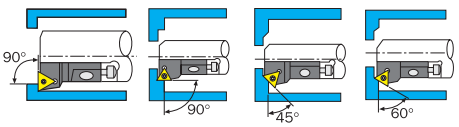


Grade	ISO Designation P	M	K	P	M	K	N	S	H
QX500	10 - 25	-	-	✓	✓	✓			
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓			

Suitable for Internal/External Toolholders:



STFC- STGC-



STFC- STGC- STSC- STTC-

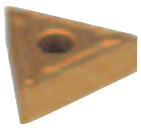
Insert Size TCMT	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
090204	PM	QX5020	-7110G	267.00
110204	PM	QX500	-7120A	267.00
	PM	QX520	-7120D	267.00
16T304	PM	QX500	-7140A	385.00
	PM	QX5020	-7140G	385.00
16T308	PM	QX5020	-7145G	385.00

PRODUCTS ARE ONLY AVAILABLE VIA YOUR DISTRIBUTOR

YAMALOY YAMALOY TOOLING • JAPAN — Think *POSITIVE*... and NEGATIVE — YAMALOY YAMALOY TOOLING • JAPAN

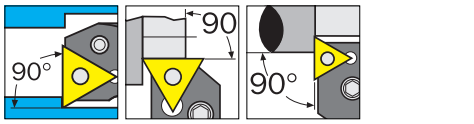
TNMG

Chip Breaker	Application
NF3	Finish
NM5	Med Cut
NM6	Med Cut
NM7	Med Cut
NR8	Rough
NR9	Rough

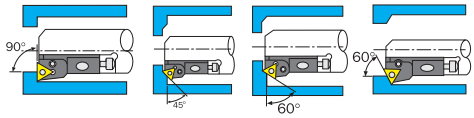


Grade	ISO Designation P	M	K	P	M	K	N	S	H
QX500	10 - 25	-	-	✓	✓	✓			
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX5030	25 - 35	15 - 25	-	✓	✓				
QX535S	-	10 - 30	-		✓				

Suitable for Internal/External Toolholders:



S_ _ _PTFN- PTFN- PTGN-

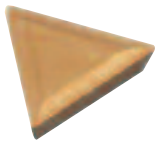


PTFN PTSN- PTTN- PTWN-

Insert Size **TNMG**	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
	NM5	QX520	-7519D	325.00
160404	NM6	QX5030	-7516H	297.00
	NM7	QX520	-7518D	355.00
	NF3	QX520	-7527D	355.00
	NM5	QX520	-7529D	349.00
160408	NM6	QX5030	-7526H	297.00
	NM7	QX520	-7528D	355.00
	NR8	QX520	-7530D	349.00
220408	NM5	QX520	-7562D	474.00

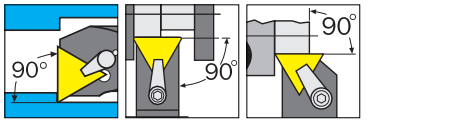
TPMR

Chip Breaker	Application
PG	Med/Cut

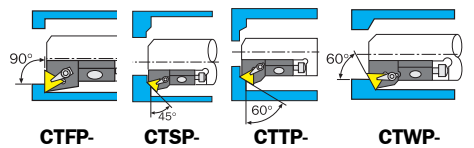


Grade	ISO Designation P	M	K	P	M	K	N	S	H
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX530	20 - 40	20 - 30		✓	✓				
QX5020	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX5030	25 - 35	15 - 25		✓	✓				

Suitable for Internal/External Toolholders:



S_ _ _CTFR- CTCP- CTFP-



CTFP- CTSP- CTTP- CTWP-

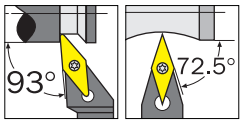
Insert Size **TPMR**	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
110304	PG	QX5020	-8742G	349.00
	PG	QX5030	-8742H	349.00
160304	PG	QX520	-8772D	267.00
	PG	QX530	-8772E	267.00
160308	PG	QX520	-8782D	267.00
	PG	QX5030	-8782H	349.00

VCGT

Chip Breaker	Application
AL	Med Cut

Grade	ISO Designation P	M	K	P	M	K	N	S	H
K10	-	-	05 - 20				✓		

Suitable for External Toolholders:

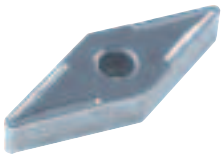


SVJC- SVVCN

Insert Size **VCGT**	Chip-breaker	Grade	Order Code YML-120 TB	Price/1
110302	AL	K10	-9101N	407.00
110304	AL	K10	-9111N	407.00
160404	AL	K10	-9141N	504.00
160408	AL	K10	-9151N	474.00
160412	AL	K10	-9161N	504.00

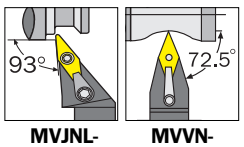
VNMG

Chip Breaker	Application
NFI	Finish
VF	Finish



Grade	ISO Designation P	M	K	P	M	K	N	S	H
QX500	10 - 25	-	-	✓	✓	✓	✓		
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓			
QX530	20 - 40	20 - 30	-	✓	✓				
QX5030	25 - 35	15 - 25	-	✓	✓				

Suitable for External Toolholders:



MVJNL- MVVN-

Insert Size **VNMG**	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
12T302	NFI	QX530	-9402E	444.00
12T304	NFI	QX500	-9404A	515.00
	NFI	QX530	-9404E	385.00
12T308	NFI	QX5030	-9408H	385.00
160404	VF	QX520	-9415D	575.00

WCMX

Chip Breaker	Application
N/A	

NEW

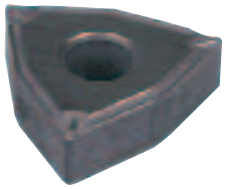
Grade	ISO Designation P	M	K	P	M	K	N	S	H
QZ820	10 - 30	10 - 30	10 - 30	✓	✓	✓			
QZ825	20 - 30	10 - 30	10 - 30	✓	✓	✓			
QZ830	05 - 30			✓	✓				

Suitable for Indexable Drills:

Insert Size **WCMX**	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
050308	-	QZ820	-9510G	464.00
06T308	-	QZ830	-9540J	489.00
080412	-	QZ830	-9580J	489.00

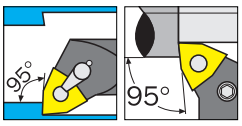
WNMG

Chip Breaker	Application
NSS	Light/Medium
NM4	Med Cut
NM5	Med Cut
NM6	Med Cut



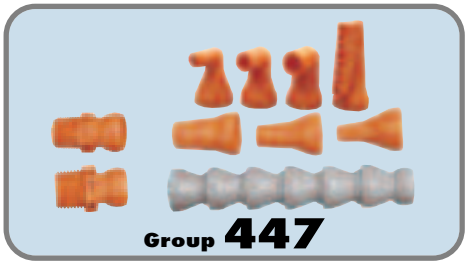
Grade	ISO Designation P	M	K	P	M	K	N	S	H
QX510	01 - 15	10 - 15	01 - 20	✓	✓				
QX520	10 - 35	10 - 30	10 - 30	✓	✓				
QX5030	25 - 35	15 - 25	-	✓	✓				
QX535S	-	10 - 30	-	✓	✓				
QX8010	10	10	10	✓	✓	✓			

Suitable for Internal/External Toolholders:



S_ _ _MWLN- PWLN-

Insert Size **WNMG**	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
060404	NM4	QX520	-9774D	361.00
060408	NSS	QX8010	-9780K	361.00
080404	NM5	QX520	-9827D	468.00
080408	NM6	QX5030	-9836H	385.00



PRODUCTS ARE ONLY AVAILABLE VIA YOUR DISTRIBUTOR

YAMALOY YAMALOY TOOLING · JAPAN — Think *POSITIVE*... and NEGATIVE — YAMALOY YAMALOY TOOLING · JAPAN

Insert Grade

K20 Micrograin uncoated. For cast iron, aluminium alloy, other non-ferrous materials including titanium and nickel alloy.

QK25C (K15 - K30) Coated. For milling cast irons.

QM3535 (P20 - P35) PVD TiAlN Coated for milling of steel. Comprehensive grade which covers wide application range due to substrate providing optimal wear resistance and toughness.

QP25 (P25) Uncoated. For medium and finish milling of steels.

QP25C (P10 - P35) CVD coated. Milling grade for steel and some stainless steels.

QP30P (P10 - P35) PVD Coated. Milling grade for steel and some stainless steels.

QP30T (P10 - P35) PVD Coated. Milling grade for steel and some stainless steels.

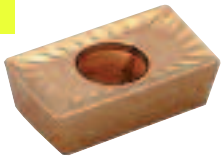
QP40 (P40) Uncoated. For rough medium and finish milling of tough Steels and Stainless Steels including interrupted cutting.

QX530 (P20 - P40, M20 - M30) Coated. A good general purpose steel grade for roughing. Use on steels, cast steel and stainless steel.

Chipbreaker

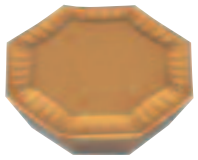
Chip Breaker	Application
AL	Aluminium & non Ferrous (Polished)
EM	Medium
MF	Finish/Light
MM	Medium/Light Roughing

APKT



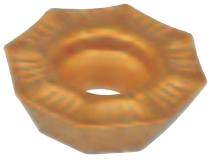
Insert Size APKT	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
1003PDR	EM	QK25C	-0028X	385.00
	EM	QP30P	-0028W	325.00
1604PDR	AL	K20	-0029K	515.00
1604PDTR	-	QP30P	-0030W	415.00
	-	QK25C	-0030X	562.00
	-	K20	-0031V	385.00

OFKR



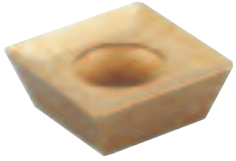
Insert Size OFKR	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
05T308	MF	QP25C	-2388W	977.00

OFKT



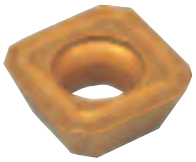
Insert Size OFKT	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
05T308-SN	MM	QP25C	-2384W	977.00

SDMT



Insert Size SDMT	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
12T308	-	QX530	-4280E	444.00

SEHT

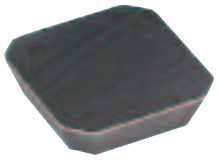


Insert Size SEHT	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
1204AFTN	-	K20	-4430V	420.00
120408	-	QP25C	-4430W	592.00
120408	-	QP25C	-4432W	711.00

SEHW

Insert Size SEHW	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
1204AFTN05	-	K20	-4445V	420.00
		QP25C	-4445W	592.00

SEKN



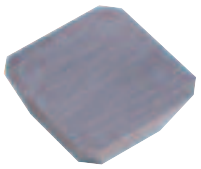
Insert Size SEKN	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
1203AFFN	-	K20	-4517V	386.00
1203AFSN	-	QM3535	-4527M	464.00
1203AFTN	-	QP25	-4527P	386.00
	-	QP40	-4527S	386.00

SEKR

Insert Size SEKR	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
1203AFTN05	-	K20	-4617V	450.00
	-	QP25C	-4627W	455.00

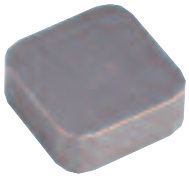
SEMN

NEW



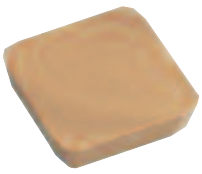
Insert Size SEMN	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
1204-AZ	-	QM3535	-4727M	465.00

SNKN



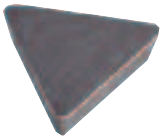
Insert Size SNKN	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
1204-ENN	-	QP25	-5227P	314.00

SPKN



Insert Size SPKN	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
1203EDR	-	K20	-6328V	361.00
1203EDTR	-	QM3535	-6338M	450.00
	-	QP25	-6338P	475.00
	-	QP40	-6338S	475.00
1504EDTR	-	QP25	-6368P	650.00

TPKN



Insert Size TPKN	Chip-breaker	Grade	Order Code YML-120	Price/1 TB
1603PPR	-	K20	-8428V	361.00
1603PPTR	-	QM3535	-8438M	361.00
	-	QP25	-8438P	361.00
	-	QP40	-8438S	361.00
2204PDR	-	K20	-8458V	373.00
2204PDSR	-	QM3535	-8468M	420.00
2204PDTR	-	QP25	-8468P	438.00
	-	QP40	-8468S	438.00

PRODUCTS ARE ONLY AVAILABLE VIA YOUR DISTRIBUTOR