PARTING & GROOVING



Parting & grooving

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Parting & grooving inserts

Double sided



ZT*D-MM	ZT*D-MG	ZT**-EG	ZP*D-MG	ZP*D-MG-R/L	ZP*D-MM	ZT*D-MU	
1.5-8	2.5-6	1-6.5	1.5-6	2.35-4	2	3-6	Width
A484	A485	A495	A486	A487	A488	A483	Page



ZR*D-MG	ZR*D-EG	ZR*D-LH	ZILD-LC				
2.5-6	2-6	6-8	8				Width
A498	A499	A502	A503				Page

Single sided



ZT*S-MM-25	ZT*S-MM	ZT*S-MG	ZP*S-MG-25	ZP*S-MG-R/L	ZP*S-MG	ZIMF-NM	ZIGQ-NM	
4-6	2.5-3	5-6	4-6	2.5-3	2.5-8	3-6	3-6	Width
A494	A493	A492	A490	A491	A489	A500	A501	Page

Three cutting edges



QC**R/L	QC**R/L***R							
0.5-4.8	1-4							Width
A505, B206	A509							Page

External tool holders



GQCR/L**

A543



QER/L**

A511



QE*SN**

A531



QE*SN-1**

A532



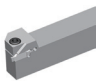
QE*SN30

A513



QE*SR/L

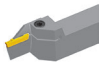
A516



QECDR/L

A514

Page



QFR/L**

A517



QFRR/LL**

A519



QF*DR/L

A522



QF*SRR/LL

A521



QFHSDR/L

A524



QX*DR/L

A515



QZS*

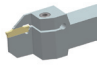
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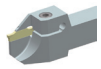
QER/L-DGC**

A535



QER/L-DGSC**

A537



QER/L-SC**

A538

Page

Boring bars



C*-Q*DR/L**

A527



S*K-QCR/L**

A544

Page

Parting & grooving System overview

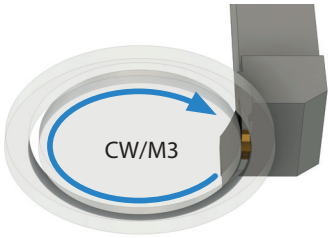
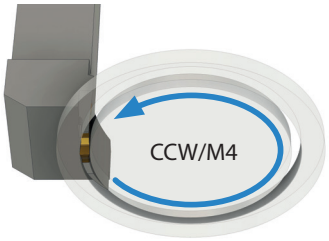
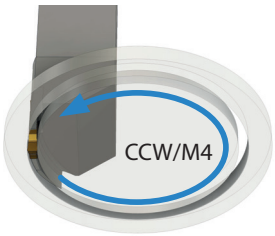
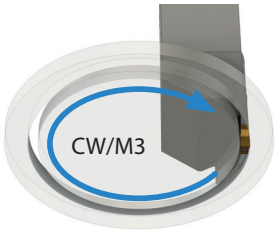
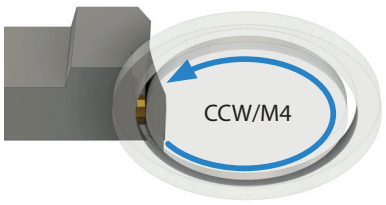
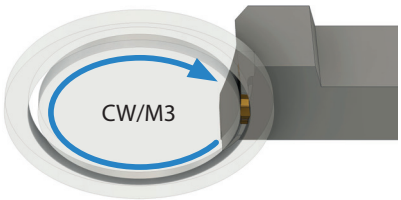
	System information	Groove width S	Groove depth a_r max.	Grooving	Parting	Turning	Page
QE system	• System for **radial parting off and grooving** and **turning** • Tool holders available for internal and external machining • Available with targeted cooling and direct supply of coolant via the shank • Inserts with one or two cutting edges • Inserts for precision grooving available	2,0–6,0 mm	max 30,0 mm	✔	✔	✔	■ A511 ● A527
QZ and QE system	• System for **radial parting off** and **grooving** • Insert holder and clamping block in one • Self-clamping system • Inserts with one cutting edge • Can be used in a wide range of applications	2,5–6,0 mm	max 60,0 mm	✔	✔	–	■ A531
QF system	• System for radial **grooving and turning** • Penetration diameter range of Ø 48–400 mm • Screw clamped for maximum stability • Inserts with two cutting edges • Tool holders available in a neutral design or with a 90° offset • Right base for M3 • Left base for M4	2,0–6,0 mm	max 22,0 mm	✔	–	✔	■ A525
QX system	• System for **undercutting** • Shank holder with 45° approach angle • Screw clamped for maximum stability • For grooving inserts with two cutting edges • For turning operations and machining undercuts and recesses. Can also be used in copy turning applications	3,0–6,0 mm	max 4,0 mm	✔	–	✔	■ A515

■ External tool holders
● Boring bars

	System information	Groove width S	Groove depth a_p max.	Grooving	Parting	Turning	Page
QE*S*N system	• System specially designed for **heat-resistant alloys** • Special chip breakers for heat-resistant alloys • Screw clamped for maximum stability • For grooving inserts with one cutting edge	3,0–6,0 mm	max 22,0 mm	✔	–	✔	■ A516
QC system	• System for **precision grooving** • Tool holders available for external and internal machining • Tangential screw clamping for high stability and rigidity • Three cutting edges for high efficiency • Precision-ground grooving inserts with high tolerances • High repeatability even after replacing insert • Grooving inserts with straight or round cutting edge • Special feature with internal machining: right tool holder + left grooving insert / left tool holder + right grooving insert	0,5–4,8 mm	max 5,0 mm	✔	–	–	■ A543 ● A544

■ External tool holders
● Boring bars

Tool holders for axial machining

Tool holder	Tool holder orientation
QFFD****L**-**H	
QFFD****R**-**H	
QFFD****LL**-**H	
QFFD****RR**-**H	
QFFD****L**-**L	
QFFD****R**-**L	

Notes

Parting & grooving Chip breaker overview

Grooving

MM P M K S



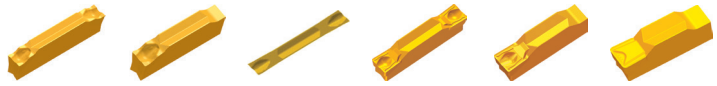

Ground chip breaker with straight cutting edge for general machining applications involving steel, stainless steel, cast iron and heat-resistant alloys. Suitable for use in grooving, turning and parting off operations.

MU P K M




Chip breaker that delivers maximum chip control in general machining operations involving steel and cast iron.

MG P M K S

Universal chip breaker for general machining of steel, stainless steel and cast iron. Suitable for grooving, turning and parting.

MG P M K S




Universal chip breaker with round profile for general machining of steel, stainless steel and cast iron. Suitable for grooving and profiling.

EG M P S




Ground precision chip breaker for grooving and turning applications. Suitable for machining of stainless steel. E-tolerance for high repeatability.

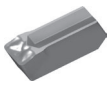
EG M P S




Ground precision chip breaker with round profile for grooving and turning applications. Suitable for machining of stainless steel. E-tolerance for high repeatability.

Grooving

NM S M

Special chip breaker for machining of heat-resistant materials.

LC N




Ground chip breaker for profile and turning applications of non-ferrous metals.

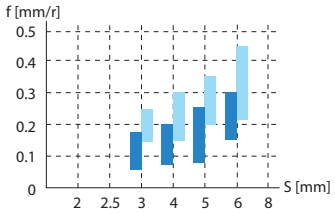
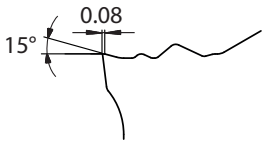
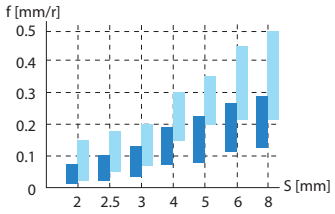
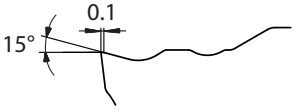
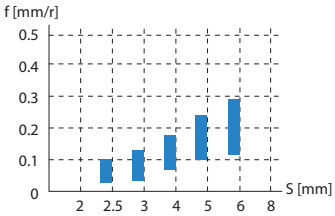
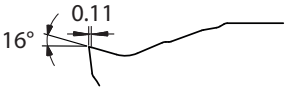
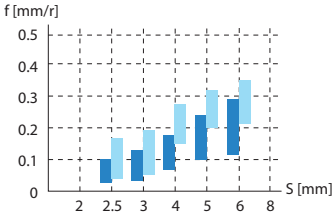
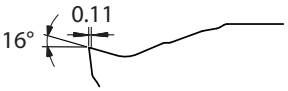
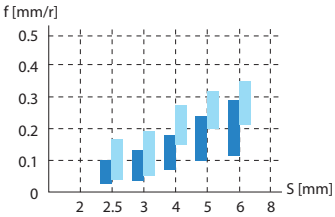
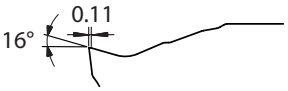
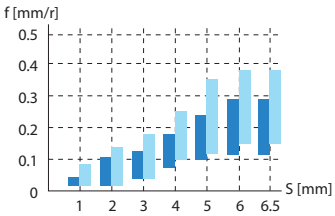
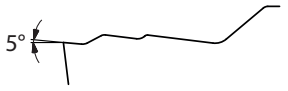
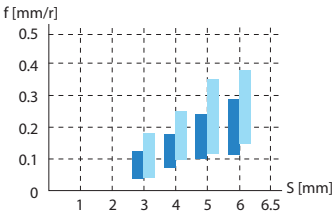
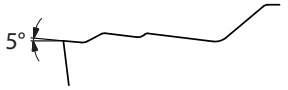
LH N




Ground chip breaker for profile and turning applications of non-ferrous metals.

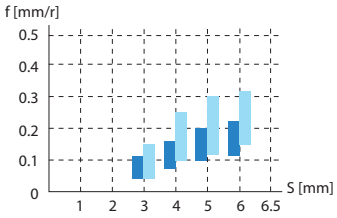
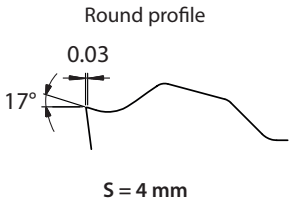
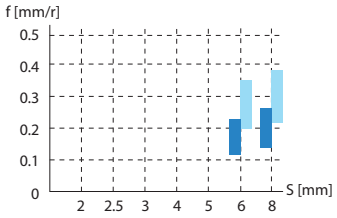
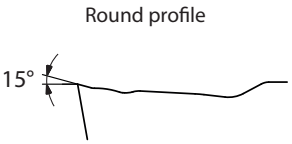
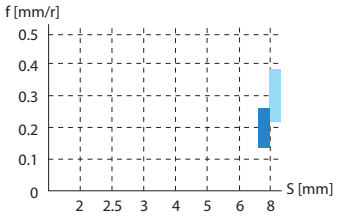
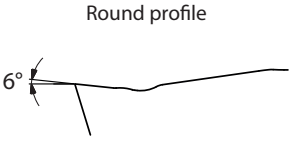
Parting & grooving

Application fields of chip breakers

Chip breaker	Application	P	M	K	N	S	H	Feed	Cutting edge design
ZT****-MU	Parting & grooving ✔	✔	✔	✔		✔			
	Turning ✔								
ZT****-MM	Parting & grooving ✔	✔	✔	✔		✔			
	Turning ✔								
ZP****-MG	Parting & grooving ✔	✔	✔	✔		✔			
	Turning –								
ZT****-MG	Parting & grooving ✔	✔	✔	✔		✔			
	Turning ✔								
ZR****-MG	Parting & grooving ✔	✔	✔	✔		✔			Round profile 
	Turning ✔								
ZT****-EG	Parting & grooving ✔	✔	✔	✔		✔			
	Turning ✔								
ZR****-EG	Parting & grooving ✔	✔	✔		✔	✔			Round profile 
	Turning ✔								

✔ Very suitable ✔ Suitable

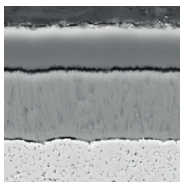
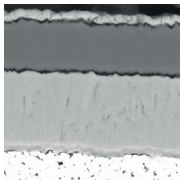
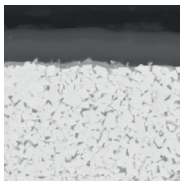
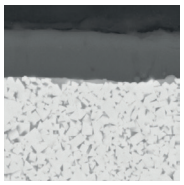
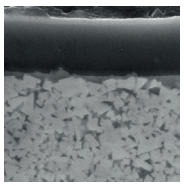
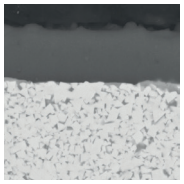
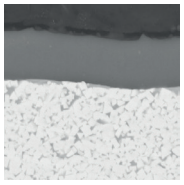
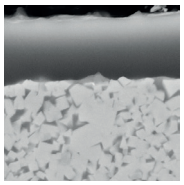
Parting & grooving
Turning

Chip breaker	Application	P	M	K	N	S	H	Feed	Cutting edge design
ZI****-NM	Parting & grooving ✔		✔		✔	✔			
	Turning ✔								
ZR****-LH	Parting & grooving ✔				✔	✔			
	Turning ✔								
ZI****-LC	Parting & grooving ✔				✔	✔			
	Turning ✔								

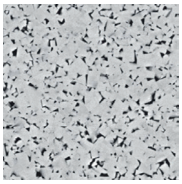
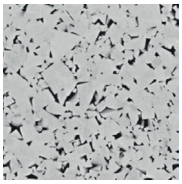
✔ Very suitable ✔ Suitable

Parting & grooving
Turning

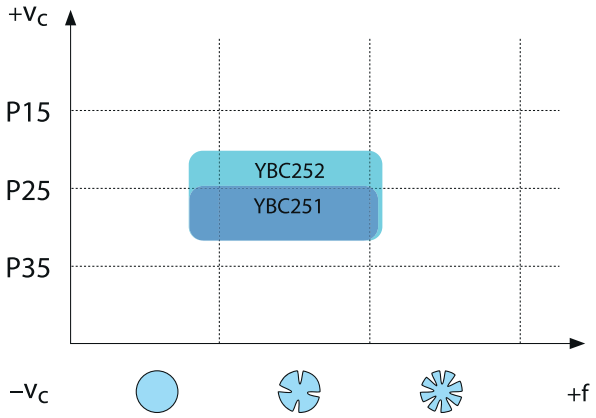
Parting & grooving

Grade	ISO	Micro structure	Grade description
YBC252	P20 - P35		CVD coated P20–P35 carbide grade for medium operation to roughing of steel and casting steel. Optimal performance of wear resistance and toughness for a wide application field.
YBC251	P20 - P35		CVD coated P20–P35 carbide grade for medium operation to roughing of steel and casting steel in lower cutting speed.
YBG105	S05 - S20		PVD multilayer coated S05–S20 carbide substrate for finishing to medium application of super alloy material but also stainless steel. Good wear resistance and thermal stability in a wide application field.
YBG102	S05 - S15		PVD coated S05–S15 carbide substrate for finishing to medium application of super alloy material, stainless steel and aluminum. Good wear resistance in a wide application field.
YB9320	P10 - P30 M10 - M25		PVD multilayer coated P10–P30/M10–M25 carbide substrate for finishing to medium machining of stainless steel, super alloys and steel (grooving/milling). Optimised coating stability for higher wear resistance and thermal stability in a wide range of applications.
YBG205	P10 - P30 M20 - M40 S15-S25		PVD multilayer coated P10–P30/M20–M40/S15–S25 carbide substrate for finishing to medium machining of stainless steel, super alloys and steel (milling). Excellent wear resistance and thermal stability in a wide range of applications.
YBG202	P10 - P30 M10 - M25		PVD coated P10–P30/M10–M25 carbide substrate for finishing to medium application of stainless steel and steel (milling). Good wear resistance in a wide application field.
YBG302	P15 - P30 M25 - M40		PVD coated P15–P30/M25–M40 carbide substrate for medium roughing application of stainless steel and steel (milling). Good wear resistance and toughness.

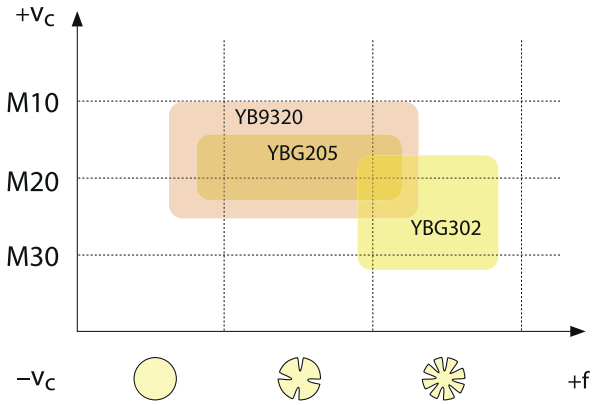
Parting & grooving

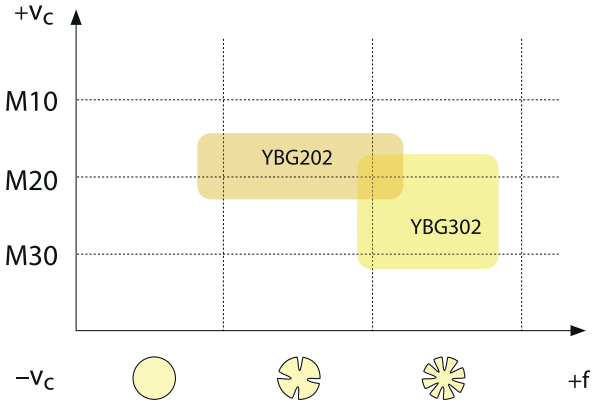
Grade	ISO	Micro structure	Grade description
YD101	K05 - K20 N05 - N20		Uncoated K05–K20/N05–N20 carbide substrate for fine to medium application in aluminum and other material.
YD201	K10 - K30 N10 - N30		Uncoated K10–K30/N10–N30 carbide substrate for medium application in aluminum and other material.

CVD coated carbide grades for steel

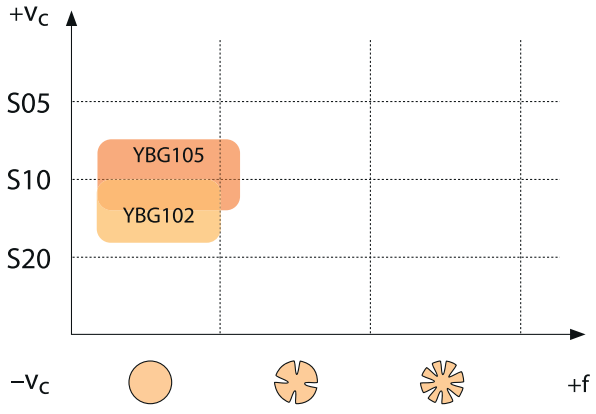


PVD coated carbide grades for stainless steel

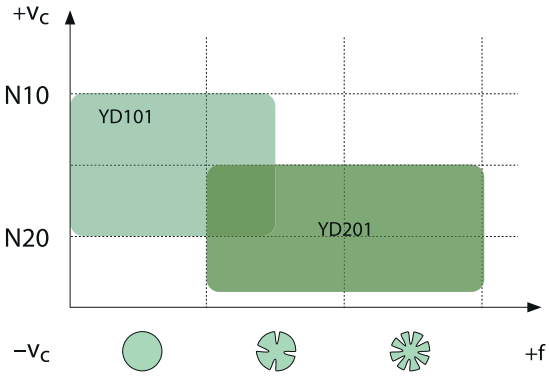




PVD coated carbide grades for superalloys



Carbide grades for non-ferrous metals



Application fields of grades – parting & grooving

	ISO	HC[1] (CVD)	HC[1] (PVD)	HT	HC[2]	Ceramic	HW	CBN	PCD
P	P01								
	P10	YBC251, YBC252							
	P20								
	P30								
	P40								
M	M01								
	M10		YBG202, YBG205, YB9320, YBG302						
	M20								
	M30								
	M40								
K	K01								
	K10								
	K20								
	K30								
N	N01								
	N10						YD101, YD102		
	N20								
	N30								
S	S01								
	S10		YBG102, YBG105						
	S20								
	S30								
H	H01								
	H10								
	H20								
	H30								

P	Steel	N	Non-ferrous metals
M	Stainless steel	S	Heat-resistant alloys
K	Cast iron	H	Hardened materials

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

Notes

Parting & grooving System code – inserts

ZP	G	D	04	04	–	M	G
1	2	3	4	5		6	7

Application	
Code	Description
ZP	Parting
ZT	Grooving & turning
ZR	Form turning

1

Insert seat size [mm]	
Groove width	
Code	Description
B	2,0
E	2,5
F	3,0
G	4,0
H	5,0
K	6,0
L	8,0

2

No. of cutting edges	
Code	Description
S	Single
D	Double

3

Insert thickness S [mm]	
	
Code	S
02	2,0
025	2,5
03	3,0
04	4,0
05	5,0
06	6,0
08	8,0

4

Nose radius r [mm]	
	
Code	r
02	0,2
03	0,3
04	0,4
08	0,8

5

Tolerance class [mm]	
Code	Description
M	±0,13
E	±0,025

6

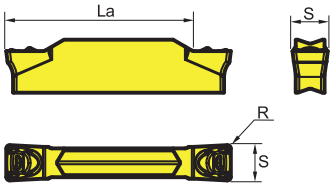
Chip breaker	
Code	Description
G	General chip breaker
F	Special chip breaker
M	Straight edge
U	Universal chip breaker

7

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

Parting & grooving insert (double sided)



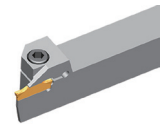
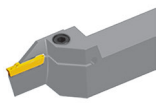
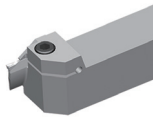
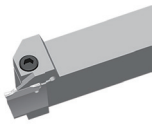
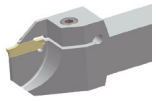
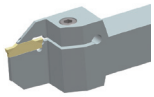
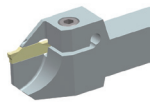
Double cutting edge

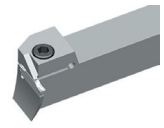
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P							◌	◌			◌	◌	◌	◌		
M											◌	◌	◌	◌		
K																
N															●	◌
S									●	●	◌	◌	◌			
H																
		**ZTFD0302-MU**	0.2	17	3	0,06-0,18					●					
		ZTFD0303-MU	0.3	17	3	0,06-0,18					●					
		ZTGD0402-MU	0.2	22	4	0,08-0,20					●					
		ZTGD0404-MU	0.4	22	4	0,08-0,20					●					
		ZTHD0504-MU	0.4	22	5	0,09-0,25					●					
		ZTHD0508-MU	0.8	22	5	0,09-0,25					●					
		ZTKD0604-MU	0.4	22	6	0,15-0,30					○					
		ZTKD0608-MU	0.8	22	6	0,15-0,30					○					

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders

QE*D*R/L	QF*D*R/L-H	QF*D*LL-H	QF*D*RR-H	QE*D*R/L-DGC	QE*D*R/L-DGSC	QE*D*R/L-SC
						
A511	A517	A519	A519	A535	A537	A538

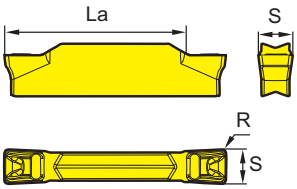
QF*D*R/L-L	C***-Q*DR/L
	
A522	A527

System code A482 | Grade selection A478 | Technical info A607 | Cutting data A546

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

ZT** parting & grooving insert (double sided)



Double cutting edge

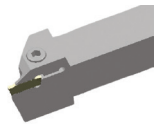
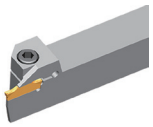
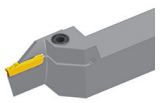
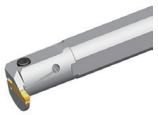
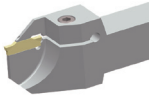
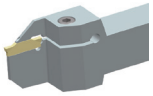
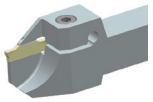
	HC¹ (CVD)						HC¹ (PVD)						HW	
P	⊛	⊛						⊛		⊛	⊛			
M								⊛		⊛	⊛			
K														
N													●	⊛
S							●	●	⊛	⊛	⊛			
H														

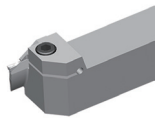
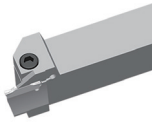
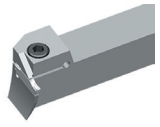
	ISO	R±0.1	La *max*	S	f	YBC252	YBC251	YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZTAD01502-MM**	0.2	12	1.5	0,03-0,12						○				
	ZTBD02002-MM	0.2	13	2	0,02-0,07					●	●		○		
	ZTED02503-MM	0.3	17	2.5	0,03-0,1					●					
	ZTFD0303-MM	0.3	17	3	0,04-0,13					●					
	ZTGD0404-MM	0.4	22	4	0,06-0,18					●					
	ZTHD0504-MM	0.4	22	5	0,08-0,23					●					
	ZTKD0608-MM	0.8	22	6	0,12-0,27					●					
	ZTLD0808-MM	0.8	28	8	0,13-0,29					●	○				

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders

QE*A*R/L	QE*D*R/L	QF*D*R/L-H	*-QBDR/L	QE*D*R/L-DGC	QE*D*R/L-DGSC	QE*D*R/L-SC
						
A511	A511	A517	A527	A535	A537	A538

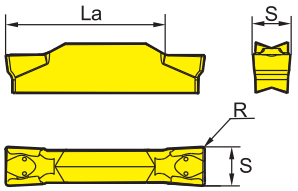
QF*D*LL-H	QF*D*RR-H	QF*D*R/L-L	C***-Q*DR/L
			
A519	A519	A522	A527

System code A482 Grade selection A478 Technical info A607 Cutting data A546

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

Parting & grooving insert (double sided)



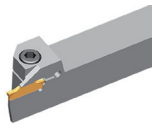
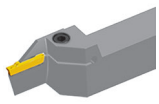
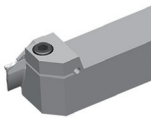
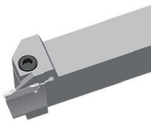
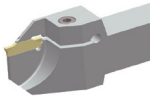
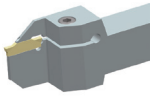
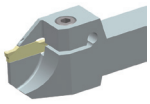
Double cutting edge

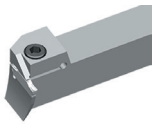
		HC¹ (CVD)						HC¹ (PVD)						HW	
P															
M															
K															
N															
S															
H															
ISO		R±0.1	La *max*	S±0.10	f	YBC252	YBC251	YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZTED02503-MG**	0.3	17	2.5	0,03-0,11							○	●		
	ZTFD0303-MG	0.3	17	3	0,04-0,14				○		●	○	●		
	ZTGD0402-MG	0.2	22	4	0,07-0,2										
	ZTGD0404-MG	0.4	22	4	0,07-0,2		○				●	○	●		●
	ZTHD0504-MG	0.4	22	5	0,10-0,25						●	○	●		
	ZTKD0604-MG	0.4	22	6	0,13-0,30						○				
	ZTKD0608-MG	0.8	22	6	0,13-0,30				○	●			●		

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders

QE*D*R/L	QF*D*R/L-H	QF*D*LL-H	QF*D*RR-H	QE*D*R/L-DGC	QE*D*R/L-DGSC	QE*D*R/L-SC
						
A511	A517	A519	A519	A535	A537	A538

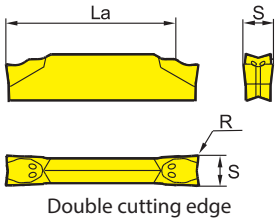
QF*D*R/L-L	C***-Q*DR/L
	
A522	A527

System code A482 | Grade selection A478 | Technical info A607 | Cutting data A546

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

Parting & grooving insert (double sided)



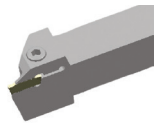
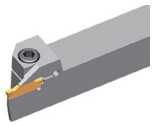
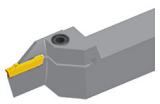
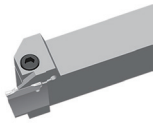
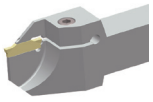
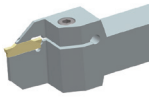
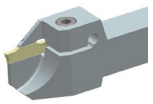
Double cutting edge

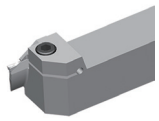
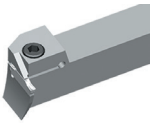
		ISO	R±0.1	La *max*	S±0.10	f	HC¹ (CVD) YBC252	HC¹ (CVD) YBC251	HC¹ (PVD) YBG105	HC¹ (PVD) YBG102	HC¹ (PVD) YB9320	HC¹ (PVD) YBG205	HC¹ (PVD) YBG202	HC¹ (PVD) YBG302	HW YD101	HW YD201
P																
M																
K																
N																
S																
H																
		ZPAD01502-MG	0.2	12	1.5	0,03-0,08						●				
		ZPED02502-MG	0.2	17	2.5	0,03-0,1		○			●			●		
		ZPFD0302-MG	0.2	17	3	0,04-0,13		○			●			●		
		ZPGD0402-MG	0.2	22	4	0,07-0,18		○			●			●	○	
		ZPHD0503-MG	0.3	22	5	0,1-0,24							○	●		
		ZPKD0604-MG	0.4	22	6	0,12-0,29	○						○	●		

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders

QE*A*R/L	QE*D*R/L	QF*D*R/L-H	QF*D*RR-H	QE*D*R/L-DGC	QE*D*R/L-DGSC	QE*D*R/L-SC
						
A511	A511	A517	A519	A535	A537	A538

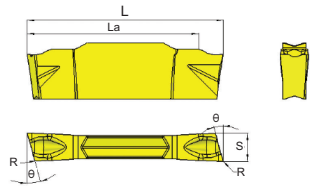
QF*D*LL-H	QF*D*R/L-L	C***-Q*DR/L
		
A519	A522	A527

System code A482 Grade selection A478 Technical info A607 Cutting data A546

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

Parting inserts

Parting & grooving insert (double sided)



Right hand style

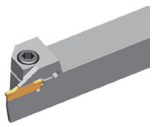
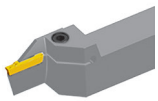
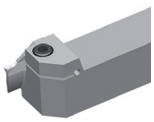
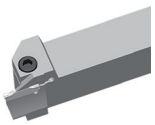
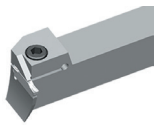
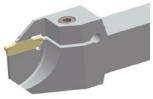
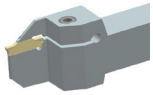
	P	M	K	N	S	H
HC[1] (CVD)	●●					
HC[1] (PVD)	●●●●	●●●●			●● ●●	
HW				●●		

	ISO	La *max*	L	S	θ	R	f	YBC252	YBC251	YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZPED02502-MG-6L**	17	20	2.35	6°	0.2	0,03-0,08								●		
	ZPED02502-MG-6R	17	20	2.35	6°	0.2	0,03-0,08					●			●		
	ZPED02502-MG-15L	17	20	2.35	15°	0.2	0,03-0,05								○		
	ZPED02502-MG-15R	17	20	2.35	15°	0.2	0,03-0,05							○	○		
	ZPFD0302-MG-6L	17	20	2.85	6°	0.2	0,04-0,1					●			●		
	ZPFD0302-MG-6R	17	20	2.85	6°	0.2	0,04-0,1					●			○		
	ZPFD0302-MG-15L	17	20	2.85	15°	0.2	0,04-0,08								○		
	ZPFD0302-MG-15R	17	20	2.85	15°	0.3	0,04-0,08					●			○		
	ZPGD0402-MG-15R	22	25	4	15°	0.2	0,06-0,18					●					

● Ex stock ○ On demand

HC[1] Coated carbide
HW Uncoated carbide

Tool holders

QE*D*R/L	QF*D*R/L-H	QF*D*LL-H	QF*D*RR-H	QF*D*R/L-L	QE*D*R/L-DGC	QE*D*R/L-DGSC
						
A511	A517	A519	A519	A522	A535	A537

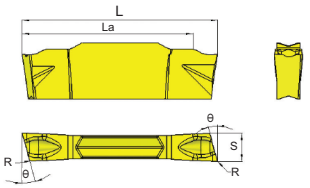
C***-Q*DR/L

A527

System code A482 Grade selection A478 Technical info A607 Cutting data A546

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

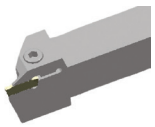
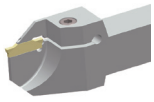
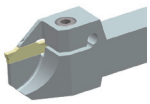
Parting inserts

Parting & grooving insert (double sided)							HC¹ (CVD)				HC¹ (PVD)						HW	
 Double cutting edge					P													
					M													
					K													
					N													
					S													
					H													
ISO		R±0.1	La *max*	S±0.10	f		YBC252	YBC251			YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZPBD02002-MM-8R**	0.2	12	2	0,02-0,07										○			

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

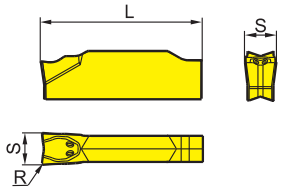
Tool holders

QE*D*R/L	*-QBDR/L	QE*D*R/L-DGC	QE*D*R/L-SC
			
A511	A527	A535	A538

System code A482 Grade selection A478 Technical info A607 Cutting data A546

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts



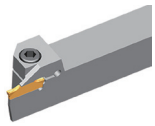
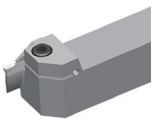
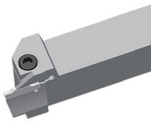
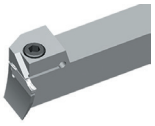
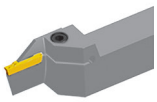
Single cutting edge

Parting & grooving insert (single sided)							HC[1] (CVD)						HC[1] (PVD)						HW	
						P														
						M														
						K														
						N														
						S														
						H														
	ISO	R±0.1	L	S±0.10	f		YBC252	YBC251					YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZPES02502-MG**	0.2	20	2.5	0,03-0,1										●			●		
	ZPFS0302-MG	0.2	20	3	0,04-0,13		○								●			●		
	ZPGS0402-MG	0.2	20	4	0,07-0,18		○										○	●		○
	ZPHS0503-MG	0.3	20	5	0,1-0,24												○	●		
	ZPKS0604-MG	0.4	20	6	0,12-0,29												○	●		
	ZPLS0806-MG	0.6	20	8	0.25-0.65											○				

● Ex stock ○ On demand
Single sided inserts only for parting blades

HC[1] Coated carbide
HW Uncoated carbide

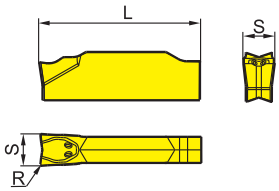
Tool holders

QE*S*R/L	QF*S*LL-H	QF*S*RR-H	QF*S*R/L-L	QF*S*R/L-H	QZ**+QE**
					
A513	A521	A521	A524	A525	A532

System code A482 Grade selection A478 Technical info A607 Cutting data A546

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

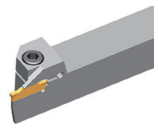
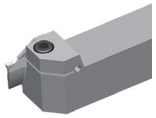
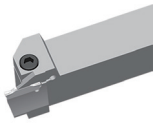
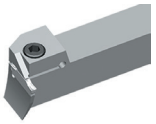
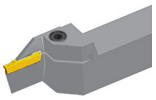
Parting inserts

Parting & grooving insert (single sided)							HC¹ (CVD)				HC¹ (PVD)						HW	
 Single cutting edge						P												
						M												
						K												
						N												
						S												
						H												
ISO		R±0.1	L	S±0.10	f		YBC252	YBC251			YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZPGS0402-MG-25**	0.2	24.6	4	0,07-0,18								●					
	ZPHS0503-MG-25	0.3	24.6	5	0,1-0,24								●					
	ZPKS0604-MG-25	0.4	24.6	6	0,12-0,29								●					

● Ex stock ○ On demand
Single sided inserts only for parting blades

HC¹ Coated carbide
HW Uncoated carbide

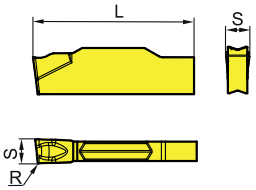
Tool holders

QE*S*R/L	QF*S*LL-H	QF*S*RR-H	QF*S*R/L-L	QF*S*R/L-H	QZ**+QE**
					
A513	A521	A521	A524	A525	A532

System code A482 Grade selection A478 Technical info A607 Cutting data A546

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts



Single cutting edge

Parting & grooving insert (single sided)								HC¹ (CVD)						HC¹ (PVD)						HW	
							P														
							M														
							K														
							N														
							S														
							H														
	ISO	R±0.1	L	S±0.10	θ	f		YBC252	YBC251					YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZPES02502-MG-6L**	0.2	19.9	2.5	6°	0,03-0,08										●					
	ZPES02502-MG-6R	0.2	19.9	2.5	6°	0,03-0,08										●					
	ZPFS0302-MG-6L	0.2	19.9	3	6°	0,04-0,1										●					
	ZPFS0302-MG-6R	0.2	19.9	3	6°	0,04-0,1										●					

● Ex stock ○ On demand
Single sided inserts only for parting blades

HC¹ Coated carbide
HW Uncoated carbide

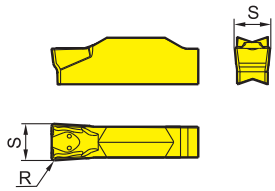
Tool holders
QZ+QE****

A532

System code A482 | Grade selection A478 | Technical info A607 | Cutting data A546

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts



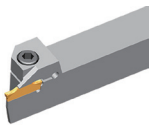
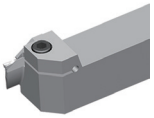
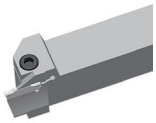
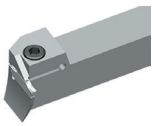
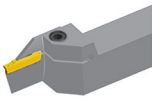
Single cutting edge

Parting & grooving insert (single sided)						HC¹ (CVD)				HC¹ (PVD)						HW	
					P												
					M												
					K												
					N												
					S												
					H												
ISO		R±0.1	S±0.10	f		YBC252	YBC251			YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZTHS0504-MG**	0.4	5	0,10-0,25								○			●		
	ZTKS0608-MG	0.8	6	0,13-0,30										○	●		

● Ex stock ○ On demand

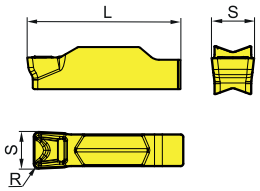
HC¹ Coated carbide
HW Uncoated carbide

Tool holders

QE*S*R/L	QF*S*LL-H	QF*S*RR-H	QF*S*R/L-L	QF*S*R/L-H	QZ**+QE**
					
A513	A521	A521	A524	A525	A531

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts



Single cutting edge

Parting & grooving insert (single sided)							HC¹ (CVD)						HC¹ (PVD)						HW	
						P														
						M														
						K														
						N														
						S														
						H														
	ISO	R±0.1	L	S±0.10	f		YBC252	YBC251					YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZTES02503-MM**	0.3		2.5	0,03-0,1										●					
	ZTFS0303-MM	0.3	19.9	3	0,04-0,13										●					

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders
QZ+QE****

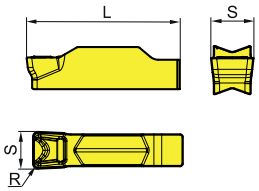
A532

System code A482 | Grade selection A478 | Technical info A607 | Cutting data A546

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

Parting inserts

Parting & grooving insert (single sided)



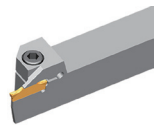
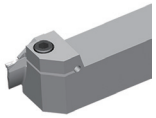
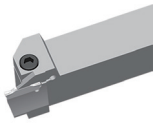
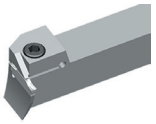
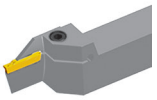
Single cutting edge

		ISO	R±0.1	L	S±0.10	f	HC¹ (CVD) YBC252	HC¹ (CVD) YBC251	HC¹ (PVD) YBG105	HC¹ (PVD) YBG102	HC¹ (PVD) YB9320	HC¹ (PVD) YBG205	HC¹ (PVD) YBG202	HC¹ (PVD) YBG302	HW YD101	HW YD201
P							⊛	⊛			⊛	⊛	⊛	⊛		
M											⊛	⊛	⊛	⊛		
K																
N															●	⊛
S									●	●	⊛	⊛	⊛			
H																
		**ZTGS0404-MM-25**	0.4	24.6	4	0,06-0,18					●					
		ZTHS0504-MM-25	0.4	24.6	5	0,08-0,23					●					
		ZTKS0608-MM-25	0.8	24.6	6	0,12-0,27					●					

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

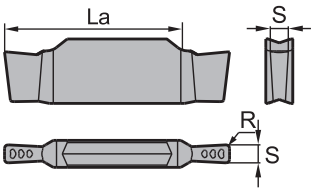
Tool holders

QE*S*R/L	QF*S*LL-H	QF*S*RR-H	QF*S*R/L-L	QF*S*R/L-H	QZ**+QE**
					
A513	A521	A521	A524	A525	A532

System code A482 | Grade selection A478 | Technical info A607 | Cutting data A546

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts



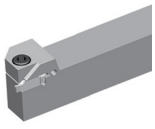
Parting & grooving insert (double sided)						HC[1] (CVD)				HC[1] (PVD)						HW	
					P												
					M												
					K												
					N												
					S												
					H												
ISO		La *max*	S±0.025	R±0.05	f	YBC252	YBC251			YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	ZTCD01002-EG	2.6	1	0.2	0,02-0,04										○		
	ZTCD011502-EG	2.6	1.15	0.2	0,02-0,04										○		
	ZTCD01202-EG	2.6	1.2	0.2	0,02-0,04										○		
	ZTCD013802-EG	2.6	1.38	0.2	0,02-0,04										○		
	ZTCD01402-EG	2.6	1.4	0.2	0,02-0,04										○		
	ZTCD01500-EG	2.6	1.5	0	0,02-0,04										○		
	ZTCD01502-EG	2.6	1.5	0.2	0,02-0,04										○		
	ZTCD01503-EG	2.6	1.5	0.3	0,02-0,04									○			
	ZTCD015503-EG	2.6	1.55	0.3	0,02-0,04										○		
	ZTCD01602-EG	2.6	1.6	0.2	0,02-0,04										○		
	ZTCD01702-EG	3.4	1.7	0.2	0,02-0,08										○		
	**ZTCD01704-EG**	3.4	1.7		0,02-0,08							○			○		
	ZTCD017503-EG	3.4	1.75	0.3	0,02-0,08										○		
	ZTCD017602-EG	3.4	1.76	0.2	0,02-0,08									○			
	ZTCD01802-EG	3.4	1.8	0.2	0,02-0,08										○		
	ZTCD018502-EG	3.4	1.85	0.2	0,02-0,08										○		
	ZTCD019602-EG	3.4	1.9	0.2	0,02-0,08										○		
	ZTCD02000-EG	3.4	2	0	0,02-0,08										○		
	ZTCD02002-EG	3.4	2	0.2	0,02-0,08										●		
	ZTCD020503-EG	3.4	2.05	0.3	0,02-0,08										○		
	ZTCD021502-EG	3.4	2.15	0.2	0,02-0,08										○		
	ZTCD02302-EG	3.4	2.3	0.2	0,03-0,11										○		
	ZTCD02303-EG	3.4	2.3	0.3	0,03-0,11										○		
	ZTCD02402-EG	3.4	2.4	0.2	0,03-0,11										○		

● Ex stock ○ On demand

HC[1] Coated carbide
HW Uncoated carbide

Tool holders

QECD

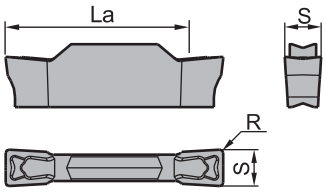


A514

System code A482 Grade selection A478 Technical info A607 Cutting data A546

Parting inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions



Parting & grooving insert (double sided)		HC[1] (CVD)						HC[1] (PVD)						HW	
	P	⊛	⊛						⊛	⊛	⊛	⊛			
	M								⊛	⊛	⊛	⊛			
	K														
	N													●	⊛
	S							●	●	⊛	⊛	⊛			
	H														

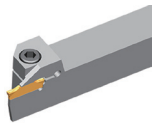
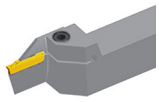
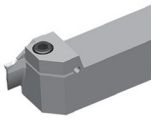
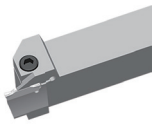
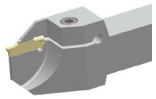
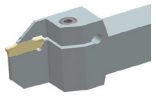
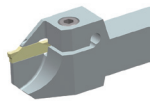
	ISO	La *max*	S±0.025	R±0.05	f	YBC252	YBC251	YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	ZTED02502-EG	17	2.5	0.2	0,03-0,11								○		
	ZTED026502-EG	17	2.65	0.2	0,03-0,11								○		
	ZTED02702-EG	17	2.7	0.2	0,03-0,11								○		
	ZTED02703-EG	17	2.7	0.3	0,03-0,11								○		
	ZTED02802-EG	17	2.8	0.2	0,04-0,13								○		
	ZTED02803-EG	17	2.8	0.3	0,04-0,13								○		
	ZTED02804-EG	17	2.8	0.4	0,04-0,13								○		
	ZTED02903-EG	17	2.9	0.3	0,04-0,13								○		
	ZTFD03002-EG	17	3	0.2	0,04-0,13								○		
	ZTFD03003-EG	17	3	0.3	0,04-0,13								○		
	ZTFD03203-EG	17	3.2	0.3	0,04-0,13								○		
	ZTFD0325024-EG	17	3.25	2.4	0,04-0,13								○		
	ZTFD03302-EG	17	3.3	0.2	0,04-0,13								○		
	ZTFD03303-EG	17	3.3	0.3	0,04-0,13								○		
	ZTFD03403-EG	17	3.4	0.3	0,04-0,13								○		
	**ZTFD035-EG**	17	3.5	0	0,04-0,13								○		
	ZTGD039602-EG	22	3.96	0.2	0,07-0,18								○		
	ZTGD04002-EG	22	4	0.2	0,07-0,18								○		
	ZTGD04003-EG	22	4	0.3	0,07-0,18								○		
	ZTGD04004-EG	22	4	0.4	0,07-0,18								○		
	ZTGD04008-EG	22	4	0.8	0,07-0,18							○			
	ZTGD04505-EG	22	4.5	0.5	0,07-0,18								○		
	ZTGD04805-EG	22	4.8	0.5	0,1-0,24								○		
	ZTHD05003-EG	22	5	0.3	0,1-0,24								○		
	ZTHD05004-EG	22	5	0.4	0,1-0,24						○				
	ZTHD05008-EG	22	5	0.8	0,1-0,24							○			
	ZTHD05012-EG	22	5	0.12	0,1-0,24							○			
	ZTHD05202-EG	22	5.2	0.2	0,1-0,24								○		
	ZTHD052503-EG	22	5.25	0.3	0,1-0,24								○		
	ZTHD05508-EG	22	5.5	0.8	0,1-0,24								○		
	ZTKD06504-EG	22	6.5	0.4	0,12-0,29								○		

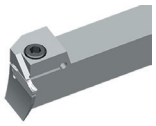
● Ex stock ○ On demand

HC[1] Coated carbide
HW Uncoated carbide

System code > A482 Grade selection > A478 Technical info > A607 Cutting data > A546

Tool holders

QE*D*R/L	QF*D*R/L-H	QF*D*LL-H	QF*D*RR-H	QE*D*R/L-DGC	QE*D*R/L-DGSC	QE*D*R/L-SC
						
A511	A517	A519	A519	A535	A537	A538

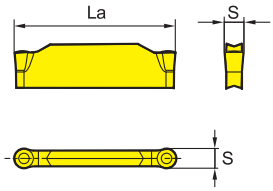
QF*D*R/L-L	C***-Q*DR/L
	
A522	A527

System code A482 | Grade selection A478 | Technical info A607 | Cutting data A546

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

Parting & grooving insert (double sided)



Double cutting edge

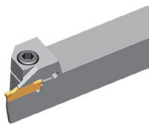
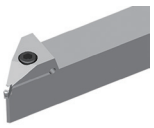
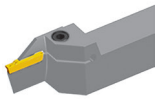
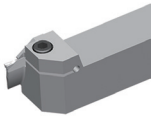
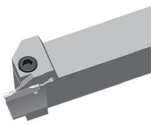
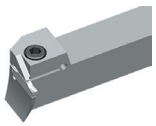
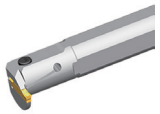
	HC¹ (CVD)						HC¹ (PVD)						HW	
P	⊛	⊛						⊛	⊛	⊛	⊛			
M								⊛	⊛	⊛	⊛			
K														
N													●	⊛
S							●	●	⊛	⊛	⊛			
H														

	ISO	La *max*	S±0.10	f	YBC252	YBC251	YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZRED025-MG**	17.5	2.5	0,03-0,11							○	●		
	ZRFD03-MG	17	3	0,04-0,14					●			●		
	ZRGD04-MG	21	4	0,07-0,2						●		●		
	ZRHD05-MG	20	5	0,1-0,24							○	●		
	ZRKD06-MG	19	6	0,12-0,29							○	●		

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders

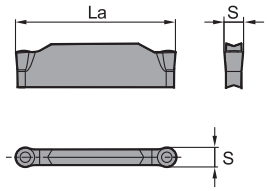
QE*D*R/L	QX*D*	QF*D*R/L-H	QF*D*LL-H	QF*D*RR-H	QF*D*R/L-L	C***-Q*DR/L
						
A511	A515	A517	A519	A519	A522	A527

System code A482 | Grade selection A478 | Technical info A607 | Cutting data A546

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

Parting & grooving insert (double sided)



Double cutting edge

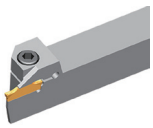
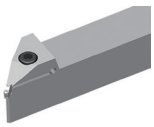
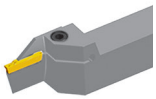
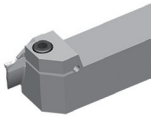
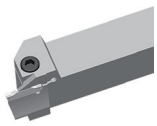
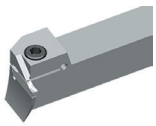
	HC¹ (CVD)				HC¹ (PVD)						HW	
P	◐	◐					◐		◐	◐		
M							◐		◐	◐		
K												
N											●	◐
S					●	●	◐		◐			
H												

	ISO	La *max*	S±0.025	f	YBC252	YBC251	YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZRBD02-EG**	15	2	0,05-0,15						○				
	ZRFD03-EG	17	3	0,04-0,14					●			○		
	ZRGD04-EG	21	4	0,07-0,2					●					
	ZRHD05-EG	20	5	0,1-0,24					●			○		
	ZRKD06-EG	19	6	0,12-0,29					○					

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

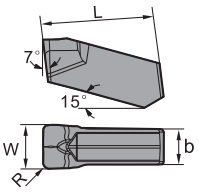
Tool holders

QE*D*R/L	QX*D*	QF*D*R/L-H	QF*D*LL-H	QF*D*RR-H	QF*D*R/L-L	C***-Q*DR/L
						
A511	A515	A517	A519	A519	A522	A527

System code A482 Grade selection A478 Technical info A607 Cutting data A546

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

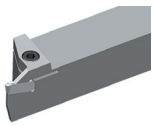
Parting & grooving insert (single sided)							HC¹ (CVD)						HC¹ (PVD)						HW	
						P														
						M														
						K														
						N														
						S														
						H														
	ISO	R±0.1	W±0.05	b	L	f	YBC252	YBC251					YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZIMF304N-NM**	0.4	3	2.4	15.3	0,04-0,11							●							
	ZIMF406N-NM	0.6	4	3.2	15.3	0,07-0,16							●	○						
	ZIMF506N-NM	0.6	5	4	15.3	0,1-0,2							●	○						
	ZIMF608N-NM	0.8	6	4	15.3	0,12-0,23							●	○						

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders

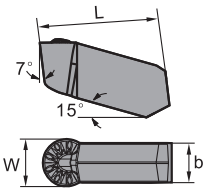
QE*S*R/L-N



A516

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

Parting inserts



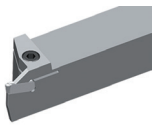
Parting & grooving insert (single sided)						HC[1] (CVD)			HC[1] (PVD)						HW	
					P											
					M											
					K											
					N											
					S											
					H											
	ISO	W±0.05	b	L	f	YBC252	YBC251		YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZIGQ3N-NM**	3	2.4	15.3	0,04-0,11				●	○						
	ZIGQ4N-NM	4	3.2	15.3	0,07-0,16				●	○						
	ZIGQ5N-NM	5	4	15.3	0,1-0,2				●	○						
	ZIGQ6N-NM	6	5	15.3	0,13-0,24				●							

● Ex stock ○ On demand

HC[1] Coated carbide
HW Uncoated carbide

Tool holders

QE*S*R/L-N

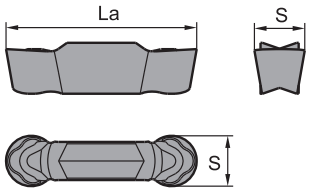


A516

System code A482 | Grade selection A478 | Technical info A607 | Cutting data A546

Parting inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

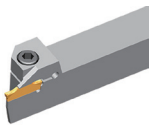


Parting & grooving insert (double sided)					HC¹ (CVD)						HC¹ (PVD)						HW	
				P	⊛	⊛						⊛	⊛	⊛	⊛			
				M								⊛	⊛	⊛	⊛			
				K														
				N													●	⊛
				S							●	●	⊛	⊛	⊛			
				H														
ISO		La *max*	S±0.025	f	YBC252	YBC251					YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZRKD06-LH**	19	6	0,12-0,23													○	
	ZRLD08-LH	22	8	0,14-0,26													○	

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

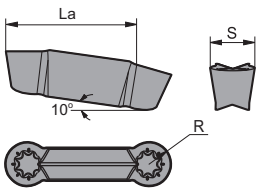
Tool holders

QE*D*R/L	C***-Q*DR/L
	
A511	A527

System code A482 Grade selection A478 Technical info A607 Cutting data A546

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts



Parting & grooving insert (double sided)					HC[1] (CVD)					HC[1] (PVD)						HW	
				P													
				M													
				K													
				N													
				S													
				H													
ISO		La *max*	S±0.025	f	YBC252	YBC251				YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	ZILD08-LC	22	8	0,14-0,26												○	○

● Ex stock ○ On demand

HC[1] Coated carbide
HW Uncoated carbide

A Turning
B Milling
C Drilling
D Technical Information
E Index

System code A482 | Grade selection A478 | Technical info A607 | Cutting data A546

Triangular, tangential grooving inserts (straight edge)

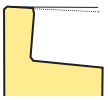
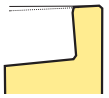
QC	22	R	300 –	R	03
1	2	3	4	5	6

1 – Series

2 – Cutting edge length [mm]

Code	I.C
11	6,35
16	9,525
22	12,70

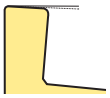
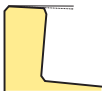
3 – Cutting direction

Code	Description
R	 Right
L	 Left

4 – Groove width [mm]

Code	Description
050	0,50
100	1,00
…	…
480	4,80

5 – Edge shape

Code	Description
R	 Radius
C	 Chamfer

6 – Radius/Chamfer [mm]

Code	Description
005	0,05
02	0,2
03	0,3
04	0,4

Triangular, tangential grooving inserts (round edge)

QC	22	R	300 –	R
1	2	3	4	5

1 – Series

2 – Cutting edge length [mm]

Code	I.C
11	6,35
16	9,525
22	12,70

3 – Cutting direction

Code	Description
R	 Right
L	 Left

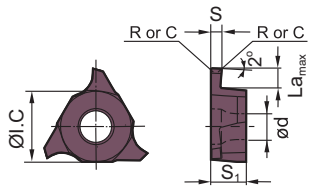
4 – Groove width [mm]

Code	Description
050	0,50
100	1,00
…	…
480	4,80

5 – Round

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts



Right hand style

QC** turning/milling insert									HC¹ (CVD)				HC¹ (PVD)						HW	
								P												
								M												
								K												
								N												
								S												
								H												
	ISO	La *max*	S±0.025	R/C	ØI.C	S1	ød	f	YBC252	YBC251			YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	QC11R050-R005	1.1	0.5	0.05	6.35	3.18	2.8	0,01-0,025								○				
	QC11L050-R005	1.1	0.5	0.05	6.35	3.18	2.8	0,01-0,025								○				
	QC11R100-R01	1.5	1	0.1	6.35	3.18	2.8	0,01-0,03								○				
	QC11L100-R01	1.5	1	0.1	6.35	3.18	2.8	0,02-0,03								○				
	QC11R120-R02	1.5	1.2	0.2	6.35	3.18	2.8	0,02-0,03								●				
	QC11L120-R02	1.5	1.2	0.2	6.35	3.18	2.8	0,02-0,03								●				
	QC11R125-R02	1.5	1.25	0.2	6.35	3.18	2.8	0,02-0,03								●				
	QC11L125-R02	1.5	1.25	0.2	6.35	3.18	2.8	0,02-0,03								●				
	QC11R145-R02	1.5	1.45	0.2	6.35	3.18	2.8	0,02-0,05								●				
	QC11L145-R02	1.5	1.45	0.2	6.35	3.18	2.8	0,02-0,05								●				
	QC11R150-R02	1.5	1.5	0.2	6.35	3.18	2.8	0,02-0,05								●				
	QC11L150-R02	1.5	1.5	0.2	6.35	3.18	2.8	0,02-0,05								●				
	QC11R200-R02	2	2	0.2	6.35	3.18	2.8	0,02-0,06								●				
	QC11L200-R02	2	2	0.2	6.35	3.18	2.8	0,02-0,06								●				
	QC11R225-R02	2	2.25	0.2	6.35	3.18	2.8	0,02-0,06								○				
	QC11L225-R02	2	2.25	0.2	6.35	3.18	2.8	0,02-0,06								○				
	**QC16R050-R005**	1.7	0.5	0.05	9.525	3.18	4.4	0,01-0,025								○				
	QC16R075-R01	2	0.75	0.1	9.525	3.18	4.4	0,02-0,03								○				
	QC16L075-R01	2	0.75	0.1	9.525	3.18	4.4	0,02-0,03								○				
	QC16R080-R01	2	0.8	0.1	9.525	3.18	4.4	0,02-0,03								○				
	QC16R095-R01	2	0.95	0.1	9.525	3.18	4.4	0,02-0,03								○				
	QC16L095-R01	2	0.95	0.1	9.525	3.18	4.4	0,02-0,03								○				
	QC16R100-R005	2	1	0.05	9.525	3.18	4.4	0,02-0,03								○				
	QC16L100-R01	2	1	0.1	9.525	3.18	4.4	0,02-0,03								○				
	QC16R110-R01	2	1.1	0.1	9.525	3.18	4.4	0,02-0,03								○				
	QC16L110-R01	2	1.1	0.1	9.525	3.18	4.4	0,02-0,03								●	○			
	QC16R115-R04	2	1.15	0.4	9.525	3.18	4.4	0,02-0,03								○				
	QC16R120-R01	2	1.2	0.1	9.525	3.18	4.4	0,02-0,03								○				
	QC16L120-R01	2	1.2	0.1	9.525	3.18	4.4	0,02-0,03								○				
	QC16R125-R02	2	1.25	0.2	9.525	3.18	4.4	0,02-0,03								○				
	QC16L125-R02	2	1.25	0.2	9.525	3.18	4.4	0,02-0,03								●				
	QC16R130-R02	2	1.3	0.2	9.525	3.18	4.4	0,02-0,06								○				
	QC16L130-R02	2	1.3	0.2	9.525	3.18	4.4	0,02-0,06								○				
	QC16L135-R02	2	1.35	0.2	9.525	3.18	4.4	0,02-0,03								○				

● Ex stock ○ On demand

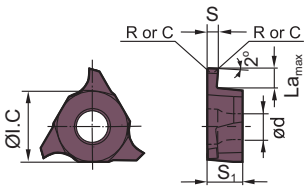
HC¹ Coated carbide
HW Uncoated carbide

System code A504 Grade selection A478 Technical info A607 Cutting data A546

Parting inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

QC** turning/milling insert



Right hand style

	HC[1] (CVD)						HC[1] (PVD)						HW	
P	◉	◉						◉	◉	◉	◉			
M								◉	◉	◉	◉			
K														
N													●	◉
S							●	●	◉		◉			
H														

	ISO	La *max*	S±0.025	R/C	ØI.C	S1	ød	f	YBC252	YBC251	YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	QC16R140-R02	2	1.4	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16R145-R02	2	1.45	0.2	9.525	3.18	4.4	0,02-0,06						●				
	QC16L145-R02	2	1.45	0.2	9.525	3.18	4.4	0,02-0,06						●				
	QC16R150-R02	2	1.5	0.2	9.525	3.18	4.4	0,02-0,06						●				
	QC16L150-R02	2	1.5	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16R160-R02	2	1.6	0.2	9.525	3.18	4.4	0,02-0,06						●				
	QC16L160-R02	2	1.6	0.2	9.525	3.18	4.4	0,02-0,06						●				
	QC16R165-R02	2	1.65	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16L165-R02	2	1.65	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16R170-R02	2	1.7	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16L170-R02	2	1.7	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16R175-R02	2	1.75	0.2	9.525	3.18	4.4	0,02-0,07						●				
	QC16L175-R02	2	1.75	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16R180-R02	2	1.8	0.2	9.525	3.18	4.4	0,02-0,07						○				
	QC16R185-R02	2.5	1.85	0.2	9.525	3.18	4.4	0,02-0,07						●				
	QC16R185-R06	2.5	1.85	0.6	9.525	3.18	4.4	0,02-0,05						○				
	**QC16L185-R02**	2.5	1.85	0.2	9.525	3.18	4.4	0,02-0,07						○				
	QC16R200-R02	2.5	2	0.2	9.525	3.18	4.4	0,02-0,07						●				
	QC16L200-R02	2.5	2	0.2	9.525	3.18	4.4	0,02-0,07						●				
	QC16L210-R02	2.5	2.1	0.2	9.525	3.18	4.4	0,02-0,07						○				
	QC16L210-R05	2.5	2.1	0.5	9.525	3.18	4.4	0,02-0,07						○				
	QC16L215-R02	2.5	2.15	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16R220-R02	2.5	2.2	0.2	9.525	3.18	4.4	0,02-0,07						○				
	QC16L220-R02	2.5	2.2	0.2	9.525	3.18	4.4	0,02-0,07						○				
	QC16R250-R02	2.5	2.5	0.2	9.525	3.18	4.4	0,02-0,08						●				
	QC16L250-R02	2.5	2.5	0.2	9.525	3.18	4.4	0,02-0,08						●				
	QC16R300-R02	3	3	0.2	9.525	3.18	4.4	0,03-0,11						●				
	QC16L300-R02	3	3	0.2	9.525	3.18	4.4	0,03-0,11						●				
	QC22R100-R01	2	1	0.1	12.7	4.76	5.5	0,02-0,03						●				
	QC22L100-R02	2	1	0.2	12.7	4.76	5.5	0,02-0,03						○				
	QC22R125-R02	2	1.25	0.2	12.7	4.76	5.5	0,02-0,03						●				
	QC22L125-R02	2	1.25	0.2	12.7	4.76	5.5	0,02-0,03						○				
	QC22R145-R02	2	1.45	0.2	12.7	4.76	5.5	0,02-0,06						○				
	QC22L145-R02	2	1.45	0.2	12.7	4.76	5.5	0,02-0,06						○				

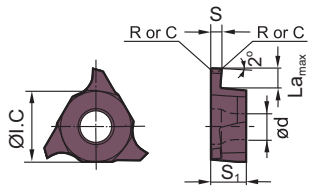
● Ex stock ○ On demand

HC[1] Coated carbide
HW Uncoated carbide

System code > A504 Grade selection > A478 Technical info > A607 Cutting data > A546

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts



Right hand style

QC** turning/milling insert									HC¹ (CVD)				HC¹ (PVD)						HW	
									YBC252	YBC251			YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
P									◉	◉					◉	◉	◉	◉		
M															◉	◉	◉	◉		
K																				
N																			●	◉
S													○	○			◉			
H																				
	ISO		La *max*	S±0.025	R/C	ØI.C	S1	ød	f											
	QC22R150-R02		3.5	1.5	0.2	12.7	4.76	5.5	0,02-0,06							○				
	QC22L150-R02		3.5	1.5	0.2	12.7	4.76	5.5	0,02-0,06							○				
	QC22R175-R02		3.5	1.75	0.2	12.7	4.76	5.5	0,02-0,06							●				
	QC22L175-R02		3.5	1.75	0.2	12.7	4.76	5.5	0,02-0,06							○				
	QC22R185-R02		3.5	1.85	0.2	12.7	4.76	5.5	0,02-0,07							●				
	QC22L185-R02		3.5	1.85	0.2	12.7	4.76	5.5	0,02-0,07							○				
	QC22R195-R02		3.5	1.95	0.2	12.7	4.76	5.5	0,02-0,07							○				
	QC22R200-R02		3.5	2	0.2	12.7	4.76	5.5	0,02-0,07							○				
	QC22L200-R02		3.5	2	0.2	12.7	4.76	5.5	0,02-0,07							○				
	QC22R205-R04		3.5	2.05	0.4	12.7	4.76	5.5	0,02-0,06						○					
	QC22R225-R02		3.5	2.25	0.2	12.7	4.76	5.5	0,02-0,07							○				
	QC22R230-R01		3.5	2.3	0.1	12.7	4.76	5.5	0,02-0,06						○	○				
	QC22R230-R02		3.5	2.3	0.2	12.7	4.76	5.5	0,02-0,07							●				
	QC22R230-R04		3.5	2.3	0.4	12.7	4.76	5.5	0,02-0,06						○	○				
	QC22L230-R02		3.5	2.3	0.2	12.7	4.76	5.5	0,02-0,07							○				
	**QC22R250-R03**		4	2.5	0.3	12.7	4.76	5.5	0,02-0,08							●				
	QC22L250-R03		4	2.5	0.3	12.7	4.76	5.5	0,02-0,08							○				
	QC22R265-R03		4	2.65	0.3	12.7	4.76	5.5	0,02-0,08							●				
	QC22L265-R03		4	2.65	0.3	12.7	4.76	5.5	0,02-0,08							●				
	QC22R280-R03		4	2.8	0.3	12.7	4.76	5.5	0,02-0,08							●				
	QC22L280-R03		4	2.8	0.3	12.7	4.76	5.5	0,02-0,08							○				
	QC22R300-R03		4	3	0.3	12.7	4.76	5.5	0,03-0,11							○				
	QC22L300-R03		4	3	0.3	12.7	4.76	5.5	0,03-0,11							○				
	QC22R320-R03		4	3.2	0.3	12.7	4.76	5.5	0,03-0,11							○				
	QC22L320-R03		4	3.2	0.3	12.7	4.76	5.5	0,03-0,11							○				
	QC22R330-R03		4	3.3	0.3	12.7	4.76	5.5	0,03-0,11							○				
	QC22L330-R03		4	3.3	0.3	12.7	4.76	5.5	0,03-0,11							○				
	QC22R350-R03		5	3.5	0.3	12.7	4.76	5.5	0,05-0,13							○				
	QC22L350-R03		5	3.5	0.3	12.7	4.76	5.5	0,05-0,13							○				
	QC22R400-R04		5	4	0.4	12.7	4.76	5.5	0,05-0,14							○				
	QC22L400-R04		5	4	0.4	12.7	4.76	5.5	0,05-0,14							●				
	QC22R430-R04		5	4.3	0.4	12.7	4.76	5.5	0,05-0,14							○				
	QC22L430-R04		5	4.3	0.4	12.7	4.76	5.5	0,05-0,14							○	○			
	QC22R450-R04		5	4.5	0.4	12.7	4.76	5.5	0,06-0,18							○				

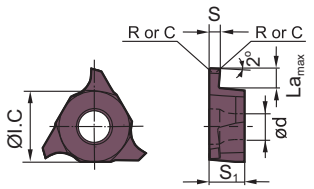
● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

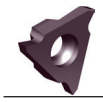
System code A504 Grade selection A478 Technical info A607 Cutting data A546

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

Parting inserts



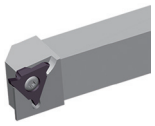
Right hand style

QC** turning/milling insert									HC¹ (CVD)				HC¹ (PVD)						HW	
								P												
								M												
								K												
								N												
								S												
								H												
	ISO	La *max*	S±0.025	R/C	ØI.C	S1	ød	f	YBC252	YBC251			YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**QC22L450-R04**	5	4.5	0.4	12.7	4.76	5.5	0,06-0,18								○				○
	QC22R480-R04	5	4.8	0.4	12.7	5.06	5.5	0,06-0,18								○				
	QC22L480-R04	5	4.8	0.4	12.7	5.06	5.5	0,08-0,2								○				

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders

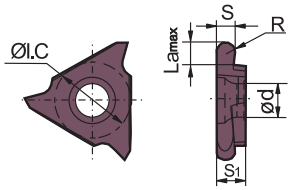
GQCR/L	S***-QC**R/L
	
A543	A544

System code A504 Grade selection A478 Technical info A607 Cutting data A546

Parting inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

QC** turning/milling insert



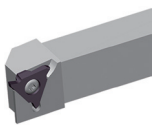
Right hand style

									HC¹ (CVD)		HC¹ (PVD)						HW	
	ISO	La *max*	S±0.025	R/C	ØI.C	S1	ød	f	YBC252	YBC251	YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
P																		
M																		
K																		
N																		
S																		
H																		
	QC16R100R	2	1	0.5	12.7	3.18	4.4	0,02-0,03						○				
	QC16R120R	2	1.2	0.6	12.7	3.18	4.4	0,02-0,03						○				
	QC16R150R	2	1.5	0.75	12.7	3.18	4.4	0,02-0,06						○				
	QC16R200R	2.5	2	1	12.7	3.18	4.4	0,02-0,07						●				
	QC16L200R	2.5	2	1	12.7	3.18	4.4	0,02-0,07						○				
	QC16R250R	2.5	2.5	1.25	12.7	3.18	4.4	0,02-0,08						○				
	QC16L280R	2.5	2.8	1.4	12.7	3.18	4.4	0,02-0,08						○				
	QC16R300R	2.5	3	1.5	12.7	3.18	4.4	0,03-0,11						●				
	QC16L300R	2.5	3	1.5	12.7	3.18	4.4	0,03-0,11						●				
	QC22R100R	2	1	0.5	12.7	4.76	5.5	0,02-0,03						●				
	QC22L100R	2	1	0.5	12.7	4.76	5.5	0,02-0,03						○	○			
	QC22R150R	3.5	1.5	0.75	12.7	4.76	5.5	0,02-0,06						●				
	QC22L150R	3.5	1.5	0.75	12.7	4.76	5.5	0,02-0,06						●	○			
	QC22R170R	3.5	1.7	0.85	12.7	4.76	5.5	0,02-0,06						○				
	QC22R200R	3.5	2	1	12.7	4.76	5.5	0,02-0,07						○				
	QC22L200R	3.5	2	1	12.7	4.76	5.5	0,02-0,07						○				
	QC22R250R	4	2.5	1.25	12.7	4.76	5.5	0,02-0,08						●				
	QC22L250R	4	2.5	1.25	12.7	4.76	5.5	0,02-0,08						●				
	QC22R300R	4	3	1.5	12.7	4.76	5.5	0,03-0,11						●				
	QC22L300R	4	3	1.5	12.7	4.76	5.5	0,03-0,11						●				
	QC22R320R	4	3.2	1.6	12.7	4.76	5.5	0,03-0,11						○				
	QC22R400R	5	4	2	12.7	4.76	5.5	0,05-0,14						●				
	QC22L400R	5	4	2	12.7	4.76	5.5	0,05-0,14						●				

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders

GQCR/L	S***-QC**R/L
	
A543	A544

System code A504 Grade selection A478 Technical info A607 Cutting data A546

External tool holders

Q	E	G	D	2525	R	22	–	S	C
1	2	3	4	5	6	7		8	9

Holder for parting & grooving

1

Application	
Code	Description
E	External machining

2

Insert seat size [mm]	
Holder/cutting width	
Code	Description
B	2,0
E	2,5
F	3,0
G	4,0
H	5,0
K	6,0

3

Number of cutting edges	
Code	Description
S	Single
D	Double

4

Cross section of holder [mm] x [mm]

5

Type	
Code	Description
R	Right
L	Left

6

Max. cutting depth [mm]

7

Series	
Code	Description
S	Swiss turning holder
DG	Cut-off holder for greater grooving depths with reinforcement
DGS	Cut-off holder for greater grooving depths without reinforcement

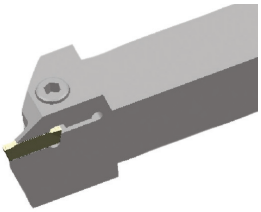
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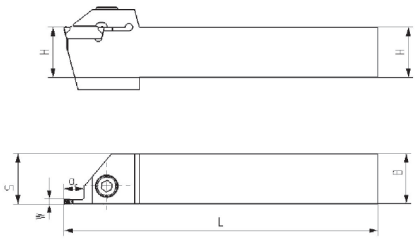
With internal cooling

9

Parting & grooving tool holder (external)

QE**R/L





Article	✻	Stock		Dimensions [mm]					Inserts
		R	L	HxB	L	S	W	ar_{max}	
QEAD2020R/L12		○	○	20x20	125	19	1.5	12	Z*AD**
QEBD1212R/L14		○	○	12x12	125	12.18	2	14	Z*BD**
QEBD1616R/L17		○	○	16x16	125	16.16	2	17	Z*BD**
QEBD1616R/L04		○	○	16x16	150	16.17	2	4	Z*BD**
QEBD2020R/L14		○	○	20x20	125	20.17	2	14	Z*BD**
QEBD2020R/L07		○	○	20x20	150	20.17	2	7	Z*BD**
QEBD2525R/L14		○	○	25x25	150	25.17	2	14	Z*BD**
QEED1212R/L10		○	○	12x12	110	12.25	2.5	10	Z*ED**
QEED1212R/L17		○	○	12x12	110	12.25	2.5	17	Z*ED**
QEED1616R/L10		●	●	16x16	125	15	2.5	10	Z*ED**
QEED1616R/L17		●	●	16x16	125	15	2.5	17	Z*ED**
QEED2020R/L17		●	●	20x20	125	19	2.5	17	Z*ED**
QEED2020R/L10		●	●	20x20	150	10	2.5	10	Z*ED**
QEED2525R/L10		●	●	25x25	150	19	2.5	10	Z*ED**
QEED2525R/L17		●	●	25x25	150	19	2.5	17	Z*ED**
QEFD1616R/L10		●	●	16x16	125	14.8	3	10	Z*FD**
QEFD1616R/L17		●	●	16x16	125	14.8	3	17	Z*FD**
QEFD2020R/L10		●	●	20x20	125	18.8	3	10	Z*FD**
QEFD2020R/L17		●	●	20x20	125	18.8	3	17	Z*FD**
QEFD2020L34			○	20x20	125	20.4	3	34	Z*FD**
QEFD2525R/L10		●	●	25x25	150	23.8	3	10	Z*FD**
QEFD2525R/L17		●	●	25x25	150	23.8	3	17	Z*FD**
QEFD2525R/L25		○	○	25x25	150	23.8	3	25	Z*FD**
QEFD3232R/L17		○	○	32x32	150	32.4	3	17	Z*FD**
QEGD2020R/L13		●	●	20x20	140	18.5	4	13	Z*GD**
QEGD2020R/L22		●	●	20x20	140	18.5	4	22	Z*GD**
QEGD2525R13C	✻	○		25x25	120	25.45	4	13	Z*GD**
QEGD2525R/L13		●	●	25x25	150	23.5	4	13	Z*GD**
QEGD2525R/L22		●	●	25x25	150	23.5	4	22	Z*GD**
QEGD3225N15				25x32	170	30.5	4	15	Z*GD**
QEGD3232R/L13		●	●	32x32	170	30.5	4	13	Z*GD**
QEGD3232R/L22		●	●	32x32	170	30.5	4	22	Z*GD**
QEHD2020L34			○	20x20	125	20.5	5	34	Z*HD**
QEHD2025R/L13		○		20x25	150	23	5	13	Z*HD**
QEHD2525R/L13		●	●	25x25	150	23	5	13	Z*HD**

System code A510 | Grade selection A478 | Technical info A607 | Cutting data A546

Parting & grooving Tool holders

Article	✻	Stock		Dimensions [mm]					Inserts
		R	L	HxB	L	S	W	ar_{max}	
QEHD2525R/L22		●	●	25x25	150	23	5	22	Z*HD**
QEHD3225N15				25x32	170	30	5	22	Z*HD**
QEHD3225N28				25x32	170	30	5	22	Z*HD**
QEHD3232R/L13		●	●	32x32	170	30	5	13	Z*HD**
QEHD3232R/L22		●	●	32x32	170	30	5	22	Z*HD**
QEKD2020R/L22		○	○	20x20	125	20.5	6	22	Z*KD**
QEKD2525R/L13		●	●	25x25	150	22.6	6	13	Z*KD**
QEKD2525R/L22		●	●	25x25	150	22.6	6	22	Z*KD**
QEKD3232R/L13		●	●	32x32	170	29.6	6	13	Z*KD**
QEKD3232R/L22		●	●	32x32	170	29.6	6	22	Z*KD**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**Z*AD****	**Z*BD****	**Z*BD****	**Z*BD****	**Z*ED****	**Z*ED****	**Z*ED****	**Z*FD****	**Z*FD****	**Z*GD****	**Z*HD****	**Z*KD****
	H	**16-20**	**12**	**16-20**	**25**	**12**	**16**	**20-32**	**16**	**20-32**	**20-32**	**20-32**	**20-32**
	Screw	GB70-85-M4×16	GB70-85-M4×12 (2.6 Nm)	GB70-85-M5×16 (4.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M4×12 (2.6 Nm)	GB70-85-M5×20 (4.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M5×20 (4.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)
	Wrench	WH40L	WH30L	WH40L	WH50L	WH30L	WH40L	WH50L	WH40L	WH50L	WH50L	WH50L	WH50L

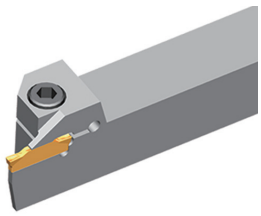
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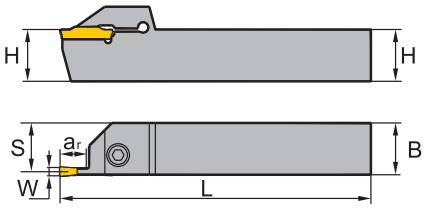
						
A483	A484	A485	A486	A487	A488	A495
						
A498	A499	A502				

System code A510 | Grade selection A478 | Technical info A607 | Cutting data A546

Parting & grooving tool holder (external)

QE*SN30







Article	✲	Stock	Dimensions [mm]					Inserts
			HxB	L	S	W	ar_{max}	
QEHS2525N30		●	25x25	150	12.5	5	30	Z*HS**
QEHS3232N30		●	32x32	170	16	5	30	Z*HS**
QEKS2525N30		○	25x25	150	12.5	6	30	Z*KS**
QEKS3232N30		○	32x32	170	16	6	30	Z*KS**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	**Z*HS****	**Z*KS****
	H	**25-32**	**25-32**
	Screw	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)
	Wrench	WH50L	WH50L

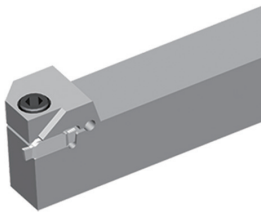
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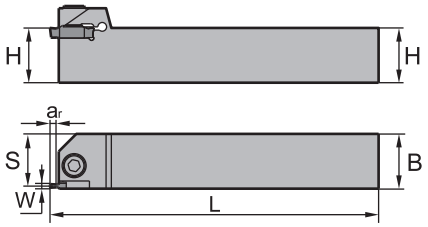
A489	A490	A492	A494

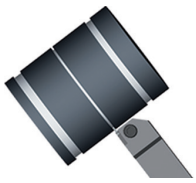
System code A510 Grade selection A478 Technical info A607 Cutting data A546

Parting & grooving tool holder (external)

QECDR/L







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] HxB	Dimensions [mm] L	Dimensions [mm] S	Dimensions [mm] ar_{max}	Inserts
QECD1616R/L025		○	○	16x16	125	14.75	2.5	Z*CD**
QECD2020R/L025		○	○	20x20	125	18.75	2.5	Z*CD**
QECD2525R/L025		○	○	25x25	150	23.75	2.5	Z*CD**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	Z*CD**	Z*CD**
	H	**16**	**20-32**
	Screw	GB70-85-M5×20 (4.0 Nm)	GB70-85-M6×20 (7.0 Nm)
	Wrench	WH40L	WH50L

Insert

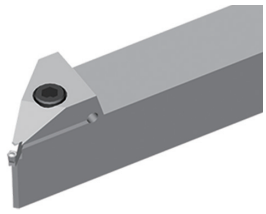


A495

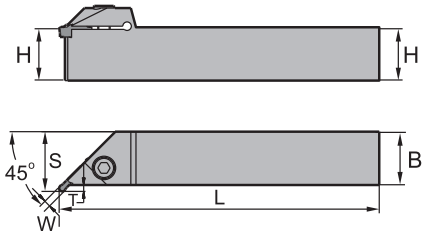
System code A510 Grade selection A478 Technical info A607 Cutting data A546

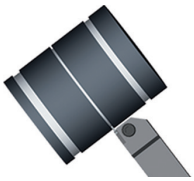
Parting & grooving tool holder (external)

QX*DR/L



Right hand style





Article	✲	Stock		Dimensions [mm]					Inserts
		R	L	HxB	L	S	W	ar_{max}	
QXFD2020R/L03-45		○	○	20x20	125	23	3	3	Z*FD**
QXFD2525R/L03-45		●	●	25x25	150	28	3	3	Z*FD**
QXFD3232R/L03-45		○	○	32x32	170	35	3	3	Z*FD**
QXGD2020R/L03-45		○	○	20x20	125	23	4	3	Z*GD**
QXGD2525R/L03-45		○	○	25x25	150	28	4	3	Z*GD**
QXGD3232R/L03-45		○	○	32x32	170	35	4	3	Z*GD**
QXHD2020R/L04-45		○	○	20x20	125	24	5	4	Z*HD**
QXHD2525R/L04-45		○	○	25x25	150	29	5	4	Z*HD**
QXHD3232R/L04-45		○	○	32x32	170	36	5	4	Z*HD**
QXKD2020R/L04-45		○	○	20x20	125	24	6	4	Z*KD**
QXKD2525R/L04-45		○	○	25x25	150	29	6	4	Z*KD**
QXKD3232R/L04-45		○	○	32x32	170	36	6	4	Z*KD**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	**Z*FD****	**Z*GD****	**Z*HD****	**Z*KD****
	H	**20-32**	**20-32**	**20-32**	**20-32**
	Screw	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)
	Wrench	WH50L	WH50L	WH50L	WH50L

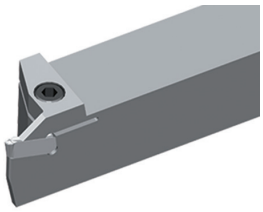
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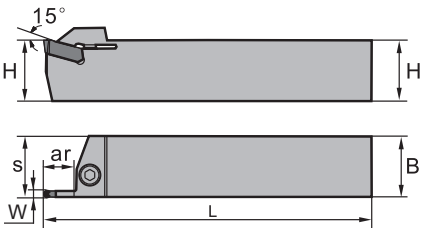
	
A498	A499

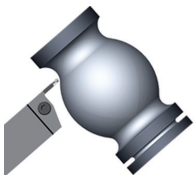
System code A510 Grade selection A478 Technical info A607 Cutting data A546

Parting & grooving tool holder (external)

QE*SR/L







Right hand style

Article	*	Stock		Dimensions [mm]					Inserts
		R	L	HxB	L	S	W	ar_{max}	
QEFS2525R/L12-3N		○	○	25x25	150	25.3	3	12	ZI**
QEGS2525R/L12-4N		○	○	25x25	150	25.3	4	12	ZI**
QEHS2525R/L12-5N		○	○	25x25	150	25.4	5	12	ZI**
QEKS2525R/L12-6N		○	○	25x25	150	25.4	6	12	ZI**
QEFS3232R/L22-3N		○	○	32x32	170	32.3	3	22	ZI**
QEGS3232R/L22-4N		○	○	32x32	170	32.3	4	22	ZI**
QEHS3232R/L22-5N		○	○	32x32	170	32.4	5	22	ZI**
QEKS3232R/L22-6N		○		32x32	170	32.4	6	22	ZI**

● Ex stock ○ On demand

* With internal cooling

Spare parts

	Insert	ZI**
	H	**25-32**
	Screw	GB70-85-M6×20 (7.0 Nm)
	Wrench	WH50L

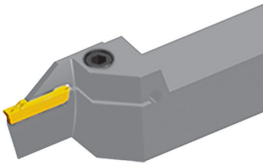
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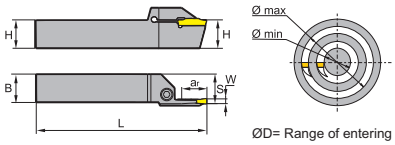
	
A500	A501

System code A510 Grade selection A478 Technical info A607 Cutting data A546

Parting & grooving tool holder (axial)

QF**R/L







Left hand style

Article	*	Stock		Dimensions [mm]						Inserts
		R	L	HxB	L	S	W	ar_{max}	ØD (min-max)	
QFFD2020R/L7-48H		○	○	20x20	150	21	3	7	48-66	Z*FD**
QFFD2020R/L7-60H		○	○	20x20	150	21	3	7	60-80	Z*FD**
QFFD2020R/L7-74H		○	○	20x20	150	21	3	7	74-110	Z*FD**
QFFD2020R/L7-100H		○	○	20x20	150	21	3	7	100-150	Z*FD**
QFFD2020R/L10-48H		○	○	20x20	150	21	3	10	48-66	Z*FD**
QFFD2020R/L10-60H		○	○	20x20	150	21	3	10	60-80	Z*FD**
QFFD2020R/L10-74H		○	○	20x20	150	21	3	10	74-110	Z*FD**
QFFD2020R/L10-100H		○	○	20x20	150	21	3	10	100-150	Z*FD**
QFFD2525R/L10-48H		●	●	25x25	150	26	3	10	48-66	Z*FD**
QFFD2525R/L10-60H		●	●	25x25	150	26	3	10	60-80	Z*FD**
QFFD2525R/L10-74H		●	●	25x25	150	26	3	10	74-110	Z*FD**
QFFD2525R/L10-100H		●	●	25x25	150	26	3	10	100-150	Z*FD**
QFFD2525R/L17-48H		●	●	25x25	150	26	3	17	48-66	Z*FD**
QFFD2525R/L17-60H		●	●	25x25	150	26	3	17	60-80	Z*FD**
QFFD2525R/L17-74H		●	●	25x25	150	26	3	17	74-110	Z*FD**
QFFD2525R/L17-100H		●	●	25x25	150	26	3	17	100-150	Z*FD**
QFFD2525R/L17-130L		○	○	25x25	150		3	17	130-230	Z*FD**
QFGD2020R/L10-52H		○	○	20x20	150	21	4	10	52-72	Z*GD**
QFGD2020R/L10-64H			○	20x20	150	21	4	10	64-100	Z*GD**
QFGD2020R/L10-90H		○	○	20x20	150	21	4	10	90-140	Z*GD**
QFGD2020R/L10-130H		○	○	20x20	150	21	4	10	130-230	Z*GD**
QFGD2020R/L15-52H		○	○	20x20	150	21	4	15	52-72	Z*GD**
QFGD2020R/L15-64H		○	○	20x20	150	21	4	15	64-100	Z*GD**
QFGD2020R/L15-90H		○	○	20x20	150	21	4	15	90-140	Z*GD**
QFGD2020R/L15-130H		○	○	20x20	150	21	4	15	130-230	Z*GD**
QFGD2525R/L13-52H		●	●	25x25	150	26	4	13	52-72	Z*GD**
QFGD2525R/L13-64H		●	●	25x25	150	26	4	13	64-100	Z*GD**
QFGD2525R/L13-90H		●	●	25x25	150	26	4	13	90-140	Z*GD**
QFGD2525R/L13-130H		●	●	25x25	150	26	4	13	130-230	Z*GD**
QFGD2525R/L22-52H		●	●	25x25	150	26	4	22	52-72	Z*GD**
QFGD2525R/L22-64H		●	●	25x25	150	26	4	22	64-100	Z*GD**
QFGD2525R/L22-90H		●	●	25x25	150	26	4	22	90-140	Z*GD**
QFGD2525R/L22-130H		●	●	25x25	150	26	4	22	130-230	Z*GD**
QFHD2525R/L13-58H		●	●	25x25	150	26	5	13	58-96	Z*HD**
QFHD2525R/L13-86H		●	●	25x25	150	26	5	13	86-140	Z*HD**
QFHD2525R/L13-130H		●	●	25x25	150	26	5	13	130-200	Z*HD**

System code A510 | Grade selection A478 | Technical info A607 | Cutting data A546

Parting & grooving Tool holders

Article	✻	Stock R	Stock L	Dimensions [mm] HxB	L	S	W	ar_{max}	ØD (min-max)	Inserts
QFHD2525R/L13-185H		●	●	25x25	150	26	5	13	185-400	Z*HD**
QFHD2525R/L22-58H		●	●	25x25	150	26	5	22	58-96	Z*HD**
QFHD2525R/L22-86H		●	●	25x25	150	26	5	22	86-140	Z*HD**
QFHD2525R/L22-130H		●	●	25x25	150	26	5	22	130-200	Z*HD**
QFHD2525R/L22-185H		●	●	25x25	150	26	5	22	185-400	Z*HD**
QFHD3232L13-185H			○	32x32	150	33	5	13	185-400	Z*HD**
QFHD3232R13-250H		○		32x32	150	33	5	13	250-800	Z*HD**
QFKD2525R/L13-60H		●	●	25x25	150	26	6	13	60-100	Z*KD**
QFKD2525R/L13-88H		○	●	25x25	150	26	6	13	88-180	Z*KD**
QFKD2525R/L13-160H		●	●	25x25	150	26	6	13	160-400	Z*KD**
QFKD2525R/L20-45H			○	25x25	150		6	20	45-90	Z*KD**
QFKD2525R/L22-60H		●	●	25x25	150	26	6	22	60-100	Z*KD**
QFKD2525R/L22-88H		●	●	25x25	150	26	6	22	88-180	Z*KD**
QFKD2525R/L22-160H		●	●	25x25	150	26	6	22	160-400	Z*KD**
QFKD2525R/L30-88H		●		25x25	150		6	30	88-180	Z*KD**
QFKD2525L32-70H			○	25x25	150		6	32	70-100	Z*KD**
QFLD2525R/L25-75H		●	●	25x25	150	27	8	25	75-150	Z*LD**
QFLD2525R/L25-140H		○	●	25x25	150	27	8	25	140-400	Z*LD**
QFLD3232R/L28-140H		●	○	32x32	170	33.8	8	28	140-400	Z*LD**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	Z*FD**	Z*GD**	Z*HD**	Z*KD**	Z*LD**
	H	20-25	20-25	16-40	20-25	25-32
	Screw	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)
	Wrench	WH50L	WH50L	WH50L	WH50L	WH50L

Insert


A483


A484


A485


A486


A487


A495

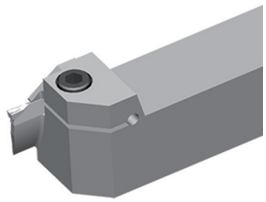

A498


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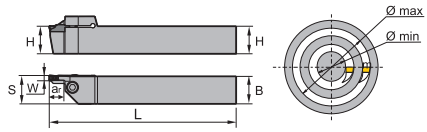
System code A510 | Grade selection A478 | Technical info A607 | Cutting data A546

Parting & grooving tool holder (axial)

QF**RR/LL



LL Version





Article	*	Stock		Dimensions [mm]						Inserts
		R	L	HxB	L	S	W	ar_{max}	ØD (min-max)	
QFFD2020LL7-74H			○	20x20	150	21	3	7	74-110	Z*FD**
QFFD2020LL10-48H			○	20x20	150	21	3	10	48-66	Z*FD**
QFFD2020RR10-48H		○		20x20	150	21	3	10	48-66	Z*FD**
QFFD2020RR10-60H		○		20x20	150	21	3	10	60-80	Z*FD**
QFFD2020LL10-74H			○	20x20	150	21	3	10	74-110	Z*FD**
QFFD2020RR10-74H		○		20x20	150	21	3	10	74-110	Z*FD**
QFFD2525LL10-48H			●	25x25	150	26	3	10	48-66	Z*FD**
QFFD2525RR10-48H		○		25x25	150	26	3	10	48-66	Z*FD**
QFFD2525LL10-60H			○	25x25	150	26	3	10	60-80	Z*FD**
QFFD2525RR10-60H		○		25x25	150	26	3	10	60-80	Z*FD**
QFFD2525LL10-74H			○	25x25	150	26	3	10	74-110	Z*FD**
QFFD2525RR10-74H		○		25x25	150	26	3	10	74-110	Z*FD**
QFFD2525LL10-100H			○	25x25	150	26	3	10	100-150	Z*FD**
QFFD2525RR10-100H		○		25x25	150	26	3	10	100-150	Z*FD**
QFFD2525LL17-48H			●	25x25	150	26	3	17	48-66	Z*FD**
QFFD2525RR17-48H		○		25x25	150	26	3	17	48-66	Z*FD**
QFFD2525LL17-60H			○	25x25	150	26	3	17	60-80	Z*FD**
QFFD2525RR17-60H		○		25x25	150	26	3	17	60-80	Z*FD**
QFFD2525LL17-74H			○	25x25	150	26	3	17	74-110	Z*FD**
QFFD2525RR17-74H		○		25x25	150	26	3	17	74-110	Z*FD**
QFFD2525LL17-100H			○	25x25	150	26	3	17	100-150	Z*FD**
QFFD2525RR17-100H		○		25x25	150	26	3	17	100-150	Z*FD**
QFGD2020LL10-52H			○	20x20	150	21	4	10	52-72	Z*GD**
QFGD2020RR10-52H		○		20x20	150	21	4	10	52-72	Z*GD**
QFGD2020LL15-52H			○	20x20	150	26	4	15	52-72	Z*GD**
QFGD2020RR15-52H		○		20x20	150	26	4	15	52-72	Z*GD**
QFGD2020LL15-90H			○	20x20	150	26	4	15	90-140	Z*GD**
QFGD2020RR15-90H		○		20x20	150	26	4	15	90-140	Z*GD**
QFGD2020RR15-130H		○		20x20	150	26	4	15	130-230	Z*GD**
QFGD2525RR13-52H		●		25x25	150	21	4	13	52-72	Z*GD**
QFGD2525LL13-64H			●	25x25	150	21	4	13	64-100	Z*GD**
QFGD2525RR13-64H		○		25x25	150	21	4	13	64-100	Z*GD**
QFGD2525RR13-90H		○		25x25	150	21	4	13	90-140	Z*GD**
QFGD2525LL13-130H			●	25x25	150	26	4	13	130-230	Z*GD**
QFGD2525RR13-130H		○		25x25	150	21	4	13	130-230	Z*GD**

System code A510 | Grade selection A478 | Technical info A607 | Cutting data A546

Parting & grooving Tool holders

Article	✻	Stock R	Stock L	Dimensions [mm] HxB	L	S	W	ar_{max}	ØD (min-max)	Inserts
QFGD2525LL22-52H			○	25x25	150	26	4	22	52-72	Z*GD**
QFGD2525RR22-52H		○		25x25	150	26	4	22	52-72	Z*GD**
QFGD2525LL22-64H			○	25x25	150	26	4	22	64-100	Z*GD**
QFGD2525RR22-64H		○		25x25	150	26	4	22	64-100	Z*GD**
QFGD2525LL22-90H			○	25x25	150	26	4	22	90-140	Z*GD**
QFGD2525RR22-90H		○		25x25	150	26	4	22	90-140	Z*GD**
QFGD2525LL22-130H			○	25x25	150	26	4	22	130-230	Z*GD**
QFGD2525RR22-130H		●		25x25	150	26	4	22	130-230	Z*GD**
QFHD2525RR13-58H		○		25x25	150	26	5	13	58-96	Z*HD**
QFHD2525LL13-130H			○	25x25	150	26	5	13	130-200	Z*HD**
QFHD2525RR13-130H		○		25x25	150	26	5	13	130-200	Z*HD**
QFHD2525RR13-185H		○		25x25	150	26	5	13	185-400	Z*HD**
QFHD2525LL22-58H			●	25x25	150	26	5	22	58-96	Z*HD**
QFHD2525RR22-58H		●		25x25	150	26	5	22	58-96	Z*HD**
QFHD2525RR22-86H		○		25x25	150	26	5	22	86-140	Z*HD**
QFHD2525LL22-130H			○	25x25	150	26	5	22	130-200	Z*HD**
QFHD2525RR22-130H		●		25x25	150	26	5	22	130-200	Z*HD**
QFHD2525LL22-185H			○	25x25	150	26	5	22	185-400	Z*HD**
QFHD2525RR22-185H		○		25x25	150	26	5	22	185-400	Z*HD**
QFKD2525RR13-60H		○		25x25	150	26	6	13	60-100	Z*KD**
QFKD2525RR13-88H		○		25x25	150	26	6	13	88-180	Z*KD**
QFKD2525RR15-50H		○		25x25	150	26	6	15	50-100	Z*KD**
QFKD2525RR22-60H		○		25x25	150	26	6	22	60-100	Z*KD**
QFKD2525LL22-88H			○	25x25	150	26	6	22	88-180	Z*KD**
QFKD2525RR22-88H		○		25x25	150	26	6	22	88-180	Z*KD**
QFKD2525LL22-160H			●	25x25	150	26	6	22	160-400	Z*KD**
QFKD2525RR22-160H		○		25x25	150	26	6	22	160-400	Z*KD**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	Z*FD**	Z*GD**	Z*HD**	Z*KD**
	H	20-25	20-25	20-32	20-25
	Screw	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)
	Wrench	WH50L	WH50L	WH50L	WH50L

Insert

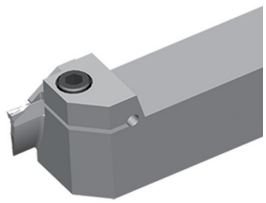
						
A483	A484	A485	A486	A487	A495	A498

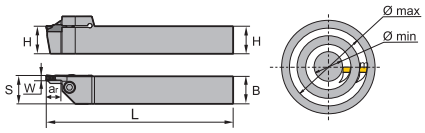

A499

System code A510 | Grade selection A478 | Technical info A607 | Cutting data A546

Parting & grooving tool holder (axial)

QF*SRR/LL







LL Version

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	HxB	L	S	W	ar_{max}	ØD (min-max)	
QFHS2525LL30-185H			●	25x25	150	26	5	30	185-400	Z*HS**
QFHS2525RR30-185H		○		25x25	150	26	5	30	185-400	Z*HS**
QFKS2525RR30-160H		○		25x25	150	26	6	30	160-400	Z*KS**
QFKS2525LL30-160H			○	25x25	150	26	6	30	160-400	ZT*S**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	Z*HS**	Z*KS**	ZT*S**
	H	25	25	25
	Screw	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)
	Wrench	WH50L	WH50L	WH50L

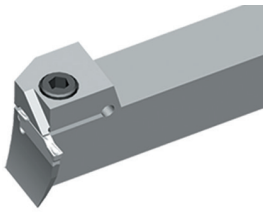
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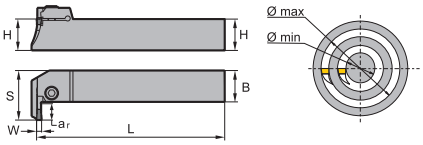
A489	A490	A492	A494

System code A510 | Grade selection A478 | Technical info A607 | Cutting data A546

Parting & grooving tool holder (axial)

QF*DR/L







Right hand style

Article	*	Stock R	Stock L	Dimensions [mm] HxB	L	S	W	ar_{max}	ØD (min-max)	Inserts
QFFD2020R/L10-48L		○	○	20x20	150	31.5	3	10	48-66	Z*FD**
QFGD2020R/L10-52L		○	○	20x20	150	31.5	4	10	52-72	Z*GD**
QFFD2020R/L10-74L		●	○	20x20	150	31.5	3	10	74-110	Z*FD**
QFGD2020R/L10-90L		●	○	20x20	150	31.5	4	10	90-140	Z*GD**
QFFD2020R/L10-100L		○	○	20x20	150	31.5	3	10	100-150	Z*FD**
QFGD2020R/L15-52L		○	○	20x20	150	36.5	4	15	52-72	Z*GD**
QFFD2525R/L10-48L		●	●	25x25	150	36.5	3	10	48-66	Z*FD**
QFFD2525R/L10-60L		●	○	25x25	150	36.5	3	10	60-80	Z*FD**
QFFD2525R/L10-74L		○	○	25x25	150	36.5	3	10	74-110	Z*FD**
QFFD2525R/L10-100L		○	○	25x25	150	36.5	3	10	100-150	Z*FD**
QFGD2525R/L13-52L		○	○	25x25	150	39.5	4	13	52-72	Z*GD**
QFKD2525R/L13-60L		○	○	25x25	150	39.5	6	13	60-100	Z*KD**
QFGD2525R/L13-64L		○	●	25x25	150	39.5	4	13	64-100	Z*GD**
QFGD2525R/L13-90L		○	○	25x25	150	39.5	4	13	90-140	Z*GD**
QFGD2525R/L13-130L		○	○	25x25	150	39.5	4	13	130-230	Z*GD**
QFFD2525R/L17-48L		○	○	25x25	150	43.5	3	17	48-66	Z*FD**
QFFD2525R/L17-60L		○	○	25x25	150	43.5	3	17	60-80	Z*FD**
QFFD2525R/L17-74L		○	○	25x25	150	43.5	3	17	74-110	Z*FD**
QFFD2525R/L17-100L		●	○	25x25	150	43.5	3	17	100-150	Z*FD**
QFGD2525R/L22-52L		○	○	25x25	150	48.5	4	22	52-72	Z*GD**
QFKD2525R/L22-60L		○	●	25x25	150	48.5	6	22	60-100	Z*KD**
QFGD2525R/L22-64L		○	○	25x25	150	48.5	4	22	64-100	Z*GD**
QFKD2525R/L22-88L		○	●	25x25	150	48.5	6	22	88-180	Z*KD**
QFGD2525R/L22-90L		○	○	25x25	150	48.5	4	22	90-140	Z*GD**
QFGD2525R/L22-130L		●	○	25x25	150	48.5	4	22	130-230	Z*GD**
QFFD2020R/L7-74L		○		20x20	150	28.5	3	7	74-110	Z*FD**
QFFD2020R/L10-60L		●		20x20	150	31.5	3	10	60-80	Z*FD**
QFGD2020R/L10-130L		●		20x20	150	31.5	4	10	130-230	Z*GD**
QFGD2020R/L15-64L		○		20x20	150	36.5	4	15	64-100	Z*GD**
QFGD2020R/L15-90L		○		20x20	150	36.5	4	15	90-140	Z*GD**
QFGD2020R/L15-130L		○		20x20	150	36.5	4	15	130-230	Z*GD**
QFHD2525R/L13-58L		○		25x25	150	39.5	5	13	58-96	Z*HD**
QFHD2525R/L13-86L		●		25x25	150	39.5	5	13	86-140	Z*HD**
QFHD2525R/L13-130L		○	○	25x25	150	39.5	5	13	130-200	Z*HD**
QFHD2525R/L13-185L		○	○	25x25	150	39.5	5	13	185-400	Z*HD**
QFHD2525R/L22-58L		○	○	25x25	150	48.5	5	22	58-96	Z*HD**

System code > A510 | Grade selection > A478 | Technical info > A607 | Cutting data > A546

Article	✲	Stock		Dimensions [mm]						Inserts
		R	L	HxB	L	S	W	ar_{max}	ØD (min-max)	
QFHD2525R/L22-86L		○	○	25x25	150	48.5	5	22	86-140	Z*HD**
QFHD2525R/L22-130L		○	○	25x25	150	48.5	5	22	130-200	Z*HD**
QFHD2525R/L22-185L		○	○	25x25	150	48.5	5	22	185-400	Z*HD**
QFKD2525R/L13-88L			○	25x25	150	39.5	6	13	88-180	Z*KD**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	**Z*FD****	**Z*GD****	**Z*HD****	**Z*KD****
	H	**20-25**	**20-25**	**20-25**	**20-25**
	Screw	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)
	Wrench	WH50L	WH50L	WH50L	WH50L

Insert

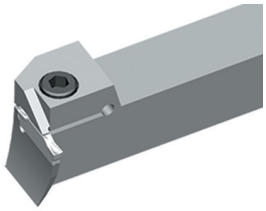
						
A483	A484	A485	A486	A487	A495	A498

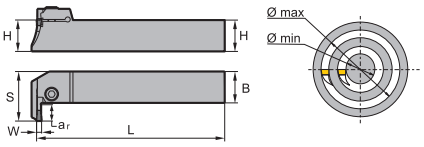

A499

System code A510 Grade selection A478 Technical info A607 Cutting data A546

Parting & grooving tool holder (axial)

QFHSDR/L







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] HxB	L	S	W	ar_{max}	ØD (min-max)	Inserts
QFHS2525R/L30-185L		○	○	25x25	150	56.5	5	30	185-400	Z*HS**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	Z*HS**
	H	**25**
	Screw	GB70-85-M6×20 (7.0 Nm)
	Wrench	WH50L

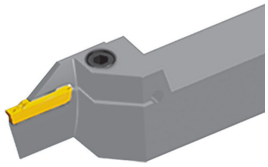
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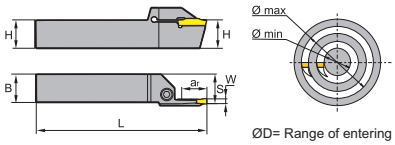
			
A489	A490	A492	A494

System code A510 Grade selection A478 Technical info A607 Cutting data A546

Parting & grooving tool holder (axial)

QF**R/L







Left hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	HxB	L	S	W	ar_{max}	ØD (min-max)	
QFHS2525R/L30-185H		●	●	25x25	150	26	5	30	185-400	Z*HS**
QFKS2525R/L30-160H		●	●	25x25	150	26	6	30	160-400	Z*KS**
QFKS2525R/L34-180H			○	25x25	170	26	6	34	180-400	Z*KS**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**Z*HS****	**Z*KS****
	H	**25**	**25**
	Screw	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)
	Wrench	WH50L	WH50L

Insert

A489	A490	A492	A494

System code A510 | Grade selection A478 | Technical info A607 | Cutting data A546

Boring bars

C	32	S	–	Q	G	D	R	11	–	44
1	2	3		4	5	6	7	8		9

1 Clamping system

2 Diameter [mm]

3 Length [mm]

Code	Description
Q	180
R	200
S	250
X	320

4 Holder for grooving

5 Insert seat size [mm]

Holder/Cutting width

Code	Description
B	2.0
E	2.5
F	3.0
G	4.0
H	5.0
K	6.0
L	8.0

6 No. of cutting edges

Code	Description
S	Single
D	Double

7 Type

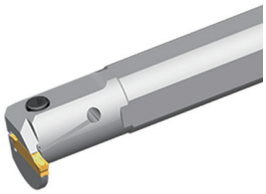
Code	Description
R	Right
L	Left
N	Right and left

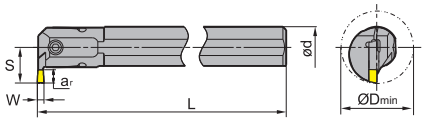
8 Max. cutting depth [mm]

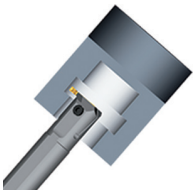
9 Min. internal diameter of work piece [mm]

Parting & grooving tool holder (internal)

C***-Q*DR/L







Article	✲	Stock		Dimensions [mm]						Inserts
		R	L	ØDmin	ød	L	S	W	ar_{max}	
C16M-QBDR/L04-20		●	○	20	16	150	12	2	4	Z*BD**
C20Q-QEDR/L05-27		●	●	27	20	180	15.2	2.5	5	Z*ED**
C25R-QEDR/L07-33		●	●	33	25	200	20.3	2.5	7	Z*ED**
C32S-QEDR/L09-42		●	●	42	32	250	25.3	2.5	9	Z*ED**
C20Q-QFDR/L05-27		●	●	27	20	180	15.2	3	5	Z*FD**
C25R-QFDR/L07-33		●	●	33	25	200	20.3	3	7	Z*FD**
C32S-QFDR/L09-42		●	●	42	32	250	25.3	3	9	Z*FD**
C25R-QGDR/L08-35		●	●	35	25	200	21.5	4	8	Z*GD**
C32S-QGDR/L11-44		●	●	44	32	250	27.5	4	11	Z*GD**
C25R-QHDR/L08-35		●	●	35	25	200	21.5	5	8	Z*HD**
C25R-QKDR/L08-35		○	●	35	25	200	21.5	6	8	Z*KD**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	**Z*BD****	**Z*ED****	**Z*ED****	**Z*ED****	**Z*FD****	**Z*FD****	**Z*FD****	**Z*GD****	**Z*GD****	**Z*HD****	**Z*KD****
	Ød	**16**	**20**	**25**	**32-40**	**20**	**25**	**32-40**	**25**	**32-40**	**25**	**25**
	Screw	GB70-85-M5×10 (4.0 Nm)	GB70-85-M4×12 (2.6 Nm)	GB70-85-M5×16 (4.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M4×12 (2.6 Nm)	GB70-85-M5×16 (4.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M5×16 (4.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M5×16 (4.0 Nm)	GB70-85-M5×16 (4.0 Nm)
	Wrench	WH40L	WH30L	WH40L	WH50L	WH30L	WH40L	WH50L	WH40L	WH50L	WH40L	WH40L

Insert

						
A483	A484	A485	A486	A487	A488	A495

System code A526 Grade selection A478 Technical info A607 Cutting data A546

		
A498	A499	A502

System code > A526 Grade selection > A478 Technical info > A607 Cutting data > A546

Notes

Blade

Q	E	G	D	32	N	(–1)
1	2	3	4	5	6	7

1 Blade for parting & grooving

2 Application

Code	Description
E	External machining

3 Insert seat size [mm]

Holder/ cutting width

Code	Description
B	2,0
E	2,5
F	3,0
G	4,0
H	5,0
K	6,0
L	8,0

4 No. of cutting edges

Code	Description
S	Single
D	Double

5 Blade height [mm]

6 Type

Code	Description
R	Right
L	Left
N	Right and left

7 Insert height –1 mm

Clamping block

QZ	S	32	32
1	2	3	4

1 Parting & grooving tool

2 No. of cutting edges

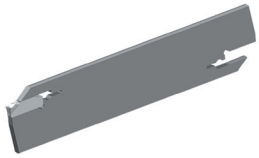
Code	Description
S	Single
D	Double

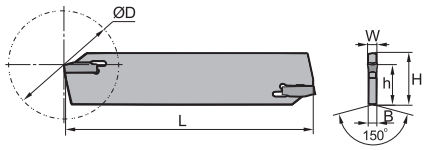
3 Clamping surface height [mm]

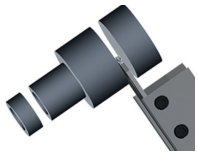
4 Blade height [mm]

Parting blade for external machining

QE*S**N







Article	✻	Stock	Dimensions [mm]						Inserts
			H	L	h	B	W	ØDmax	
QEES26N		●	26	110	19	2	2.5	60	ZPES**
QEES32N		●	32	150	24.6	2	2.5	100	ZPES**
QEFS26N		●	26	110	19	2.4	3	60	ZPFS**
QEFS32N		●	32	150	24.6	2.4	3	100	ZPFS**
QEGS26N		●	26	110	19	3.2	4	70	ZPGS**
QEGS32N		●	32	150	24.6	3.2	4	120	ZPGS**
QEHS26N		●	26	110	19	4	5	70	ZPHS**
QEHS32N		●	32	150	24.6	4	5	120	ZPHS**
QEKS26N		●	26	110	19	5	6	70	ZPKS**
QEKS32N		●	32	150	24.6	5	6	120	ZPKS**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	ZPES**	ZPFS**	ZPGS**	ZPHS**	ZPKS**
		26-32	**26-32**	**26-32**	**26-32**	**26-32**
	Wrench	W50RL	W50RL	W50RL	W50RL	W50RL

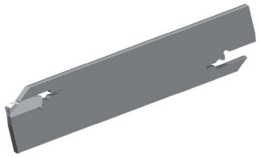
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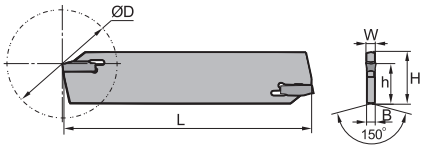
					
A489	A490	A491	A492	A493	A494

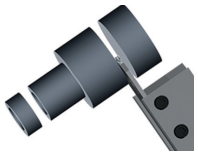
System code A530 | Grade selection A478 | Technical info A607 | Cutting data A546

Parting blade for external machining

QE*S**N-1







Article	✻	Stock	Dimensions [mm]						Inserts
			H	L	h	B	W	ØDmax	
QEES26N-1		●	26	110	21.4	2	2.5	60	ZPES**
QEES32N-1		●	32	150	25	2	2.5	100	ZPES**
QEFS26N-1		●	26	110	21.4	2.4	3	60	ZPFS**
QEFS32N-1		●	32	150	25	2.4	3	100	ZPFS**
QEGS26N-1		●	26	110	21.4	3.2	4	70	ZPGS**
QEGS32N-1		●	32	150	25	3.2	4	120	ZPGS**

● Ex stock ○ On demand

✻ With internal cooling

Only compatible with clamping blocks of commercially available systems from other manufacturers.

Spare parts

	Insert	ZPES**	ZPFS**	ZPGS**
		26-32	**26-32**	**26-32**
	Wrench	W50X	W50X	W50X

W50X key must be ordered as an option.

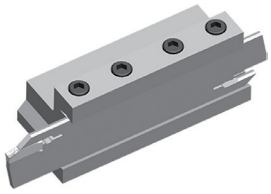
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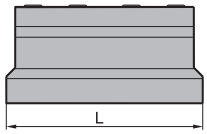
A489	A490	A491	A493	A494

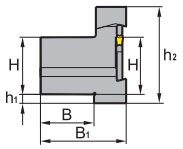
System code A530 Grade selection A478 Technical info A607 Cutting data A546

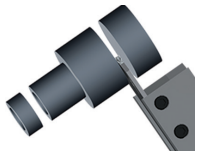
Clamping block (external)

QZS*









Article	✻	Stock	Dimensions [mm]						Inserts
			H	L	h_1	h_2	B	B1	
QZS2026		●	20	86	10	46.6	19	38	QE**26
QZS2526		●	25	86	5	46.6	23	42	QE**26
QZS3226		○	32	86	3	51.6	30	48	QE**26
QZS2032		●	20	110	13	50	19	38	QE**32
QZS2532		●	25	110	8	50	23	42	QE**32
QZS3232		●	32	110	5	54	30	48	QE**32

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**QE**26**	**QE**32**
		20-32	**20-32**
	Clamp	QZC26	QZC32
	Screw	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)
	Wrench	W50RL	W50RL

System code A530 | Grade selection A478 | Technical info A607 | Cutting data A546

External tool holders

Q	E	G	D	2525	R	22	–	S	C
1	2	3	4	5	6	7		8	9

1 Holder for parting & grooving

2 Application

Code	Description
E	External machining

3 Insert seat size [mm]

Holder/cutting width

Code	Description
B	2,0
E	2,5
F	3,0
G	4,0
H	5,0
K	6,0

4 Number of cutting edges

Code	Description
S	Single
D	Double

5 Cross section of holder [mm] x [mm]

6 Type

Code	Description
R	Right
L	Left

7 Max. cutting depth [mm]

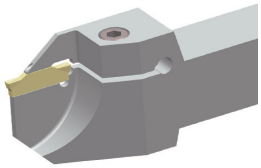
8 Series

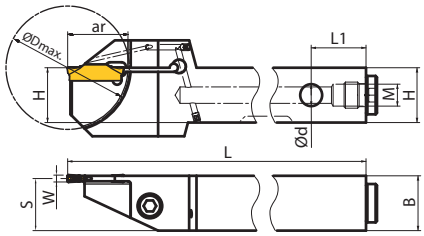
Code	Description
S	Swiss turning holder
DG	Cut-off holder for greater grooving depths with reinforcement
DGS	Cut-off holder for greater grooving depths without reinforcement

9 With internal cooling

Parting & grooving tool holder (external)

QE**R/L-DGC





Article	✲	Stock		Dimensions [mm]									Inserts
		R	L	HxB	ød	L	S	L_1	W	ar_{max}	ØDmax	M	
QEBD1616R/L20-DGC	✲	○	○	16x16	G1/8	96	15	20	2	20	40	G1/8	Z*BD**
QEBD1616R/L30-DGC	✲	●	●	16x16	G1/8	105	15	20	2	30	60	G1/8	Z*BD**
QEBD2020R/L20-DGC	✲	○	○	20x20	G1/8	111	19	20	2	20	40	G1/8	Z*BD**
QEBD2020R/L30-DGC	✲	●	●	20x20	G1/8	120	19	20	2	30	60	G1/8	Z*BD**
QEBD2525R/L20-DGC	✲	○	○	25x25	G1/8	126	24	20	2	20	40	G1/8	Z*BD**
QEBD2525R/L30-DGC	✲	●	●	25x25	G1/8	135	24	20	2	30	60	G1/8	Z*BD**
QEED1616R/L20-DGC	✲	○	○	16x16	G1/8	96	14.75	20	2.5	20	40	G1/8	Z*ED**
QEED1616R/L30-DGC	✲	●	●	16x16	G1/8	105	14.75	20	2.5	30	60	G1/8	Z*ED**
QEED2020R/L20-DGC	✲	○	○	20x20	G1/8	111	18.75	20	2.5	20	40	G1/8	Z*ED**
QEED2020R/L30-DGC	✲	●	○	20x20	G1/8	120	18.75	20	2.5	30	60	G1/8	Z*ED**
QEED2525R/L20-DGC	✲	○	○	25x25	G1/8	126	23.75	20	2.5	20	40	G1/8	Z*ED**
QEED2525R/L30-DGC	✲	○	○	25x25	G1/8	135	23.75	20	2.5	30	60	G1/8	Z*ED**
QEFD1616R/L20-DGC	✲	○	○	16x16	G1/8	96	14.5	20	3	20	40	G1/8	Z*FD**
QEFD1616R/L30-DGC	✲	●	○	16x16	G1/8	105	14.5	20	3	30	60	G1/8	Z*FD**
QEFD2020R/L20-DGC	✲	○	○	20x20	G1/8	111	18.5	20	3	20	40	G1/8	Z*FD**
QEFD2020R/L30-DGC	✲	●	●	20x20	G1/8	120	18.5	20	3	30	60	G1/8	Z*FD**
QEFD2525R/L20-DGC	✲	○	○	25x25	G1/8	126	23.5	20	3	20	40	G1/8	Z*FD**
QEFD2525R/L30-DGC	✲	○	○	25x25	G1/8	135	23.5	20	3	30	60	G1/8	Z*FD**
QEGD1616R/L20-DGC	✲	○	○	16x16	G1/8	96	14	20	4	20	40	G1/8	Z*GD**
QEGD1616R/L30-DGC	✲	●	●	16x16	G1/8	105	14	20	4	30	60	G1/8	Z*GD**
QEGD2020R/L20-DGC	✲	○	○	20x20	G1/8	111	18	20	4	20	40	G1/8	Z*GD**
QEGD2020R/L30-DGC	✲	○	○	20x20	G1/8	120	18	20	4	30	60	G1/8	Z*GD**
QEGD2525R/L20-DGC	✲	○	○	25x25	G1/8	126	23	20	4	20	40	G1/8	Z*GD**
QEGD2525R/L30-DGC	✲	○	○	25x25	G1/8	135	23	20	4	30	60	G1/8	Z*GD**

● Ex stock ○ On demand

✲ With internal cooling

System code A534 | Grade selection A478 | Technical info A607 | Cutting data A546

Parting & grooving tool holder (external)

Spare parts

	Insert	Z*BD**	Z*ED**	Z*FD**	Z*GD**
	H	16-25	16-25	16-25	20-25
	Grub screw	PT1/8×4	PT1/8×4	PT1/8×4	PT1/8×4
	Screw	GB70-85-M5×20 (4.0 Nm)	GB70-85-M5×20 (4.0 Nm)	GB70-85-M5×20 (4.0 Nm)	GB70-85-M5×20 (4.0 Nm)
	Wrench	WH50L	WH50L	WH50L	WH50L
	Wrench	WH40L	WH40L	WH40L	WH40L

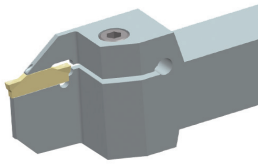
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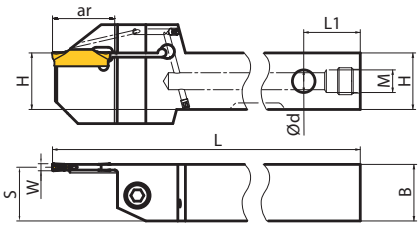
						
A483	A484	A485	A486	A487	A488	A495

System code > A534 Grade selection > A478 Technical info > A607 Cutting data > A546

Parting & grooving tool holder (external)

QE**R/L-DGSC





Article	✲	Stock		Dimensions [mm]								Inserts
		R	L	HxB	ød	L	S	L_1	W	ar_{max}	M	
QEED1616R/L30-DGSC	✲	●	●	16x16	G1/8	105	14.75	20	2.5	30	G1/8	Z*ED**
QEED2020R/L30-DGSC	✲	●	○	20x20	G1/8	120	18.75	20	2.5	30	G1/8	Z*ED**
QEED2525R/L30-DGSC	✲	○	○	25x25	G1/8	135	23.75	20	2.5	30	G1/8	Z*ED**
QEFD1616R/L30-DGSC	✲	●	●	16x16	G1/8	105	14.5	20	3	30	G1/8	Z*FD**
QEFD2020R/L30-DGSC	✲	○	○	20x20	G1/8	120	20.4	20	3	30	G1/8	Z*FD**
QEFD2525R/L30-DGSC	✲	○	○	25x25	G1/8	135	23.5	20	3	30	G1/8	Z*FD**
QEGD1616R/L30-DGSC	✲	○	○	16x16	G1/8	105	14	20	4	30	G1/8	Z*GD**
QEGD2020R/L30-DGSC	✲	○	○	20x20	G1/8	120	18	20	4	30	G1/8	Z*GD**
QEGD2525R/L30-DGSC	✲	○	○	25x25	G1/8	135	23	20	4	30	G1/8	Z*GD**
QEHD2525R/L30-DGSC	✲	○	○	25x25	G1/8	135	22.5	20	5	30	G1/8	Z*HD**
QEKD2525R/L30-DGSC	✲	○	○	25x25	G1/8	135	22	20	6	30	G1/8	Z*KD**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	Z*ED**	Z*FD**	Z*GD**	Z*HD**	Z*KD**
	H	16-25	16-25	20-25	20-25	20-25
	Grub screw	PT1/8×4	PT1/8×4	PT1/8×4	PT1/8×4	PT1/8×4
	Screw	GB70-85-M5×20 (4.0 Nm)	GB70-85-M5×20 (4.0 Nm)	GB70-85-M5×20 (4.0 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M6×20 (7.0 Nm)
	Wrench	WH50L	WH50L	WH50L	WH50L	WH50L
	Wrench	WH40L	WH40L	WH40L	WH50L	WH50L

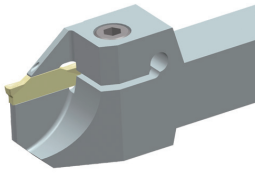
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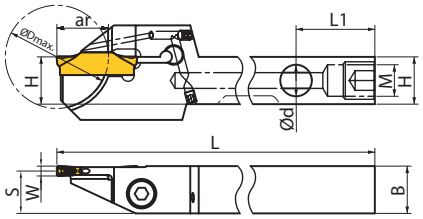
					
A483	A484	A485	A486	A487	A495

System code A534 Grade selection A478 Technical info A607 Cutting data A546

Parting & grooving tool holder (external)

QE**R/L-SC





Article	✲	Stock R	Stock L	Dimensions [mm] HxB	ød	L	S	L_1	W	ar_{max}	ØDmax	M	Inserts
QEAD1010R/L10-SC	✲	○	○	10x10	G1/16	125	9	20	1.5	10	20	G1/16	Z*AD**
QEAD1212R/L13-SC	✲	○	○	12x12	G1/8	125	12	20	1.5	13	26	G1/8	Z*AD**
QEAD1616R/L13-SC	✲	○	○	16x16	G1/8	125	15	20	1.5	13	26	G1/8	Z*AD**
QEAD2020R/L13-SC	✲	○	○	20x20	G1/8	125	19	20	1.5	13	26	G1/8	Z*AD**
QEBD1010R/L10-SC	✲	○	○	10x10	G1/16	110	9	20	2	10	20	G1/16	Z*BD**
QEBD1212R/L13-SC	✲	●	●	12x12	G1/8	110	11	20	2	13	26	G1/8	Z*BD**
QEBD1616R/L13-SC	✲	●	●	16x16	G1/8	110	15	20	2	13	26	G1/8	Z*BD**
QEBD2020R/L13-SC	✲	○	○	20x20	G1/8	110	19	20	2	13	26	G1/8	Z*BD**
QEED1010R/L10-SC	✲	○	○	10x10	G1/16	110	8.75	20	2.5	10	20	G1/16	Z*ED**
QEED1212R/L13-SC	✲	●	●	12x12	G1/8	110	10.75	20	2.5	13	26	G1/8	Z*ED**
QEED1616R/L17-SC	✲	●	●	16x16	G1/8	110	14.75	20	2.5	17	34	G1/8	Z*ED**
QEED2020R/L17-SC	✲	●	●	20x20	G1/8	110	18.75	20	2.5	17	34	G1/8	Z*ED**
QEFD1212R/L13-SC	✲	●	●	12x12	G1/8	110	10.5	20	3	13	26	G1/8	Z*FD**
QEFD1616R/L17-SC	✲	●	●	16x16	G1/8	110	14.5	20	3	17	34	G1/8	Z*FD**
QEFD2020R/L22-SC	✲	●	●	20x20	G1/8	110	18.5	20	3	22	44	G1/8	Z*FD**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	Z*AD**	Z*AD**	Z*AD**	Z*AD**	Z*BD**	Z*BD**	Z*BD**	Z*ED**	Z*ED**	Z*ED**	Z*FD**	Z*FD**
	H	10	12	16	20	10	12	16-20	10	12	16-20	12	16-20
	Grub screw	PT1/16×6	PT1/8×4	PT1/8×4	PT1/8×4	PT1/16×6	PT1/8×4	PT1/8×4	PT1/16×6	PT1/8×4	PT1/8×4	PT1/8×4	PT1/8×4
	Screw	GB70-85-M4×12 (2.6 Nm)	GB70-85-M4×12 (2.6 Nm)	GB70-85-M4×14 (4.5 Nm)	GB70-85-M4×18 (5.0 Nm)	GB70-85-M4×12 (2.6 Nm)	GB70-85-M4×12 (2.6 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M4×12 (2.6 Nm)	GB70-85-M4×12 (2.6 Nm)	GB70-85-M6×20 (7.0 Nm)	GB70-85-M4×12 (2.6 Nm)	GB70-85-M5×20 (4.0 Nm)
	Wrench	WH40L	WH50L	WH50L	WH50L	WH40L	WH50L	WH50L	WH40L	WH50L	WH50L	WH50L	WH50L
	Wrench	WH30L	WH30L	WH30L	WH30L	WH30L	WH30L	WH40L	WH30L	WH30L	WH40L	WH30L	WH40L

System code A534 Grade selection A478 Technical info A607 Cutting data A546

Parting & grooving tool holder (external)

Insert					
					
A483	A484	A485	A486	A488	A495

System code A534 Grade selection A478 Technical info A607 Cutting data A546

Accessoires

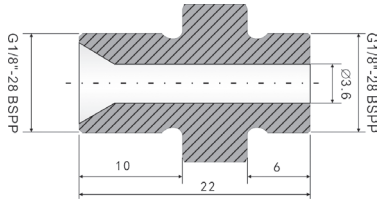
Coolant hose



Article	Dimensions [mm]			Stock
	L	Th1	Th2	
HOSE G1/8-7/16/200BS	200	G1/8"-28 BSPP	G1/8"-28 BSPP	○
HOSE G1/8-7/16/300BS	300	G1/8"-28 BSPP	G1/8"-28 BSPP	○
HOSE G1/8-7/16/200BB	200	G1/8"-28 BSPP	G1/8"-28 BSPP	○
HOSE G1/8-7/16/300BB	300	G1/8"-28 BSPP	G1/8"-28 BSPP	○

● Ex stock ○ On demand

Coolant connection



Article	Stock
NIPPLE G1/8- G1/8	○

● Ex stock ○ On demand

Notes

External tool holders – QC series

GQC	R	20	20	K	22	–	15
1	2	3	4	5	6		7

Series
1

Type	
Code	Description
R	Right
L	Left

2

Height [mm]	
Code	Description
16	16
20	20
25	25

3

Width [mm]	
Code	Description
16	16
20	20
25	25

4

Length [mm]	
Code	Description
K	125
M	150

5

Cutting edge length [mm]	
Code	I.C
11	6,35
16	9,252
22	12,70

6

Cutting width range [mm]		
Code	Insert size	
15	0,5≤S<1,8 (QC16***)	1,0≤S<2,3 (QC22***)
25	1,8≤S<3,0 (QC16***)	2,3≤S<3,3 (QC22***)
35	–	3,3≤S≤4,8 (QC22***)

7

Boring bars – QC series

S	20	K	–	QC	16	15	R	25
1	2	3		4	5	6	7	8

Shank type	
Code	Material
S	Steel shank
C	Solid carbide shank
A	Solid carbide shank (IC)

1

Diameter [mm]	
Code	Description
16	16
20	20
25	25

2

Length [mm]	
Code	Description
H	100
K	125
M	150

3

Series
4

Cutting edge length [mm]	
Code	I.C
11	6,35
16	9,252
22	12,70

5

Cutting width range [mm]			
Code	Insert size		
15	0,5≤S<1,8 (QC11***)	0,5≤S<1,8 (QC16***)	1,0≤S<2,3 (QC22***)
25	1,8≤S<3,0 (QC11***)	1,8≤S<3,0 (QC16***)	2,3≤S<3,3 (QC22***)
35	–	–	3,3≤S≤4,8 (QC22***)

6

Cutting direction	
Code	Description
R	Right
L	Left

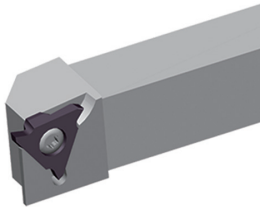
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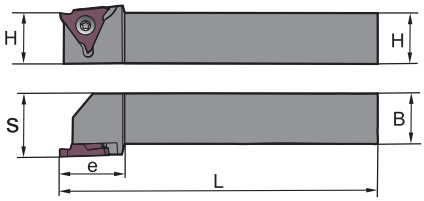
Starting diameter [mm]			
Code	Ø	Code	Ø
16	16	25	25
20	20	35	35

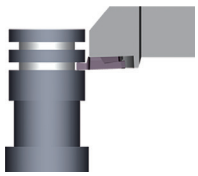
8

Grooving (external)

GQC**R/L







Right hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	H	L	S	e	B	Width	
GQCR/L1212K16-15		○	○	12	125	17	18	12	0,5-1,80	QC16R/L 050-180
GQCR/L1616K16-15		●	●	16	125	21	25.5	16	0.5-1.80	QC16R/L 050-180
GQCR/L2020K16-15		○	●	20	125	25	25.5	20	0.5-1.80	QC16R/L 050-180
GQCR/L2525M16-15		○	●	25	150	30	25.5	25	0.5-1.80	QC16R/L 050-180
GQCR/L2525K22-15			●	25	125	30	25.5	25	1,0-2,3	QC16R/L 100-230
GQCR/L1616K16-25		●	●	16	125	21	25.5	16	1.8-3.0	QC16R/L 180-300
GQCR/L2020K16-25		○	●	20	125	25	25.5	20	1.8-3.0	QC16R/L 180-300
GQCR/L2525M16-25		○	●	25	150	30	25.5	25	1.8-3.0	QC16R/L 180-300
GQCR/L2525K22-25			●	25	125	30	25.5	25	2,3-3,3	QC16R/L 230-330
GQCR/L2020K22-15		○	●	20	125	25	25.5	20	1.0-2.3	QC22R/L 100-230
GQCR/L2525M22-15		○	●	25	150	30	25.5	25	1.0-2.3	QC22R/L 100-230
GQCR/L2020K22-25		○	●	20	125	25	25.5	20	2.3-3.3	QC22R/L 230-330
GQCR/L2525M22-25		○	●	25	150	30	25.5	25	2.3-3.3	QC22R/L 230-330
GQCR/L2020K22-35		●	●	20	125	25	25.5	20	3.3-4.8	QC22R/L 330-480
GQCR/L2525M22-35		●	●	25	150	30	25.5	25	3.3-4.8	QC22R/L 330-480

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	QC16R/L 050-180	QC16R/L 100-230	QC16R/L 180-300	QC16R/L 230-330	QC22R/L 100-230	QC22R/L 230-330	QC22R/L 330-480
	H	12-32	16-32	16-32	16-32	16-32	16-32	16-32
	Screw	I60M3.5×10 (2.7 Nm)	I60M5×13 (6.7 Nm)	I60M3.5×10 (2.7 Nm)	I60M5×13 (6.7 Nm)	I60M5×13 (6.7 Nm)	I60M5×13 (6.7 Nm)	I60M5×13 (6.7 Nm)
	Wrench (shim)	WT15IP	WT20IP	WT15IP	WT20IP	WT20IP	WT20IP	WT20IP

Insert



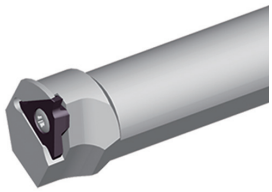
Medium Cut

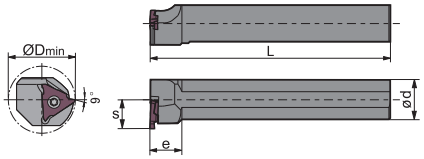
A505
B206

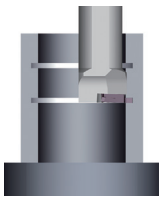
System code A542 Grade selection A478 Technical info A607 Cutting data A546

S_QCR/L

S*K-QC**R/L







Right hand style

Article	✲	Stock R	Stock L	Dimensions [mm] ØDmin	ød	L	S	e	Width	Inserts
S16H-QC1115R/L20		●	●	21	16	100	11.5	12	0.5-1.80	QC11R/L 050-180
S20K-QC1115R/L16		●	●	16	20	125	11.1	40	0.5-1.80	QC11R/L 050-180
S16H-QC1125R/L20		●	●	21	16	100	11.5	12	1.8-3.0	QC11R/L 180-300
S20K-QC1125R/L16		○	○	16	20	125	11.1	40	1.8-3.0	QC11R/L 180-300
S20M-QC1615R/L25		○	●	26	20	150	12.5	15	0.5-1.80	QC16R/L 050-180
S20M-QC1625R/L25		●	●	26	20	150	12.5	15	1.8-3.0	QC16R/L 180-300
S25M-QC2215R/L35		●	●	35	25	150	18.2	15	1.0-2.3	QC22R/L 100-230
S25M-QC2225R/L35		●	●	35	25	150	18.2	20	2.3-3.3	QC22R/L 230-330
S25M-QC2235R/L35		○	●	35	25	150	18.2	20	3.3-4.8	QC22R/L 330-480

● Ex stock ○ On demand

✲ With internal cooling

Right-hand tool holder for left-hand grooving insert.
Left-hand tool holder for right-hand grooving insert.

Spare parts

	Insert	QC11R/L 050-180 16-20	QC11R/L 180-300 16-20	QC16R/L 050-180 20	QC16R/L 180-300 20	QC22R/L 100-230 25	QC22R/L 230-330 25	QC22R/L 330-480 25
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M2.5×6.5 (1.0 Nm)	I60M3.5×10 (2.7 Nm)	I60M3.5×10 (2.7 Nm)	I60M5×13 (6.7 Nm)	I60M5×13 (6.7 Nm)	I60M5×13 (6.7 Nm)
	Wrench (shim)	WT07IP	WT07IP	WT15IP	WT15IP	WT20IP	WT20IP	WT20IP

Insert



Medium Cut

A505
B206

System code A542 | Grade selection A478 | Technical info A607 | Cutting data A546

Notes

Parting & grooving inserts

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed vc [m/min]			
						HC (CVD)	HC (PVD)		
						YBC252	YBG102	YBG105	
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	190			
		approx. 0,45 % C	annealed	190	2	175			
		approx. 0,45 % C	tempered	250	3	145			
		approx. 0,75 % C	annealed	270	4	140			
		approx. 0,75 % C	tempered	300	5	135			
	Low-alloyed steel		annealed	180	6	170			
			tempered	275	7	125			
			tempered	300	8	115			
			tempered	350	9	105			
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	125			
			hardened and tempered	325	11	95			
M	Stainless steel	ferritic/martensitic	annealed	200	12	165	165	170	
		martensitic	tempered	240	13	135	135	140	
		austenitic	quench hardened	180	14	155	155	160	
		austenitic-ferritic		230	15	135	135	140	
K	Grey cast iron	perlitic/ferritic		180	16	240			
		perlitic (martensitic)		260	17	185			
	Cast iron with spheroidal graphite	ferritic		160	18	220			
		perlitic		250	19	165			
	Malleable cast iron	ferritic		130	20	175			
		perlitic		230	21	165			
N	Aluminium wrought alloys	cannot be hardened		60	22				
		hardenable	hardened	100	23				
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24				
		≤ 12 % Si, hardenable	hardened	90	25				
		> 12 % Si, cannot be hardened		130	26				
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27				
		CuZn, CuSnZn		90	28				
		CuSn, Pb-free copper, electrolytic copper		100	29				
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30		95	100	
			hardened	280	31		50	50	
		Ni or Co bass	annealed	250	32		80	80	
			hardened	350	33		70	70	
			cast	320	34		70	70	
	Titanium alloys	pure titanium		R_m 400	35		145	150	
		α and β alloys	hardened	R_m 1050	36		50	50	
H	Hardened steel		hardened and tempered	55 HRC	37				
			hardened and tempered	60 HRC	38				
	Hard cast iron		cast	400	39				
	Hardened cast iron		hardened and tempered	55 HRC	40				
X	Non-metallic materials	Thermoplasts			41				
		Thermosetting plastics			42				
		Plastic, glass-fibre reinforced GFRP			43				
		Plastic, carbon fibre reinforced CFRP			44				
		Graphite			45				
		Wood			46				

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
For examples of material for cutting tool groups view page D11.

	Starting values for cutting speed vc [m/min]						
	HC (PVD)				HW		
	YB9320	YBG202	YBG205	YBG302	YD101	YD201	
	190	190	190	185			
	175	175	175	170			
	145	145	145	140			
	140	140	140	135			
	135	135	135	130			
	170	170	170	165			
	125	125	125	125			
	115	115	115	115			
	105	105	105	105			
	125	125	125	125			
	95	95	95	95			
	165	165	165	160			
	135	135	135	130			
	155	155	155	150			
	135	135	135	130			
	240	240	240	235			
	185	185	185	180			
	220	220	220	215			
	165	165	165	160			
	175	175	175	170			
	165	165	165	160			
					800	760	
					600	570	
					320	305	
					240	230	
					160	155	
					160	155	
					600	570	
					200	190	
	95	95	95	95	70	65	
	50	50	50	50	35	35	
	80	80	80	75	60	60	
	70	70	70	65	50	50	
	70	70	70	65	50	50	
	145	145	145	140	105	100	
	50	50	50	50	35	35	

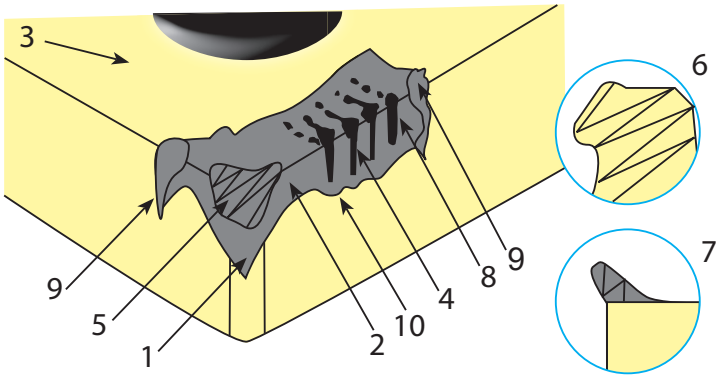
HC Coated carbide
HW Uncoated carbide, main component (WC)

Technical information

Trouble shooting - turning	**A608-A610**
Technical Information - turning	**A611-A618**
Special tools – turning	**A619**

Trouble shooting – general turning

Fig.	Type of wear	Effects	Reason	Countermeasure
1+2	Flank wear	– Bad surface quality and dimensional stability – Increase of cutting force	– Grade not wear-resistant enough – Cutting speed too high – Clearance angle too small – Feed rate too low	– Grade with higher wear-resistance – Reduce cutting speed – Increase clearance angle – Reduce feed rate
3	Crater wear	– Bad surface quality and chip control	– Grade not wear-resistant enough – Cutting speed too high – Feed rate too low	– Grade with higher wear-resistance – Reduce cutting speed – Reduce feed rate
4	Chipping	– Unstable tool life – Sudden breakage of cutting edge	– Grade too hard – Feed rate too high – Cutting edge not stable enough – Stability of the holder or tension insufficient	– Grade with higher toughness – Reduce feed rate – Change honing of cutting edge – Use a more stable tool holder
5	Breakage	– Increase of cutting force – Bad surface quality and dimensional stability	– Grade too hard – Feed rate too high – Cutting edge not stable enough – Stability of the holder or tension insufficient	– Grade with higher toughness – Reduce feed rate – Change honing of cutting edge – Use a more stable tool holder
6	Plastic deformation	– Bad dimensional stability – Damage to cutting edge	– Grade not wear-resistant enough – Cutting speed too high – Cutting depth and/or feed rate too high – Temperature on the cutting edge too high	– Grade with higher toughness – Reduce cutting speed – Reduce cutting depth and feed rate – Grade with higher heat-resistance
7	Welding	– Increase of cutting force – Bad surface quality	– Cutting speed too low – Cutting edge not sharp enough – Grade not suitable	– Increase cutting speed – Increase rake angle – Use a more suitable grade
8	Thermal cracks	– Breakage due to thermal interaction, often caused when cutting is interrupted (milling)	– Temperature fluctuation when machining – Grade too hard	– Dry machining – Grade with higher toughness
9	Notch wear	– Burr formation – Increase of cutting force	– Damage through chips (jagged edges) – Feed rate and cutting speed too high	– Grade with higher wear-resistance – Increase rake angle to get a sharper cutting edge – Reduce cutting speed
10	Flaking (coating)	– Often appears when machining hardened materials or caused by vibration	– Cutting edge adhesion and chipping – Bad chip removal	– Increase rake angle to get a sharper cutting edge – Chip breaker with bigger chip space



Trouble shooting – PCBN & PCD

Type of wear	Countermeasure	
	Geometry	Cutting condition
Flank wear	– Sharper cutting edge for reduced cutting force – Smaller negative chamfer – Use positive inserts	– Reduce cutting speed – Increase feed rate to reduce operation time
Notch wear	– Bigger radius	– Use "method of altering feed rate"
Crater wear/breakage due to crater wear	– Sharper cutting edge for reduced cutting force	– Reduce cutting speed – Increase feed rate to minimise operation time and to increase distance between cutting edge and crater
Chipping due to rough condition or vibration	– Bigger negative chamfer angle and/or honed chamfer	– Increase feed rate to reduce number of hits
Flaking	– Sharper cutting edge to reduce cutting force – Smaller negative chamfer – Use positive inserts	– Increase feed rate to reduce operation time
Thermal crack/breakage	– Sharper cutting edge for reduced cutting force – Smaller negative chamfer – Use positive inserts	– Reduce cutting speed, feed rate and depth of cut – Dry machining
Chipping	– Bigger negative chamfer	– Increase cutting speed to reduce cutting force

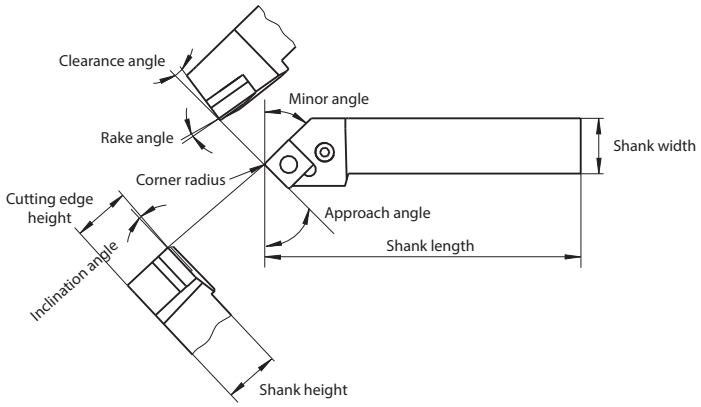
For investigation please send us the used inserts. If breakage is the problem please use inserts only 80–90 % of expected tool life because broken inserts almost have no information.

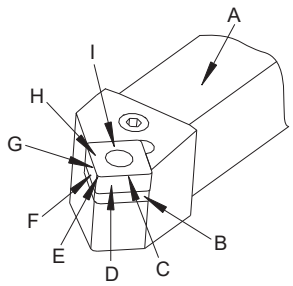
Trouble shooting – threading

Problème	Cause	Solution
Big flank wear	– Cutting speed too high	– Reduce cutting speed
	– Width of cut too small	– Reduce number of width of cut
	– Insert over/under centre line	– Adjust insert height
Asymmetric wear on left and right cutting edge	– Width of cut not optimal	– Adjust width of cut
	– Inclination angle and lead angle are not optimally aligned	– Change the shim to get the correct angle
Breakage	– Cutting speed too low	– Increase cutting speed
	– Cutting force too high	– Increase number of width of cut – Reduce width of cut
	– Unstable conditions	– Improve clamping and overhang to avoid vibrations
	– Bad chip control	– Increase coolant pressure for better chip removal
Déformation plastique	– Cutting speed and temperature too high	– Reduce cutting speed – Increase number of width of cut – Reduce width of cut
	– Insufficient coolant supply	– Improve coolant supply
Mauvais état de surface du filet	– Cutting speed too low	– Increase cutting speed
	– Insert over/under centre line	– Adjust insert height
	– Bad chip control	– Change feed rate and/or width of cut
Profil de filet incorrect	– Incorrect insert height	– Change insert height
	– Tool holder doesn't form a 90° angle	– Adjust tool holder
	– Pitch error in machine	– Adjust machine
Profil de filetage de profondeur insuffisante	– Incorrect insert height	– Change insert height
	– Breakage of cutting edge	– Change insert
	– Excessive wear	– Change insert
Formation d'arêtes rapportées	– Temperature on cutting edge is too low	– Increase cutting speed
	– Often occurs when machining of carbon steel and stainless steel	– Use grade with sufficient toughness (PVD coated)
Vibrations	– Incorrect cutting data	– Increase or highly decrease cutting speed
	– Incorrect insert height	– Change insert height
	– Insufficient clamping	– Improve clamping system and minimise overhang

General turning

Cutting tool geometry





A Holder
B Shim
C Main cutting edge
D Flank face
E Nose radius
G Minor cutting edge
H Rake face
I Insert

Rake angle

The rake angle is a cutting edge angle that has large effects on cutting resistance, chip disposal, cutting temperature and tool life. Increasing the rake angle in positive direction improves the sharpness of the cutting edge and the cutting force decreases but at the same time it lowers the strength. To increase the cutting resistance the rake angle must be increased in negative direction.

Rake angle	Applications
Small	Machining of fragile and hard materials, roughing and interrupted cut
Large	Machining of plastic materials and soft materials, precision machining

Clearance angle

The flank angle prevents friction between the flank face and work piece resulting in smooth feed. Increasing the flank angle decreases the cutting force and the surface roughness becomes better but on the other hand this lowers the cutting edge strength and decreases the flank wear occurrence.

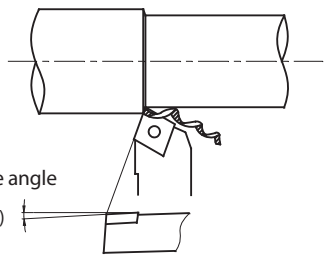
Clearance angle	Applications
Small	Machining of hard and demure materials, for roughing operation with stable cutting edge
Large	Precision machining with low cutting force, work pieces suffer from work hardening easily

Inclination angle

The positive and negative edge inclination angle determines the discharging direction of chips. In heavy cutting, the cutting edge receives extremely large shocks at the beginning of cutting. Cutting edge inclination keeps the cutting edge from receiving this shock and prevents fracturing. On the other hand the back force increases and occurs vibration. For a finishing operation a positive angle is more suitable.

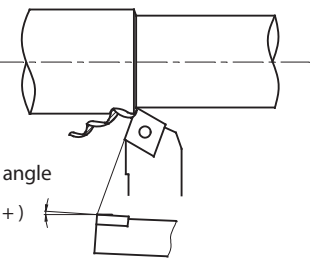
When the edge inclination angle is negative, i.e. the cutting edge is located at the lowest point relative to the bottom plane of the tool holder, the chips flow to the machined surface of workpiece.

Fig. (1)



As shown in Fig. (2), when the edge inclination angle is positive, i.e. the cutting edge is located at the highest point relative to the bottom plane of the tool holder, the chips flow to the un-machined surface of workpiece.

Fig. (2)

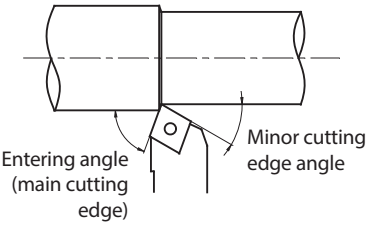


General turning

Entering angle (main cutting edge)

Reducing the lead angle increases the strength of the cutting edge. Because the lead angle is small, the cutting width is long, the force on the unit cutting edge length is small. At the same time, reducing the lead angle can increase the tool life. Normally, when turning thin long shaft and ladder shaft, the lead angle adapts 90°. The lead angle is increased, radial force is reduced, cutting is stable, cutting thickness is increased and chip breaking performance is good.

Entering angle	Applications
Small	For material with high tensile strength, high hardness or hardened layer on surface
Large	For machining with low rigidity



Minor cutting edge

The minor cutting edge angle is the main angle on influence surface roughness; its size is also influence strength of cutter. When the minor cutting edge angle is too small, the cutting force increases and results in chattering and vibration.
The selection principle for the minor cutting edge angle is under the condition of rough machining, or un-influencing friction and producing vibration, the smaller angle should be chosen; the bigger angle can be used for precision machining.

Nose radius

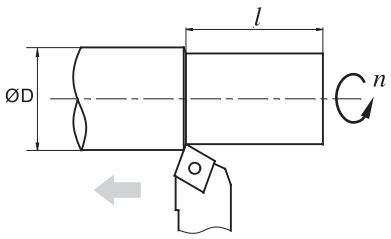
The nose radius effects the cutting edge strength and the finished surface. By increasing the nose radius the surface finish becomes better and the cutting edge strength improves. Flank and rake wear decreases. If the radius becomes too big, the cutting force increases and causes vibration which effects the chip control negative.

Radius	Applications
Small	Finishing with small cutting depth, machining thin long shaft, rigidity of machine is insufficient
Large	Rough machining, high cutting edge strength is required, rigidity of machine is good, machining hardened materials and interrupted cut

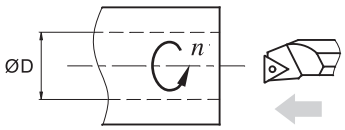
General turning

Cutting speed V_c

$$V_C = \frac{\pi \times D \times n}{1000} \text{ [m/min]}$$



External machining



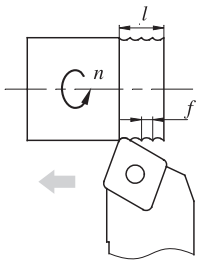
Internal machining

Vc: Cutting speed [m/min]
n: Revolution [1/min]
f: Feed rate [mm]

Example: n = 250 1/min, f = 0,2 mm, l = 150 mm
Result: [insert values in formula Vc]

Feed rate F

$$f = \frac{l}{n} \text{ [mm/rev]}$$



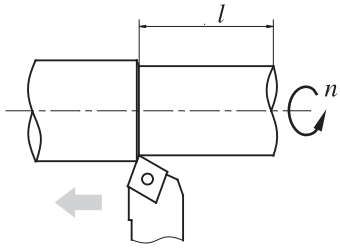
f: Feed rate [mm]
l: Cutting length [mm/min]
n: Revolution [1/min]

Example: n = 500 1/min, l = 100 mm/min
Result: [insert values in formula f]

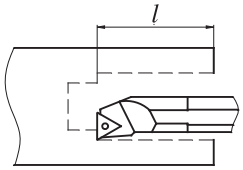
$$f = \frac{l}{n} = \frac{100}{500} = 0{,}2 \text{ mm}$$

Cutting time T_c

$$T_C = \frac{l}{f \times n} \text{ [min]}$$



External machining



Internal machining

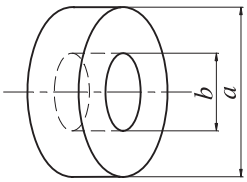
T_C: Cutting time [min]
l: Cutting length [mm/min]
f: Feed rate [mm]
n: Revolution [1/min]

Example: n = 250 1/min, f = 0,2 mm, l = 150 mm
Result: [insert values in formula T_C]

General turning

Cutting time T_c for face milling

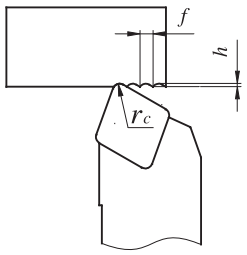
$$T_C = \frac{\pi \times (a^2 - b^2)}{4000 \times V_c \times f} \text{ [min]}$$



T_C: Cutting time [min]
V_C: Cutting speed [m/min]
f: Feed rate [mm]

Theoretical surface roughness R

$$R = \frac{f^2}{8r_c} \times 1000 \text{ [µm]}$$



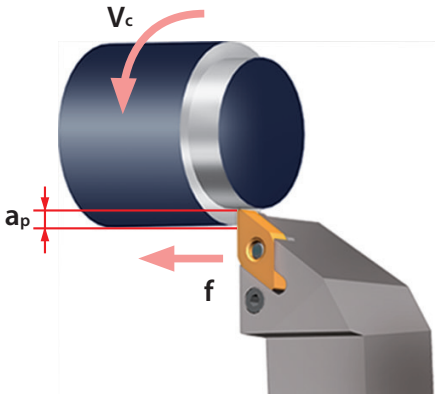
R: Surface roughness [µm]
f: Feed rate [mm]
r_C: Radius of insert [mm]

Example: f = 0,2 mm,
r_C = 0,4 mm

General turning

Three effects of cutting condition for turning

Today short machining time, long tool life and high machining accuracy is expected from modern tools. Based on the machine performance, material shape and hardness of the components the right choice of tool and cutting conditions are the premise for a successful machining process. Cutting speed, feed rate and depth of cut are what we call the "Three effects of cutting".



1. Cutting speed (V_c)

Cutting speed is defined as the rate (or speed) that the material moves past the cutting edge of the tool. The unit for V_c is meter per minute [m/min].

Cutting speed influence: Cutting speed is one of the three important effects of turning and has influence on tool life. Increasing the cutting speed also increases the cutting temperature and that decreases the tool life. Depending on the hardness and type of material the cutting speed varies. Therefore to choose a suitable grade for the cutting speed is necessary.
In general situation, when cutting speed is increased by 20% the tool life will be reduced ½; when the cutting speed is increased by 50% the tool life decreases ⅕. Lower cutting speed results in vibration which will shorten tool life.

2. Feed rate (f)

In turning application feed rate is the distance the tool holder moves per work piece revolution. That has influence to the surface quality. The unit for feed rate is millimetre per revolution [mm/rev]

Feed rate influence: Decreasing the feed rate will increase flank wear and tool life will be shortened. Increasing the feed rate increases the cutting temperature and also flank wear. On the other hand the efficiency will be improved.

3. Depth of cut (a_p)

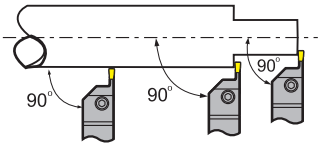
The depth of cut refers to the half different value between the diameter of the unmachined and machined work piece. The unit is millimetre [mm].

Depth of cut influence: Changing depth of cut has no big influence to the tool life. Machining hardened layer with small depth of cut results in friction and short tool life. Machining uncut surface or cast iron material, choose maximum depth of cut according to the machine power so that the cutting edge and corner radius is out of the hardened layer. That helps to prevent chipping and abnormal wear.

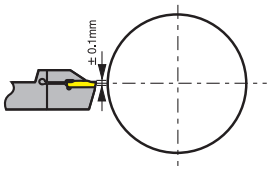
Parting & grooving

Adjusting the cutting edge height

– Mount the tool holder in a 90° angle to the central axis of the workpiece. This improves the surface quality and decreases the risk of vibrations.



– Height tolerance between the cutting edge of the insert and the centre of the work piece should be kept ± 0.1 mm, especially for parting of rods and grooving of materials with a small diameter. This extends the tool life and reduces the cutting forces as well as the formation of burrs.

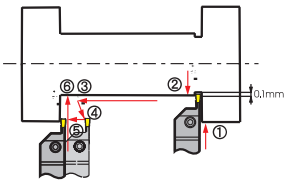


Parting off

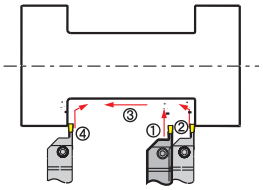
– When the cutting edge nears the central axis of the work piece, reducing the feed rate by 30 % can extend the tool life of the insert.
– Pick a tool holder with the smallest possible overhang to avoid vibrations and tool deflection.

Longitudinal turning and profile turning

– Machining sequence 0.5 mm:
1. Bring radial feed rate to required cutting depth (ap max. 0.75 × cutting edge width)
2. Radial relocating by 0.1 mm
3. Longitudinal turning to opposite shoulder
4. Diagonal relocating by 0.5 mm outward axial feed rate to the starting point
5. Radial feed rate to required cutting depth, etc.

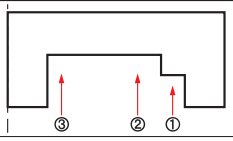


– When machining the chamfer or the base of the slot follow the steps as shown in figure. This reduces tool deflection and avoids cutting edge chipping.

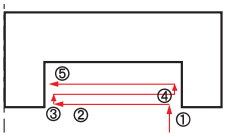


Surface grooving and turning

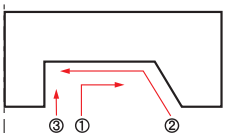
– Roughing:
Processing from largest diameter to the axis. When returning it's recommended to bend the tool slightly.



– Flute turning:
Depth of axial turning less than 0.75 × S (width of insert). When the pocket width is bigger than the depth follow the working steps as shown. When the pocket depth is bigger than the width, we recommend to go to the required diameter step by step.

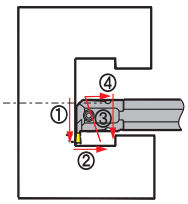


– Finishing:
When finishing begin with the outer diameter and the bottom. Then go on with the inner diameter to the required size.



Internal machining

– Procedure according to figure. For better chip removal in blind holes machine from the inside out.



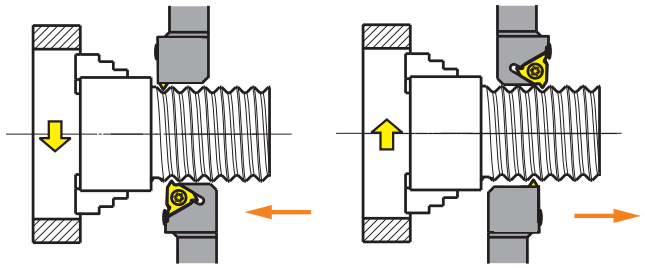
Threading

Steps for best results when thread-cutting

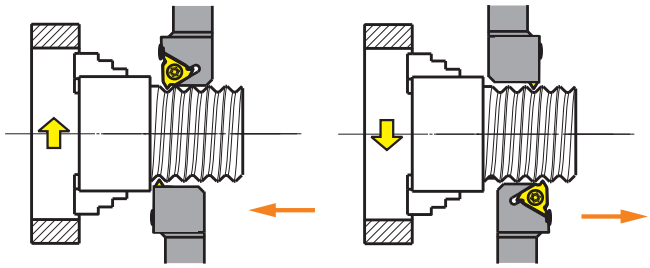
1. Choice of threading method
2. Choice of angle and shim
3. Choice of tool holder and inserts
4. Choice of cutting data
5. Choice of cutting direction

Thread turning method

External machining

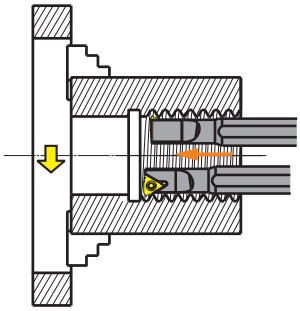


Right hand type

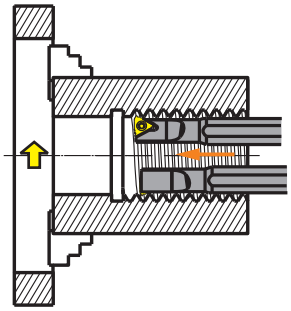


Left hand type

Internal machining



Right hand type



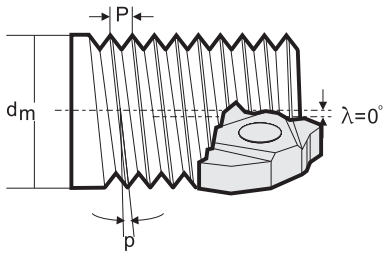
Left hand type

Choice of angle and shim

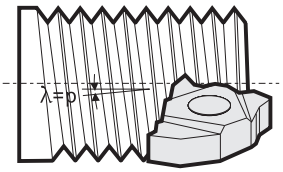
Choice of angle

The flank clearance angles of the thread profile depend on the helical angle of the thread. The helical angle of the thread must coincide with the insert's angle of inclination angle as far as possible to get the ideal profile, to avoid longer unfavourable wear on one of the flanks and thus to ensure tool life.

$$\lambda = \arctan \frac{p}{d_2 \times \pi}$$



Helix angle (p)



Pitch angle (λ)

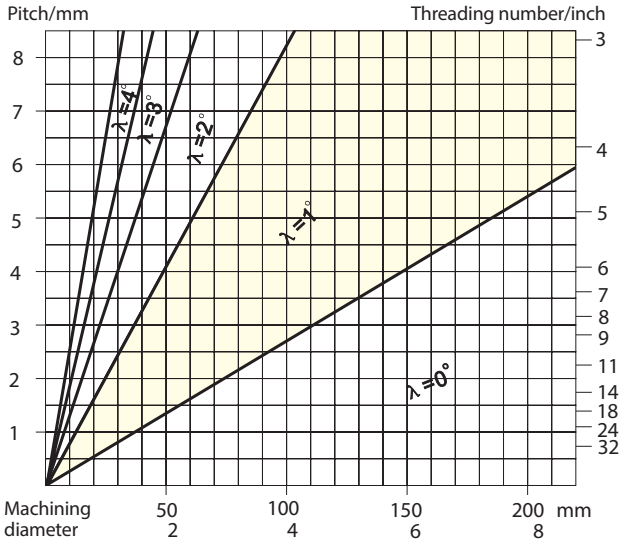
p Pitch
d_2 Flank diameter
λ Pitch angle

Choice of shim

Pitch range	Dimension	Pitch angle	Shim
0,5–3,0 mm	16 mm	0°	MT16-00M(N)
		1°	MT16-01M(N)
		2°	MT16-02M(N)
		3°	MT16-03M(N)
3,5–6,0 mm	22 mm	0°	MT22-00M(N)
		1°	MT22-01M(N)
		2°	MT22-02M(N)
		3°	MT22-03M(N)

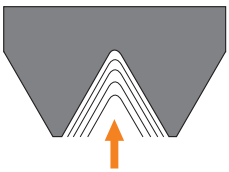
MT-**M** shims for RT and LT thread inserts (from page A581)
MT-**MN** shims for zType thread inserts (from page A559)

The shim λ = 1° is delivered with the tool holder.



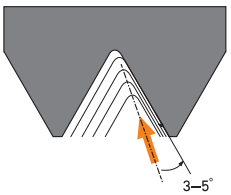
Infeed way of threading

The number of passes and widths of cut are the key points of threading operation. Please choose the cutting parameters with the recommended form according to experience data. In case of breakages or too much wear please have a look at page A447 (trouble shooting).



Radial width of cut

Radial width of cut requires low cutting depth, sharp cutting edge and tough grade. It is recommended when the pitch is smaller than 2 mm, not ideal for material with long chips.



Modified flank width of cut

Infeed at an angle of 3–5° to the flank of the teeth. It is easy for chips flow. Suitable for long chip material and internal threading.

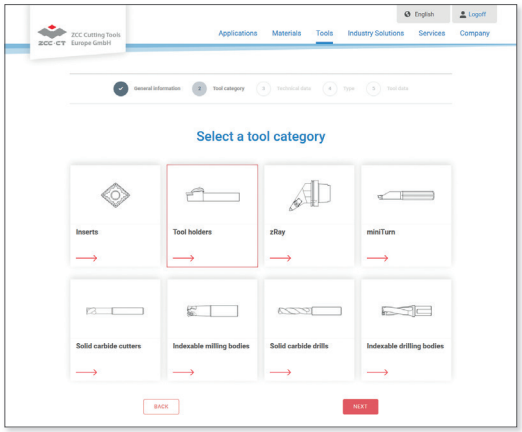


Alternating width of cut

Alternating width of cut is mainly used for large pitches and long chip materials. To get equal insert wear on both edges.

Go directly to the special tool tailored for your turning applications

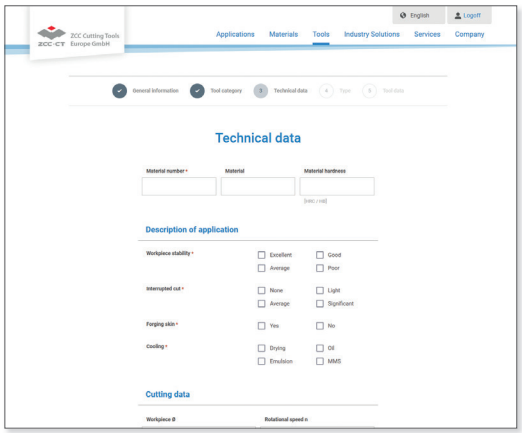
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'Online tool for special tools' launch page where you can select the tool category

Selecting the tool category

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Define the relevant tool parameters.

Defining the tool parameters

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