



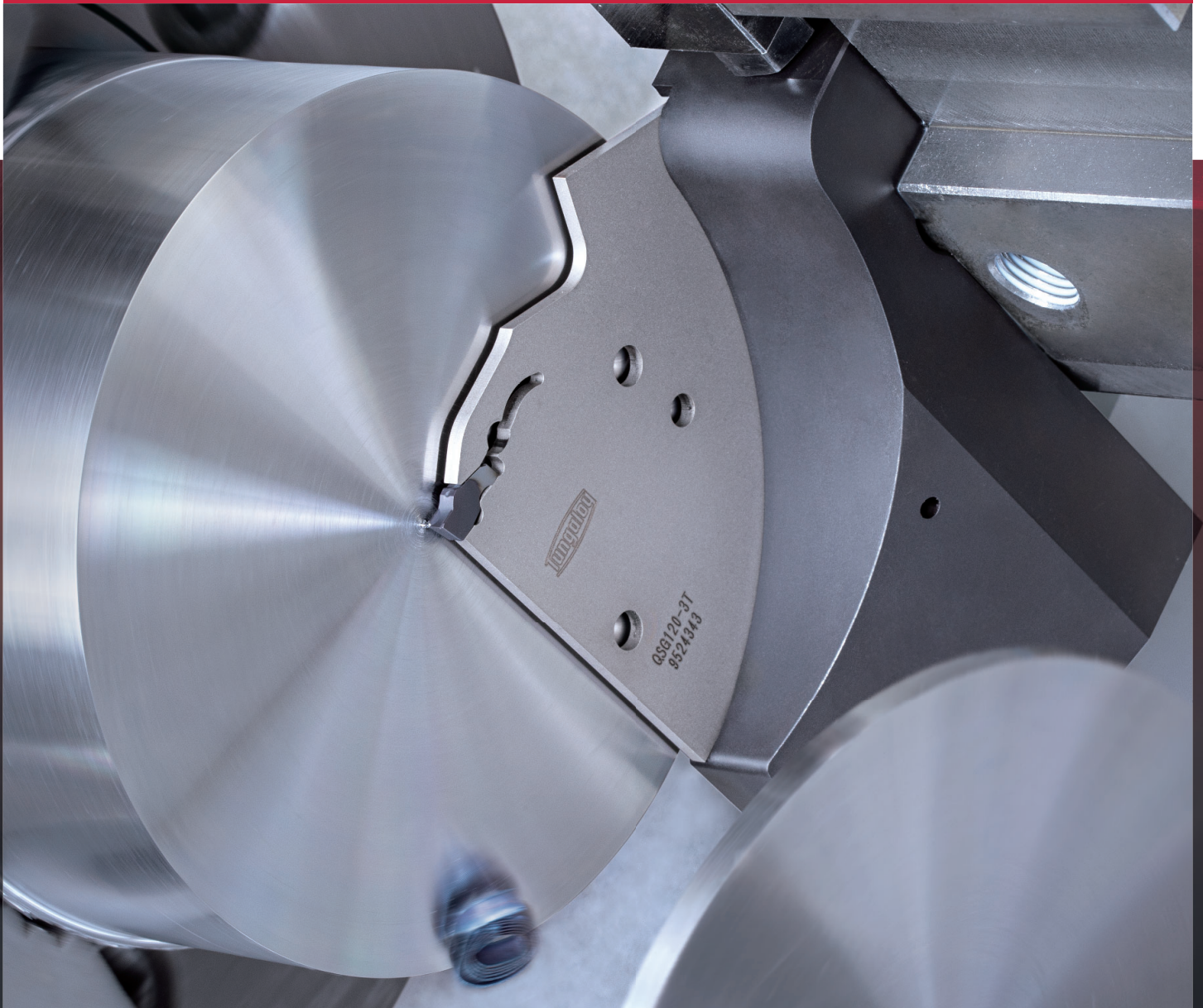
For more information

Grooving and parting-off tool

ADD^{FORCE}CUT

Tungaloy Report No. 543-US

New grooving and parting-off tool series with optimally rigid self-clamping system







ADD F ORCE CUT

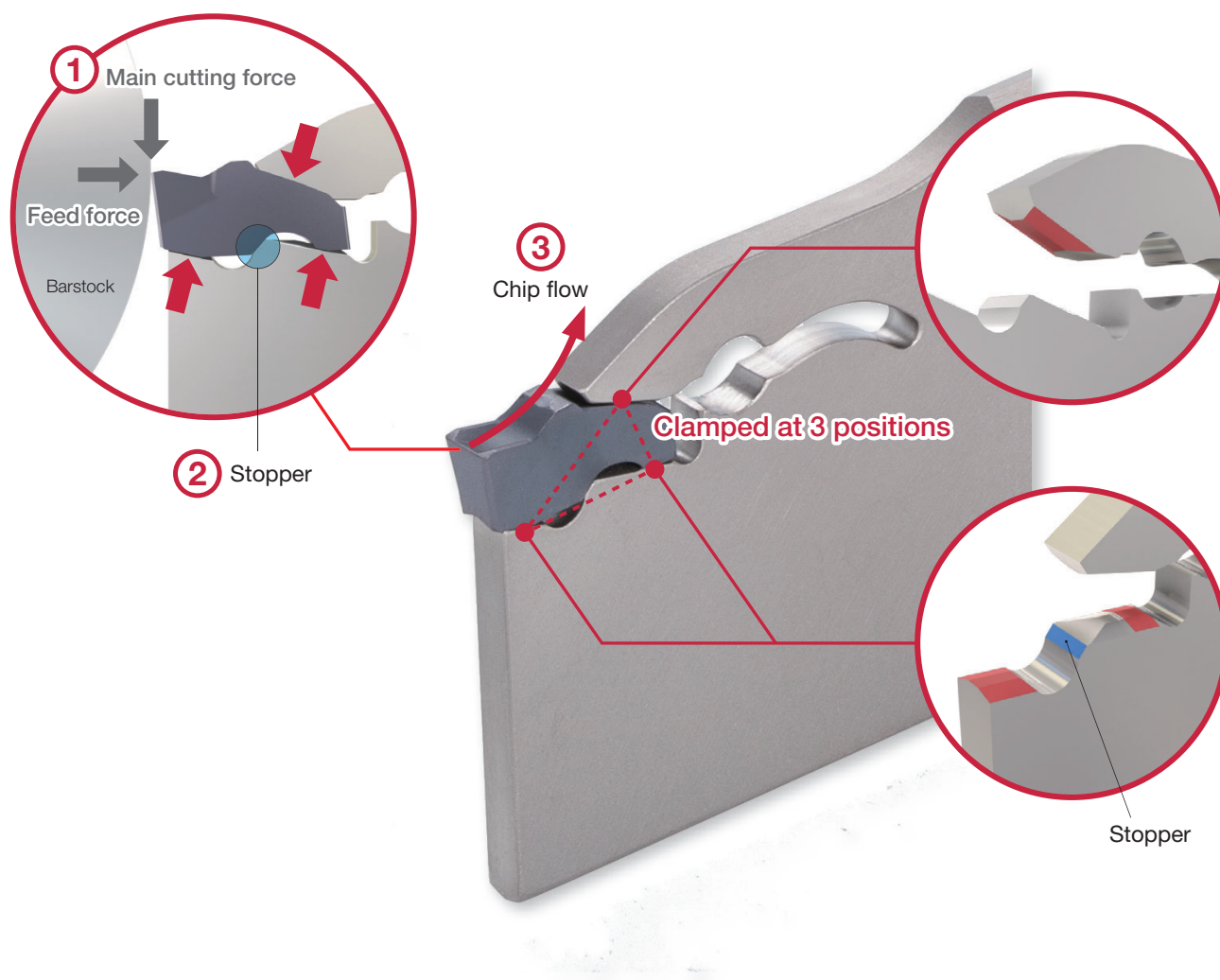


Highly rigid self-clamping system improves productivity
for deep grooving and parting-off operations

Unique, high rigidity self-clamping system

Features

- ① The stopper supporting the insert bottom ensures secure edge position for excellent repeatability
- ② The pocket is designed to securely spring-clamp the insert with three contact faces for stability
- ③ Smooth uninterrupted chip flow is possible thanks to two variations of effective 3D chipbreakers



TungFeed-Blade now available for high productive deep grooving and parting operations

Features

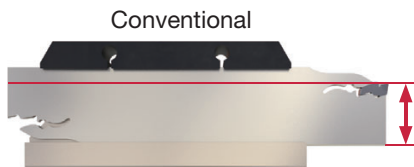
- A thick support beneath the insert allows the tool to produce grooves with high surface quality and straightness at increased feed rates
- Economical blade with three insert pockets



- The block is clamped by contacting two surfaces for enhanced rigidity

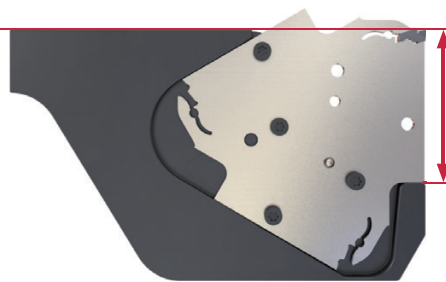


- With much thicker support than existing grooving blades, tool deflection and chatter are minimized even at higher feed rates

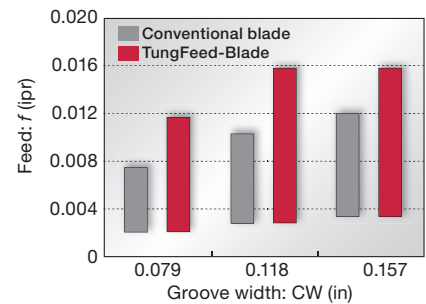
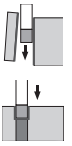


Conventional

TUNG^{FEED}BLADE

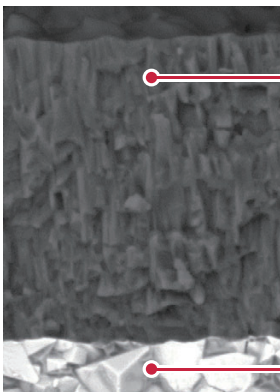


QGM type



Enables high feed machining

AH7025

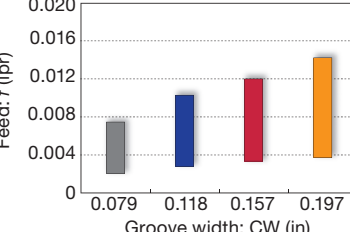
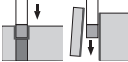
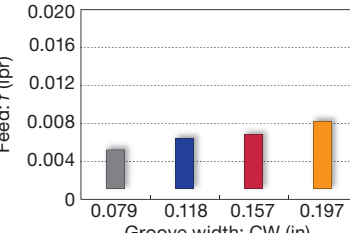
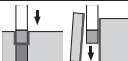


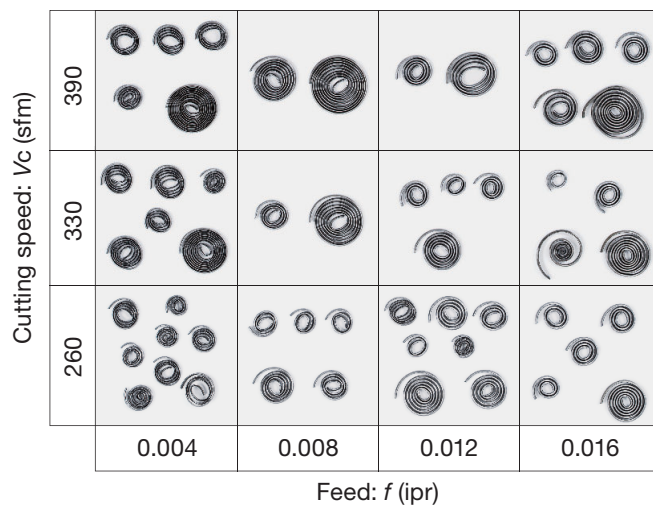
AH7025 uses the latest coating technology of a nano-scale multi-layered AlTiN PVD coating with high Al content, featuring

- Coating hardness increased by 20%
- A multi-layered coating structure impedes micro-crack propagation, reducing insert failures
- Enhanced adhesion strength between the coating and carbide substrate layer

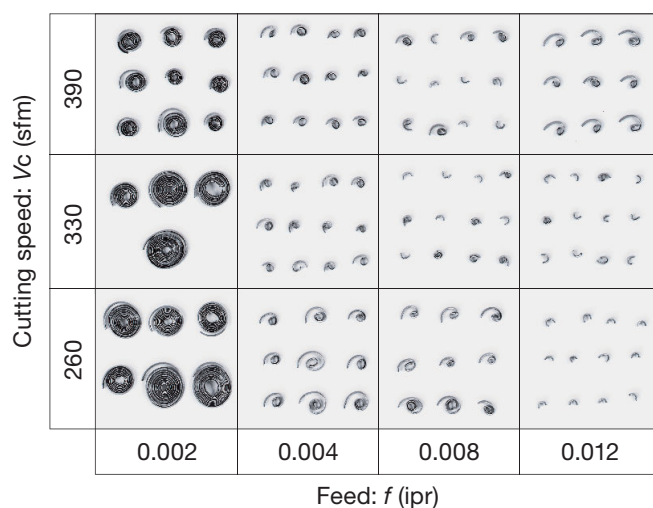
High wear and fracture resistant carbide substrate for optimal grooving performance

CHIPBREAKER GUIDE

QGM 	1st choice for grooving and parting Smooth chip evacuation Well-designed edge with high strength CW = 0.079 - 0.197"	■ Standard feed 	
QGS 	Lower cutting force and superior sharpness Uniquely designed edge and chipbreaker CW = 0.079 - 0.197"	■ Standard feed 	



P Toolholder : QSER16-3T33
 Insert : **QGM**3-020 AH7025
 Workpiece material: 1045
 Groove width : 0.157"
 Coolant : Wet

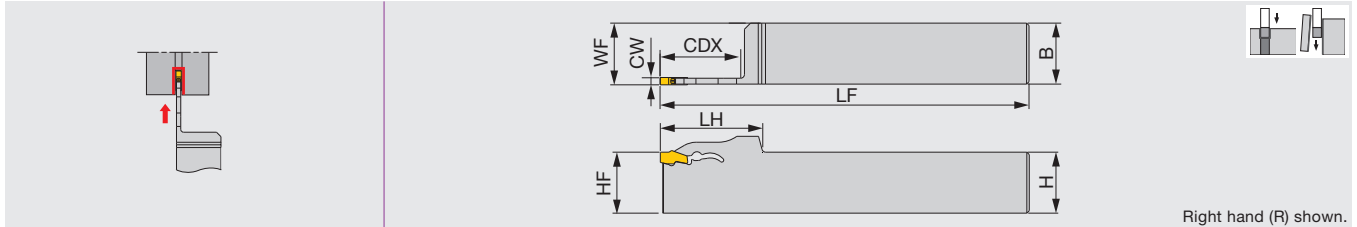


P Toolholder : QSER16-3T33
 Insert : **QGS**3-020 AH7025
 Workpiece material: 1045
 Groove width : 0.157"
 Coolant : Wet

HOLDER

QSER/L

External toolholders for grooving and parting



Inch	CW	CDX	Seat size	H	B	LF	LH	HF	WF
QSER/L12-2T26	0.079	1.024	2	0.750	0.750	5.000	1.417	0.750	0.756
QSER/L12-2T33	0.079	1.299	2	0.750	0.750	5.000	1.654	0.750	0.756
QSER/L16-2T26	0.079	1.024	2	1.000	1.000	6.000	1.417	1.000	1.004
QSER/L16-2T33	0.079	1.299	2	1.000	1.000	6.000	1.654	1.000	1.004
QSER/L12-3T26	0.118	1.024	3	0.750	0.750	5.000	1.417	0.750	0.764
QSER/L12-3T33	0.118	1.299	3	0.750	0.750	5.000	1.654	0.750	0.764
QSER/L16-3T26	0.118	1.024	3	1.000	1.000	6.000	1.417	1.000	1.012
QSER/L16-3T33	0.118	1.299	3	1.000	1.000	6.000	1.654	1.000	1.012
QSER/L12-4T33	0.157	1.299	4	0.750	0.750	5.000	1.654	0.750	0.768
QSER/L16-4T33	0.157	1.299	4	1.000	1.000	6.000	1.654	1.000	1.016
QSER/L16-5T33	0.197	1.299	5	1.000	1.000	6.000	1.654	1.000	1.020

SPARE PARTS

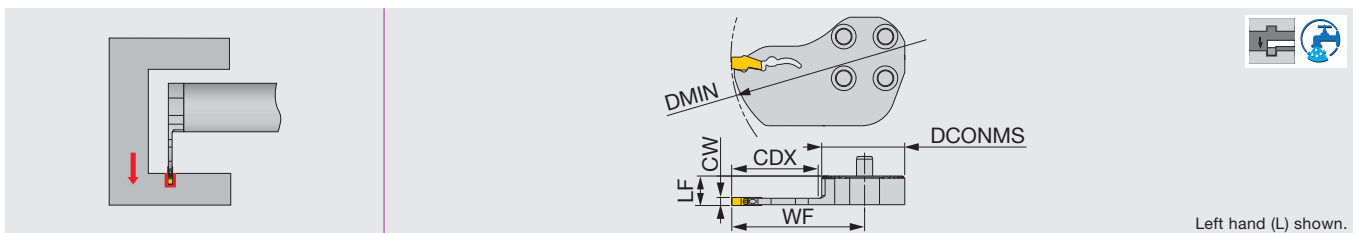
Designation	Wrench
QSER/L...	QL-39

MODULAR HEAD

S-QSIR/L-H

BOREMEISTER

Exchangeable boring head, for internal grooving



Metric	CW	CDX	DMIN	DCONMS	Seat size	LF	WF	Shank
S25-QSIR/L2T26D550-H	2	26	55	25	2	8.5	40.1	D25
S25-QSIR/L3T26D550-H	3	26	55	25	3	9	40.1	D25
S32-QSIR/L3T32D700-H	3	32	70	32	3	11	49.6	D32
S32-QSIR/L4T32D700-H	4	32	70	32	4	11.5	49.6	D32

Please refer to the BoreMeister Tungaloy Report (TR517) for shank information that is applicable to the head.

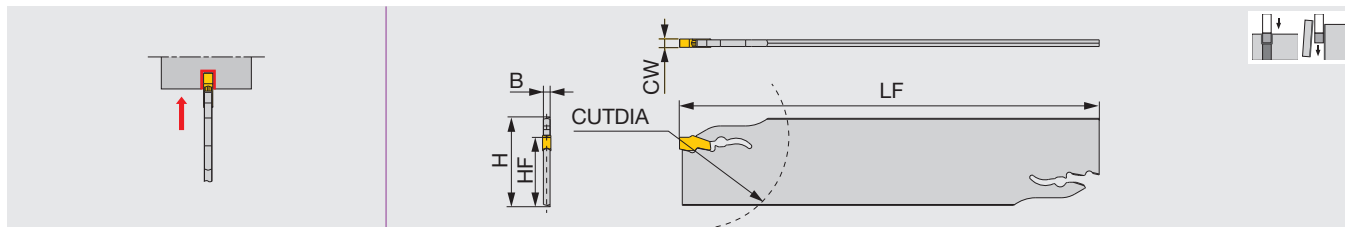
SPARE PARTS

Designation	Wrench
S**-QSIR/L...	QL-39

BLADE

QSP

Blades for external deep grooving and parting



Inch	CW (in)	CW (mm)	Seat size	CUTDIA	H	B	LF	HF
QSP26-2D	0.079	2	2	2.047	1.024	0.071	5.906	0.843
QSP32-2D	0.079	2	2	2.598	1.260	0.071	5.906	0.976
QSP26-3D	0.118	3	3	2.953	1.024	0.094	5.906	0.843
QSP32-3D	0.118	3	3	4.724	1.260	0.094	5.906	0.976
QSP26-4D	0.157	4	4	3.150	1.024	0.126	5.906	0.843
QSP32-4D	0.157	4	4	4.724	1.260	0.126	5.906	0.976
QSP32-5D	0.197	5	5	4.724	1.260	0.157	5.906	0.976

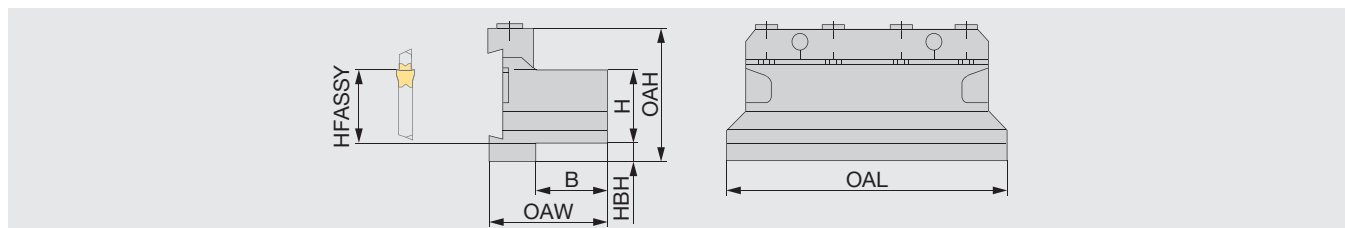
SPARE PARTS

Designation	Wrench
QSP...	QL-39

TOOL BLOCK

CTBU

Tool block for QSP blades

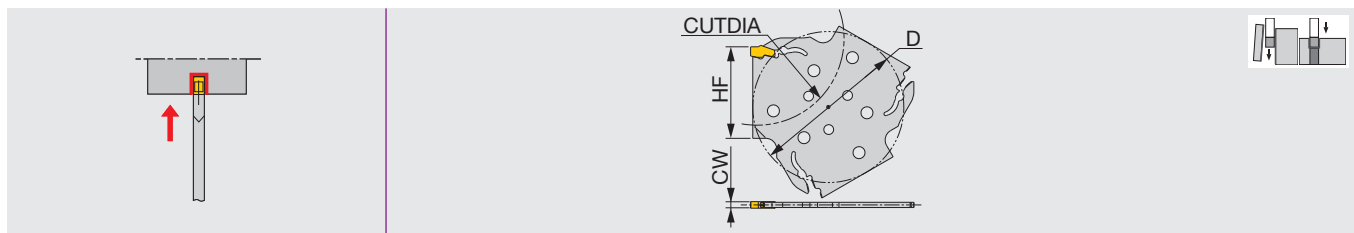


Inch	H	B	OAL	HFASSY	HBH	OAH	OAW	Blade (Optional)
CTBU12-26-U	0.750	0.827	3.386	0.750	0.354	1.690	1.496	QSP26...
CTBU16-26-U	1.000	0.906	4.331	1.000	0.197	1.770	1.654	QSP26...
CTBU12-32-U	0.750	0.748	3.937	0.750	0.512	1.970	1.496	QSP32...
CTBU16-32-U	1.000	0.906	4.331	1.000	0.315	1.970	1.654	QSP32...
CTBU20-32-U	1.250	1.142	4.331	1.250	0.197	2.130	1.890	QSP32...

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
CTBU12-26-U	CT-86	CM6X30-S	P-5
CTBU16-26-U	CT-100	CM6X30-S	P-5
CTBU12-32-U	CT-105	CM6X30-S	P-5
CTBU16-32-U	CT-110	CM6X30-S	P-5
CTBU20-32-U	CT-110	CM6X30-S	P-5

Parting-off and external grooving blade



Inch	CW (in)	CW (mm)	Seat size	CUTDIA	HF	D
QSG52-2T	0.079	2	2	2.047	1.063	1.902
QSG82-2T	0.079	2	2	3.228	1.654	2.728
QSG52-3T	0.118	3	3	2.047	1.063	1.902
QSG82-3T	0.118	3	3	3.228	1.654	2.728
QSG120-3T	0.118	3	3	4.724	2.402	3.465
QSG52-4T	0.157	4	4	2.047	1.063	2.728
QSG82-4T	0.157	4	4	3.228	1.654	2.728
QSG120-4T	0.157	4	4	4.724	2.402	3.465
QSG120-5T	0.197	5	5	4.724	2.402	3.465

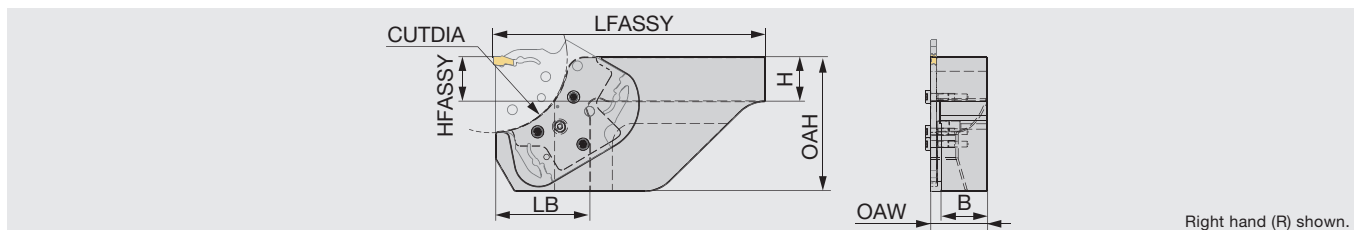
SPARE PARTS

Designation	Wrench
QSG...	QL-39

TOOL BLOCK

CHTBR/L

Tool block for QSG blade

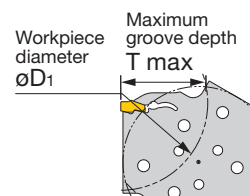


Inch	CUTDIA	H	B	LFASSY	HFASSY	OAH	OAW	LB
CHTBR/L12-52	2.047	0.750	0.770	4.000	0.750	1.970	1.000	1.457
CHTBR/L16-52	2.047	1.000	1.020	5.000	1.000	1.970	1.250	1.457
CHTBR/L12-82	3.228	0.750	0.770	5.500	0.750	2.950	1.000	2.087
CHTBR/L16-82	3.228	1.000	1.020	6.000	1.000	2.950	1.250	2.087
CHTBR/L16-120	4.724	1.000	1.020	6.500	1.000	3.940	1.250	2.638
CHTBR/L20-120	4.724	1.250	1.270	6.500	1.250	3.940	1.500	2.638

The blade clamping screw heads protrude out for as much as 0.122" over the insert cutting edge point. Maintain the clearance from the chucking device to avoid interference.

SPARE PARTS

Designation	Clamping screw	Grip	Torx bit
CHTBR/L...	SR-ISO14580M4X10	SW6-SD	BLDT20/S7



Maximum groove depth (T max) as function of workpiece diameter (øD1)

Designation	øD1																	
CHTBR/L****-D52	2.087	2.126	2.165	2.205	2.283	2.362	2.441	2.559	2.677	2.835	3.071	3.307	3.622	4.016	4.528	5.236	6.260	7.795
CHTBR/L****-D82	4.094	4.252	4.409	4.567	4.764	5.000	5.276	5.591	5.945	6.378	6.929	7.559	8.346	9.331	10.630	12.323	14.764	18.425
CHTBR/L****-D120	8.071	8.425	8.819	9.252	9.724	10.276	10.945	11.693	12.559	13.583	14.803	16.299	18.189	20.551	23.661	27.913	34.055	43.780
T max	0.827	0.787	0.748	0.709	0.669	0.630	0.591	0.551	0.512	0.472	0.433	0.394	0.354	0.315	0.276	0.236	0.197	0.157

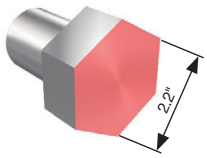
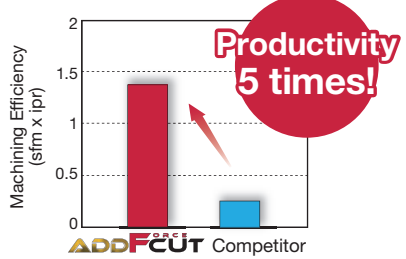
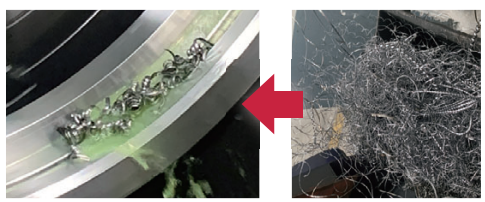
Designation		øD ₁													
CHTBR/L****-D82	3.268	3.307	3.307	3.346	3.386	3.425	3.504	3.543	3.622	3.701	3.780	3.858	3.976		
CHTBR/L****-D120	5.669	5.787	5.906	6.024	6.142	6.299	6.457	6.614	6.811	7.008	7.244	7.480	7.756		
T max	1.339	1.299	1.260	1.220	1.181	1.142	1.102	1.063	1.024	0.984	0.945	0.906	0.866		

Designation	øD1																
CHTBR/L****-D120	4.764	4.803	4.843	4.882	4.921	4.961	5.000	5.039	5.079	5.118	5.157	5.236	5.276	5.354	5.433	5.512	5.591
T max	2.165	2.047	1.969	1.890	1.850	1.811	1.772	1.732	1.693	1.654	1.614	1.575	1.535	1.496	1.457	1.417	1.378

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Grade	Cutting speed Vc (sfm)
P	Steels 1045, 4140, etc.	< 300 HB	AH7025	160 - 590
M	Stainless steel 304, etc.	< 200 HB	AH7025	160 - 390
K	Gray cast iron No.250B, etc.	-	AH7025	160 - 590
	Ductile cast irons 65-45-12, etc.	-	AH7025	160 - 390
S	Superalloys Inconel718, etc.	< HRC 40	AH7025	60 - 200
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	AH7025	60 - 260

PRACTICAL EXAMPLES

Workpiece type		Bolt parts	Ring
Toolholder		QSG82-3T / CHTBL16-82	QSER16-5T33
Insert		QGS3-020	QGS5-030
Grade		AH7025	AH7025
Workpiece material		304	E
		 M	 P
Cutting conditions	Grooving width (in)	0.118	0.197
	Grooving depth (in)	1.063	0.650
	Cutting speed : Vc (sfm)	230	302
	Feed : f (ipr)	0.006	0.005
	Machining	Parting off	Grooving
Coolant		Wet	Wet
Results		 TungFeed-Blade doubled tool life, while also increasing feed rate 5 times when used with the high rigidity CHTBL holder.	 AddForceCut improved chip control and chip evacuation when compared to existing tools, and also doubled the feed rate.

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