



Grooving and parting-off tool

TUNG^{HORT}**CUT**

Tungaloy Report No. 391S8-US

New TungCut internal grooving inserts for $DMIN = 12 \text{ mm}$



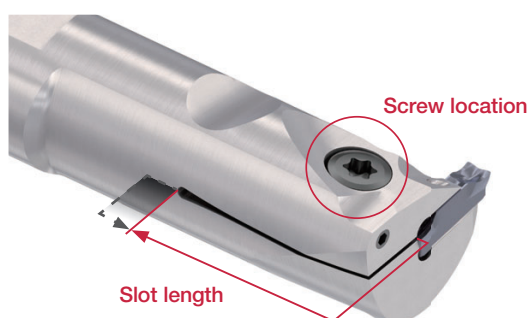
New double-ended small-size internal grooving inserts with exceptional features

■ Robust toolholder design



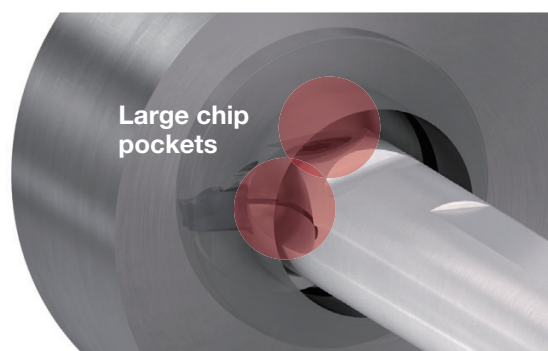
1 Improved chatter resistance

- Optimized screw location enhances insert clamping capability
- Shorter slot length



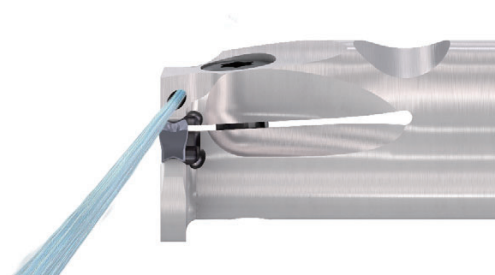
2 Effective chip evacuation

- Larger pockets promote smooth chip evacuation



3 Internal coolant system

- Precision coolant delivered from the top to the cutting point for best performance and smooth chip evacuation.



CHIPBREAKER GUIDE

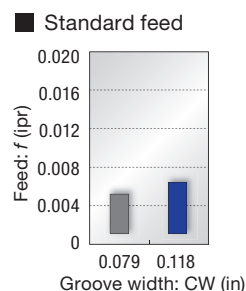
Internal grooving and parting

DGS*S type (2 corners)



Lower cutting force and superior sharpness

Uniquely designed edge and chipbreaker
CW = 0.079" - 0.118"



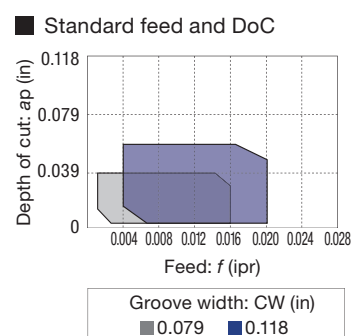
Profiling and undercutting

DTR*S type (2 corners)



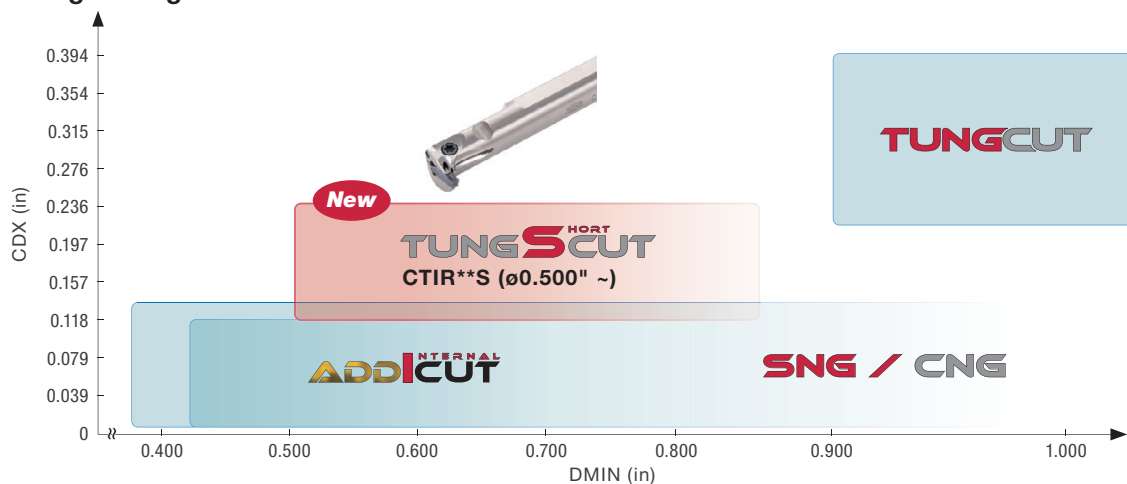
Full radius type

Provides effective chip control during profile turning application
Molded inserts available
CW = 0.079" - 0.118"

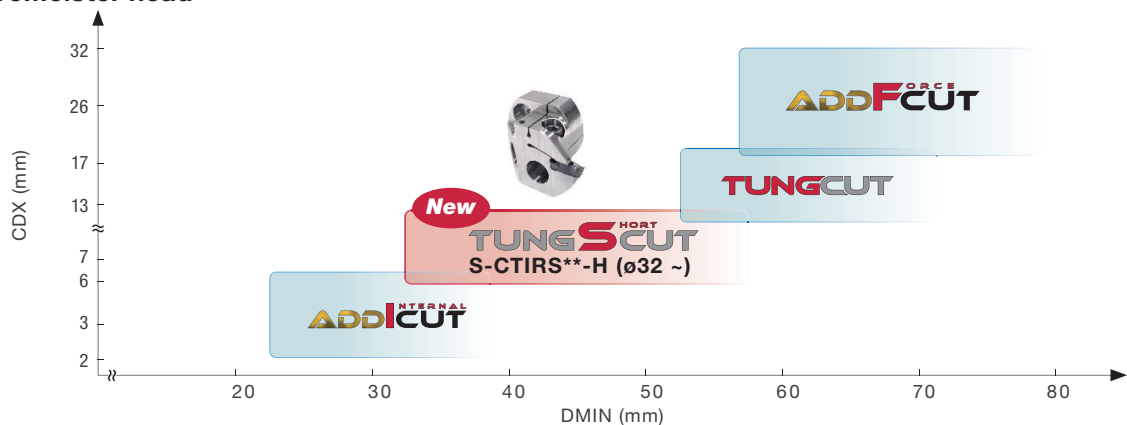


General internal grooving

Internal grooving holder



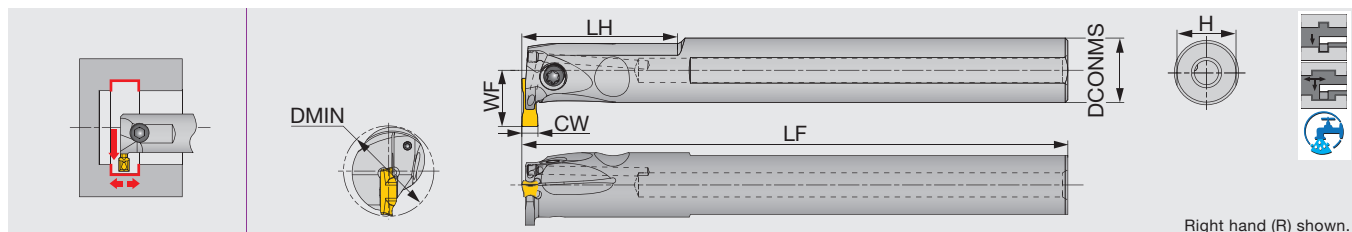
BoreMeister head



TOOLHOLDER

CTIR**S

Internal grooving and turning toolholder



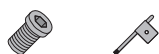
Right hand (R) shown.

Inch	CW	DMIN	Seat size	CDX	DCONMS	H	LF ⁽¹⁾	LH	WF	Insert	Torque*
CTIR06S2T03-D08U	0.079	0.500	S2	0.118	0.375	0.350	4.000	0.875	0.319	D**2S...	0.96
CTIR08S2T04-D10U	0.079	0.625	S2	0.157	0.500	0.475	4.000	1.125	0.433	D**2S...	1.70
CTIR10S2T06-D12U	0.079	0.750	S2	0.236	0.625	0.591	4.500	1.438	0.571	D**2S...	2.58
CTIR08S3T04-D10U	0.118	0.625	S3	0.157	0.500	0.475	4.000	1.125	0.433	D**3S...	1.70
CTIR10S3T06-D12U	0.118	0.750	S3	0.236	0.625	0.591	4.500	1.438	0.571	D**3S...	2.58

(1) LF is calculated with the groove width CW in the above table.

*Torque: Recommended clamping torque: lbs-ft

SPARE PARTS



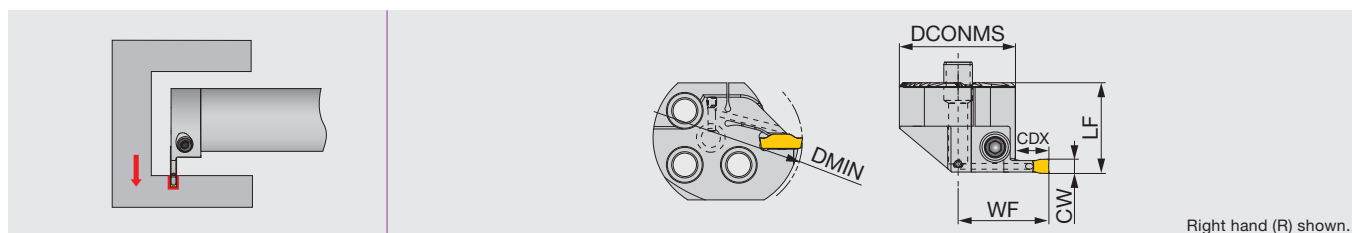
Designation	Clamping screw	Wrench
CTIR06S2T03-D08U	CSTB-2.5L080	T-8F
CTIR08S*T04-D10U	CSTB-3.5D	T-9F
CTIR10S*T06-D12U	CSTB-4	T-15F

MODULAR HEAD

S-CTIRS-H

BOREMEISTER

Exchangeable boring head, for internal grooving



Right hand (R) shown.

Metric	CW	CDX	DMIN	DCONMS	Seat size	LF ⁽¹⁾	WF	Shank	Insert
S25-CTIRS2T06D320-H	2	6	32	25 (1.00")	S2	19	19	D25 (D1.00)	D**2S...
S32-CTIRS2T07D400-H	2	7	40	32 (1.25")	S2	23	23.5	D32 (D1.25)	D**2S...
S25-CTIRS3T06D320-H	3	6	32	25 (1.00")	S3	19	19	D25 (D1.00)	D**3S...
S32-CTIRS3T07D400-H	3	7	40	32 (1.25")	S3	23	23.5	D32 (D1.25)	D**3S...

(1) The LF value is true when the insert with the same CW as indicated in the matching line is mounted in the pocket.

SPARE PARTS

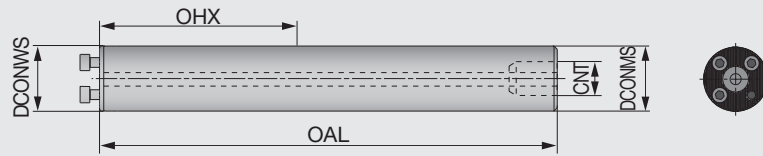


Designation	Clamping screw	Wrench
S25-CTIRS*T06D320-H	CM3X0.5X6	P-2.5
S32-CTIRS*T07D400-H	CM5X0.8X8	P-4

Straight Shank

BOREMEISTER

Anti-vibration bars with through coolant for interchangeable turning heads



Inch	Material	DCONWS	DCONMS	OAL	OHX	CNT
D1.00-L10.2-7D-C	Steel	0.984	1.000	10.200	6.200	G1/4
D1.00-L13.21-10D-C	Steel	0.984	1.000	13.210	9.200	G1/4
D1.25-L12.48-7D-C	Steel	1.260	1.250	12.480	7.500	G3/8
D1.25-L16.24-10D-C	Steel	1.260	1.250	16.240	11.200	G3/8
Metric	Material	DCONWS	DCONMS	OAL	OHX	CNT
D25-L255-7D-C	Steel	25	25	257.5	155	G1/4
D25-L330-10D-C	Steel	25	25	332.5	230	G1/4
D32-L320-7D-C	Steel	32	32	323	192	G3/8
D32-L416-10D-C	Steel	32	32	419	288	G3/8

SPARE PARTS

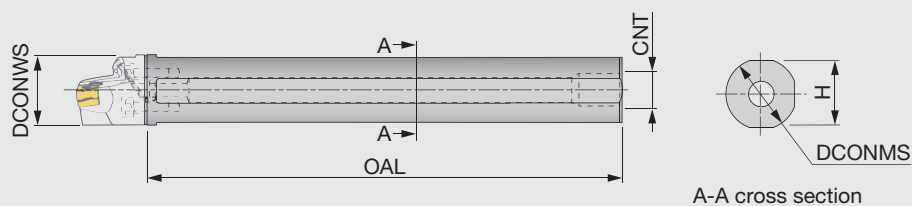


Designation	Clamping screw	Wrench
D1.00..., D25-L...	SRM4X12DIN912	HW3.0
D1.25..., D32-L...	SRM5X12DIN912	HW4.0

D#4D-SH

BOREMEISTER

Steel shank for internal turning, with through coolant



A-A cross section

Inch	Material	DCONWS	DCONMS	OAL	CNT	H
D1.00-L7.2-4D-SH	Steel	1.000	1.000	7.200	UNF-2B 1/2"-20	0.921
D1.25-L8.74-4D-SH	Steel	1.250	1.250	8.740	UNF-2B 1/2"-20	1.142
Metric	Material	DCONWS	DCONMS	OAL	CNT	H
D25-L200-4D-SH	Steel	25	25	200	UNF-2B 1/2"-20	23
D32-L218-4D-SH	Steel	32	32	218	UNF-2B 1/2"-20	29

SPARE PARTS

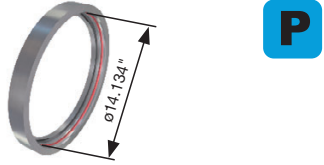
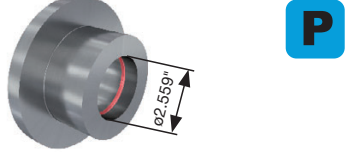
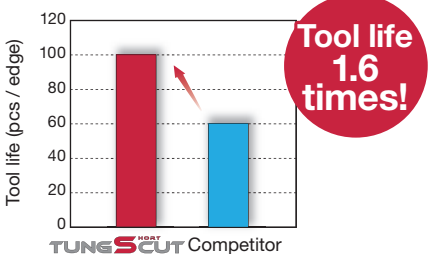
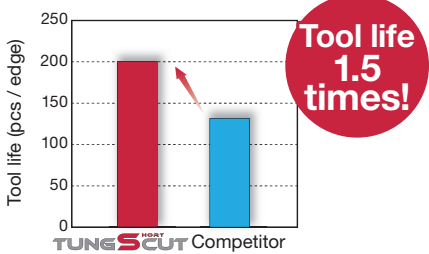


Designation	Clamping screw	Wrench
D1.00-L7.2-4D-SH, D25-L200-4D-SH	SRM4X12DIN912	HW3.0
D1.25-L8.74-4D-SH, D32-L218-4D-SH	SRM5X12DIN912	HW4.0

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Grade	Cutting speed Vc (sfm)
P	Steel 1045, 4137, etc.	< 300 HB	AH7025	164 - 591
M	Stainless steel 303SS, 304SS, etc.	< 200 HB	AH7025	164 - 394
K	Gray cast iron Class 25, etc.	-	AH7025	164 - 591
	Ductile cast iron 65-45-12, etc.	-	AH7025	164 - 394
S	Superalloys Inconel718, etc.	< HRC 40	AH7025	66 - 197
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	AH7025	66 - 262

PRACTICAL EXAMPLES

Workpiece type		Ring	Flywheel
Toolholder		CTIR16S2T06-D200	CTIR16S2T06-D200
Insert		DGS2S-010	DGS2S-010
Grade		AH7025	AH7025
Workpiece material		4140	5120
			
Cutting conditions	Cutting speed : Vc (sfm)	328	328
	Feed : f (ipr)	0.006	0.008
	Groove width : CW (in)	0.079	0.079
	Machining	Internal grooving	Internal grooving
	Coolant	Wet	Wet
Results			
		TungShortCut improved chip control and eliminated built-up edge, successfully achieving 1.6x tool life.	TungShortCut provided superior chip evacuation, eliminating chip jamming. As a result, 1.5x tool life.

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