



Grooving and parting-off tool

TUNG^{HORT}**CUT**

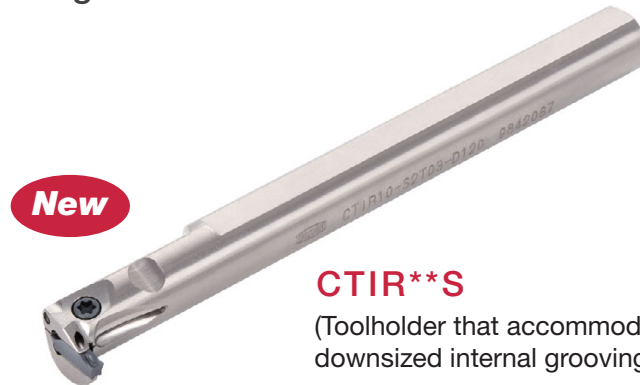
Tungaloy Report No. 391S8-G

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



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

■ Robust toolholder design

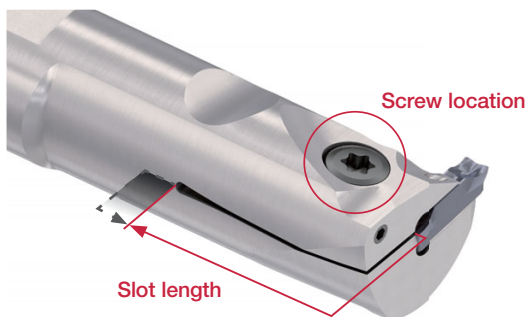


CTIR**S

(Toolholder that accommodates downsized internal grooving insert)

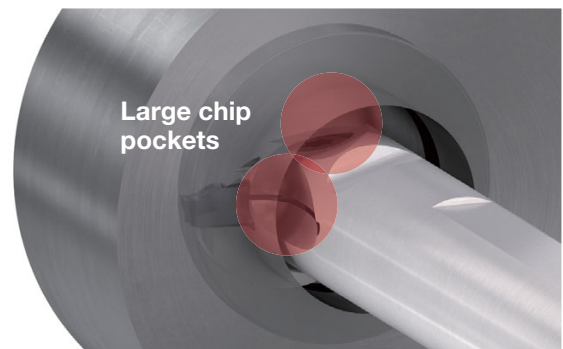
1 Improved chatter resistance

- 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

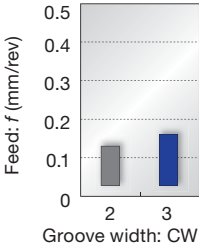
DGS*S type
(2 corners)



Lower cutting force and superior sharpness

Uniquely designed edge and chipbreaker
CW = 2 - 3 mm

Standard feed




Feed: f (mm/rev)

Groove width: CW (mm)

Profiling and undercutting

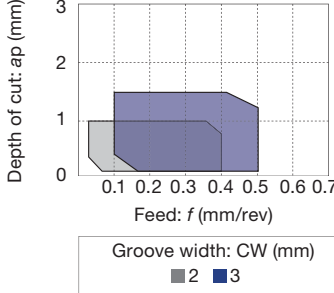
DTR*S type
(2 corners)



Full radius type

Provides effective chip control during profile turning application
Molded inserts available
CW = 2 - 3 mm

Standard feed and DoC



Depth of cut: a_p (mm)

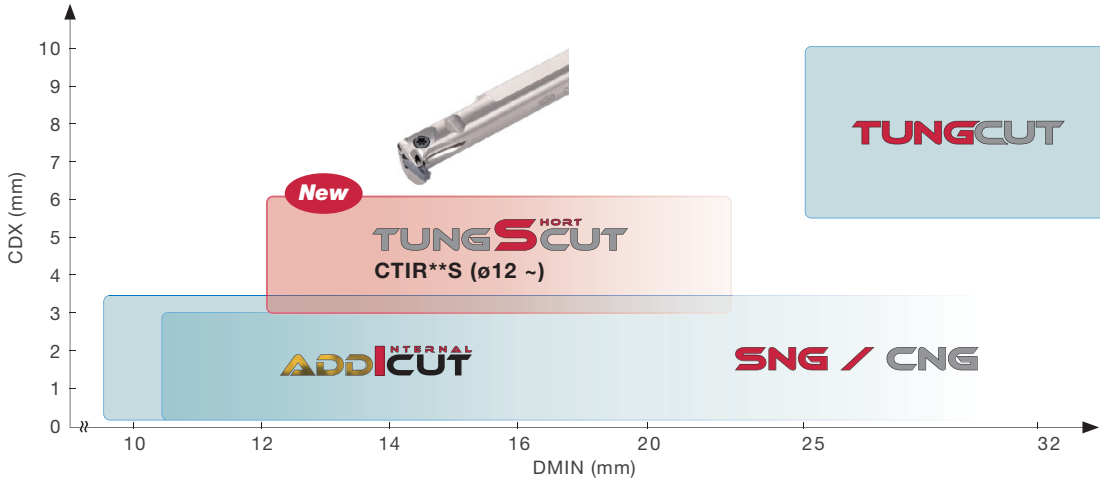
Feed: f (mm/rev)

Groove width: CW (mm)

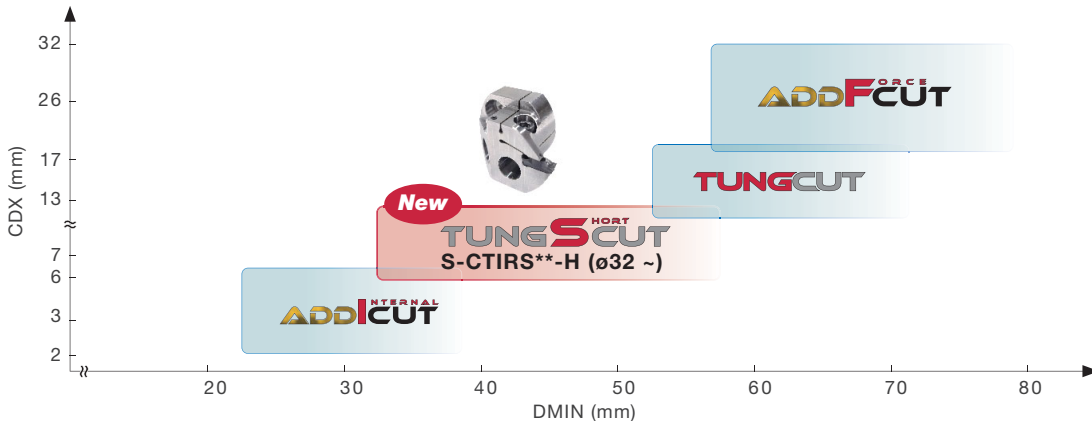
■ 2 ■ 3

General internal grooving

Internal grooving holder



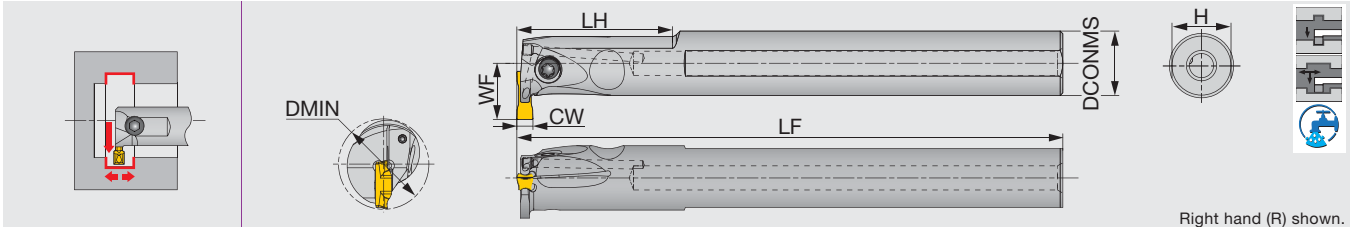
BoreMeister head



TOOLHOLDER

CTIR**S

Internal grooving and turning toolholder



Designation	CW	DMIN	Seat size	CDX	DCONMS	H	LF ⁽¹⁾	LH	WF	Insert	Torque*
CTIR10S2T03-D120	2	12	S2	3	10	9	100	22	8.4	D**2S...	1.3
CTIR12S2T04-D160	2	16	S2	4	12	11	100	28	10.5	D**2S...	2.3
CTIR16S2T06-D200	2	20	S2	6	16	15	110	36	14.5	D**2S...	3.5
CTIR12S3T04-D160	3	16	S3	4	12	11	100	28	10.5	D**3S...	2.3
CTIR16S3T06-D200	3	20	S3	6	16	15	110	36	14.5	D**3S...	3.5

(1) LF is calculated with the groove width CW in the above table.
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

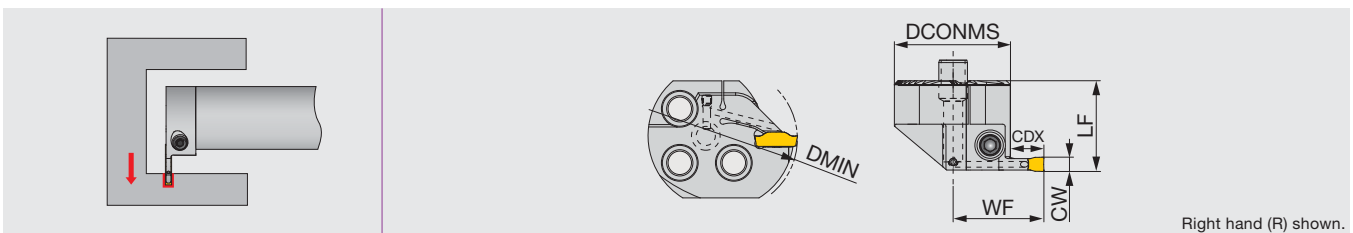
Designation	Clamping screw	Wrench
CTIR10S2T03-D120	CSTB-2.5L080	T-8F
CTIR12S2T04-D160	CSTB-3.5D	T-9F
CTIR16S2T06-D200	CSTB-4	T-15F

MODULAR HEAD

S-CTIRS-H

BOREMEISTER

Exchangeable boring head, for internal grooving



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

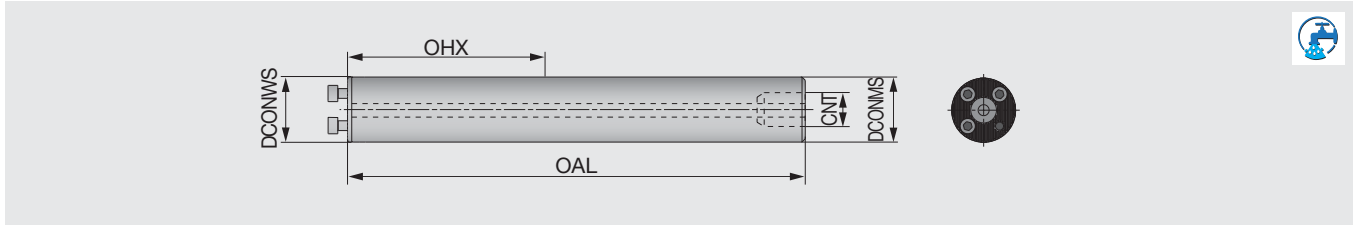
SPARE PARTS

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

Straight Shank

BOREMEISTER

Anti-vibration bars with through coolant for interchangeable turning heads



Designation	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

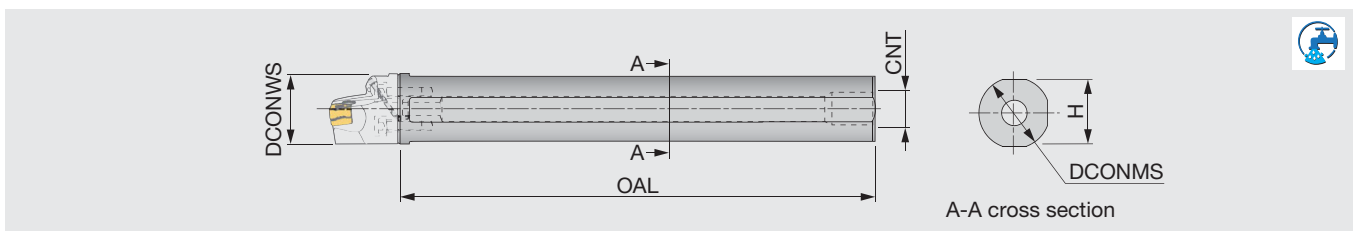


Designation	Clamping screw	Wrench
D25-L...	SRM4X12DIN912	HW3.0
D32-L...	SRM5X12DIN912	HW4.0

D#4D-SH

BOREMEISTER

Steel shank for internal turning, with through coolant



Designation	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

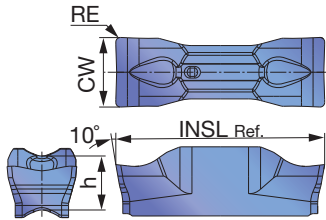


Designation	Clamping screw	Wrench
D25-L..., D25**4D-SH	SRM4X12DIN912	HW3.0
D32-L..., D32**4D-SH	SRM5X12DIN912	HW4.0

INSERT

DGS*S

Internal grooving and parting, 2 corners

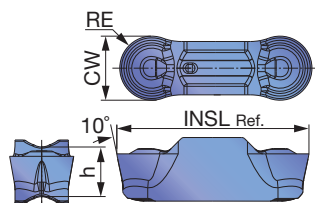


Designation	Seat size	CW±0.05	RE	Coated								INSL	h
				AH7025									
DGS2S-010	S2	2	0.1	●								9	2.2
DGS3S-020	S3	3	0.2	●								9	2.2

● : New

DTR*S

Profiling and undercutting



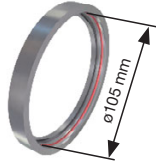
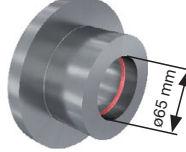
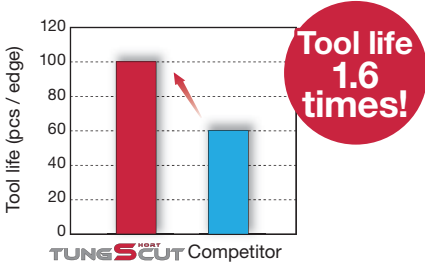
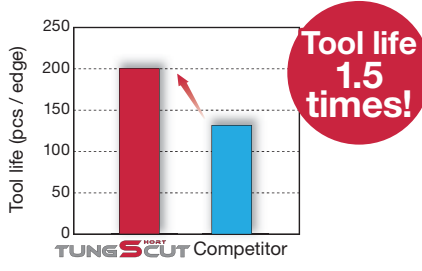
Designation	Seat size	CW±0.05	RE	Coated								INSL	h
				AH7025									
DTR2S-100	S2	2	1	●								9	2.2
DTR3S-150	S3	3	1.5	●								9	2.2

● : New

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Grade	Cutting speed Vc (m/min)
P	Steel S45C, SCM435, etc. C45, 34CrMo4, etc.	< 300 HB	AH7025	50 - 180
M	Stainless steel SUS303, SUS304, etc. X10CrNiS18-9, X5CrNi18-9, etc.	< 200 HB	AH7025	50 - 120
K	Grey cast iron FC250, etc. 250, etc.	-	AH7025	50 - 180
	Ductile cast iron FCD450, etc. 450-10S, etc.	-	AH7025	50 - 120
S	Superalloys Inconel718, etc.	< HRC 40	AH7025	20 - 60
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	AH7025	20 - 80

PRACTICAL EXAMPLES

Workpiece type		Ring	Flywheel
Toolholder		CTIR16S2T06-D200	CTIR16S2T06-D200
Insert		DGS2S-010	DGS2S-010
Grade		AH7025	AH7025
Workpiece material		SCM415	SCr420
		 P	 P
Cutting conditions	Cutting speed : Vc (m/min)	100	100
	Feed : f (mm/rev)	0.15	0.2
	Groove width : CW (mm)	3	2
	Machining	Internal grooving	Internal grooving
	Coolant	Wet	Wet
Results		 <p>TungShortCut improved chip control and eliminated built-up edge, successfully achieving 1.6x tool life.</p>	 <p>TungShortCut provided superior chip evacuation, eliminating chip jamming. As a result, 1.5x tool life.</p>

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