DrillLine

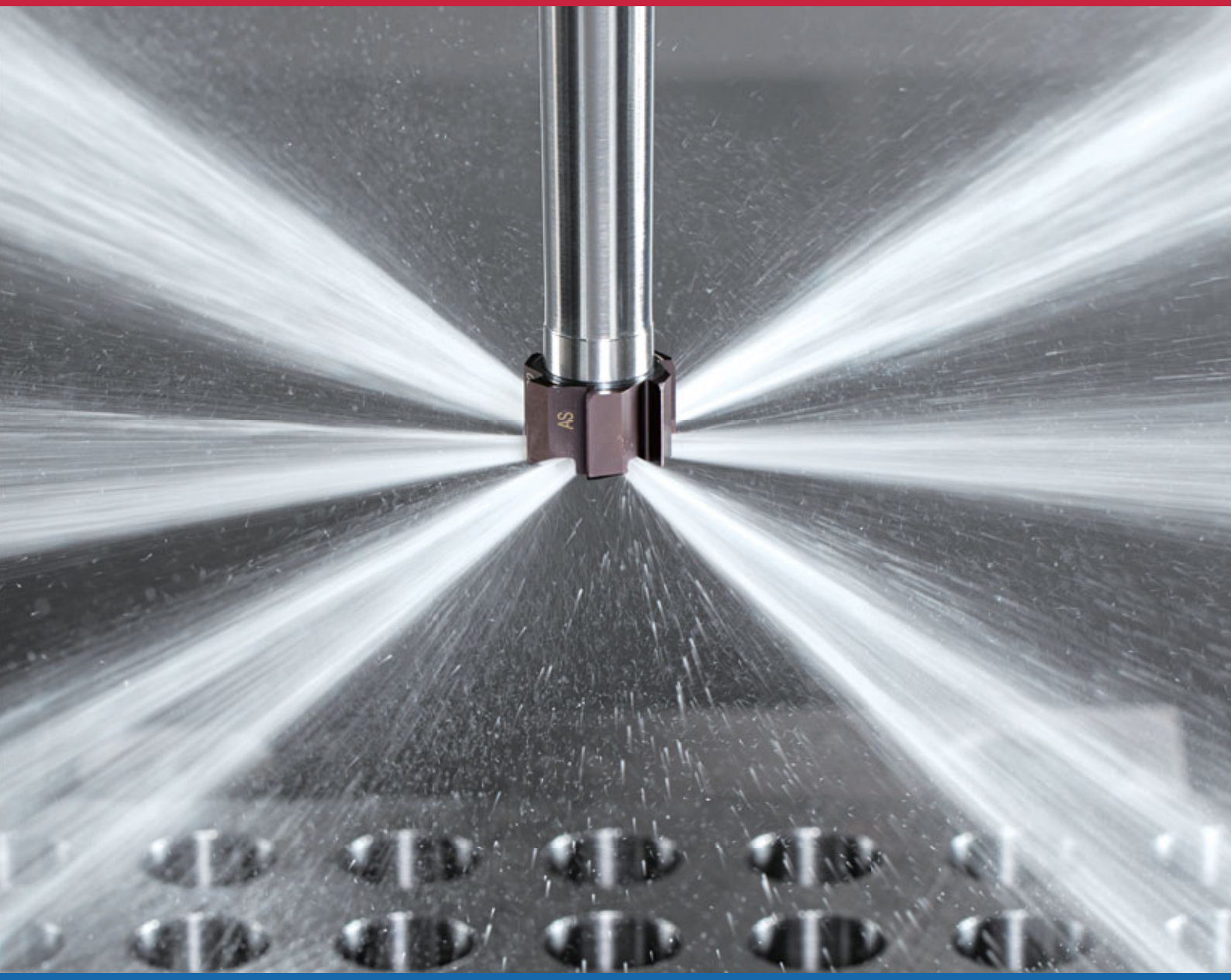
REAMMEISTER

Member IMC Group Tungaloy

www.tungaloy.com

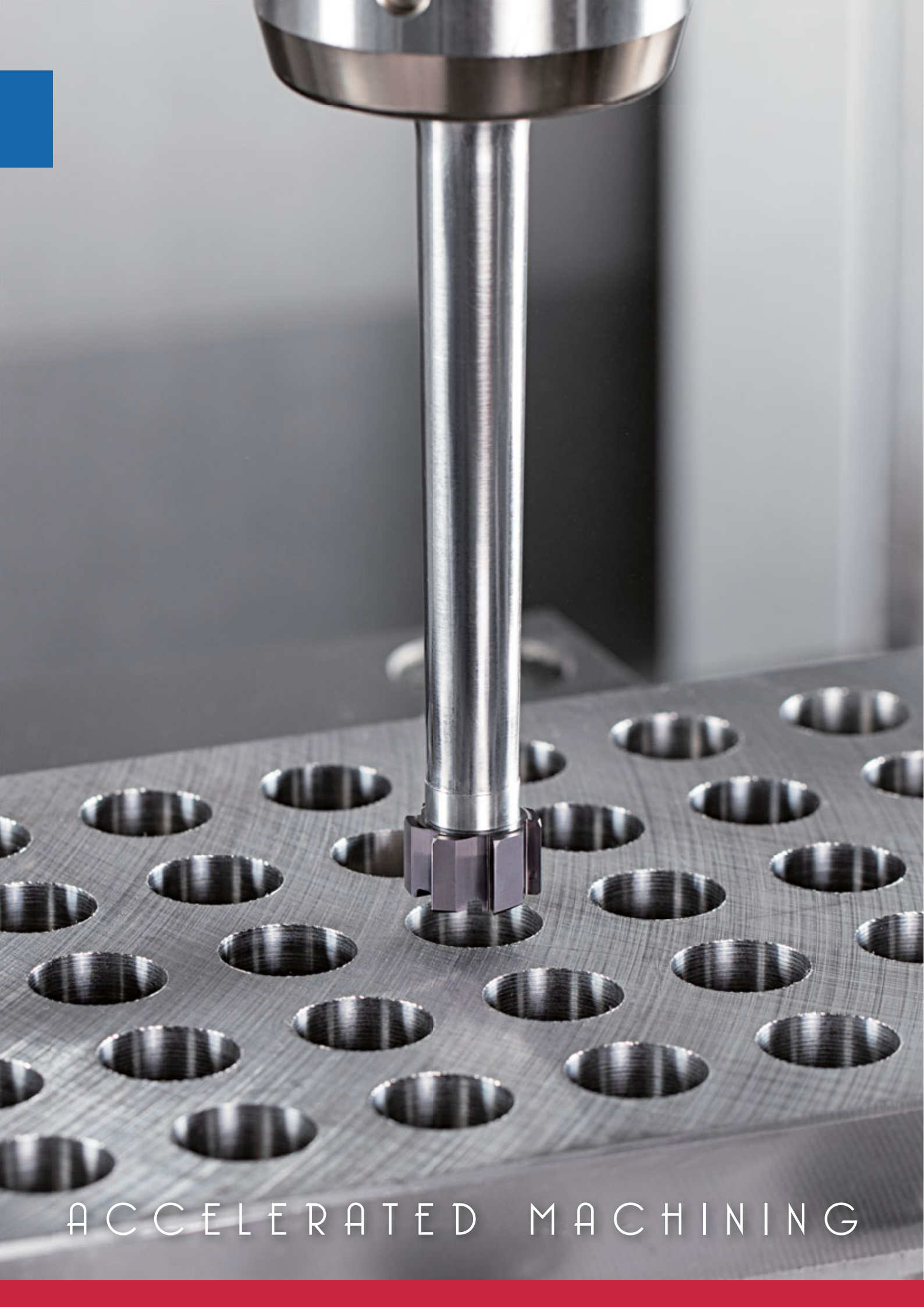
Tungaloy Report No. 530-G

High precision and productivity **solution** for finishing hole operations



INDUSTRY 4.0

FEED the SPEED!


ACCELERATED MACHINING

DrillLine

REAMMEISTER

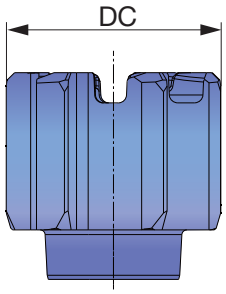
TUNGALOY

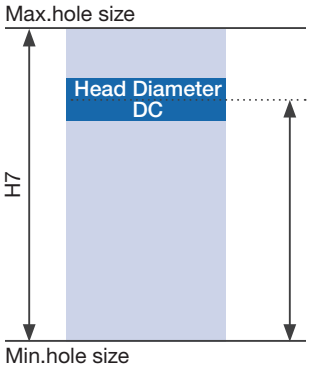
New generation reamer for finishing hole operation

REAMMEISTER
TUNGALOY

Innovative head clamping system ensures **high quality and productive reaming operation**

High precision reamer heads for applications of H7 hole-tolerance range



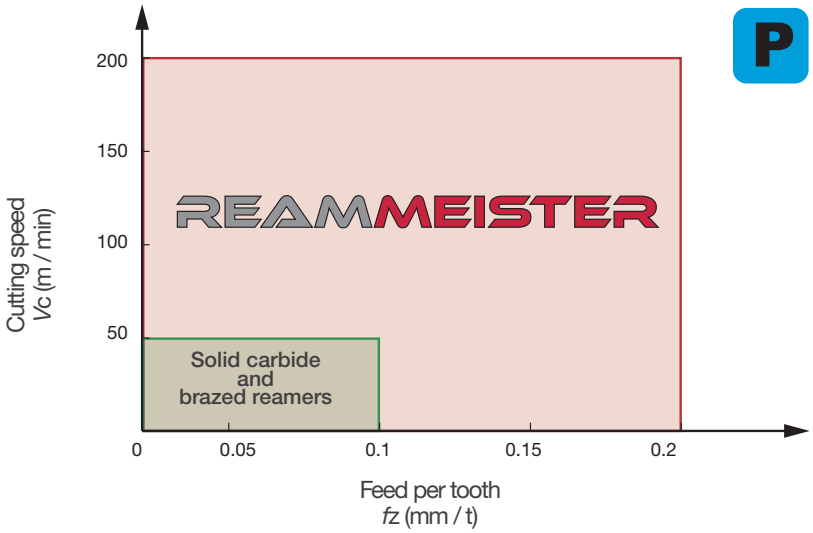


Nominal hole diameter (mm)		Hole diameter tolerance (µm)	ReamMeister head tolerance DC (µm)
Above	Up to & including	H7	H7
11.500	18	+18 / 0	+15 / +11
18.001	30	+21 / 0	+17 / +13
30.001	32	+25 / 0	+21 / +16

• Head diameters are produced so that the hole diameter achieved is close to the max tolerance limit.

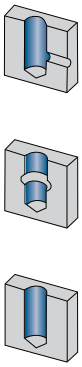
Allows applications of higher cutting speeds and feed rates over solid carbide or brazed reamers, ensuring high productivity

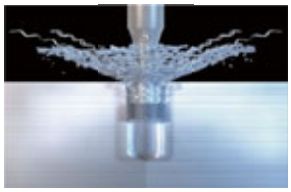
Applicable machining area



2 types of reamer heads are available depending on the hole types

Diameters: ø11.5 mm - ø32.0 mm

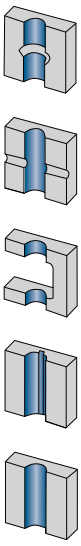




Chip evacuation in rear

Type AS
Straight flute
For blind holes

*Can be used for through holes

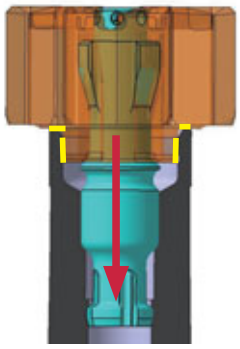


Type BL
Left hand flute
For through holes

Chip evacuation in front

Innovative head clamping system ensures a runout accuracy and repeatability

Clamping mechanism



Parts

Coolant supply

- Dedicated screw pulls the head towards the shank when tightened, **clamping the reamer head securely** in place, allowing **easy head indexing** with **no need for clamping screws** as in the case with indexable reamers

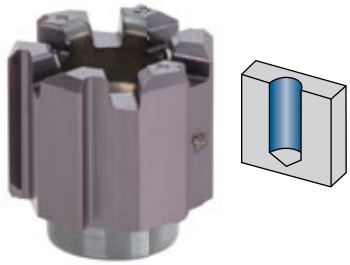
- Face and taper contact provides secure clamping of the head to **ensure high repeatability with minimal runout**

- **Internal coolant bores are arranged in radial directions** on the reamer head so the cutting edges are **effectively cooled and lubricated during machining**, ensuring long tool life

* Can be used also for e xternal coolant supply

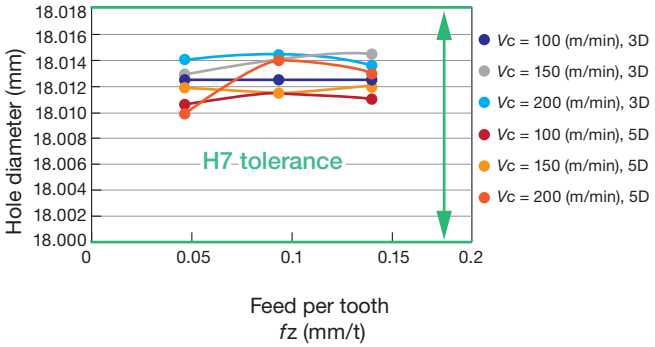
CUTTING PERFORMANCE

P

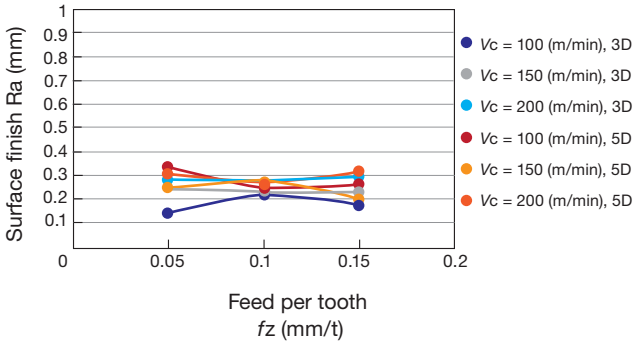


Tool	: TRM-T7-R20-3, TRM-T7-R20-5
Head	: HRM-18.000-AS-T7 AH725
Workpiece material	: S55C, C55
Hole type	: Blind
Pre hole diameter	: ø17.8
Hole depth	: *H* = 30 mm
Coolant	: Internal

Hole diameter accuracy



Surface finish



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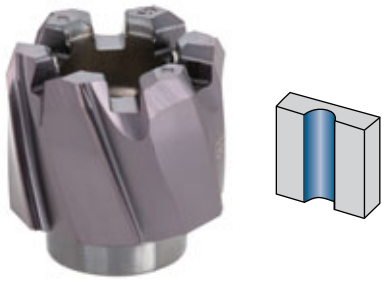
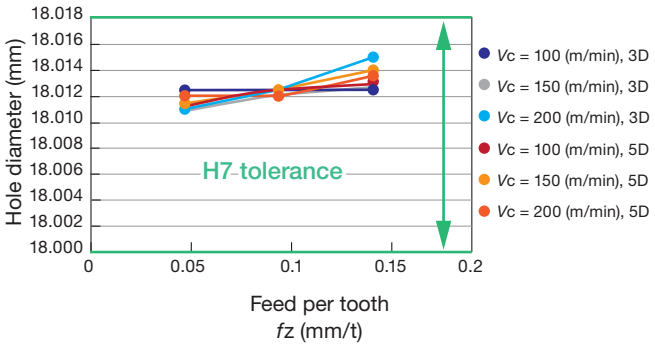
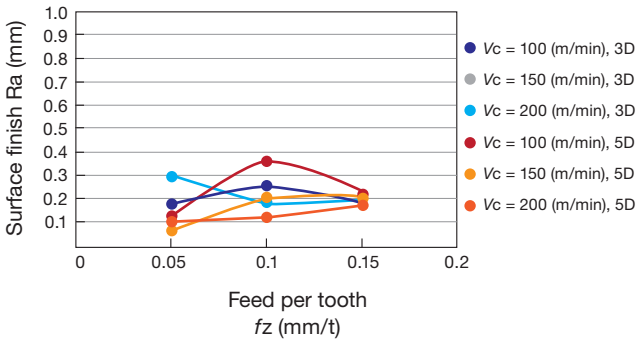


Tool	: TRM-T7-R20-3, TRM-T7-R20-5
Head	: HRM-18.000-BL-T7 AH725
Workpiece material	: S55C, C55
Hole type	: Through
Pre hole diameter	: ø17.8
Hole depth	: *H* =30 mm
Coolant	: Internal

Hole diameter accuracy



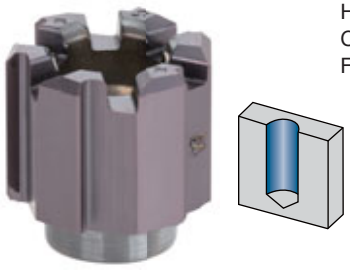
Surface finish



Hole diameters machined with ReamMeister have exhibited minimum deviations at all cutting conditions, providing consistency in hole accuracy

TOOL LIFE

P



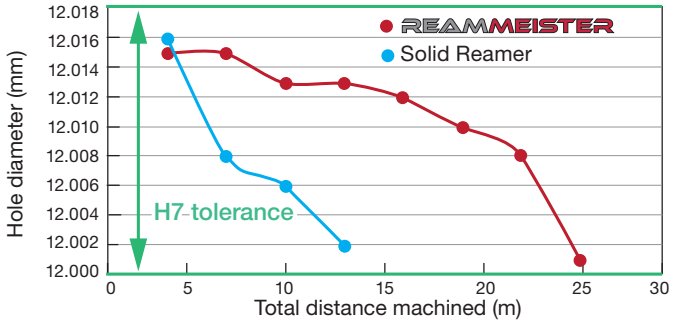
REAMMEISTER

Tool : TRM-T5-R16-3
Head : HRM-12.000-AS-T5 AH725
Cutting speed : *Vc* = 150 m/min
Feed per tooth : *fz* = 0.1 mm/t

Solid Reamer

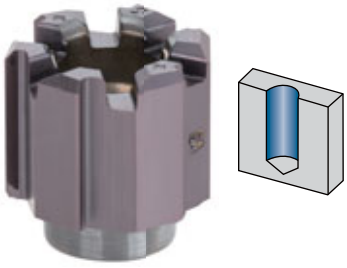
Tool : ø12.000 Solid Reamer (Uncoated)
Cutting speed : *Vc* = 50 m/min
Feed per tooth : *fz* = 0.1 mm/t

Workpiece material : S55C, C55
Hole type : Blind
Pre hole diameter : ø11.8
Hole depth : *H* =30 mm
Coolant : Internal

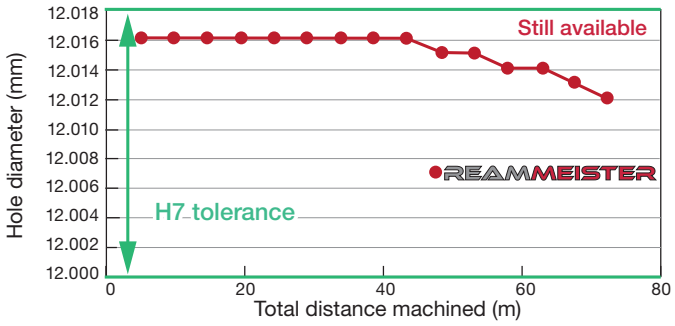


The tool life of ReamMeister is tripled even in high speed machining

K



Workpiece material : FCD600, GG60, 600-3
Hole type : Blind
Pre hole diameter : ø11.8
Hole depth : *H* =30 mm
Coolant : Internal



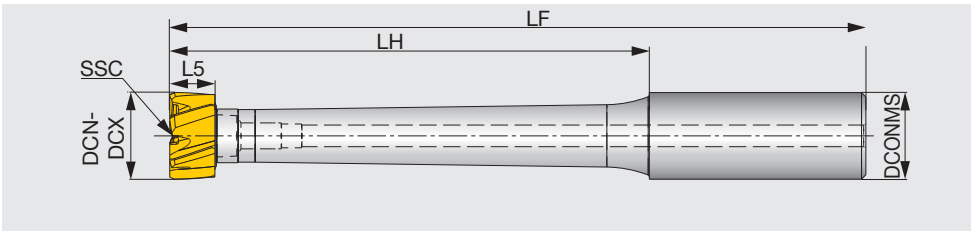
REAMMEISTER

Tool : TRM-T5-R16-3
Head : HRM-12.000-AS-T5 AH725
Cutting speed : *Vc* = 150 m/min
Feed per tooth : *fz* = 0.1 mm/t

Hole diameter reduction was small with ReamMeister even after machining 80 meters

TRM

Reamer tool



Designation	DCN	DCX	SSC	L/D	DCONMS	L5	LF	LH
TRM-T5-R16-1.5	11.5	13.5	T5	1.5	16	9.3	77.8	29.8
TRM-T6-R16-1.5	13.501	16	T6	1.5	16	9.4	81.5	33.5
TRM-T7-R20-1.5	16.001	20	T7	1.5	20	10.6	90.7	40.7
TRM-T8-R20-1.5	20.001	25.999	T8	1.5	20	12.8	101	51
TRM-T9-R32-1.5	26	32	T9	1.5	32	12.8	120.9	60.9
TRM-T5-R16-3	11.5	13.5	T5	3	16	9.3	97.8	49.8
TRM-T6-R16-3	13.501	16	T6	3	16	9.4	105.4	57.4
TRM-T7-R20-3	16.001	20	T7	3	20	10.6	120.6	70.6
TRM-T8-R20-3	20.001	25.999	T8	3	20	12.8	137.8	87.8
TRM-T9-R32-3	26	32	T9	3	32	12.8	167.1	107.1
TRM-T5-R16-5	11.5	13.5	T5	5	16	9.3	125	77
TRM-T6-R16-5	13.501	16	T6	5	16	9.4	137.4	89.4
TRM-T7-R20-5	16.001	20	T7	5	20	10.6	160.6	110.6
TRM-T8-R20-5	20.001	25.999	T8	5	20	12.8	187.8	137.8
TRM-T9-R32-5	26	32	T9	5	32	12.8	231.1	171.1
TRM-T5-R16-8	11.5	13.5	T5	8	16	9.3	165.5	117.5
TRM-T6-R16-8	13.501	16	T6	8	16	9.4	185.4	137.4
TRM-T7-R20-8	16.001	20	T7	8	20	10.6	220.6	170.6
TRM-T8-R20-8	20.001	25.999	T8	8	20	12.8	262.8	212.8
TRM-T9-R32-8	26	32	T9	8	32	12.8	327.1	267.1
TRMU-T5-R0.625-1.5	11.5	13.5	T5	1.5	15.875	9.3	77.7	29.7
TRMU-T6-R0.625-1.5	13.501	16	T6	1.5	15.875	9.4	81.5	33.5
TRMU-T7-R0.75-1.5	16.001	20	T7	1.5	19.05	10.6	90.7	40.6
TRMU-T8-R0.75-1.5	20.001	25.999	T8	1.5	19.05	12.8	101.1	51.1
TRMU-T9-R1.25-1.5	26	32	T9	1.5	31.75	12.8	120.9	61.0
TRMU-T5-R0.625-3	11.5	13.5	T5	3	15.875	9.3	97.8	49.8
TRMU-T6-R0.625-3	13.501	16	T6	3	15.875	9.4	105.4	57.4
TRMU-T7-R0.75-3	16.001	20	T7	3	19.05	10.6	120.4	70.6
TRMU-T8-R0.75-3	20.001	25.999	T8	3	19.05	12.8	137.7	87.6
TRMU-T9-R1.25-3	26	32	T9	3	31.75	12.8	167.1	106.9
TRMU-T5-R0.625-5	11.5	13.5	T5	5	15.875	9.3	125.0	77.0
TRMU-T6-R0.625-5	13.501	16	T6	5	15.875	9.4	137.4	89.4
TRMU-T7-R0.75-5	16.001	20	T7	5	19.05	10.6	160.5	110.5
TRMU-T8-R0.75-5	20.001	25.999	T8	5	19.05	12.8	187.7	137.7
TRMU-T9-R1.25-5	26	32	T9	5	31.75	12.8	231.1	171.2
TRMU-T5-R0.625-8	11.5	13.5	T5	8	15.875	9.3	165.4	117.3
TRMU-T6-R0.625-8	13.501	16	T6	8	15.875	9.4	185.4	137.4
TRMU-T7-R0.75-8	16.001	20	T7	8	19.05	10.6	220.5	170.7
TRMU-T8-R0.75-8	20.001	25.999	T8	8	19.05	12.8	262.9	212.9
TRMU-T9-R1.25-8	26	32	T9	8	31.75	12.8	327.2	267.0

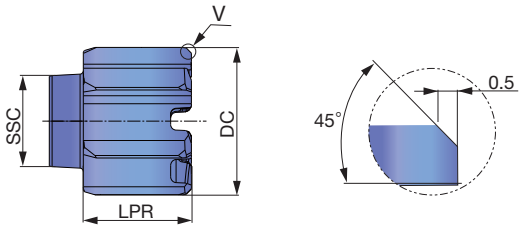
•Key and screw are included.
•Maximum effective reaming depth = Head diameter(mm) x L/D ratio.
Ex. For a reamer with ø12 mm: 12 mm x 3D = 36 mm

SPARE PARTS

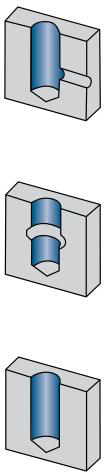

Designation	Screw	Key
TRM-T5-R16-1.5	SCR-TRM-T5	K-TRM-T5
TRM-T6-R16-1.5	SCR-TRM-T6	K-TRM-T6
TRM-T7-R20-1.5	SCR-TRM-T7	K-TRM-T7
TRM-T8-R20-1.5	SCR-TRM-T8	K-TRM-T8
TRM-T9-R32-1.5	SCR-TRM-T9	K-TRM-T9
TRM-T5-R16-3	SCR-TRM-T5	K-TRM-T5
TRM-T6-R16-3	SCR-TRM-T6	K-TRM-T6
TRM-T7-R20-3	SCR-TRM-T7	K-TRM-T7
TRM-T8-R20-3	SCR-TRM-T8	K-TRM-T8
TRM-T9-R32-3	SCR-TRM-T9	K-TRM-T9
TRM-T5-R16-5	SCR-TRM-T5	K-TRM-T5
TRM-T6-R16-5	SCR-TRM-T6	K-TRM-T6
TRM-T7-R20-5	SCR-TRM-T7	K-TRM-T7
TRM-T8-R20-5	SCR-TRM-T8	K-TRM-T8
TRM-T9-R32-5	SCR-TRM-T9	K-TRM-T9
TRM-T5-R16-8	SCR-TRM-T5	K-TRM-T5
TRM-T6-R16-8	SCR-TRM-T6	K-TRM-T6
TRM-T7-R20-8	SCR-TRM-T7	K-TRM-T7
TRM-T8-R20-8	SCR-TRM-T8	K-TRM-T8
TRM-T9-R32-8	SCR-TRM-T9	K-TRM-T9
TRMU-T5-R0.625-1.5	SCR-TRM-T5	K-TRM-T5
TRMU-T6-R0.625-1.5	SCR-TRM-T6	K-TRM-T6
TRMU-T7-R0.75-1.5	SCR-TRM-T7	K-TRM-T7
TRMU-T8-R0.75-1.5	SCR-TRM-T8	K-TRM-T8
TRMU-T9-R1.25-1.5	SCR-TRM-T9	K-TRM-T9
TRMU-T5-R0.625-3	SCR-TRM-T5	K-TRM-T5
TRMU-T6-R0.625-3	SCR-TRM-T6	K-TRM-T6
TRMU-T7-R0.75-3	SCR-TRM-T7	K-TRM-T7
TRMU-T8-R0.75-3	SCR-TRM-T8	K-TRM-T8
TRMU-T9-R1.25-3	SCR-TRM-T9	K-TRM-T9
TRMU-T5-R0.625-5	SCR-TRM-T5	K-TRM-T5
TRMU-T6-R0.625-5	SCR-TRM-T6	K-TRM-T6
TRMU-T7-R0.75-5	SCR-TRM-T7	K-TRM-T7
TRMU-T8-R0.75-5	SCR-TRM-T8	K-TRM-T8
TRMU-T9-R1.25-5	SCR-TRM-T9	K-TRM-T9
TRMU-T5-R0.625-8	SCR-TRM-T5	K-TRM-T5
TRMU-T6-R0.625-8	SCR-TRM-T6	K-TRM-T6
TRMU-T7-R0.75-8	SCR-TRM-T7	K-TRM-T7
TRMU-T8-R0.75-8	SCR-TRM-T8	K-TRM-T8
TRMU-T9-R1.25-8	SCR-TRM-T9	K-TRM-T9

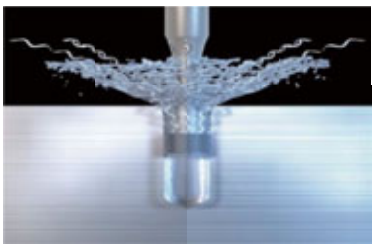
REAMER HEAD

HRM-AS



Designation	DC	AH725	SSC	LPR	CICT	Edge type	Flute type
HRM-11.501-AS-T5	11.501	●	T5	9.3	6	A	S
HRM-12.000-AS-T5	12	●	T5	9.3	6	A	S
HRM-13.000-AS-T5	13	●	T5	9.3	6	A	S
HRM-13.500-AS-T5	13.5	●	T5	9.3	6	A	S
HRM-14.000-AS-T6	14	●	T6	9.4	6	A	S
HRM-15.000-AS-T6	15	●	T6	9.4	6	A	S
HRM-16.000-AS-T6	16	●	T6	9.4	6	A	S
HRM-16.001-AS-T7	16.001	●	T7	10.6	6	A	S
HRM-17.000-AS-T7	17	●	T7	10.6	6	A	S
HRM-18.000-AS-T7	18	●	T7	10.6	6	A	S
HRM-19.000-AS-T7	19	●	T7	10.6	6	A	S
HRM-20.000-AS-T7	20	●	T7	10.6	6	A	S
HRM-20.001-AS-T8	20.001	●	T8	12.8	8	A	S
HRM-21.000-AS-T8	21	●	T8	12.8	8	A	S
HRM-22.000-AS-T8	22	●	T8	12.8	8	A	S
HRM-23.000-AS-T8	23	●	T8	12.8	8	A	S
HRM-24.000-AS-T8	24	●	T8	12.8	8	A	S
HRM-25.000-AS-T8	25	●	T8	12.8	8	A	S
HRM-26.000-AS-T9	26	●	T9	12.8	8	A	S
HRM-27.000-AS-T9	27	●	T9	12.8	8	A	S
HRM-28.000-AS-T9	28	●	T9	12.8	8	A	S
HRM-29.000-AS-T9	29	●	T9	12.8	8	A	S
HRM-30.000-AS-T9	30	●	T9	12.8	8	A	S
HRM-31.000-AS-T9	31	●	T9	12.8	8	A	S
HRM-32.000-AS-T9	32	●	T9	12.8	8	A	S
HRM-12.700-AS-T5	12.7	●	T5	9.3	6	A	S
HRM-15.875-AS-T6	15.875	●	T6	9.4	6	A	S
HRM-19.050-AS-T7	19.05	●	T7	10.6	6	A	S
HRM-25.400-AS-T8	25.4	●	T8	12.8	8	A	S
HRM-31.750-AS-T9	31.75	●	T9	12.8	8	A	S



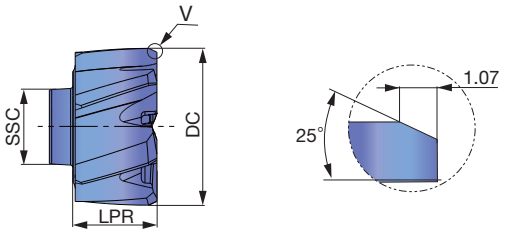


Head diameter range	Tolerance range of the head	Hole diameter tolerance (H7)
ø11.500 - ø18.000	+0.015 / +0.011	+0.018 / 0
ø18.001 - ø30.000	+0.017 / +0.013	+0.021 / 0
ø30.001 - ø32.000	+0.021 / +0.016	+0.025 / 0

Package quantity = 1 pcs.
●: Line up

- All standard heads are designed to achieve H7 hole tolerance.
- Head diameters are produced so that the hole diameter achieved is close to the max tolerance limit.

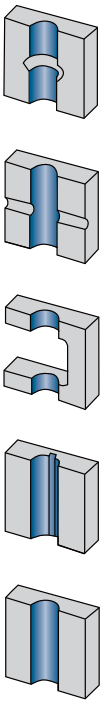
HRM-BL



Designation	DC	AH725	SSC	LPR	CICT	Edge type	Flute type
HRM-11.501-BL-T5	11.501	●	T5	9.3	6	B	L
HRM-12.000-BL-T5	12	●	T5	9.3	6	B	L
HRM-13.000-BL-T5	13	●	T5	9.3	6	B	L
HRM-13.500-BL-T5	13.5	●	T5	9.3	6	B	L
HRM-13.501-BL-T6	13.501	●	T6	9.4	6	B	L
HRM-14.000-BL-T6	14	●	T6	9.4	6	B	L
HRM-15.000-BL-T6	15	●	T6	9.4	6	B	L
HRM-16.000-BL-T6	16	●	T6	9.4	6	B	L
HRM-16.001-BL-T7	16.001	●	T7	10.6	6	B	L
HRM-17.000-BL-T7	17	●	T7	10.6	6	B	L
HRM-18.000-BL-T7	18	●	T7	10.6	6	B	L
HRM-19.000-BL-T7	19	●	T7	10.6	6	B	L
HRM-20.000-BL-T7	20	●	T7	10.6	6	B	L
HRM-20.001-BL-T8	20.001	●	T8	12.8	8	B	L
HRM-21.000-BL-T8	21	●	T8	12.8	8	B	L
HRM-22.000-BL-T8	22	●	T8	12.8	8	B	L
HRM-23.000-BL-T8	23	●	T8	12.8	8	B	L
HRM-24.000-BL-T8	24	●	T8	12.8	8	B	L
HRM-25.000-BL-T8	25	●	T8	12.8	8	B	L
HRM-26.000-BL-T9	26	●	T9	12.8	8	B	L
HRM-27.000-BL-T9	27	●	T9	12.8	8	B	L
HRM-28.000-BL-T9	28	●	T9	12.8	8	B	L
HRM-29.000-BL-T9	29	●	T9	12.8	8	B	L
HRM-30.000-BL-T9	30	●	T9	12.8	8	B	L
HRM-31.000-BL-T9	31	●	T9	12.8	8	B	L
HRM-32.000-BL-T9	32	●	T9	12.8	8	B	L
HRM-12.700-BL-T5	12.7	●	T5	9.3	6	B	L
HRM-15.875-BL-T6	15.875	●	T6	9.4	6	B	L
HRM-19.050-BL-T7	19.05	●	T7	10.6	6	B	L
HRM-25.400-BL-T8	25.4	●	T8	12.8	8	B	L

Head diameter range	Tolerance range of the head	Hole diameter tolerance (H7)
ø11.500 - ø18.000	+0.015 / +0.011	+0.018 / 0
ø18.001 - ø30.000	+0.017 / +0.013	+0.021 / 0
ø30.001 - ø32.000	+0.021 / +0.016	+0.025 / 0

Package quantity = 1 pcs.
●: Line up



- All standard heads are designed to achieve H7 hole tolerance.
- Head diameters are produced so that the hole diameter achieved is close to the max tolerance limit.

REAMMEISTER
TUNGALOY

STANDARD CUTTING CONDITIONS

Conversion table for feed per tooth

ISO	Workpiece materials	Cutting speed *Vc* (m/min)	Feed: *fz*(mm/t)			
			AS: Straight flute (for blind holes)		BL: Left hand flute (for through holes)	
			ø11.5 - ø16	ø16 - ø32	ø11.5 - ø16	ø16 - ø32
P	Low carbon steel (C<0.3) SS400, SM490, S25C, E275A, etc.	80 - 200	0.05 - 0.18	0.05 - 0.20	0.05 - 0.2	0.05 - 0.27
P	Carbon steel (C>0.3) S45C, S55C, C45, C55, etc.	80 - 150	0.05 - 0.15	0.05 - 0.18	0.05 - 0.18	0.05 - 0.25
P	Low alloy steel (C<0.3) SCM415, etc.	80 - 200	0.05 - 0.18	0.05 - 0.20	0.05 - 0.2	0.05 - 0.27
P	Alloy steel (C>0.3) SCM440, SCr420, 42CrMo4, 20Cr4 etc.	50 - 150	0.03 - 0.10	0.05 - 0.13	0.05 - 0.13	0.05 - 0.17
M	Stainless steel (Austenitic) SUS304, SUS316, X5CrNi18-9, X5CrNiMo17-12-3, etc.	20 - 40	0.03 - 0.10	0.03 - 0.13	0.05 - 0.13	0.05 - 0.17
M	Stainless steel (Martensitic and ferritic) SUS430, SUS416, X6Cr17, etc.	20 - 40	0.03 - 0.10	0.03 - 0.13	0.05 - 0.13	0.05 - 0.17
M	Stainless steel (Precipitation hardening) SUS630, X5CrNiCuNb16-4 etc.	20 - 40	0.03 - 0.10	0.03 - 0.13	0.05 - 0.13	0.05 - 0.17
K	Gray cast iron FC250, GG25, 250 etc.	100 - 250	0.05 - 0.18	0.05 - 0.20	0.05 - 0.2	0.05 - 0.27
K	Ductile cast iron FCD700, etc.	80 - 200	0.05 - 0.15	0.05 - 0.18	0.05 - 0.18	0.05 - 0.25
N	Aluminum alloy	100 - 300	0.05 - 0.18	0.05 - 0.20	0.05 - 0.2	0.05 - 0.27
S	High temp. alloy Inconel718 etc.	15 - 50	0.03 - 0.06	0.03 - 0.08	0.05 - 0.1	0.05 - 0.13
S	Titanium alloy Ti-6Al-4V etc.	30 - 60	0.03 - 0.10	0.03 - 0.13	0.05 - 0.13	0.05 - 0.17
H	Hardened steel Over 40HRC etc.	50 - 100	0.03-0.08	0.03 - 0.1	0.05-0.12	0.05 - 0.15

Conversion table for feed per revolution

ISO	Workpiece materials	Cutting speed *Vc* (m/min)	Feed: *f* (mm/rev)					
			AS: Straight flute (for blind holes)			BL: Left hand flute (for through holes)		
			ø11.5 - ø16 6 flutes	ø16.001 - ø20 6 flutes	ø20.001 - ø32 8 flutes	ø11.5 - ø16 6 flutes	ø16.001 - ø20 6 flutes	ø20.001 - ø32 8 flutes
P	Low carbon steel (C<0.3) SS400, SM490, S25C, E275A, etc.	80 - 200	0.3 - 1.08	0.3 - 1.2	0.4 - 1.6	0.3 - 1.2	0.3 - 1.62	0.4 - 2.16
	Carbon steel (C>0.3) S45C, S55C, C45, C55, etc.	80 - 150	0.3 - 0.9	0.3 - 1.08	0.4 - 1.44	0.3 - 1.08	0.3 - 1.5	0.4 - 2
	Low alloy steel (C<0.3) SCM415, etc.	80 - 200	0.3 - 1.08	0.3 - 1.2	0.4 - 1.6	0.3 - 1.2	0.3 - 1.2	0.4 - 2.16
	Alloy steel (C>0.3) SCM440, SCr420, 42CrMo4, 20Cr4 etc.	50 - 150	0.18 - 0.6	0.3 - 0.78	0.4 - 1.04	0.3 - 0.78	0.3 - 1.02	0.4 - 1.36
M	Stainless steel (Austenitic) SUS304, SUS316, X5CrNi18-9, X5CrNiMo17-12-3, etc.	20 - 40	0.18 - 0.6	0.18 - 0.78	0.24 - 1.04	0.3 - 0.78	0.3 - 1.02	0.4 - 1.36
	Stainless steel (Martensitic and ferritic) SUS430, SUS416, X6Cr17, etc.	20 - 40	0.18 - 0.6	0.18 - 0.78	0.24 - 1.04	0.3 - 0.78	0.3 - 1.02	0.4 - 1.36
	Stainless steel (Precipitation hardening) SUS630, X5CrNiCuNb16-4 etc.	20 - 40	0.18 - 0.6	0.18 - 0.78	0.24 - 1.04	0.3 - 0.78	0.3 - 1.02	0.4 - 1.36
K	Gray cast iron FC250, GG25, 250 etc.	100 - 250	0.3 - 1.08	0.3 - 1.2	0.4 - 1.6	0.3 - 1.2	0.3 - 1.62	0.4 - 2.16
	Ductile cast iron FCD700, etc.	80 - 200	0.3 - 0.9	0.3 - 1.08	0.4 - 1.44	0.3 - 1.8	0.3 - 1.62	0.4 - 2
N	Aluminum alloy	100 - 300	0.3 - 1.08	0.3 - 1.2	0.4 - 1.6	0.3 - 1.2	0.3 - 1.62	0.4 - 2.16
S	High temp. alloy Inconel718 etc.	15 - 50	0.18 - 0.36	0.18 - 0.48	0.24 - 0.64	0.3 - 0.6	0.3 - 0.78	0.4 - 1.04
	Titanium alloy Ti-6Al-4V etc.	30 - 60	0.18 - 0.6	0.18 - 0.78	0.24- 1.04	0.3 - 0.78	0.3 - 1.02	0.4 - 1.36
H	Hardened steel Over 40HRC etc.	50 - 100	0.18 - 0.48	0.18 - 0.6	0.24 - 0.8	0.3 - 0.72	0.3 - 0.9	0.4 - 1.2

FOR BEST PERFORMANCE

Note: Cutting tools may fracture during use. To avoid injury always use safety precautions such as gloves, shields, and eye protection.

First assembly

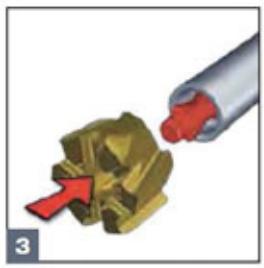
- Clean the tool holder pocket (Fig. 1)
- Clean the reamer head clamping cone
- Insert the clamping screw into the holder and rotate it 2-3 turns in the clockwise direction (Fig. 2)
- Clamp the reaming head on the screw. Please note that T8 and T9 connections can be assembled only in a specific position relative to the screw (rotate the head until locating the correct position) (Fig. 3)
- Manually rotate the head until feeling a slight torque
- Tighten with the special key (Fig. 4)
- Make sure there is no face gap between the tool holder and the reaming head (Fig. 5)

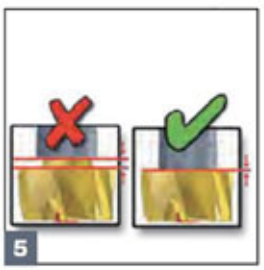
* For recommended torque for T5 through T9 connections, see the chart on the right

Indexing

- Release the reaming head with the key, turning in the counterclockwise direction until it rotates freely
- Rotate another one turn by hand
- Remove the reamer head from the tool. The clamping screw should remain inside!!!
- Clean the pocket of the tool holder (Fig. 1)
- Clean the cone on the new reamer head
- Clamp the reaming head on the screw. Please note that T8 and T9 connections can be assembled only in a specific position relative to the screw (rotate the head until locating the correct position) (Fig. 3)
- Manually rotate the reaming head. In the beginning it should rotate without the screw and then (after 1/6 of a turn) it should engage with the screw. Rotate until it sits firmly in the pocket. If the screw rotates together with the reaming head from the beginning, remove the reaming head and open the screw another one turn
- Manually rotate the head until feeling a slight torque
- Tighten with the special key (Fig. 4)
- Make sure that there is no face gap between the tool holder and the reaming head (Fig. 5)

* For recommended torque for T5 through T9 connections, see the chart on the right





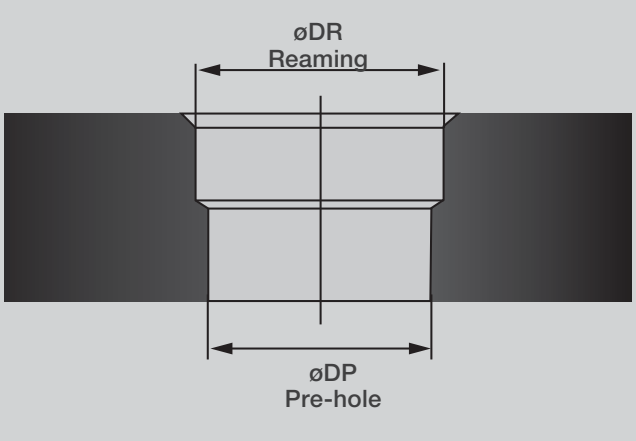
FOR BEST PERFORMANCE

Reaming allowance

- Reaming allowance Δ is the stock material to be removed in the reaming process. For a successful reaming operation, reaming allowance must be determined with proper considerations. Refer to the table below for appropriate reaming allowance for various hole diameters and materials. Standard reaming allowance, unless otherwise required, will be the target diameter+0.2 mm for all hole diameter ranges and materials.
- Reaming quality largely depends on the quality of the pre-drilled holes. Holes must have no diameter fluctuation and good straightness.

Δ : Reaming allowance

Δ = øDR - øDP



Workpiece material	Hole diemeter ø (mm)			
	11.500 - 13.500	13.501 - 16.000	16.001 - 26.000	26.001 - 32.000
Steel and cast Iron	Δ = 0.1 - 0.2	Δ = 0.1 - 0.3	Δ = 0.1 - 0.4	Δ = 0.2 - 0.5
Aluminum and brass	Δ = 0.15 - 0.25	Δ = 0.2 - 0.3	Δ = 0.2 - 0.5	Δ = 0.2 - 0.6

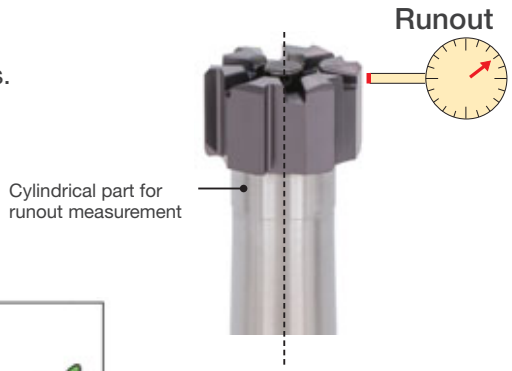
Recommended runout control

Runout control is important to achieve proper reaming process.

Best: less than 0.005

Acceptable: 0.005 - 0.015

Not acceptable: over 0.015

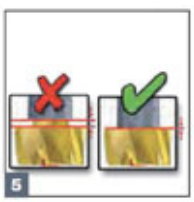


*** If an acceptable runout is not achieved, adjust the runout as follows.**

1. Make sure that there is no gap between the faces of the reaming head and the tool holder.

If there is a gap, use the key and tighten again until the gap disappears.

2. Measure the runout of the cylindrical part for runout measurement on the upper part of the tool to check the installation accuracy of the tool and the arbor. If the runout on the cylindrical surface of the tool is bad, remove the tool from the arbor, clean the tool and the arbor, then remount them and measure the runout.



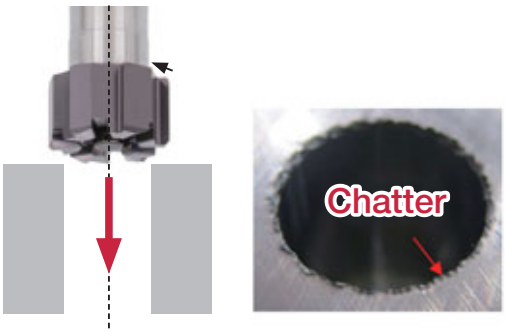
FOR BEST PERFORMANCE

Cautions when using 5D and 8D reamers

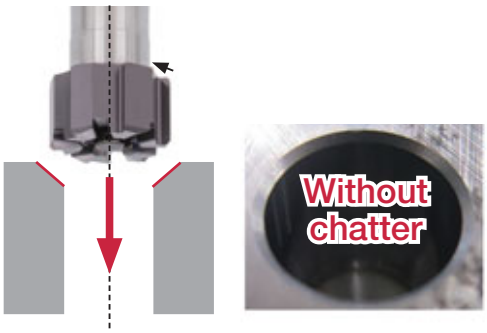
In long overhang applications with the length-to-diameter ratios of 5D to 8D, a reamer is prone to chatter due to low rigidity when entering the hole.
The following methods are recommended for process stability.

1. Provide internal chamfer (e.g. 45° x 0.5) on the hole entrance for smooth reamer engagement. (best option for using a 5D tool)

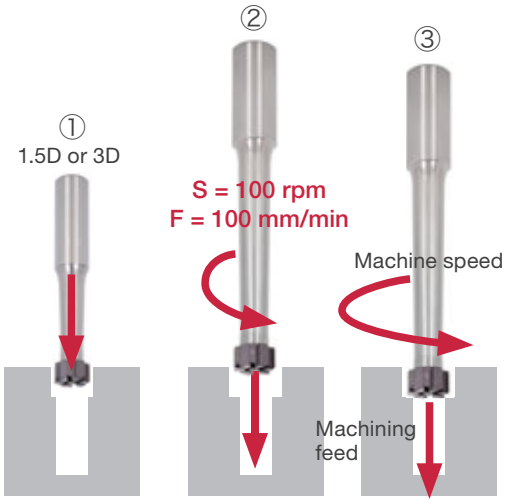
Without chamfer



With chamfer



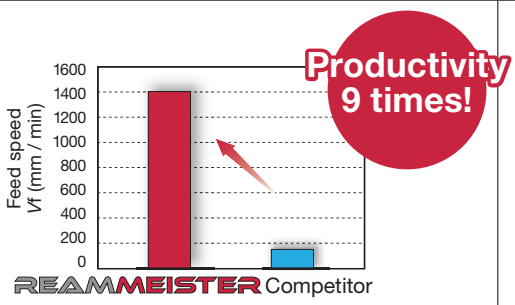
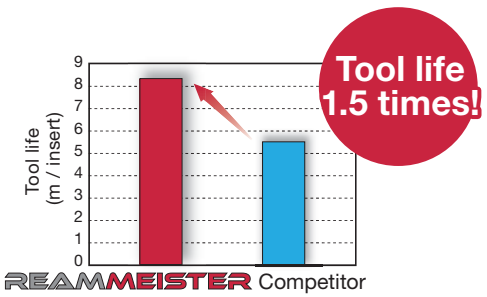
2. Make a guide hole with a shorter reamer (1.5D or 3D), then use a long overhang tool. (best option for using an 8D tool)



① Use a shorter reamer (1.5D or 3D) to make a guide hole with a depth of 0.5xD~1xD.
② Insert the long reamer (8D) in the guide hole rotating at a low speed (<100 rpm) and feeding slowly (at F=100) until the reamer reaches several millimeters from the bottom.
③ Rotate the reamer with the full machining speed and start feeding.

*Use the same diameter heads for both piloting and deep reaming processes

PRACTICAL EXAMPLES

	Workpiece type	Flange yoke	Flange yoke
	Drill	TRM-T9-R32-5	TRM-T9-R32-5
	Insert	HRM-27.000-BL-T9	HRM-27.000-BL-T9
	Grade	AH725	AH725
	Workpiece material	FCD500 / GGG50 / 450-10S	S45C / C45
		 K	 P
Cutting conditions	Cutting speed: *Vc* (m/min)	100	90
	Feed : *f* (mm/rev)	1.2	0.8
	Feed speed : *Vf* (mm/min)	1415	850
	Drilling depth : *H* (mm)	20	15
	Machine	Horizontal M/C	Horizontal M/C
	Coolant	Internal	Internal
	Results	 Higher cutting speed and feed rates are attainable with ReamMeister over current brazed reamer due to coated insert and optimal edge geometry. 9 times higher productivity is possible with ReamMeister.	 Higher cutting speed and feed rates are attainable with ReamMeister over current brazed reamer due to coated insert and optimal edge geometry. 1.5 times longer tool life is possible with ReamMeister.

MEMO

Check our site and our App to get more info!

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