Member IMC Group Tungaloy

SM TOOLS®

DrillLine

For more information

Exchangeable head drill

DRILLMEISTER / ADDMEISTER DRILL

Tungaloy Report No. 412-G

Head exchangeable drill for superior drilling performance

Expanded DMM heads for stainless steel and exotic material

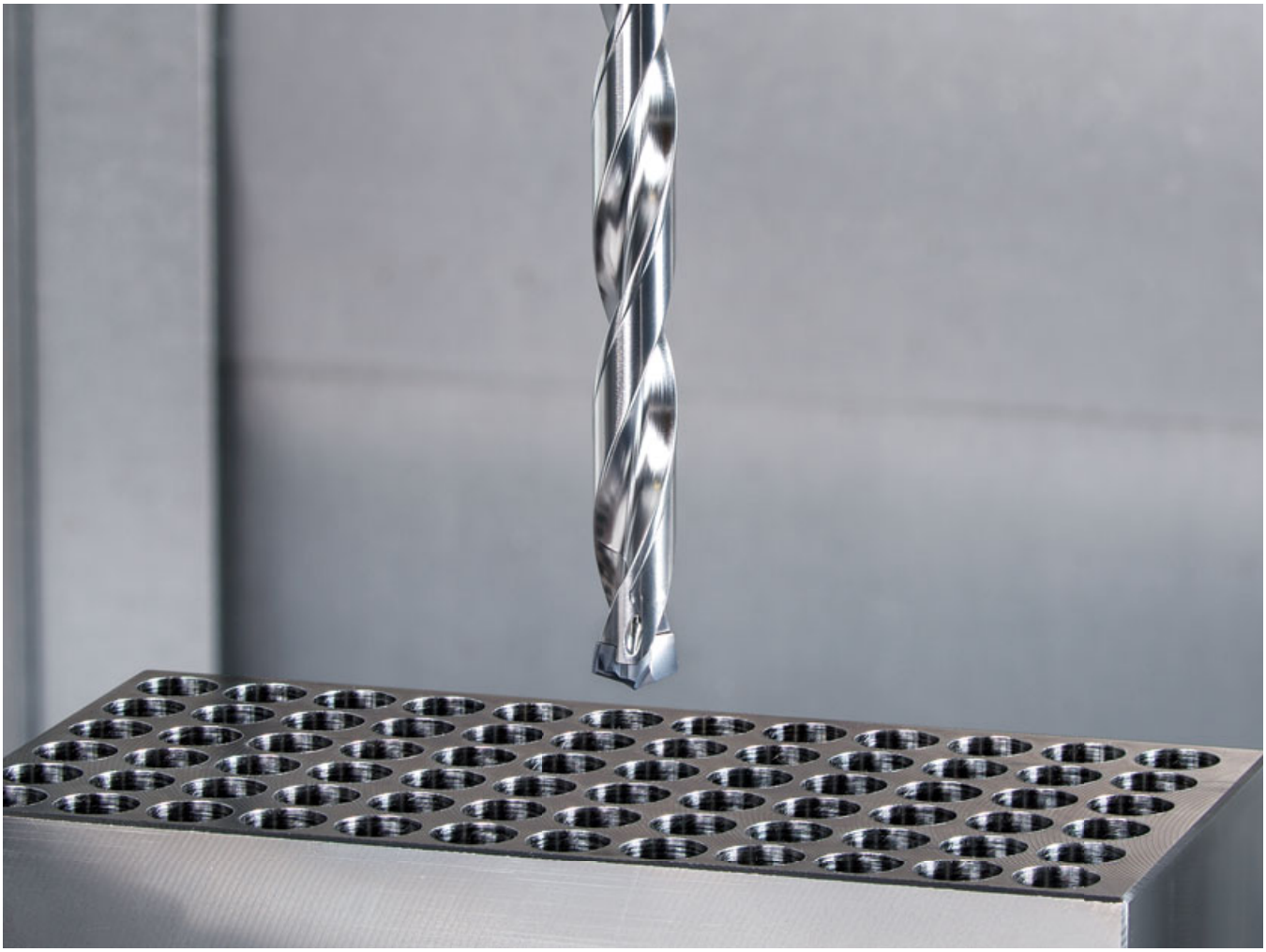
TUNGALOY ADDFORCE ACCELERATED LINES

TUNGALOY

ADDFORCE DRILL

ACCELERATED HOLEMAKING

DRILLMEISTER / ADDMEISTER DRILL

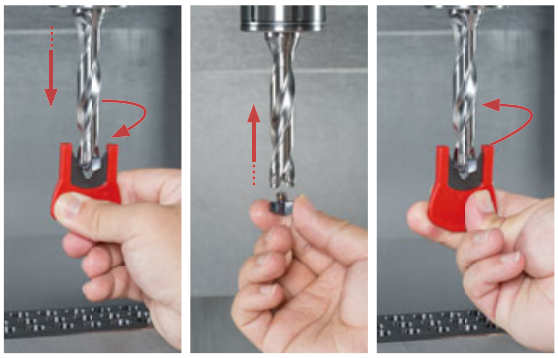


Exchangeable head drill system for superior drilling performance and long tool life.

Exchangeable head drills for unparalleled tool life and machining performance

ADDMEISTERDRILL
Tool diameter: ø4 - ø5.9 mm

DRILLMEISTER
Tool diameter: ø6 - ø25.9 mm



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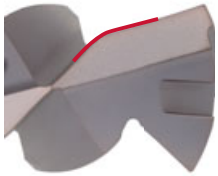
Video

DMM - Stainless steel & exotic materials

New

Smooth shape gash

Reinforced design



- Excellent tool life and cost reduction in stainless steel and exotic materials
- Large smooth R-Gash pocket enables smooth chip evacuation, reducing cutting edge load and extending tool life
- Pilot hole unnecessary up to max. 5xD depth

M S

Product info P9

DRILL HEAD SELECTION GUIDE

		General	New For stainless steel and exotic materials	High accuracy drilling Deep drilling	Flat drill with pilot edge	Reinforced design	Non-ferrous metal
Head		 DMP	 DMM	 DMC	 DMF / DMF-R	 DMH	 DMN
Drill diameter range (mm)		4 - 25.9	10 - 19.9	4 - 25.9	4 - 25.9	6 - 25.9	6.8 - 19.5
Workpiece material	P Steel	★	☆	★	★	★	
	M Stainless	☆	★	☆	☆	☆	
	K Cast iron	★	☆	★	★	★	
	N Non-ferrous	☆	☆	☆	☆		★
	S Superalloys	☆	★	☆	☆	☆	
	H Hard materials	☆	☆	☆	☆	★	
Drilling depth	1.5xD	●	●	●	●	●	●
	3xD	●	●	●	●	●	●
	5xD	●	●	●	●	●	●
	6xD	○	○	●	●	○	●
	8xD	○	○	●	●	○	●
	12xD	○	○	●	○	○	○
	IT8 - 9	☆	☆	★			
	IT9 - 10	★	★	★	★	★	★
	Hole position	☆	☆	★	☆		
	High hole straightness			★	☆		
Curvature surface 				★	☆		
Flat bottom hole 					★		
Uneven surface Entry / Exit 		☆	☆	☆	★		☆
Narrow depth through hole		☆	☆	☆		★	☆
External coolant 		★	★	☆	☆	☆	
Edge fracture 						★	

● : Possible to drill without pre-hole ★ : First choice
○ : Pre-hole operation is recommended ☆ : Second choice

● IT (International Tolerance) Grades

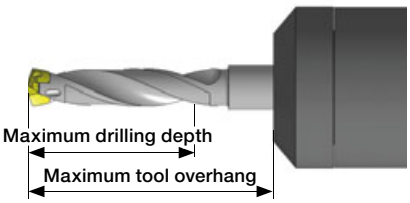
Basic size (mm)		International tolerance grade			
		IT7	IT8	IT9	IT10
>	≤	(μm)			
3	6	12	18	30	48
6	10	15	22	36	58
10	18	18	27	43	70
18	30	21	33	52	84

DRILL BODY SELECTION GUIDE

● TID

Flange type

Cylindrical type



Note: Only for round shank

Maximum drilling depth	Maximum tool overhang	Shank type	Drill diameter range (mm)	Tool holder					Page
				Hydro chuck	Collet chuck	Power chuck	Side lock	Side lock sleeve	
1.5xD	-	Flange	ø6 ø25.9		○	○	○	○	20
2xD	4xD	Cylindrical	ø6 ø16.9	○	○	○			24
3xD	-	Flange	ø6 ø25.9		○	○	○	○	21
	4xD	Cylindrical	ø4 ø5.9	○	○	○			19
3.5xD	6xD	Cylindrical	ø6 ø19.9	○	○	○			25
5xD	-	Flange	ø6 ø25.9		○	○	○	○	22
	6xD	Cylindrical	ø4 ø5.9	○	○	○			19
6xD	9xD	Cylindrical	ø6 ø19.9	○	○	○			26
8xD	-	Flange	ø7 ø25.9		○	○	○	○	23
	11xD	Cylindrical	ø6 ø19.9	○	○	○			27
12xD	-	Cylindrical	ø8 ø25.9	○	○	○			28

● TIDC

Maximum drilling depth	Maximum tool overhang	Shank type	Drill diameter range (mm)	Tool holder					Page
				Hydro chuck	Collet chuck	Power chuck	Side lock	Side lock sleeve	
3xD	-	Cylindrical + Flat	ø7.5 ø19.9		○	○	○	○	29
5xD	-	Cylindrical + Flat	ø7.5 ø19.9		○	○	○	○	30

● TID-M, TID-S

Maximum drilling depth	Maximum tool overhang	Shank type	Drill diameter range (mm)	Page
2xD	-	TungMeister	ø6.5 ø10.9	33
2xD	-	TungFlex	ø6 ø14.9	33
3xD	-	TungFlex	ø6 ø18.9	34

● TID**A**M

Maximum drilling depth	Maximum tool overhang	Shank type	Drill diameter range (mm)	Page
25mm 40mm	-	TungFlex	ø6.5 ø16.9	35

● TID**TT**

Maximum drilling depth	Maximum tool overhang	Shank type	Drill diameter range (mm)	Page
3xD	-	TinyMini-Turn	ø4 ø8.4	21

Tool body variations

TID-F...

- Constant tool length due to flange support
- Flat for side-lock clamping

TID-R...

- Tool overhang to be adjusted more freely within shank length
- Perfectly suitable for hydro holders

TID-R..E

- Economical option for external coolant environment
- Tool overhang to be adjusted more freely within shank length

TID-M, TID-S

- Modular bodies compatible with 2xD and 3xD hole depths
- TungFlex and TungMeister connections
- Ensures stable machining even with long overhangs

TIDC

- Tools have peripheral flats for correct clamping of the chamfering inserts when assembled with TIDCF holder
- Flat for side-lock clamping

TID**A**M

- Modular drill bodies with chamfering inserts for tap drill hole processing
- Tung Flex modular body
- Compatible with various overhang lengths when combined with the shank

TIDCF

- Drilling and chamfering in one shot
-Three different chamfering angles are available on the same holder.

TIDCF

TID**TT**

- Dedicated for TinyMini-Turn sleeve
- Application for Swiss type machine and small lathe

BLM sleeve

- Dedicated sleeves for automatic lathes and small lathes
- Designed for use in combination with TID-F

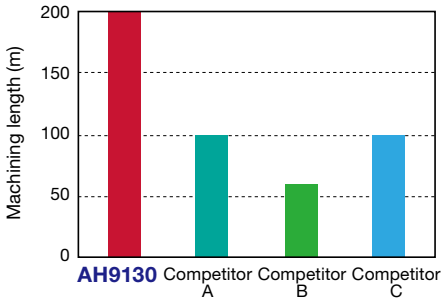
A single drill body can hold a range of drill heads with various geometries and sizes. Drill heads are available in 0.1 mm increments.

New

DMP	DMC	DMF	DMF-R	DMH	DMN	DMM
						
General	High accuracy drilling Deep drilling	Flat drill with pilot edge		Reinforced design	Non-ferrous metal	For stainless steel and exotic materials

Dedicated grades achieve outstanding tool life for drilling

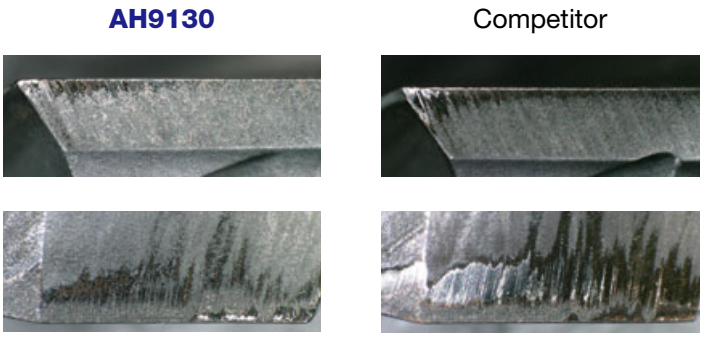
■ Tool life machining carbon steel (S55C / C55)



P

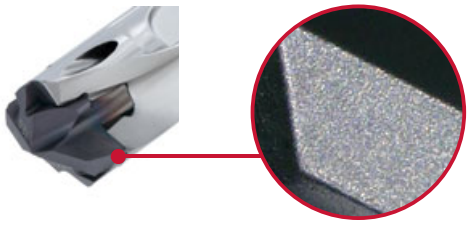
Tool : ø14 mm, L/D = 5
Cutting speed : *Vc* = 100 m/min
Feed : *f* = 0.25 mm/rev
Hole depth : *H* = 60 mm (Blind hole)

■ Edge damage after 100 m machined



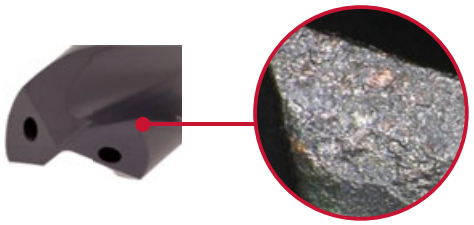
Ensures long tool life and wear predictability

Margin of DrillMeister head



- Cutting head is always new and reliable
- Optimized coating thickness provides long tool life
- Constant coating quality provides superior tool life predictability

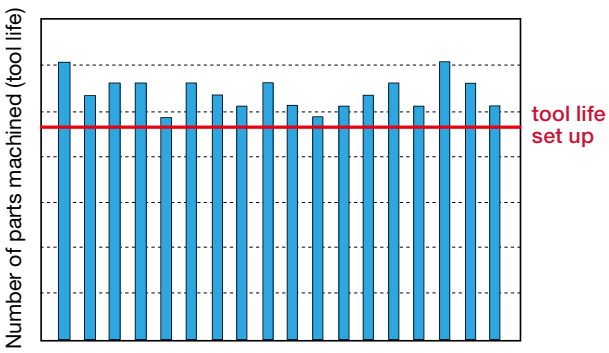
Margin of solid carbide drill (after reconditioning)



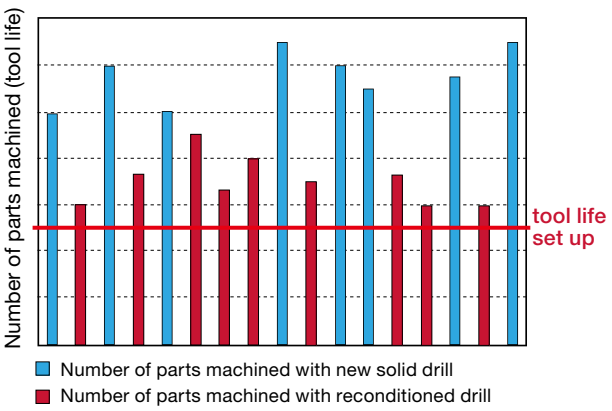
- Excess coating thickness due to multiple re-coating processes
- Fragile coating layer due to excess re-coating
- Result: unpredictable tool life

Stable tool life

■ Tool life fluctuations of DrillMeister



■ Tool life fluctuations of solid carbide drills

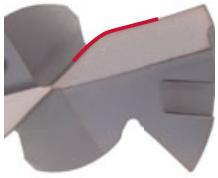


DMM - Stainless steel & exotic materials

New

Smooth shape gash

Reinforced design



- Excellent tool life and cost reduction in stainless steel and exotic materials
- Large smooth R-Gash pocket enables smooth chip evacuation, reducing cutting edge load and extending tool life
- Pilot hole unnecessary up to max. 5xD depth

Compact chips form in stainless steel — enabling high productivity

DRILLMEISTER DMM

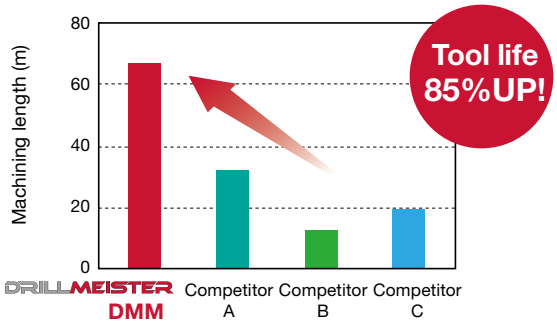
Competitor A

Competitor B

M

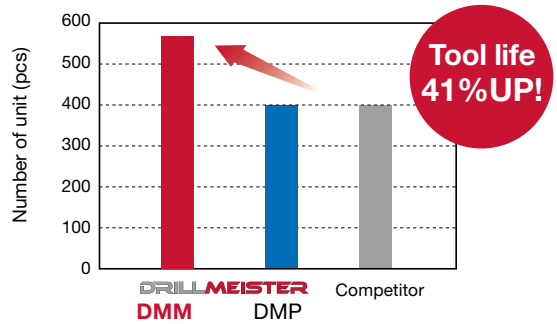
Tool	: ø14 mm, L/D = 5
Workpiece material	: SUS304
Cutting speed	: *Vc* = 60 m/min
Feed	: *f* = 0.18 mm/rev
Hole depth	: *H* = 60 mm
Coolant	: Wet (Internal)

Superior tool life and cost reductions



M

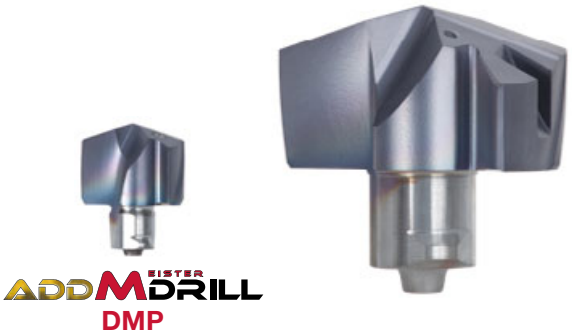
Tool	: ø14 mm, L/D = 5
Drill head	: DMM140
Grade	: AH9130
Workpiece material	: SUS304 / X5CrNi18-9
Cutting speed	: *Vc* = 60 m/min
Feed	: *f* = 0.18 mm/rev
Hole depth	: *H* = 50 mm
Coolant	: Wet (Internal)



S

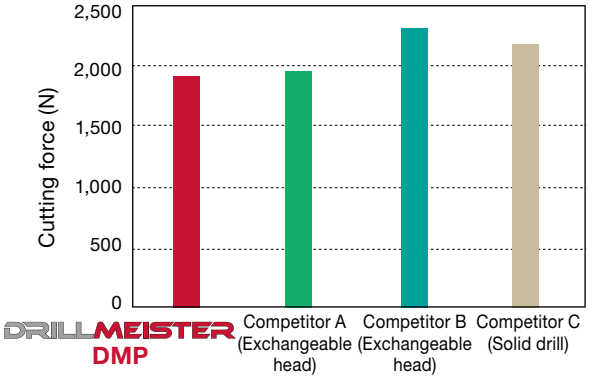
Tool	: ø12 mm, L/D = 5
Drill head	: DMM120
Grade	: AH9130
Workpiece material	: Ni base alloy
Cutting speed	: *Vc* = 23 m/min
Feed	: *f* = 0.1 mm/rev
Hole depth	: *H* = 12 mm
Coolant	: Wet (Internal)
Machine	: lathe

DMP - General purpose



- General drill head with 140° point angle suitable for all types of materials.
- Smooth radius edge honing provides low cutting force and long tool life

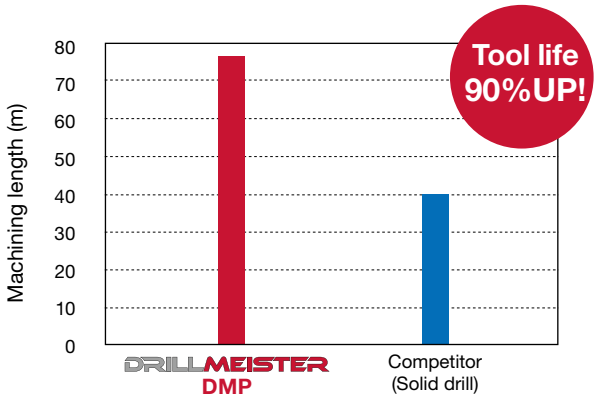
Low cutting force ensures stable drilling



P

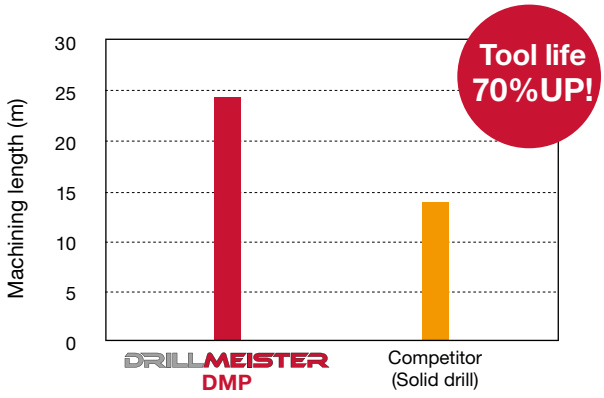
Tool	: ø12 mm, L/D = 3
Drill head	: DMP120
Grade	: AH9130
Workpiece material	: S55C / C55
Cutting speed	: *Vc* = 120 m/min
Feed	: *f* = 0.2 mm/rev
Hole depth	: *H* = 30 mm
Coolant	: Wet

Long tool life in any type of material



P

Tool	: TID160F20-3
Drill head	: DMP167
Grade	: AH9130
Workpiece material	: S20C / C20
Cutting speed	: *Vc* = 110 m/min
Feed	: *f* = 0.35 mm/rev
Hole depth	: *H* = 20 mm
Coolant	: Wet



M

Tool	: TID115F16-3
Drill head	: DMP115
Grade	: AH9130
Workpiece material	: SUS304 / X5CrNiMo
Cutting speed	: *Vc* = 50 m/min
Feed	: *f* = 0.2 mm/rev
Hole depth	: *H* = 40 mm
Coolant	: Wet

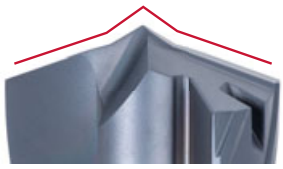
DMC - High accuracy drilling

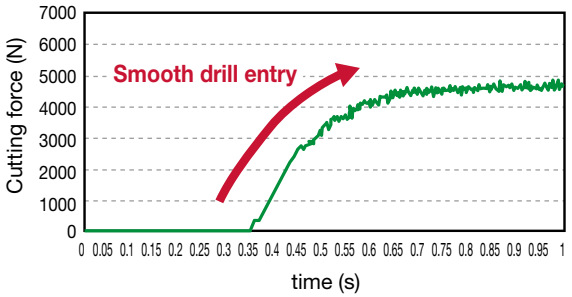
*DMC040 - 059 is single margin

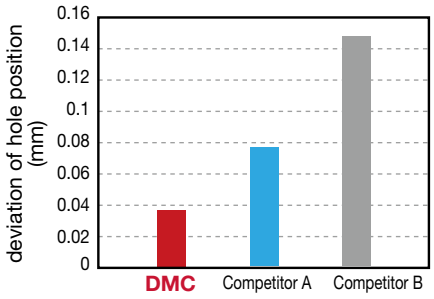
- Innovative self-centering geometry for smooth drilling and accurate hole tolerance
- No pre-drilling required in 12xD drilling operation
- Double margins provide superior surface finish and hole drilling straightness

Smooth drill entry provides accurate hole position

Self-centering profile

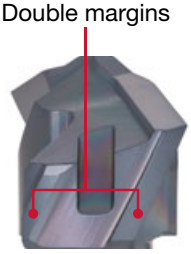




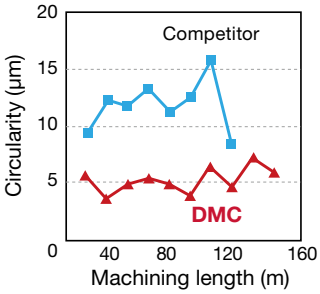


Excellent hole accuracy and surface finish

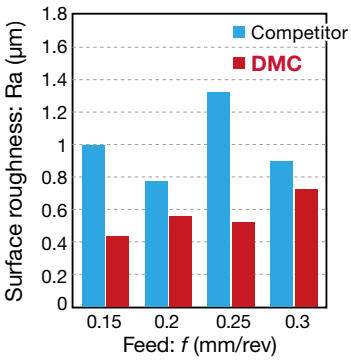
Double margins



■ Circularity



■ Surface roughness



P

Tool	: ø14 mm, L/D = 5
Workpiece material	: S55C / C55
Cutting speed	: *Vc* = 100 m/min
Feed	: *f* = 0.25 mm/rev
Measured at	: 30 mm

Non pre-machining requirement even over 12xD

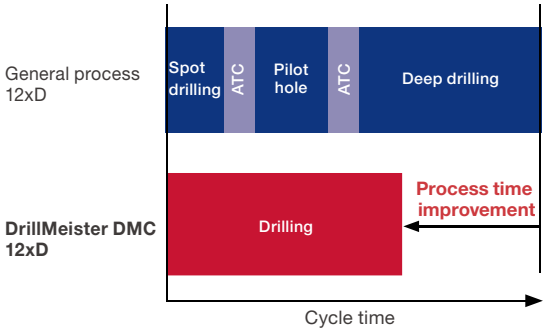
DRILLMEISTER

DMC

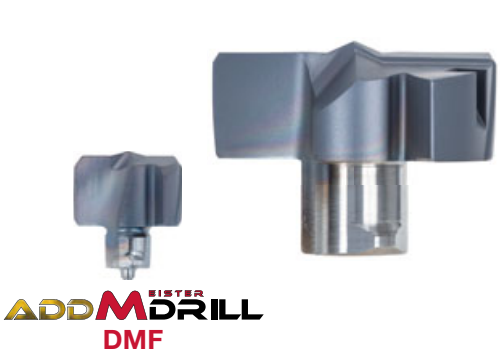
Competitor

P

Tool	: ø13 mm, L/D = 12 (No pilot hole)
Workpiece material	: S55C / C55
Cutting speed	: *Vc* = 100 m/min
Feed	: *f* = 0.3 mm/rev

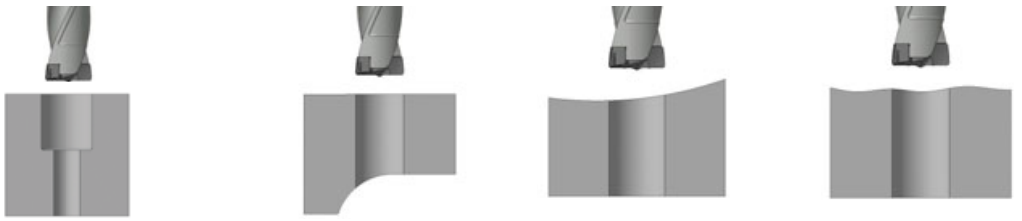


DMF - Flat edge design with pilot edge



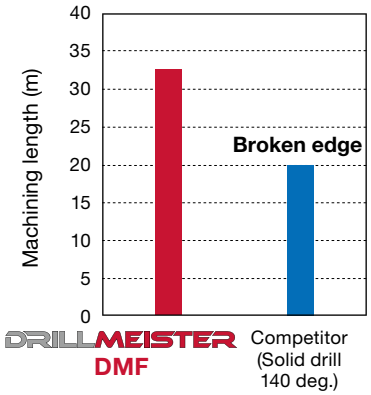
- Ideal solution for counterboring, bolt heads and pre-hole of internal turning operation
- Significantly reduced radial forces ensure stable drilling for complex surfaces at drill entry and exit
- Stable drilling with long overhang up to 8xD without pre-hole

Solution for complex hole making processes



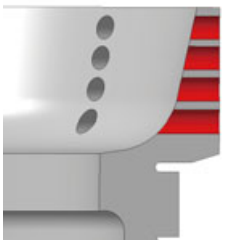
Counterboring for bolt holes	Uneven exit	Uneven drill entry	Rough surface
ADDMEISTERDRILL	DRILLMEISTER		

Stable tool life in uneven surface entry and exit



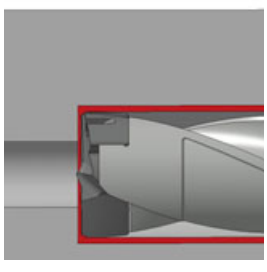
K

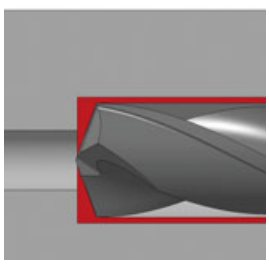
Tool	: ø12.6 mm, L/D = 3.5
Drill head	: DMF126
Grade	: AH9130
Workpiece material	: FCD450 / GGG45 / 450-10S
Cutting speed	: *Vc* = 60 m/min
Feed	: *f* = 0.3 mm/rev / Exit: 0.06 mm/rev
Hole depth	: *H* = 46 mm
Coolant	: Wet

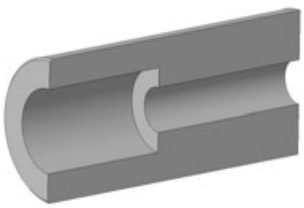


Ideal option for pre-hole for internal turning

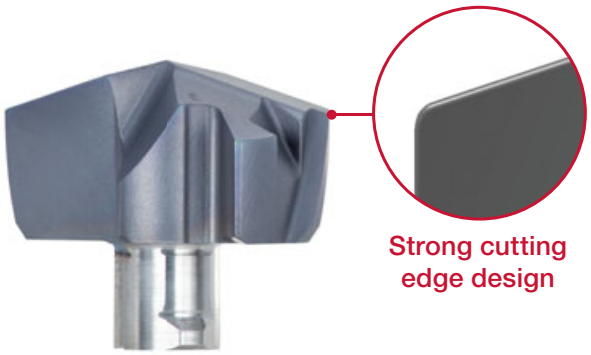
Use a DMF drill head to create a starter hole for internal turning. Its flat edges leave consistent and minimum stock to remove, compared with solid carbide drills with an angled tip, for the following finishing process.





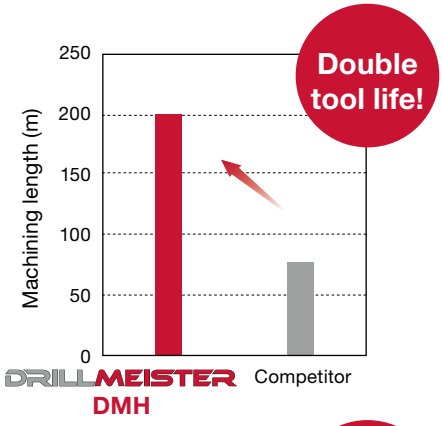


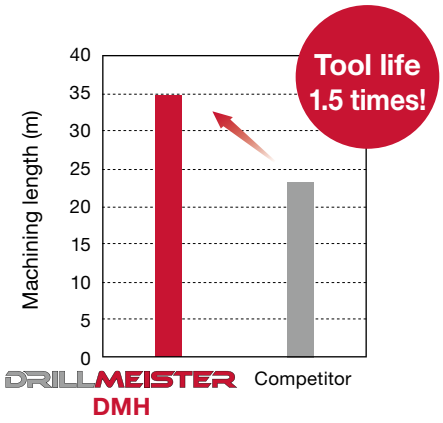
DMH - Fracture resistance head



- Solution for corner edge fracture
- The reinforced drill edge design protects the head's corners from the damaging impact of recoiling walls and weak fixtures
- Ideal option for low rigidity workpiece or machine

Longer tool life without edge fracture





P

Tool	: ø13.7 mm, L/D = 3
Drill head	: DMH137
Grade	: AH9130
Workpiece material	: High carbon steel
Cutting speed	: *Vc* = 90 m/min
Feed	: *f* = 0.3 mm/rev
Hole depth	: *H* = 20 mm
Coolant	: Wet (External)

H

Tool	: ø10.2 mm, L/D = 3
Drill head	: DMH102
Grade	: AH9130
Workpiece material	: Tool steel (40HRC)
Cutting speed	: *Vc* = 54.5 m/min
Feed	: *f* = 0.18 mm/rev
Hole depth	: *H* = 23 mm
Coolant	: Wet (Internal)

Solution for improved tool life, especially for shallow through-holes

Hub

Knuckle

Diff. case

Brake disc

DMN - Sharp edge design for non-ferrous metals

Sharp and uncoated cutting edge design prevents built-up edge and provides good chip evacuation during drilling of non-ferrous metal.

CHIP CONTROL

Aluminium alloy (A5052)

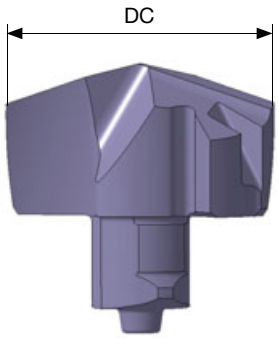
Aluminium alloy casting (ADC12)

N

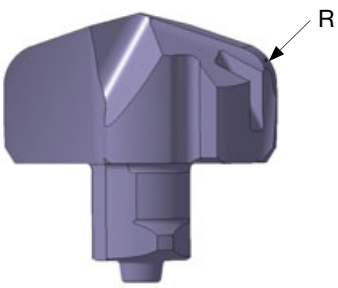
Tool	: ø13.7 mm, L/D = 5
Drill head	: DMN137
Grade	: KS15F
Cutting speed	: *Vc* = 200 m/min
Feed	: *f* = 0.4 mm/rev
Hole depth	: *H* = 40 mm
Coolant	: Wet

Tailor made drill head

- Special drill diameters in 0.01 mm increments can be produced upon request for each type of head
- Special edge design can be produced upon request



Ex. DMP1902 AH9130 (ø19.02 + 0.018 / 0)
DMC1332 AH9130 (ø13.32 + 0.018 / 0)
DMF0928 AH9130 (ø9.28 + 0.018 / 0)



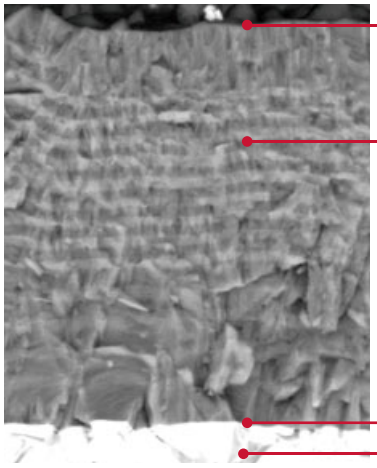
Ex. Radius shoulder design

GRADES

Latest coating optimized for extended tool life

AH9130

- Unique nano-multilayered coating is made possible by Tungaloy's latest coating technology, providing 3 principal features
- This coating achieves highly-balanced wear resistance and chipping resistance, also has acid resistance, resistance to dissolution, and high adhesion strength



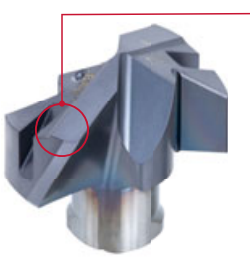
Resistance to built-up edge
Coating layer to resist built-up edge

Resistance to wear, oxidation, and fracture
- 2 coating layers for wear and oxidation resistance
- Layered alternatively to prevent crack from propagating to fracture

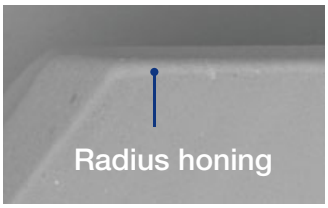
Strong coating-substrate adhesion
Coating is provided with strong adhesion between the coating layer and carbide substrate to prevent coating delamination

Substrate
Carbide substrate features wear and fracture resistance

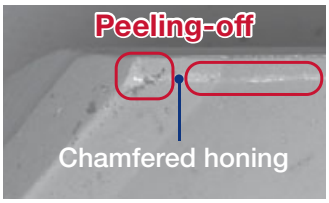
Adoption of R-honing enables stable coating file all the way to the cutting-edge tip



No peeling-off



DRILLMEISTER
DMP



Competitor

DRILLMEISTER TOOL COST REDUCTION CALCULATOR

This calculator allows you to analyze the benefits of switching from your current solid drill to our head exchangeable drill, DrillMeister.
By entering values in the following fields, you can calculate the expected tool life of DrillMeister for the same tool cost you spend on your current solid drill (break-even point) and the expected annual savings from the extended tool life.
Representative values are pre-filled in each field, but please modify them according to your situation and check the results.

Link

Ex.

Current Solid Drill

*required fields

Currency	USD / EUR	
Drill diameter	* 10.0	mm
Hole depth	* 50	mm
Purchase price of current solid drill	* 72.00	USD
Regrinding frequency	* 5	time(s)
Regrinding/recoating cost	* 15.00	USD per regrinding/recoating

Current Tool Life

Tool life in number of holes	* 1000	hole(s)
Tool life in machining length	50 m	

Discount Rate for Tools

Discount rate	* 40	%

- Please enter the discount rate that is applied to the standard price when you purchase tools from your tool supplier.
- The discount rate represents the percentage of how much the purchase price is discounted compared to the standard price. A range of 30-60% is a general guideline.
- For exact values, please contact your tool supplier.

Machined Parts and Production Conditions

Monthly production quantity of parts using the drill	* 10000	pieces per month
Number of holes in one part	* 4	hole(s) per part

>>>

You will be able to save...

Tool Cost of Current Solid Drill

Tool cost per hole of current tool	0.025 USD
Annual tool cost of current tool	11,760 USD per year

Recommended Items with DrillMeister

Recommended head description	DMP100 AH725 / DMP100 AH9130
Recommended drill holder description	TID100F16-5

Break-Even Point for Switching to DrillMeister

Tool life in number of holes for the same tool cost of the current solid drill	1,918 holes
(Tool life in drilling length for the same tool cost of the current solid drill)	96 m

* Click here to see examples of extended tool life with DrillMeister

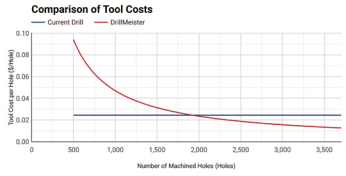
Tool Cost Reduction Target and Effect

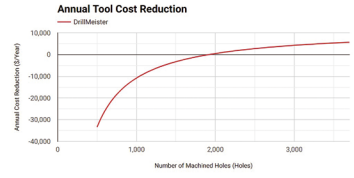
When aiming to reduce tool cost by **30%** compared to the current solid drill

Required tool life in number of holes	2,741 holes
(Required tool life in drilling length)	137 m
Annual cost reduction	3,528 USD per year

When aiming to reduce tool cost by **50%** compared to the current solid drill

Required tool life in number of holes	3,837 holes
(Required tool life in drilling length)	192 m
Annual cost reduction	5,880 USD per year





Export the result

Notes and Disclaimers

- The tool cost calculation for DrillMeister assumes no regrinding or recoating.
- The tool life of the drill body of DrillMeister (Head dia. ø6.0 – 25.9) is calculated assuming the drill body will be replaced after using 30 drill heads.
- The tool life of the drill body of AddMeisterDrill (Head dia. ø4.0 – 5.9) is calculated assuming the drill body will be replaced after using 10 drill heads.
- The simulation results do not guarantee the actual effects. Please note that the actual effects may vary depending on individual circumstances.

COMPARISON AGAINST OTHER TYPES OF HOLE MAKING TOOLS

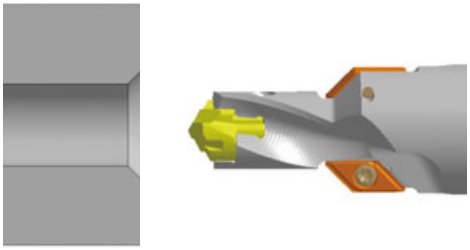
	ADDMEISTER DRILL DRILLMEISTER	Screw lock type Exchangeable drill	Solid carbide drill	Indexable insert type drill
Number of effective edge	2	2	2	1
Productivity	Excellent	High	High	Low
Hole diameter accuracy	IT8 - 10	IT8 - 10	IT8 - 10	IT11 - 12
Diameter variation	0.1mm increment	0.1 mm increment	0.1 mm increment	0.5 mm increment
Over 8xD drilling	Possible (with DMC head)	Pre-hole operation required	Pre-hole operation required	Special tool body required
Chip control	Excellent	Good chip control	Good chip control	Optimized by cutting condition and breaker
Hole straightness	Excellent (with DMC head)	Good	Excellent	Not good
Accessory of tool set up	Key only	Wrench and screw	-	Wrench and screw
Tool set up	15 sec.	1 min.	10 min.	5 min.
Tool position after set up	Constant	Constant	Always different	Constant
Tool life	Long and stable	Stable	After reconditioning tool life decreased by around 30%	Stable
Tool cost	Medium	Medium	High	Low
Reconditioning	None	None	Necessary	None
Inventory Management	Easy	Easy	Complex	Easy
Special diameter	Only need special drill head	Only need special drill head	Special drill body required	Special tool body required
Lathe machine	Stable	Stable	Misalignment will cause breakage	Stable

TAILOR MADE

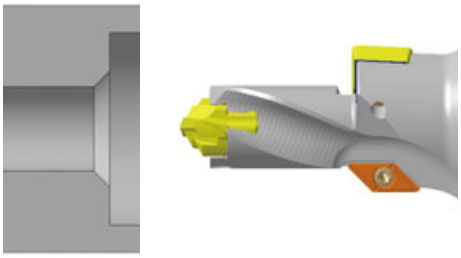
Special drill bodies, such as the one featuring chamfering or counter boring capabilities, will be available upon request.

Video

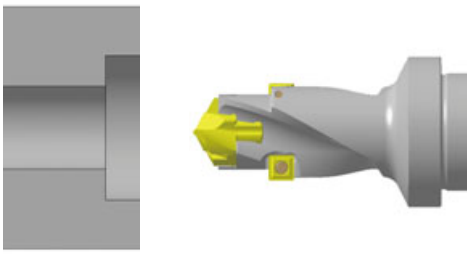
Drilling + Chamfering



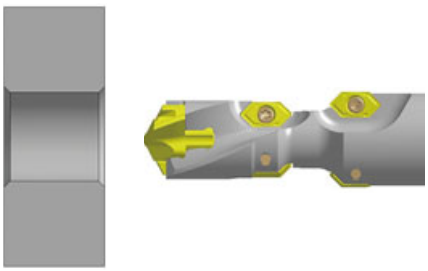
Drilling + Boring and Chamfering



Drilling + Boring



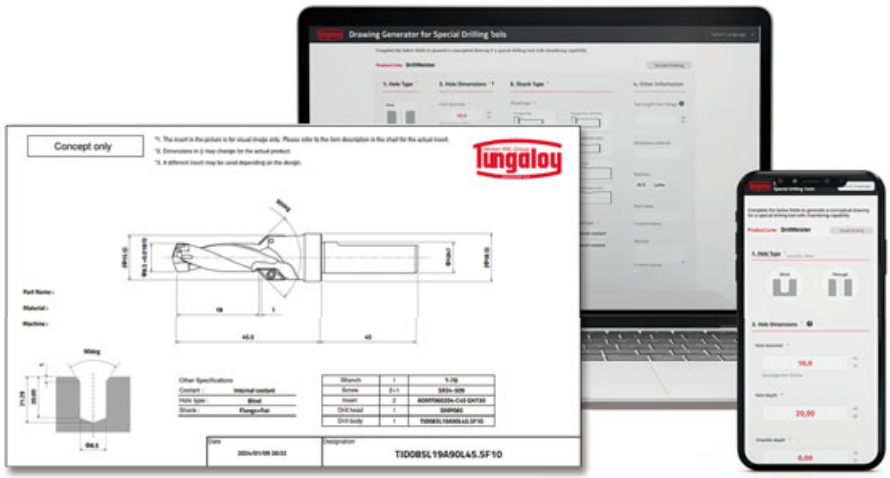
Drilling + double side chamfering



DRAWING GENERATOR FOR SPECIAL DRILLING TOOLS

Create simple drawings easily according to your needs.

Link

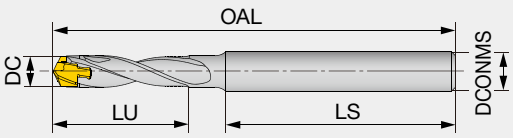


DRILL BODY

ADDMEISTER DRILL

TID-R L/D=3

Exchangeable head drill, L/D = 3, Cylindrical shank



Designation	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP	DMC	DMF		
TID040R06-3	4 - 4.4	6	13	35	57.7	58.1	57.55	4	DM*040 - DM*044
TID045R06-3	4.5 - 4.9	6	14	35	59.7	59.9	59.38	4.5	DM*045 - DM*049
TID050R06-3	5 - 5.4	6	16	35	61.4	61.8	61.17	5	DM*050 - DM*054
TID055R06-3	5.5 - 5.9	6	17	35	64	64.3	63.67	5.5	DM*055 - DM*059

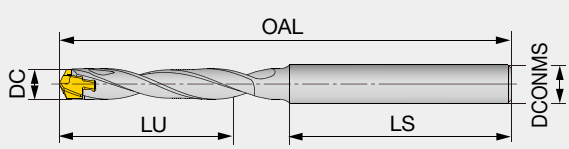
Tool diameter	Hole diameter tolerance*
ø4 - ø5.9	+0.04 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.

TID-R L/D=5

Exchangeable head drill, L/D = 5, Cylindrical shank



Designation	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP	DMC	DMF		
TID040R06-5	4 - 4.4	6	21	35	65.7	66.1	65.55	4	DM*040 - DM*044
TID045R06-5	4.5 - 4.9	6	23	35	68.7	68.9	68.38	4.5	DM*045 - DM*049
TID050R06-5	5 - 5.4	6	26	35	71.3	71.6	71.12	5	DM*050 - DM*054
TID055R06-5	5.5 - 5.9	6	28	35	74.2	74.5	73.82	5.5	DM*055 - DM*059

Tool diameter	Hole diameter tolerance*
ø4 - ø5.9	+0.05 / 0

*Just for reference

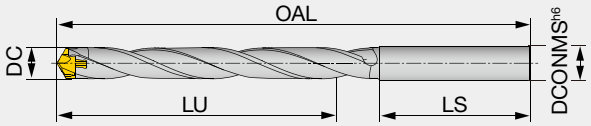
- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.

SPARE PARTS

Designation	Clamping key
TID040..., TID045...	K-TID4-4.99
TID050..., TID055...	K-TID5-5.99

TID-R L/D=8

Exchangeable head drill, L/D = 8, Cylindrical shank



Designation	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP	DMC	DMF		
TID045R06-8	4.5 - 4.9	6	37	35	82.2	82.4	81.93	4.5	DM*045 - DM*049
TID050R06-8	5 - 5.4	6	41	35	86.3	86.7	86.12	5	DM*050 - DM*054
TID055R06-8	5.5 - 5.9	6	45	35	90.7	91	90.37	5.5	DM*055 - DM*059

Tool diameter	Hole diameter tolerance*
ø4.5 - ø5.9	+0.05 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.
- DMC drill heads are recommended when using 8xD bodies.

SPARE PARTS

Designation	Clamping key
TID045...	K-TID4-4.99
TID050..., TID055...	K-TID5-5.99

TID-TT L/D=3

Exchangeable head drill, L/D = 3, "TinyMini-Turn" adaptation

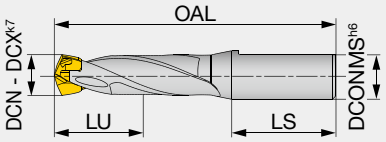


Fig. 1

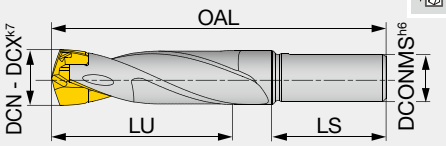


Fig. 2

Designation	DCX	DCN	DCONMS	LS	LU	OAL			Pocket size	Head	Fig.
						DMP	DMC	DMF			
TID040TT07-3	4 - 4.4	4	7	15	13	39.5	39.9	-	4	DM*040 - DM*044	1
TID045TT07-3	4.5 - 4.9	4.5	7	15	14	39.7	39.9	-	4.5	DM*045 - DM*049	1
TID050TT07-3	5 - 5.4	5	7	15	16	41.3	41.7	-	5	DM*050 - DM*054	1
TID055TT07-3	5.5 - 5.9	5.5	7	15	17	43.8	44.1	-	5.5	DM*055 - DM*059	1
TID060TT07-3	6 - 6.4	6	7	15	19	40.6	40.7	39.7	6	DM*060 - DM*064	1
TID065TT07-3	6.5 - 6.9	6.5	7	15	21	42.4	42.6	41.5	6.5	DM*065 - DM*069	1
TID070TT07-3	7 - 7.4	7	7	15	22	44.1	44.5	43.2	7	DM*070 - DM*074	1
TID075TT07-3	7.5 - 7.9	7.5	7	15	24	46.3	46.8	45.4	7	DM*074 - DM*079	2
TID080TT07-3	8 - 8.4	8	7	17	26	48.2	48.3	47.3	8	DM*080 - DM*084	2

Tool diameter	Hole diameter tolerance*
ø4 - ø8.4	+0.05 / 0

*Just for reference

Please check the TinyMini-Turn series information from below link

SPARE PARTS

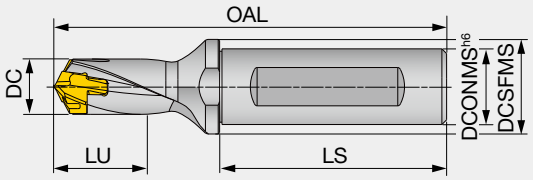
Designation	Clamping key 1	Clamping key 2
TID040..., TID045...	K-TID4-4.99	-
TID050..., TID055...	K-TID5-5.99	-
TID060... - TID080...	-	K-TID6-9.99

TINYMINI TURN

Sleeve information P43

TID-F L/D=1.5

Exchangeable head drill, L/D = 1.5, flange type



Designation	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TID060F12-1.5	6 - 6.4	12	16	10	45	67.9	68	67	6	DM*060 - DM*064
TID065F12-1.5	6.5 - 6.9	12	16	11	45	68.9	69.1	68	6.5	DM*065 - DM*069
TID070F12-1.5	7 - 7.4	12	16	12	45	70	70.4	69.1	7	DM*070 - DM*074
TID075F12-1.5	7.5 - 7.9	12	16	13	45	70.7	71.2	69.8	7	DM*075 - DM*079
TID080F12-1.5	8 - 8.9	12	16	14	45	72.3	72.4	71.4	8	DM*080 - DM*089
TID090F12-1.5	9 - 9.9	12	16	16	45	74.2	74.3	73.1	9	DM*090 - DM*099
TID100F16-1.5	10 - 10.9	16	20	17	48	79.1	79.7	77.7	10	DM*100 - DM*109
TID110F16-1.5	11 - 11.9	16	20	19	48	81	81.6	79.4	11	DM*110 - DM*119
TID120F16-1.5	12 - 12.9	16	20	20	48	82.8	83.4	81.2	12	DM*120 - DM*129
TID130F16-1.5	13 - 13.9	16	20	22	48	84.9	85.7	83	13	DM*130 - DM*139
TID140F16-1.5	14 - 14.9	16	20	24	48	89	89.8	87	14	DM*140 - DM*149
TID150F20-1.5	15 - 15.9	20	25	26	50	96	96.9	93.9	15	DM*150 - DM*159
TID160F20-1.5	16 - 16.9	20	25	27	50	99.1	100.1	96.8	16	DM*160 - DM*169
TID170F20-1.5	17 - 17.9	20	25	29	50	102.2	103.2	99.7	17	DM*170 - DM*179
TID180F25-1.5	18 - 18.9	25	32	30	56	111.3	112.4	108.5	18	DM*180 - DM*189
TID190F25-1.5	19 - 19.9	25	32	33	56	114.3	115.4	111.3	19	DM*190 - DM*199
TID200F25-1.5	20 - 20.9	25	32	34	56	117.4	118.6	115.1	20	DM*200 - DM*209
TID210F25-1.5	21 - 21.9	25	32	36	56	120.5	121.7	118	21	DM*210 - DM*219
TID220F25-1.5	22 - 22.9	25	32	37	56	123.6	124.8	120.9	22	DM*220 - DM*229
TID230F32-1.5	23 - 23.9	32	42	39	60	130.6	132	127.8	23	DM*230 - DM*239
TID240F32-1.5	24 - 24.9	32	42	40	60	133.7	135.1	130.7	24	DM*240 - DM*249
TID250F32-1.5	25 - 25.9	32	42	43	60	136.8	138.3	133.7	25	DM*250 - DM*259

Tool diameter	Hole diameter tolerance*
ø6 - ø17.9	+0.03 / 0
ø18 - ø25.9	+0.035 / 0

*Just for reference

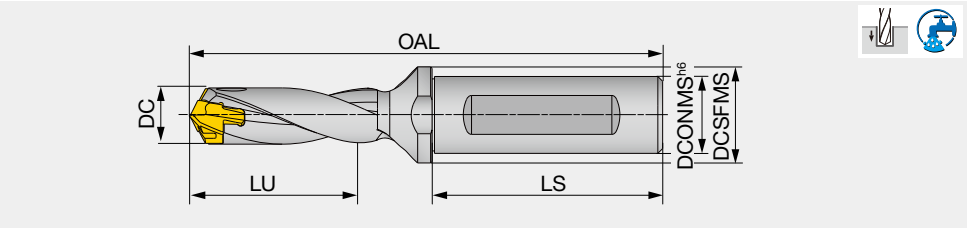
- An overall length (OAL) differs based on each head geometry.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS

Designation	Clamping key
TID060... - TID090...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99
TID200... - TID250...	K-TID20-26.99

TID-F L/D=3

Exchangeable head drill, L/D = 3, flange type



Designation	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TID060F12-3	6 - 6.4	12	16	19	45	76.9	77	76	6	DM*060 - DM*064
TID065F12-3	6.5 - 6.9	12	16	21	45	78.7	78.8	77.8	6.5	DM*065 - DM*069
TID070F12-3	7 - 7.4	12	16	22	45	80.5	80.9	79.6	7	DM*070 - DM*074
TID075F12-3	7.5 - 7.9	12	16	24	45	82	82.4	81.1	7	DM*075 - DM*079
TID080F12-3	8 - 8.4	12	16	26	45	84.3	84.4	83.4	8	DM*080 - DM*084
TID085F12-3	8.5 - 8.9	12	16	28	45	85.8	85.9	84.9	8	DM*085 - DM*089
TID090F12-3	9 - 9.4	12	16	29	45	87.7	87.8	86.6	9	DM*090 - DM*094
TID095F12-3	9.5 - 9.9	12	16	31	45	89.2	89.3	88.1	9	DM*095 - DM*099
TID100F16-3	10 - 10.4	16	20	32	48	94.1	94.7	92.7	10	DM*100 - DM*104
TID105F16-3	10.5 - 10.9	16	20	34	48	95.6	96.2	94.2	10	DM*105 - DM*109
TID110F16-3	11 - 11.4	16	20	35	48	97.5	98.1	95.9	11	DM*110 - DM*114
TID115F16-3	11.5 - 11.9	16	20	37	48	99	99.6	97.4	11	DM*115 - DM*119
TID120F16-3	12 - 12.4	16	20	38	48	100.8	101.4	99.2	12	DM*120 - DM*124
TID125F16-3	12.5 - 12.9	16	20	39	48	102.3	102.9	100.7	12	DM*125 - DM*129
TID130F16-3	13 - 13.4	16	20	41	48	104.4	105.2	102.5	13	DM*130 - DM*134
TID135F16-3	13.5 - 13.9	16	20	44	48	105.9	106.7	104	13	DM*135 - DM*139
TID140F16-3	14 - 14.4	16	20	45	48	110	110.8	108	14	DM*140 - DM*144
TID145F16-3	14.5 - 14.9	16	20	47	48	111.5	112.3	109.5	14	DM*145 - DM*149
TID150F20-3	15 - 15.9	20	25	48	50	118.5	119.4	116.4	15	DM*150 - DM*159
TID160F20-3	16 - 16.9	20	25	51	50	123.1	124.1	120.8	16	DM*160 - DM*169
TID170F20-3	17 - 17.9	20	25	54	50	127.7	128.7	125.2	17	DM*170 - DM*179
TID180F25-3	18 - 18.9	25	32	57	56	138.3	139.4	135.5	18	DM*180 - DM*189
TID190F25-3	19 - 19.9	25	32	61	56	142.8	143.9	139.8	19	DM*190 - DM*199
TID200F25-3	20 - 20.9	25	32	64	56	147.4	148.6	145.1	20	DM*200 - DM*209
TID210F25-3	21 - 21.9	25	32	67	56	152	153.2	149.5	21	DM*210 - DM*219
TID220F25-3	22 - 22.9	25	32	70	56	156.6	157.8	153.9	22	DM*220 - DM*229
TID230F32-3	23 - 23.9	32	42	73	60	165.1	166.5	162.3	23	DM*230 - DM*239
TID240F32-3	24 - 24.9	32	42	76	60	169.7	171.1	166.7	24	DM*240 - DM*249
TID250F32-3	25 - 25.9	32	42	80	60	174.3	175.8	171.2	25	DM*250 - DM*259

Tool diameter	Hole diameter tolerance*
ø6 - ø17.9	+0.04 / 0
ø18 - ø25.9	+0.045 / 0

*Just for reference

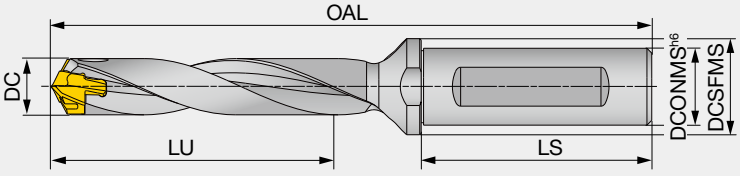
- An overall length (OAL) differs based on each head geometry.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS

Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99
TID200... - TID250...	K-TID20-26.99

TID-F L/D=5

Exchangeable head drill, L/D = 5, flange type



Designation	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TID060F12-5	6 - 6.4	12	16	31	45	88.9	89	88	6	DM*060 - DM*064
TID065F12-5	6.5 - 6.9	12	16	34	45	91.7	91.8	90.8	6.5	DM*065 - DM*069
TID070F12-5	7 - 7.4	12	16	36	45	94.5	94.9	93.6	7	DM*070 - DM*074
TID075F12-5	7.5 - 7.9	12	16	39	45	97	97.4	96.1	7	DM*075 - DM*079
TID080F12-5	8 - 8.4	12	16	42	45	100.3	100.4	99.4	8	DM*080 - DM*084
TID085F12-5	8.5 - 8.9	12	16	45	45	102.8	102.9	101.9	8	DM*085 - DM*089
TID090F12-5	9 - 9.4	12	16	47	45	105.7	105.8	104.6	9	DM*090 - DM*094
TID095F12-5	9.5 - 9.9	12	16	50	45	108.2	108.3	107.1	9	DM*095 - DM*099
TID100F16-5	10 - 10.4	16	20	52	48	114.1	114.7	112.7	10	DM*100 - DM*104
TID105F16-5	10.5 - 10.9	16	20	55	48	116.6	117.2	115.2	10	DM*105 - DM*109
TID110F16-5	11 - 11.4	16	20	57	48	119.5	120.1	117.9	11	DM*110 - DM*114
TID115F16-5	11.5 - 11.9	16	20	60	48	122	122.6	120.4	11	DM*115 - DM*119
TID120F16-5	12 - 12.4	16	20	62	48	124.8	125.4	123.2	12	DM*120 - DM*124
TID125F16-5	12.5 - 12.9	16	20	64	48	127.3	127.9	125.7	12	DM*125 - DM*129
TID130F16-5	13 - 13.4	16	20	67	48	130.4	131.2	128.5	13	DM*130 - DM*134
TID135F16-5	13.5 - 13.9	16	20	71	48	132.9	133.7	131	13	DM*135 - DM*139
TID140F16-5	14 - 14.4	16	20	73	48	138	138.8	136	14	DM*140 - DM*144
TID145F16-5	14.5 - 14.9	16	20	76	48	140.5	141.3	138.5	14	DM*145 - DM*149
TID150F20-5	15 - 15.9	20	25	78	50	148.5	149.4	146.4	15	DM*150 - DM*159
TID160F20-5	16 - 16.9	20	25	83	50	155.1	156.1	152.8	16	DM*160 - DM*169
TID170F20-5	17 - 17.9	20	25	88	50	161.7	162.7	159.2	17	DM*170 - DM*179
TID180F25-5	18 - 18.9	25	32	93	56	174.3	175.4	171.5	18	DM*180 - DM*189
TID190F25-5	19 - 19.9	25	32	99	56	180.8	181.9	177.8	19	DM*190 - DM*199
TID200F25-5	20 - 20.9	25	32	104	56	187.6	188.8	185.3	20	DM*200 - DM*209
TID210F25-5	21 - 21.9	25	32	109	56	194.2	195.4	191.8	21	DM*210 - DM*219
TID220F25-5	22 - 22.9	25	32	114	56	200.8	202.1	198.1	22	DM*220 - DM*229
TID230F32-5	23 - 23.9	32	42	119	60	211.3	212.7	208.5	23	DM*230 - DM*239
TID240F32-5	24 - 24.9	32	42	124	60	217.9	219.3	214.9	24	DM*240 - DM*249
TID250F32-5	25 - 25.9	32	42	130	60	224.5	226	221.4	25	DM*250 - DM*259

Tool diameter	Hole diameter tolerance*
ø6 - ø25.9	+0.05 / 0

*Just for reference

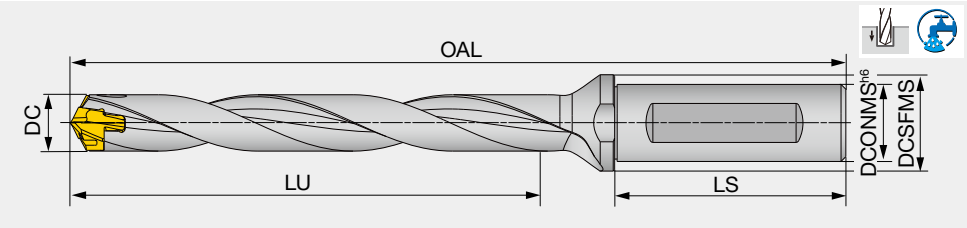
- An overall length (OAL) differs based on each head geometry.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS

Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99
TID200... - TID250...	K-TID20-26.99

TID-F L/D=8

Exchangeable head drill, L/D = 8, flange type



Designation	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TID070F12-8	7 - 7.4	12	16	57	45	115.5	115.9	114.6	7	DM*070 - DM*074
TID075F12-8	7.5 - 7.9	12	16	61	45	119.5	119.9	118.6	7	DM*075 - DM*079
TID080F12-8	8 - 8.4	12	16	66	45	124.3	124.4	123.4	8	DM*080 - DM*084
TID085F12-8	8.5 - 8.9	12	16	70	45	128.3	128.4	127.4	8	DM*085 - DM*089
TID090F12-8	9 - 9.4	12	16	74	45	132.7	132.8	131.6	9	DM*090 - DM*094
TID095F12-8	9.5 - 9.9	12	16	78	45	136.7	136.8	135.6	9	DM*095 - DM*099
TID100F16-8	10 - 10.4	16	20	82	48	144.1	144.7	142.7	10	DM*100 - DM*104
TID105F16-8	10.5 - 10.9	16	20	86	48	148.1	148.7	146.7	10	DM*105 - DM*109
TID110F16-8	11 - 11.4	16	20	90	48	152.5	153.1	150.9	11	DM*110 - DM*114
TID115F16-8	11.5 - 11.9	16	20	94	48	156.5	157.1	154.9	11	DM*115 - DM*119
TID120F16-8	12 - 12.4	16	20	98	48	160.8	161.4	159.2	12	DM*120 - DM*124
TID125F16-8	12.5 - 12.9	16	20	102	48	164.8	165.4	163.2	12	DM*125 - DM*129
TID130F16-8	13 - 13.4	16	20	106	48	169.4	170.2	167.5	13	DM*130 - DM*134
TID135F16-8	13.5 - 13.9	16	20	111	48	173.4	174.2	171.5	13	DM*135 - DM*139
TID140F16-8	14 - 14.4	16	20	115	48	180	180.8	178	14	DM*140 - DM*144
TID145F16-8	14.5 - 14.9	16	20	119	48	184	184.8	182	14	DM*145 - DM*149
TID150F20-8	15 - 15.9	20	25	123	50	193.5	194.4	191.4	15	DM*150 - DM*159
TID160F20-8	16 - 16.9	20	25	131	50	203.1	204.1	200.8	16	DM*160 - DM*169
TID170F20-8	17 - 17.9	20	25	139	50	212.7	213.7	210.2	17	DM*170 - DM*179
TID180F25-8	18 - 18.9	25	32	147	56	228.3	229.4	225.5	18	DM*180 - DM*189
TID190F25-8	19 - 19.9	25	32	156	56	237.8	238.9	234.8	19	DM*190 - DM*199
TID200F25-8	20 - 20.9	25	32	164	56	247.4	248.6	245.1	20	DM*200 - DM*209
TID210F25-8	21 - 21.9	25	32	172	56	257	258.2	254.5	21	DM*210 - DM*219
TID220F25-8	22 - 22.9	25	32	180	56	266.6	267.8	263.9	22	DM*220 - DM*229
TID230F32-8	23 - 23.9	32	42	188	60	280.1	281.5	277.3	23	DM*230 - DM*239
TID240F32-8	24 - 24.9	32	42	196	60	289.7	291.1	286.7	24	DM*240 - DM*249
TID250F32-8	25 - 25.9	32	42	205	60	299.3	300.8	296.2	25	DM*250 - DM*259

Tool diameter	Hole diameter tolerance*
ø7 - ø17.9	+0.05 / 0
ø18 - ø25.9	+0.055 / 0

*Just for reference

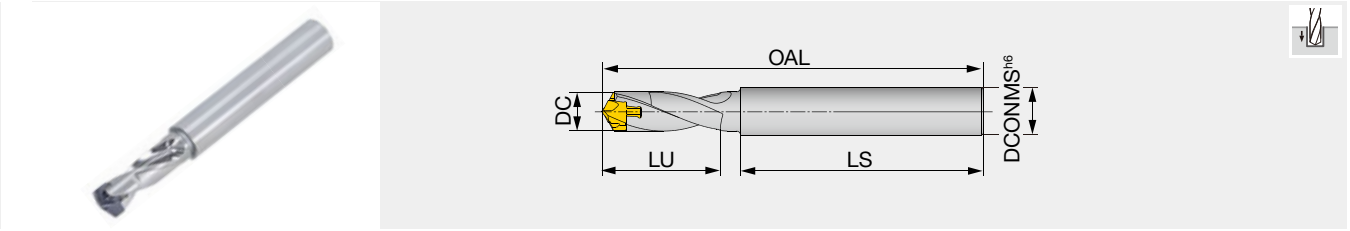
- An overall length (OAL) differs based on each head geometry.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS

Designation	Clamping key
TID070... - TID095...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99
TID200... - TID250...	K-TID20-26.99

TID-R-2E L/D=2

Exchangeable head drill, L/D = 2, Cylindrical shank, for external coolant supply



Designation	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TID060R8-2E	6 - 6.4	8	12	45	66.1	66.2	65.2	6	DM*060 - DM*064
TID065R8-2E	6.5 - 6.9	8	13	45	67.2	67.3	66.3	6.5	DM*065 - DM*069
TID070R8-2E	7 - 7.4	8	13	45	68	68.4	67.1	7	DM*070 - DM*074
TID075R8-2E	7.5 - 7.9	8	14	45	69	69.4	68.1	7	DM*075 - DM*079
TID080R10-2E	8 - 8.9	10	15	50	75.2	75.3	74.3	8	DM*080 - DM*089
TID090R10-2E	9 - 9.9	10	17	50	77.4	77.5	76.3	9	DM*090 - DM*099
TID100R12-2E	10 - 10.9	12	22	60	94.3	94.9	92.9	10	DM*100 - DM*109
TID110R12-2E	11 - 11.9	12	24	60	96.5	97.1	94.9	11	DM*110 - DM*119
TID120R14-2E	12 - 12.9	14	26	65	103.6	104.2	102	12	DM*120 - DM*129
TID130R14-2E	13 - 13.9	14	27	65	108.8	109.6	106.9	13	DM*130 - DM*139
TID140R16-2E	14 - 14.9	16	29	70	115	115.8	113	14	DM*140 - DM*149
TID150R16-2E	15 - 15.9	16	32	70	118	118.9	115.9	15	DM*150 - DM*159
TID160R18-2E	16 - 16.9	18	33	70	122.2	123.2	119.9	16	DM*160 - DM*169

Tool diameter	Hole diameter tolerance*
ø6 - ø16.9	+0.04 / 0

*Just for reference

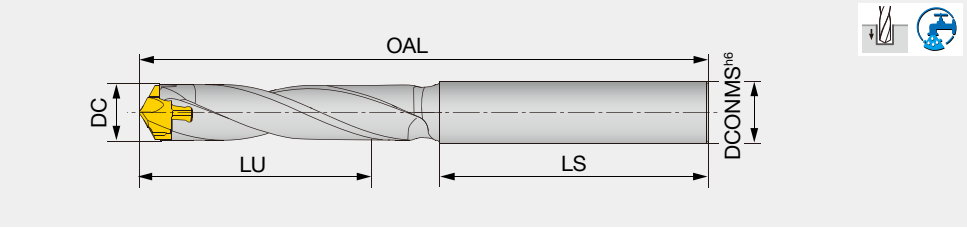
- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS

Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID160...	K-TID10-19.99

TID-R L/D=3.5

Exchangeable head drill, L/D = 3.5, Cylindrical shank



Designation	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TID060R8-3.5	6 - 6.4	8	23	45	75.6	75.8	74.8	6	DM*060 - DM*064
TID065R8-3.5	6.5 - 6.9	8	25	45	77.5	77.6	76.6	6.5	DM*065 - DM*069
TID070R8-3.5	7 - 7.4	8	26	45	79.1	79.5	78.2	7	DM*070 - DM*074
TID075R8-3.5	7.5 - 7.9	8	28	45	80.8	81.3	80	7	DM*075 - DM*079
TID080R10-3.5	8 - 8.4	10	30	50	87.8	87.9	86.9	8	DM*080 - DM*084
TID085R10-3.5	8.5 - 8.9	10	32	50	89.5	89.7	88.6	8	DM*085 - DM*089
TID090R10-3.5	9 - 9.4	10	34	50	91.4	91.6	90.4	9	DM*090 - DM*094
TID095R10-3.5	9.5 - 9.9	10	36	50	93.2	93.3	92.1	9	DM*095 - DM*099
TID100R12-3.5	10 - 10.4	12	42	60	114	114.7	112.7	10	DM*100 - DM*104
TID105R12-3.5	10.5 - 10.9	12	44	60	115.7	116.3	114.4	10	DM*105 - DM*109
TID110R12-3.5	11 - 11.4	12	46	65	123.1	123.8	121.6	11	DM*110 - DM*114
TID115R12-3.5	11.5 - 11.9	12	48	65	124.8	125.4	123.2	11	DM*115 - DM*119
TID120R14-3.5	12 - 12.4	14	50	65	127.2	127.8	125.6	12	DM*120 - DM*124
TID125R14-3.5	12.5 - 12.9	14	52	65	128.8	129.5	127.3	12	DM*125 - DM*129
TID130R14-3.5	13 - 13.4	14	54	65	132.7	133.5	130.9	13	DM*130 - DM*134
TID135R14-3.5	13.5 - 13.9	14	56	65	134.4	135.2	132.5	13	DM*135 - DM*139
TID140R16-3.5	14 - 14.4	16	58	70	142.2	143	140.2	14	DM*140 - DM*144
TID145R16-3.5	14.5 - 14.9	16	60	70	143.8	144.7	141.9	14	DM*145 - DM*149
TID150R16-3.5	15 - 15.9	16	64	70	148.4	149.4	146.3	15	DM*150 - DM*159
TID160R18-3.5	16 - 16.9	18	68	70	153.9	154.9	151.7	16	DM*160 - DM*169
TID170R18-3.5	17 - 17.9	18	72	70	158.5	159.4	155.9	17	DM*170 - DM*179
TID180R20-3.5	18 - 18.9	20	76	70	164	165.1	161.2	18	DM*180 - DM*189
TID190R20-3.5	19 - 19.9	20	80	70	168.4	169.5	165.4	19	DM*190 - DM*199

Tool diameter	Hole diameter tolerance*
ø6 - ø19.9	+0.04 / 0

*Just for reference

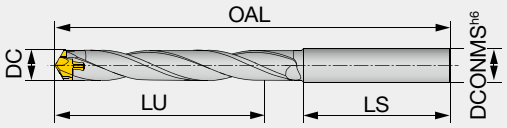
- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS

Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99

TID-R L/D=6

Exchangeable head drill, L/D = 6, Cylindrical shank



Designation	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TID060R8-6	6 - 6.4	8	39	45	91.6	91.8	90.8	6	DM*060 - DM*064
TID065R8-6	6.5 - 6.9	8	42	45	94.7	94.9	93.9	6.5	DM*065 - DM*069
TID070R8-6	7 - 7.4	8	45	45	97.6	98	96.7	7	DM*070 - DM*074
TID075R8-6	7.5 - 7.9	8	48	45	100.6	101	99.7	7	DM*075 - DM*079
TID080R10-6	8 - 8.4	10	51	50	108.8	108.9	107.9	8	DM*080 - DM*084
TID085R10-6	8.5 - 8.9	10	54	50	111.8	111.9	110.9	8	DM*085 - DM*089
TID090R10-6	9 - 9.4	10	57	50	114.9	115.1	113.9	9	DM*090 - DM*094
TID095R10-6	9.5 - 9.9	10	60	50	117.9	118.1	116.9	9	DM*095 - DM*099
TID100R12-6	10 - 10.4	12	68	60	140	140.7	138.7	10	DM*100 - DM*104
TID105R12-6	10.5 - 10.9	12	71	60	142.9	143.6	141.6	10	DM*105 - DM*109
TID110R12-6	11 - 11.4	12	75	65	151.6	152.3	150.1	11	DM*110 - DM*114
TID115R12-6	11.5 - 11.9	12	78	65	154.5	155.2	153	11	DM*115 - DM*119
TID120R14-6	12 - 12.4	14	81	65	158.2	158.8	156.6	12	DM*120 - DM*124
TID125R14-6	12.5 - 12.9	14	84	65	161.1	161.7	159.5	12	DM*125 - DM*129
TID130R14-6	13 - 13.4	14	88	65	166.2	167	164.4	13	DM*130 - DM*134
TID135R14-6	13.5 - 13.9	14	91	65	169.2	169.9	167.3	13	DM*135 - DM*139
TID140R16-6	14 - 14.4	16	94	70	178.2	179	176.2	14	DM*140 - DM*144
TID145R16-6	14.5 - 14.9	16	97	70	181.1	181.9	179.1	14	DM*145 - DM*149
TID150R16-6	15 - 15.9	16	104	70	188.2	189.1	186.1	15	DM*150 - DM*159
TID160R18-6	16 - 16.9	18	110	70	196.2	197.2	193.9	16	DM*160 - DM*169
TID170R18-6	17 - 17.9	18	117	70	203.2	204.2	200.7	17	DM*170 - DM*179
TID180R20-6	18 - 18.9	20	124	70	211.3	212.3	208.4	18	DM*180 - DM*189
TID190R20-6	19 - 19.9	20	130	70	218.1	219.2	215.1	19	DM*190 - DM*199

Tool diameter	Hole diameter tolerance*
ø6 - ø17.9	+0.05 / 0
ø18 - ø19.9	+0.055 / 0

*Just for reference

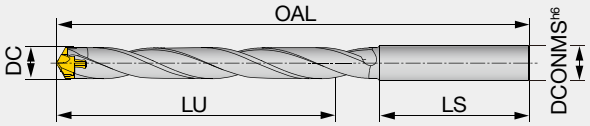
- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS

Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99

TID-R L/D=8

Exchangeable head drill, L/D = 8, Cylindrical shank



Designation	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TID060R8-8	6 - 6.4	8	52	45	104.4	104.6	103.6	6	DM*060 - DM*064
TID065R8-8	6.5 - 6.9	8	56	45	108.5	108.7	107.7	6.5	DM*065 - DM*069
TID070R8-8	7 - 7.4	8	60	45	112.4	112.8	111.5	7	DM*070 - DM*074
TID075R8-8	7.5 - 7.9	8	64	45	116.4	116.8	115.5	7	DM*075 - DM*079
TID080R10-8	8 - 8.4	10	68	50	125.6	125.7	124.7	8	DM*080 - DM*084
TID085R10-8	8.5 - 8.9	10	72	50	129.6	129.7	128.7	8	DM*085 - DM*089
TID090R10-8	9 - 9.4	10	76	50	133.7	133.9	132.7	9	DM*090 - DM*094
TID095R10-8	9.5 - 9.9	10	80	50	137.7	137.9	136.7	9	DM*095 - DM*099
TID100R12-8	10 - 10.4	12	89	60	160.8	161.5	159.5	10	DM*100 - DM*104
TID105R12-8	10.5 - 10.9	12	93	60	164.7	165.4	163.4	10	DM*105 - DM*109
TID110R12-8	11 - 11.4	12	98	65	174.4	175.1	172.9	11	DM*110 - DM*114
TID115R12-8	11.5 - 11.9	12	102	65	178.3	179	176.8	11	DM*115 - DM*119
TID120R14-8	12 - 12.4	14	106	65	183	183.6	181.4	12	DM*120 - DM*124
TID125R14-8	12.5 - 12.9	14	110	65	186.9	187.5	185.3	12	DM*125 - DM*129
TID130R14-8	13 - 13.4	14	115	65	193	193.8	191.2	13	DM*130 - DM*134
TID135R14-8	13.5 - 13.9	14	119	65	196.9	197.7	195	13	DM*135 - DM*139
TID140R16-8	14 - 14.4	16	123	70	207	207.8	205	14	DM*140 - DM*144
TID145R16-8	14.5 - 14.9	16	127	70	210.9	211.7	208.9	14	DM*145 - DM*149
TID150R16-8	15 - 15.9	16	136	70	220	220.9	217.9	15	DM*150 - DM*159
TID160R18-8	16 - 16.9	18	144	70	230	231	227.7	16	DM*160 - DM*169
TID170R18-8	17 - 17.9	18	153	70	239	240	236.5	17	DM*170 - DM*179
TID180R20-8	18 - 18.9	20	162	70	249.1	250.1	246.2	18	DM*180 - DM*189
TID190R20-8	19 - 19.9	20	170	70	257.9	259	254.9	19	DM*190 - DM*199

Tool diameter	Hole diameter tolerance*
ø6 - ø17.9	+0.05 / 0
ø18 - ø19.9	+0.055 / 0

*Just for reference

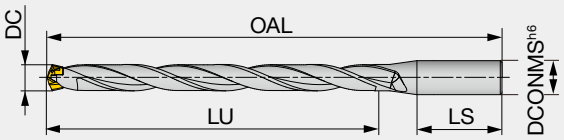
- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS

Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99

TID L/D=12

Exchangeable head drill, L/D = 12, Cylindrical shank



Designation	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TID080R12-12	8 - 8.4	12	98	45	156.3	156.4	155.4	8	DM*080 - DM*084
TID085R12-12	8.5 - 8.9	12	104	45	162.3	162.4	161.4	8	DM*085 - DM*089
TID090R12-12	9 - 9.4	12	110	45	168.7	168.8	167.6	9	DM*090 - DM*094
TID095R12-12	9.5 - 9.9	12	116	45	174.7	174.8	173.6	9	DM*095 - DM*099
TID100R16-12	10 - 10.4	16	122	48	184.1	184.7	182.7	10	DM*100 - DM*104
TID105R16-12	10.5 - 10.9	16	128	48	190.1	190.7	188.7	10	DM*105 - DM*109
TID110R16-12	11 - 11.4	16	134	48	196.5	197.1	194.9	11	DM*110 - DM*114
TID115R16-12	11.5 - 11.9	16	140	48	202.5	203.1	200.9	11	DM*115 - DM*119
TID120R16-12	12 - 12.4	16	146	48	208.8	209.4	207.2	12	DM*120 - DM*124
TID125R16-12	12.5 - 12.9	16	152	48	214.8	215.4	213.2	12	DM*125 - DM*129
TID130R16-12	13 - 13.4	16	158	48	221.4	222.2	219.5	13	DM*130 - DM*134
TID135R16-12	13.5 - 13.9	16	165	48	227.4	228.2	225.5	13	DM*135 - DM*139
TID140R16-12	14 - 14.4	16	171	48	236	236.8	234	14	DM*140 - DM*144
TID145R16-12	14.5 - 14.9	16	177	48	242	242.8	240	14	DM*145 - DM*149
TID150R20-12	15 - 15.9	20	183	50	253.5	254.4	251.4	15	DM*150 - DM*159
TID160R20-12	16 - 16.9	20	195	50	267.1	268.1	264.8	16	DM*160 - DM*169
TID170R20-12	17 - 17.9	20	207	50	280.7	281.7	278.2	17	DM*170 - DM*179
TID180R25-12	18 - 18.9	25	219	56	300.3	301.4	297.5	18	DM*180 - DM*189
TID190R25-12	19 - 19.9	25	232	56	313.8	314.9	310.8	19	DM*190 - DM*199
TID200R25-12	20 - 20.9	25	244	56	327.4	328.6	325.1	20	DM*200 - DM*209
TID210R25-12	21 - 21.9	25	256	56	341	342.2	338.5	21	DM*210 - DM*219
TID220R25-12	22 - 22.9	25	267	56	354.6	355.8	351.9	22	DM*220 - DM*229
TID230R32-12	23 - 23.9	32	276	60	372.1	373.5	369.3	23	DM*230 - DM*239
TID240R32-12	24 - 24.9	32	288	60	385.7	387.1	382.7	24	DM*240 - DM*249
TID250R32-12	25 - 25.9	32	300	60	399.3	400.8	396.2	25	DM*250 - DM*259

Tool diameter	Hole diameter tolerance*
ø8 - ø17.9	+0.05 / 0
ø18 - ø25.9	+0.055 / 0

*Just for reference

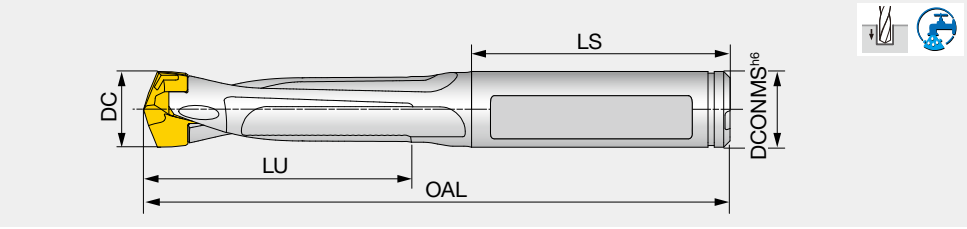
- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS

Designation	Clamping key
TID080... - TID095...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99
TID200... - TID250...	K-TID20-26.99

TIDC L/D=3

Exchangeable head drill, L/D = 3, Cylindrical shank, for chamfering adapter



Designation	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TIDC075C8-3	7.5 - 7.9	8	23	36	70.1	70.6	69.2	7	DM*075 - DM*079
TIDC080C8-3	8 - 8.4	8	24	36	70.6	70.8	69.7	8	DM*080 - DM*084
TIDC085C9-3	8.5 - 8.9	9	26	36	72.8	73	71.9	8	DM*085 - DM*089
TIDC090C9-3	9 - 9.4	9	27	36	74.7	74.9	73.7	9	DM*090 - DM*094
TIDC095C10-3	9.5 - 9.9	10	29	36	76.2	76.4	75.2	9	DM*095 - DM*099
TIDC100C10-3	10 - 10.4	10	32	41	86.1	86.7	84.8	10	DM*100 - DM*104
TIDC105C11-3	10.5 - 10.9	11	33	41	87.6	88.2	86.3	10	DM*105 - DM*109
TIDC110C11-3	11 - 11.4	11	35	41	89.5	90.2	88	11	DM*110 - DM*114
TIDC115C12-3	11.5 - 11.9	12	37	41	91	91.7	89.5	11	DM*115 - DM*119
TIDC120C12-3	12 - 12.4	12	38	41	92.8	93.4	91.2	12	DM*120 - DM*124
TIDC125C13-3	12.5 - 12.9	13	40	46	98.3	98.9	96.7	12	DM*125 - DM*129
TIDC130C13-3	13 - 13.4	13	41	47	102.4	103.2	100.5	13	DM*130 - DM*134
TIDC135C14-3	13.5 - 13.9	14	43	43	99.9	100.7	98	13	DM*135 - DM*139
TIDC140C14-3	14 - 14.4	14	45	44	103	103.8	101	14	DM*140 - DM*144
TIDC145C15-3	14.5 - 14.9	15	46	45	105.5	106.3	103.5	14	DM*145 - DM*149
TIDC150C15-3	15 - 15.9	15	48	45	107.5	108.4	105.4	15	DM*150 - DM*159
TIDC160C16-3	16 - 16.9	16	51	48	117.5	118.5	115.2	16	DM*160 - DM*169
TIDC170C17-3	17 - 17.9	17	54	48	119.7	120.7	117.2	17	DM*170 - DM*179
TIDC180C18-3	18 - 18.9	18	57	48	123.3	124.4	120.5	18	DM*180 - DM*189
TIDC190C19-3	19 - 19.9	19	61	54	132.4	133.5	129.4	19	DM*190 - DM*199

Tool diameter	Hole diameter tolerance*
ø7.5 - ø17.9	+0.04 / 0
ø18 - ø19.9	+0.045 / 0

*Just for reference

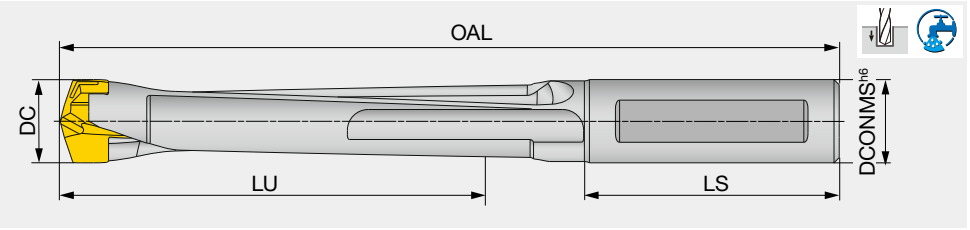
- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.

SPARE PARTS

Designation	Clamping key
TIDC075... - TIDC099...	K-TID6-9.99
TIDC100... - TIDC190...	K-TID10-19.99

TIDC L/D=5

Exchangeable head drill, L/D = 5, Cylindrical shank, for chamfering adapter



Designation	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TIDC075C8-5	7.5 - 7.9	8	38	36	85.1	85.6	84.2	7	DM*075 - DM*079
TIDC080C8-5	8 - 8.4	8	40	36	92.3	92.5	91.4	8	DM*080 - DM*084
TIDC085C9-5	8.5 - 8.9	9	43	36	89.8	90	88.9	8	DM*085 - DM*089
TIDC090C9-5	9 - 9.4	9	45	36	92.7	92.9	91.7	9	DM*090 - DM*094
TIDC095C10-5	9.5 - 9.9	10	48	36	95.2	95.4	94.2	9	DM*095 - DM*099
TIDC100C10-5	10 - 10.4	10	52	41	106.1	106.7	104.8	10	DM*100 - DM*104
TIDC105C11-5	10.5 - 10.9	11	54	41	108.6	109.2	107.3	10	DM*105 - DM*109
TIDC110C11-5	11 - 11.4	11	57	41	111.5	112.2	110	11	DM*110 - DM*114
TIDC115C12-5	11.5 - 11.9	12	60	41	114	114.7	112.5	11	DM*115 - DM*119
TIDC120C12-5	12 - 12.4	12	62	41	116.8	117.4	115.2	12	DM*120 - DM*124
TIDC125C13-5	12.5 - 12.9	13	65	46	124.3	124.9	122.7	12	DM*125 - DM*129
TIDC130C13-5	13 - 13.4	13	67	47	128.4	129.2	126.5	13	DM*130 - DM*134
TIDC135C14-5	13.5 - 13.9	14	70	43	126.9	127.7	125	13	DM*135 - DM*139
TIDC140C14-5	14 - 14.4	14	73	44	131	131.8	129	14	DM*140 - DM*144
TIDC145C15-5	14.5 - 14.9	15	75	45	134.5	135.3	132.5	14	DM*145 - DM*149
TIDC150C15-5	15 - 15.9	15	78	45	137.5	138.4	135.4	15	DM*150 - DM*159
TIDC160C16-5	16 - 16.9	16	83	48	149.5	150.5	147.2	16	DM*160 - DM*169
TIDC170C17-5	17 - 17.9	17	88	48	153.7	154.7	151.2	17	DM*170 - DM*179
TIDC180C18-5	18 - 18.9	18	93	48	159.3	160.4	156.5	18	DM*180 - DM*189
TIDC190C19-5	19 - 19.9	19	99	54	170.4	171.5	167.4	19	DM*190 - DM*199

Tool diameter	Hole diameter tolerance*
ø7.5 - ø19.9	+0.05 / 0

*Just for reference

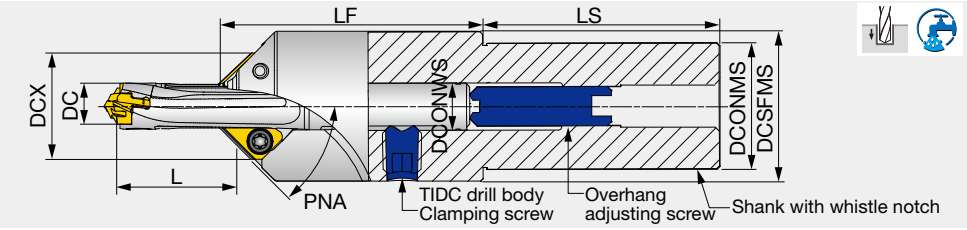
- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.

SPARE PARTS

Designation	Clamping key
TIDC075... - TIDC099...	K-TID6-9.99
TIDC100... - TIDC190...	K-TID10-19.99

TIDCF

Chamfering adapter



Designation	DC	DCONMS	DCSFMS	DCX	LF	LS	L* L/D = 3	L* L/D = 5	Drill body	DCONWS	Insert
TIDCF080-W20	7.5 - 7.9	20	25	18.8	47.4	50	12.6 - 24	17.3 - 38	TIDC075C8-...	8	XCGT06...
TIDCF080-W20	8.0 - 8.4	20	25	18.8	47.4	50	13.5 - 24.6	24.7 - 45	TIDC080C8-...	8	XCGT06...
TIDCF090-W20	8.5 - 8.9	20	25	19.8	47.4	50	12.6 - 26.2	18.5 - 43	TIDC085C9-...	9	XCGT06...
TIDCF090-W20	9.0 - 9.4	20	25	19.8	47.4	50	13 - 29.2	22.9 - 46.8	TIDC090C9-...	9	XCGT06...
TIDCF100-W32	9.5 - 9.9	32	38	24.9	67.3	60	12.9 - 27.8	26 - 47	TIDC095C10-...	10	XHG*09...
TIDCF100-W32	10 - 10.4	32	38	24.9	67.3	60	14.5 - 31.8	31.7 - 51.8	TIDC100C10-...	10	XHG*09...
TIDCF110-W32	10.5 - 10.9	32	38	25.9	67.3	60	15.7 - 33.3	31.2 - 54.2	TIDC105C11-...	11	XHG*09...
TIDCF110-W32	11 - 11.4	32	38	25.9	67.3	60	16.2 - 35.3	34.1 - 57.3	TIDC110C11-...	11	XHG*09...
TIDCF120-W32	11.5 - 11.9	32	38	26.9	67.3	60	15.1 - 36.7	33.8 - 59.4	TIDC115C12-...	12	XHG*09...
TIDCF120-W32	12 - 12.4	32	38	26.9	67.3	60	16.5 - 37.7	36.6 - 61.6	TIDC120C12-...	12	XHG*09...
TIDCF130-W32	12.5 - 12.9	32	38	27.9	67.3	60	16.1 - 39.6	39.7 - 64.8	TIDC125C13-...	13	XHG*09...
TIDCF130-W32	13 - 13.4	32	38	27.9	67.3	60	17.5 - 41.5	42.7 - 68	TIDC130C13-...	13	XHG*09...
TIDCF140-W32	13.5 - 13.9	32	38	28.4	67.3	60	17.7 - 42.9	41.4 - 70.3	TIDC135C14-...	14	XHG*09...
TIDCF140-W32	14 - 14.4	32	38	28.4	67.3	60	18.1 - 45	44.8 - 73.1	TIDC140C14-...	14	XHG*09...
TIDCF150-W32	14.5 - 14.9	32	38	29.4	67.3	60	19.2 - 44.6	44 - 73.9	TIDC145C15-...	15	XHG*09...
TIDCF150-W32	15 - 15.9	32	38	29.4	67.3	60	19.7 - 47.4	47.6 - 80.7	TIDC150C15-...	15	XHG*09...
TIDCF160-W32	16 - 16.9	32	38	30.4	67.3	60	19.5 - 55.3	57 - 87.5	TIDC160C16-...	16	XHG*09...
TIDCF170-W32	17 - 17.9	32	38	31.4	67.3	60	21.4 - 54.9	55.9 - 88.5	TIDC170C17-...	17	XHG*09...
TIDCF180-W32	18 - 18.9	32	38	32.4	67.3	60	24.2 - 65.2	60 - 93	TIDC180C18-...	18	XHG*09...
TIDCF190-W32	19 - 19.9	32	38	33.4	75	60	28.5 - 62.3	67 - 100	TIDC190C19-...	19	XHG*09...

L* is the dimension when using 45° chamfering insert.

SPARE PARTS





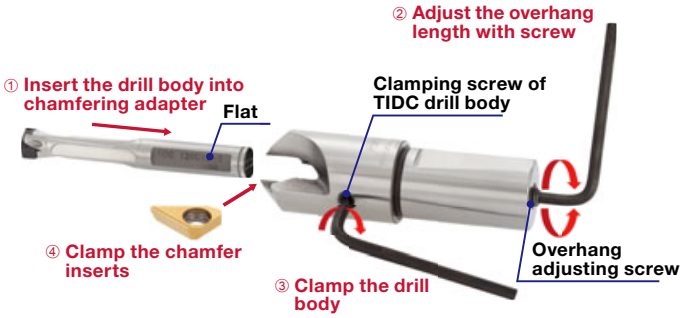


Designation	Insert screw	Grip	Clamping screw of TIDC drill body	Overhang adjusting screw	Torx bit	Wrench	Wrench
TIDCF080... - TIDCF090...	SR14-560	-	SRM6X6DIN916	SRM6X1S	-	HW3.0	T-8D
TIDCF100... - TIDCF190...	SR14-544/S	SW6-SD	SRM10X10DIN916	SRM10X1.5S	BT15S	HW5.0	-

Recommended clamping torque (N·m) : SR14-544/S = 4.8

● How to mount the chamfering adapter on the TIDC drill body

The overhang length of the drill can be changed by the adjusting screw at the bottom of the adapter. The rear end of the drill body must be in contact with the adjusting screw as the screw supports the drill against thrust force when drilling.



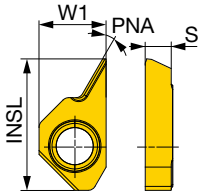
Procedures

① Place the TIDC drill body into the chamfering adapter without chamfer inserts.
② Adjust the overhang length of the drill body with the adjusting screw at the bottom of the adapter.
③ Adjust the position of the drill body so that the drill body is fixed at the flat and tighten the clamping screw of the drill body. This aligns the flutes of the TIDC drill body with the chamfer inserts.
④ To clamp the chamfer inserts, tighten the clamping screw of the insert while pushing the insert into the insert pocket.

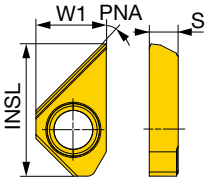
Notice: Before removing the drill body from the adapter, chamfer inserts must be unclamped. The overhang adjusting screw can be handled from the top of the adapter with a flat-blade screwdriver. The overhang length of the drill body can be adjusted after the adapter is positioned on the drill shank.

CHAMFERING INSERT

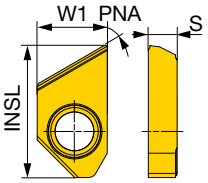
XCGT-30DT/XHGT-30A



XCGT-45DT/XHGR-45A



XCGT-60DT/XHGR-60A



		GH730
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	Chamfering angle PNA	Maximum width of chamfer*	Coated GH730	W1	INSL	S
XCGT060300-30DT	30°	2	●	6.18	12.3	2.8
XCGT060300-45DT	45°	4	●	6.18	12.3	2.8
XCGT060300-60DT	60°	4	●	6.18	12.3	2.8
XHGT090300-30A	30°	3	●	8.5	16	3.3
XHGR090300-45A	45°	6	●	8.5	16	3.3
XHGR090300-60A	60°	6	●	8.5	16	3.3

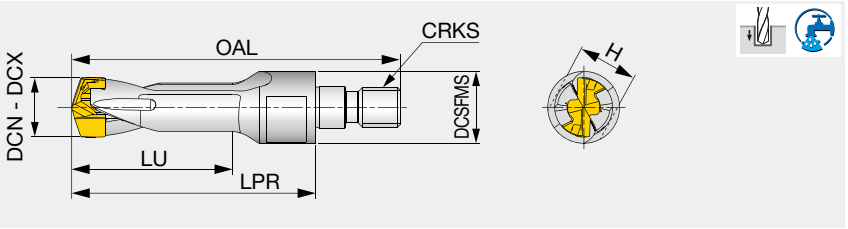
*Please reduce the feed rate to half when chamfering over 60% of maximum width of chamfer.

● : Line up
2 pieces per package

MODULAR BODIES

TID-M L/D=2

Modular body with "TungFlex" connection



Designation	DC	DCSFMS	LU	LPR	OAL			CRKS	Pocket size	H	Head
					DMP	DMC	DMF				
TID060M6-2	6 - 6.4	10	13	27.55	42.05	42.2	41.21	M6	6	7	DM*060 - DM*064
TID065M6-2	6.5 - 6.9	10	14.5	29.15	43.65	43.8	42.78	M6	6.5	7	DM*065 - DM*069
TID070M6-2	7 - 7.4	10	15	30.55	45.05	45.5	44.18	M6	7	7	DM*070 - DM*074
TID075M6-2	7.5 - 7.9	10	16.5	32.05	46.55	47	45.68	M6	7	7	DM*075 - DM*079
TID080M6-2	8 - 8.4	10	18	33.65	48.15	48.3	47.29	M6	8	7	DM*080 - DM*084
TID085M6-2	8.5 - 8.9	10	19.5	35.15	49.65	49.8	48.79	M6	8	7	DM*085 - DM*089
TID090M6-2	9 - 9.4	10	20	36.85	51.35	51.5	50.31	M6	9	7	DM*090 - DM*094
TID095M6-2	9.5 - 9.9	10	21.5	38.35	52.85	53	51.81	M6	9	7	DM*095 - DM*099
TID100M8-2	10 - 10.4	14.5	22	42.95	59.95	60.57	58.62	M8	10	10	DM*100 - DM*104
TID105M8-2	10.5 - 10.9	14.5	23.5	44.55	61.55	62.17	60.22	M8	10	10	DM*105 - DM*109
TID110M8-2	11 - 11.4	14.5	24	46.15	63.15	63.8	61.6	M8	11	10	DM*110 - DM*114
TID115M8-2	11.5 - 11.9	14.5	25.5	47.75	64.75	65.4	63.2	M8	11	10	DM*115 - DM*119
TID120M8-2	12 - 12.4	14.5	26	49.3	66.3	66.93	64.71	M8	12	10	DM*120 - DM*124
TID125M8-2	12.5 - 12.9	14.5	27.5	50.9	67.9	68.53	66.31	M8	12	10	DM*125 - DM*129
TID130M10-2	13 - 13.4	18	28	49	68	68.75	66.13	M10	13	15	DM*130 - DM*134
TID135M10-2	13.5 - 13.9	18	29.5	50.5	69.5	70.25	67.63	M10	13	15	DM*135 - DM*139
TID140M10-2	14 - 14.4	18	31	52.15	71.15	71.96	69.16	M10	14	15	DM*140 - DM*144

Tool diameter	Hole diameter tolerance*
ø6 - ø14.4	+0.04 / 0

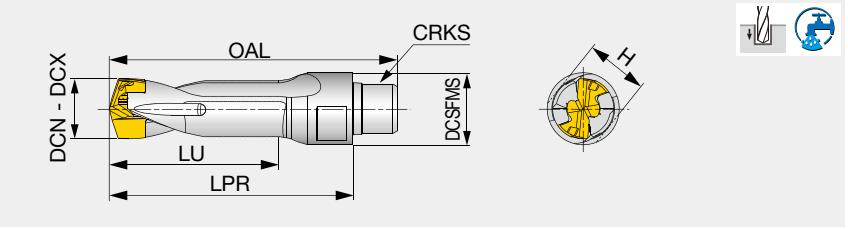
*Just for reference

SPARE PARTS

Designation	Clamping key
TID060M6-2 - TID095M6-2	K-TID6-9.99
TID100M8-2 - TID140M10-2	K-TID10-19.99

TID-S L/D=2

Modular body with "TungMeister" connection



Designation	DC	DCSFMS	LU	LPR	OAL			CRKS	Pocket size	H	Head
					DMP	DMC	DMF				
TID065S06-2	6.5 - 6.9	10	14.5	27.15	33.45	33.6	32.58	S06	6.5	8	DM*065
TID085S06-2	8.5 - 8.9	10	19.5	33.15	39.45	39.55	38.59	S06	8.5	8	DM*085
TID105S08-2	10.5 - 10.9	12	23.5	40.55	48.05	48.67	46.72	S08	10.5	10	DM*105

Tool diameter	Hole diameter tolerance*
ø6.5 - ø10.9	+0.04 / 0

*Just for reference

SPARE PARTS

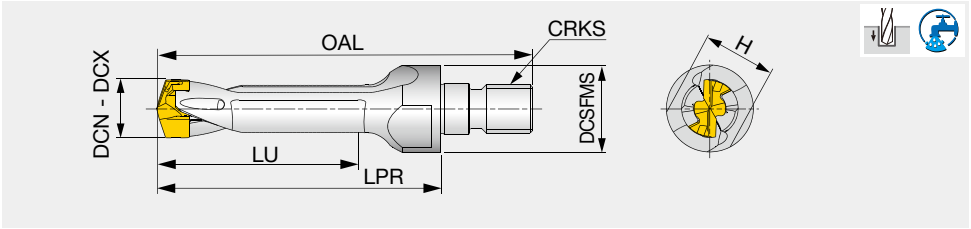
Designation	Clamping key
TID065S06-2, TID085S06-2	K-TID6-9.99
TID105S08-2	K-TID10-19.99

Designation	Wrench*
TID065S06-2, TID085S06-2	KEYV-S06
TID105S08-2	KEYV-S08

*Sold separately

TID-M L/D=3

Modular body with "TungFlex" connection



Designation	DC	DCSFMS	LU	LPR	OAL			CRKS	Pocket size	H	Head
					DMP	DMC	DMF				
TID060M10-3	6 - 6.4	18	19	37.05	56.05	56.2	55.21	M10	6	15	DM*060 - DM*064
TID065M10-3	6.5 - 6.9	18	21	38.9	57.9	58.05	57.03	M10	6.5	15	DM*065 - DM*069
TID070M10-3	7 - 7.4	18	22	40.55	59.55	60	58.68	M10	7	15	DM*070 - DM*074
TID075M10-3	7.5 - 7.9	18	24	42.3	61.3	61.75	60.43	M10	7	15	DM*075 - DM*079
TID080M10-3	8 - 8.4	18	26	44.15	63.15	63.3	62.29	M10	8	15	DM*080 - DM*084
TID085M10-3	8.5 - 8.9	18	28	45.9	64.9	65.05	64.04	M10	8	15	DM*085 - DM*089
TID090M10-3	9 - 9.4	18	29	47.85	66.85	67	65.81	M10	9	15	DM*090 - DM*094
TID095M10-3	9.5 - 9.9	18	31	49.6	68.6	68.75	67.56	M10	9	15	DM*095 - DM*099
TID100M10-3	10 - 10.4	18	32	51.45	70.45	71.07	69.12	M10	10	15	DM*100 - DM*104
TID105M10-3	10.5 - 10.9	18	34	53.3	72.3	72.92	70.97	M10	10	15	DM*105 - DM*109
TID110M10-3	11 - 11.4	18	35	55.15	74.15	74.8	72.6	M10	11	15	DM*110 - DM*114
TID115M10-3	11.5 - 11.9	18	37	57	76	76.65	74.45	M10	11	15	DM*115 - DM*119
TID120M10-3	12 - 12.4	18	38	58.8	77.8	78.43	76.21	M10	12	15	DM*120 - DM*124
TID125M10-3	12.5 - 12.9	18	40	60.65	79.65	80.28	78.06	M10	12	15	DM*125 - DM*129
TID130M10-3	13 - 13.4	18	41	62.5	81.5	82.25	79.63	M10	13	15	DM*130 - DM*134
TID135M10-3	13.5 - 13.9	18	43	64.25	83.25	84	81.38	M10	13	15	DM*135 - DM*139
TID140M10-3	14 - 14.4	18	45	66.15	85.15	85.96	83.16	M10	14	15	DM*140 - DM*144
TID145M10-3	14.5 - 14.9	18	47	68	87	87.81	85.01	M10	14	15	DM*145 - DM*149
TID150M10-3	15 - 15.9	18	48	69.73	88.73	89.64	86.63	M10	15	15	DM*150 - DM*159
TID160M12-3	16 - 16.9	23	51	75.4	97.4	98.37	95.14	M12	16	17	DM*160 - DM*169
TID170M12-3	17 - 17.9	23	54	79.1	101.1	102.08	98.55	M12	17	17	DM*170 - DM*179
TID180M12-3	18 - 18.9	23	57	82.7	104.7	105.75	101.85	M12	18	17	DM*180 - DM*189

Tool diameter	Hole diameter tolerance*
ø6 - ø17.9	+0.04 / 0
ø18 - ø18.9	+0.045 / 0

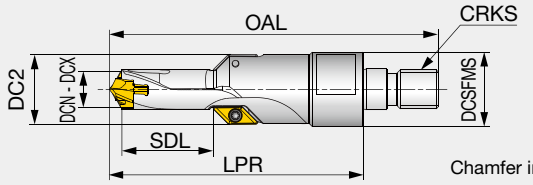
*Just for reference

SPARE PARTS

Designation	Clamping key
TID060M10-3 - TID095M10-3	K-TID6-9.99
TID100M10-3 - TID180M12-3	K-TID10-19.99

TID-L-A-M

Drill with chamfer and "TungFlex" connection



Chamfer insert: AOMT060204-C45

Designation	DCX	DCN	DC2	SDL	DCSFMS	LPR	OAL	CRKS	H	Pocket size
TID065L25A90M08	6.9	6.5	13.84	24.91	15.5	58.18	75.18	M8	10	6.5
TID085L25A90M08	8.9	8.5	15.84	25	15.5	58.29	75.29	M8	10	8
TID100L25A90M10	10.4	10	17.34	25	19	64.47	83.47	M10	15	10
TID105L25A90M10	10.9	10.5	19.34	25	19	64.56	83.56	M10	15	10
TID120L25A90M10	12.4	12	19.34	25	19	64.82	83.82	M10	15	12
TID120L40A90M10	12.4	12	19.34	40	19	79.82	98.82	M10	15	12
TID125L25A90M10	12.9	12.5	19.84	25	19	64.91	83.91	M10	15	12
TID125L40A90M10	12.9	12.5	19.84	40	19	79.91	98.91	M10	15	12
TID140L25A90M12	14.4	14	21.34	25	23.5	70.12	92.12	M12	17	14
TID140L40A90M12	14.4	14	21.34	40	23.5	85.12	107.12	M12	17	14
TID145L25A90M12	14.9	14.5	21.84	25	23.5	70.21	92.21	M12	17	14
TID145L40A90M12	14.9	14.5	21.84	40	23.5	85.21	107.21	M12	17	14
TID150L25A90M12	15.9	15	22.34	25	23.5	70.27	92.27	M12	17	15
TID150L40A90M12	15.9	15	22.34	40	23.5	85.27	107.27	M12	17	15
TID160L25A90M12	16.9	16	23.34	25	23.5	70.42	92.42	M12	17	16
TID160L40A90M12	16.9	16	23.34	40	23.5	85.42	107.42	M12	17	16

SPARE PARTS

Designation	Clamping key	Wrench	Clamping screw
TID065L... - TID085L...	K-TID6-9.99	T-7D	SR 34-508
TID100L... - TID160L...	K-TID10-19.99	T-7D	SR 34-508

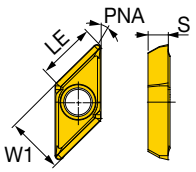
Tool diameter	Hole diameter tolerance*
ø6.5 - ø16.9	+0.04 / 0

*Just for reference

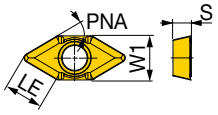
INSERT FOR CHAMFERING ADAPTERS

AOMT...

AOMT06-C45



AOMT03-N-DT**



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous	☆	
S	Superalloys	★	
H	Hard materials	★	

★ : First choice
☆ : Second choice

Designation	LE	Chamfering angle PNA	Coated GH730	W1	S
AOMT060204-C45	4.5	45°	●	5.66	1.96
AOMT030204-N-30DT	4	30°	●	4	1.59
AOMT030204-N-45DT	2.8	45°	●	4	1.59

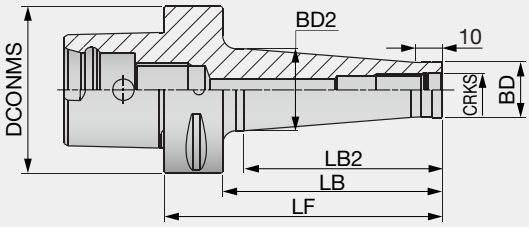
● : Line up

SHANKS

C-ODP

TUNGFLEX

Screw-clamp holder for modular body



Designation	CRKS	DCONMS	BD	BD2	LF	LB	LB2
C4ODP10X53	M10	40	18	23	53	33	23
C4ODP12X53	M12	40	21	26	53	33	23
C4ODP16X53	M16	40	29	34	53	33	23
C5ODP10X53	M10	50	18	19.5	53	33	25
C5ODP10X103	M10	50	18	28	103	83	75
C5ODP12X53	M12	50	21	23.5	53	33	25
C5ODP12X103	M12	50	21	31	103	83	75
C5ODP16X53	M16	50	29	34	53	33	25
C5ODP16X103	M16	50	29	36	103	83	75
C6ODP10X55	M10	63	18	19.5	55	33	25
C6ODP10X105	M10	63	18	28	105	83	75
C6ODP10X130	M10	63	18	32	130	108	100
C6ODP12X55	M12	63	21	23.5	55	33	25
C6ODP12X105	M12	63	21	31	105	83	75
C6ODP12X130	M12	63	21	36	130	108	100

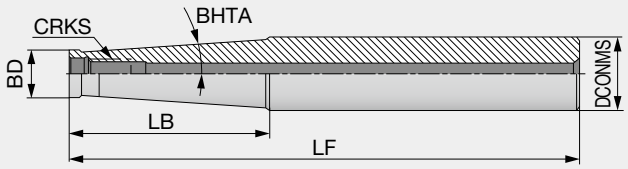
Applicable for 7 MPa coolant

e-catalog

SM

TUNGFLEX

Steel modular shank



Designation	CRKS	DCONMS	LF	LB	BD	BHTA
SM06-L60C10	M6	10	60	20	9.7	0°
SM06-L105-C12	M6	12	105	60	9.7	1.2°
SM06-L125-C16	M6	16	125	60	9.7	3.3°
SM08-L73C16	M8	16	73	25	13	0°
SM08-L128-C16	M8	16	128	80	13	0.9°
SM08-L170-C20	M8	20	170	66.8	13	3.3°
SM10-L80C20	M10	20	80	30	18	0°
SM10-L130-C20	M10	20	130	80	18	0.6°
SM10-L200-C25	M10	25	200	57.2	19	3.3°
SM12-L86-C25	M12	25	86	30	21	5.1°
SM12-L200-C32	M12	32	200	78	21	4.4°

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SM-C-H

Carbide modular shank

Fig. 1

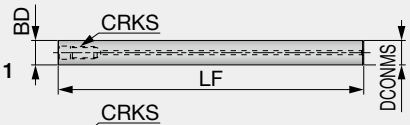


Fig. 2

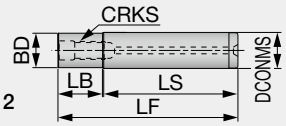
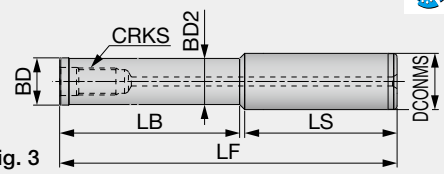


Fig. 3



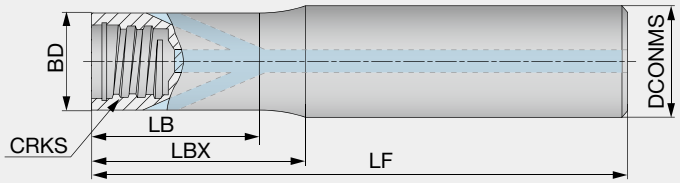
Designation	CRKS	DCONMS	LF	LB	LS	BD	BD2	Fig.
SM06-L100-C10-C-H	M6	10	100	-	-	10	-	1
SM06-L150-C10-C-H	M6	10	150	-	-	10	-	1
SM06-L100-C12-C-H	M6	12	100	-	-	12	-	1
SM06-L150-C12-C-H	M6	12	150	-	-	12	-	1
SM08-L80-20-C16-C-H	M8	16	80	20	59.6	15.3	-	2
SM08-L100-40-C16-C-H	M8	16	100	40	59.6	15.3	-	2
SM08-L150-80-C16-C-H	M8	16	150	80	69.6	15.3	-	2
SM08-L200-100-C16-C-H	M8	16	200	100	98.2	13	12.5	3
SM08-L200-140-C16-C-H	M8	16	200	140	59.6	15.3	-	2
SM08-L250-180-C16-C-H	M8	16	250	180	69.6	15.3	-	2
SM10-L80-20-C20-C-H	M10	20	80	20	59.2	18.5	-	2
SM10-L100-40-C20-C-H	M10	20	100	40	59.2	18.5	-	2
SM10-L150-80-C20-C-H	M10	20	150	80	69.2	18.5	-	2
SM10-L200-100-C20-C-H	M10	20	200	100	99.2	18.5	-	2
SM10-L200-140-C20-C-H	M10	20	200	140	58.7	18	17.5	3
SM10-L200-140-C20-C-H-N	M10	20	200	140	59.2	18.5	-	2
SM10-L250-130-C20-C-H	M10	20	250	130	118.7	18	17.5	3
SM10-L250-180-C20-C-H	M10	20	250	180	68.7	18	17.5	3
SM10-L250-180-C20-C-H-N	M10	20	250	180	69.2	18.5	-	2
SM10-L300-180-C20-C-H	M10	20	300	180	118.7	18	17.5	3
SM10-L300-230-C20-C-H	M10	20	300	230	68.7	18	17.5	3
SM12-L100-40-C25-C-H	M12	25	100	40	59.5	24	-	2
SM12-L150-80-C25-C-H	M12	25	150	80	67.7	21	20.5	3
SM12-L150-80-C25-C-H-N	M12	25	150	80	69.5	24	-	2
SM12-L200-100-C25-C-H	M12	25	200	100	97.7	21	20.5	3
SM12-L200-100-C25-C-H-N	M12	25	200	100	99.5	24	-	2
SM12-L200-140-C25-C-H	M12	25	200	140	57.7	21	20.5	3
SM12-L250-130-C25-C-H	M12	25	250	130	117.7	21	20.5	3
SM12-L250-180-C25-C-H	M12	25	250	180	69.5	24	-	2
SM12-L300-180-C25-C-H	M12	25	300	180	117.7	21	20.5	3
SM12-L300-180-C25-C-H-N	M12	25	300	180	119.5	24	-	2
SM12-L300-230-C25-C-H	M12	25	300	230	67.7	21	20.5	3

e-catalog

VSSD**-W-A...

TUNGMEISTER

Straight shank and neck with coolant hole



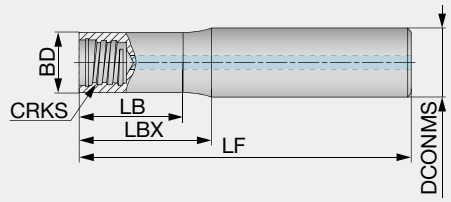
CRKS = Connection screw size

Designation	DCONMS	BD	LF	LBX	LB	CRKS	Shank material
VSSD10L070S06-W-A	10	9.6	70	20	19	S06	Tungsten
VSSD10L090S06-W-A	10	9.6	90	40	39	S06	Tungsten
VSSD10L110S06-W-A	10	9.6	110	60	59	S06	Tungsten
VSSD12L070S08-W-A	12	11.5	70	20	19	S08	Tungsten
VSSD12L090S08-W-A	12	11.5	90	40	39	S08	Tungsten
VSSD12L110S08-W-A	12	11.5	110	60	59	S08	Tungsten
VSSD12L130S08-W-A	12	11.5	130	80	79	S08	Tungsten

VSSD...

TUNGMEISTER

Straight neck and cylindrical shank



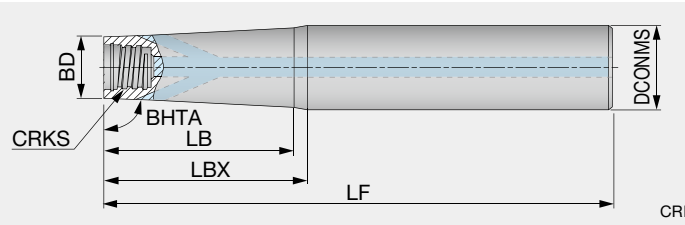
CRKS = Connection screw size

Designation	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VSSD12L070S08-C-A	12	11.5	70	20	17	S08	Cylindrical	Carbide
VSSD12L090S08-S-A	12	11.5	90	16	13.6	S08	Cylindrical	Steel
VSSD12L090LS08-C-A	12	11.5	90	40	37	S08	Cylindrical	Carbide
VSSD12L090LS08-S-A	12	11.5	90	42	37	S08	Cylindrical	Steel
VSSD12L110S08-C-A	12	11.5	110	60	57	S08	Cylindrical	Carbide
VSSD12L130S08-C-A	12	11.5	130	80	77	S08	Cylindrical	Carbide

VTSD**-W-A...

TUNGMEISTER

Straight shank and taper neck with coolant hole



CRKS = Connection screw size

Designation	BHTA	DCONMS	BD	LF	LBX	LB	CRKS	Shank material
VTSD12L110S06-W-A	89°	12	9.6	110	60	59	S06	Tungsten
VTSD16L170S06-W-A	89°	16	9.6	170	120	116	S06	Tungsten

WRENCH

Appearance	Designation	Connection screw size	Torque (N·m)	Applicable head
	KEYV-S06	S06	10	TID065S06-2 TID085S06-2
	KEYV-S08	S08	15	TID105S08-2

Note: Wrenches are sold separately.

TORQUE WRENCHES

Appearance		Designation	Connection screw size	Torque (N·m)
Handle		TORQUEWRENCH5-50NM9x12	-	5 - 50
Open wrenches for cylindrical heads		TM-WRENCH-8-06	S06	10
		TM-WRENCH-10-08	S08	15

SLEEVE

BLM

Sleeve for exchangeable head drill

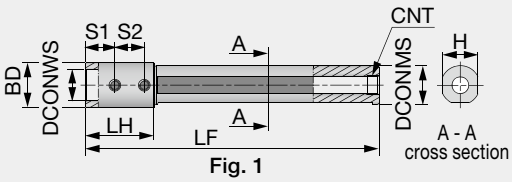


Fig. 1

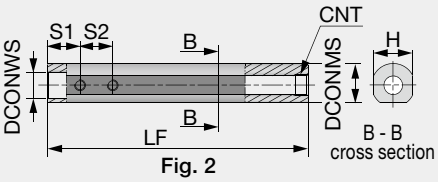


Fig. 2

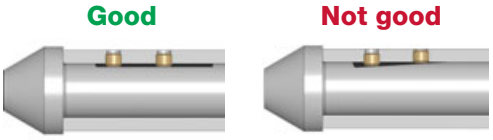
Designation	DCONMS	DCONWS	LF	LH	BD	H	S1	S2	CNT	Body	Fig.
BLM16-12LF	16	12	85	35	20	15	15	15	Rc1/8	TID***F12...	1
BLM19-12LF	19.05	12	140	35	23	18	15	15	Rc1/8	TID***F12...	1
BLM19-12SF	19.05	12	90	35	23	18	15	15	Rc1/8	TID***F12...	1
BLM19-16LF	19.05	16	140	35	23	18	15	15	Rc1/8	TID***F16...	1
BLM19-16SF	19.05	16	90	35	23	18	15	15	Rc1/8	TID***F16...	1
BLM20-12LR	20	12	120	-	-	18	15	15	Rc1/8	TID***F12...	2
BLM20-16LF	20	16	150	35	23	18	15	15	Rc1/8	TID***F16...	1
BLM22-12LR	22	12	120	-	-	21	15	15	Rc1/8	TID***F12...	2
BLM22-16LF	22	16	140	35	25	21	15	15	Rc1/8	TID***F16...	1
BLM25-12LR	25	12	115	-	-	23	15	15	Rc1/8	TID***F12...	2
BLM25-16LR	25	16	115	-	-	23	15	15	Rc1/8	TID***F16...	2
BLM25-20LF	25	20	150	35	28	23	15	15	Rc1/8	TID***F20...	1
BLM254-12LR	25.4	12	115	-	-	24	15	15	Rc1/8	TID***F12...	2
BLM254-12SR	25.4	12	75	-	-	24	15	15	Rc1/8	TID***F12...	2
BLM254-16LR	25.4	16	115	-	-	24	15	15	Rc1/8	TID***F16...	2
BLM254-16SR	25.4	16	75	-	-	24	15	15	Rc1/8	TID***F16...	2
BLM254-20LF	25.4	20	140	35	28	24	15	15	Rc1/8	TID***F20...	1
BLM32-12LR	32	12	120	-	-	31	15	15	Rc1/8	TID***F12...	2
BLM32-16LR	32	16	120	-	-	31	15	15	Rc1/8	TID***F16...	2
BLM32-20LR	32	20	120	-	-	31	15	15	Rc1/8	TID***F20...	2

SPARE PARTS

Designation	Clamping screw	Wrench
BLM16/19/20/22...	SR M5x4 FLAT	P-2.5
BLM25-12LR	SR M5x6 FLAT	P-2.5
BLM25-16LR, BLM25-20LF	SR M5x4 FLAT	P-2.5
BLM254-12LR, BLM254-12SR	SR M5x6 FLAT	P-2.5
BLM254-16LR, BLM254-16SR, BLM254-20LF	SR M5x4 FLAT	P-2.5
BLM32-12LR, BLM32-16LR	SR M5x6 FLAT	P-2.5
BLM32-20LR	SR M5x4 FLAT	P-2.5

Note for sleeve usage

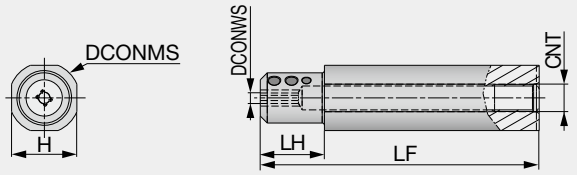
- Please refrain from using whistle notch and weldon type shanks due to clamping stability concerns.



Flat | Whistle notch shank

JBBS-4N

Sleeve for internal coolant supply with 4 coolant holes



Designation	DCONMS	DCONWS	LF	LH	H	CNT
JBBS159-7-L100C-4N	15.875	7	100	10	14.58	Rc1/8
JBBS16-7-L100C-4N	16	7	100	10	15	Rc1/8
JBBS19-7-L100C-4N	19.05	7	100	20	17.2	Rc1/8
JBBS20-7-L100C-4N	20	7	100	20	18	Rc1/8
JBBS22-7-L100C-4N	22	7	100	20	20	Rc1/8
JBBS25-7-L100C-4N	25	7	100	23	23	Rc1/8
JBBS254-7-L100C-4N	25.4	7	100	23	23.4	Rc1/8

JBBS-C

Sleeve for internal coolant supply

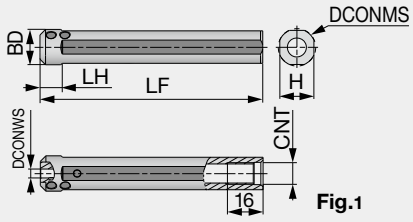


Fig.1

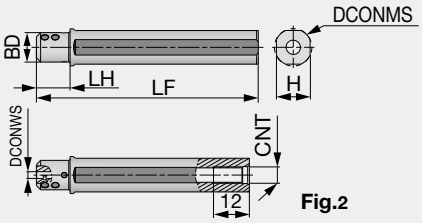


Fig.2

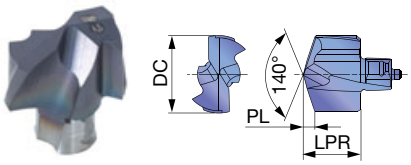
Designation	DCONMS	BD	DCONWS	LF	LH	H	CNT	Fig
JBBS159-7-L100C	15.875	15.875	7	100	10	14.58	Rc1/8	1
JBBS16-7-L100C	16	16	7	100	10	15	Rc1/8	1
JBBS19-7-L100C	19.05	17.5	7	100	20	17.2	Rc1/8	2
JBBS20-7-L100C	20	17.5	7	100	20	18	Rc1/8	2
JBBS22-7-L100C	22	17.5	7	100	20	20	Rc1/8	2
JBBS25-7-L100C	25	18	7	100	23	23	Rc1/8	2
JBBS254-7-L100C	25.4	18	7	100	23	23.4	Rc1/8	2

SPARE PARTS

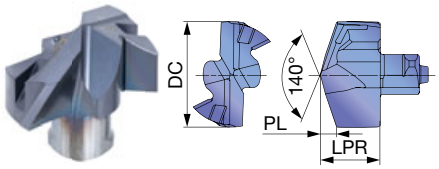
Designation	Clamping screw	Wrench
JBBS**-7-L***C-4N, JBBS**-7-L100C	SSHM5-4PF-S	P-2.5

DRILL HEAD

DMP (General purpose)



ADDMEISTERDRILL
DMP040 - DMP059



DRILLMEISTER
DMP060 - DMP259

Tool diameter	Head diameter tolerance
ø4 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

		Coated	
		AH725	AH9130
P	Steel	★	★
M	Stainless	☆	☆
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	☆	☆
H	Hard materials	☆	☆

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated AH725	Coated AH9130	PL	Body
DMP040	4	3.1	●		0.62	TID*040...
DMP041	4.1	3.1	●		0.64	TID*040...
DMP042	4.2	3.1	●		0.66	TID*040...
DMP043	4.3	3.1	●		0.67	TID*040...
DMP044	4.4	3.1	●		0.69	TID*040...
DMP045	4.5	3.55	●		0.66	TID*045...
DMP046	4.6	3.55	●		0.68	TID*045...
DMP047	4.7	3.55	●		0.70	TID*045...
DMP048	4.8	3.55	●		0.71	TID*045...
DMP049	4.9	3.55	●		0.73	TID*045...
DMP050	5	3.7	●		0.73	TID*050...
DMP051	5.1	3.7	●		0.75	TID*050...
DMP052	5.2	3.7	●		0.77	TID*050...
DMP053	5.3	3.7	●		0.78	TID*050...
DMP054	5.4	3.7	●		0.8	TID*050...
DMP055	5.5	3.85	●		0.81	TID*055...
DMP056	5.6	3.85	●		0.83	TID*055...
DMP057	5.7	3.85	●		0.85	TID*055...
DMP058	5.8	3.85	●		0.86	TID*055...
DMP059	5.9	3.85	●		0.88	TID*055...
DMP060	6	3.85	●	●	1.09	TID*060...
DMP061	6.1	3.85	●	●	1.11	TID*060...
DMP062	6.2	3.85	●	●	1.13	TID*060...
DMP063	6.3	3.85	●	●	1.14	TID*060...
DMP064	6.4	3.85	●	●	1.16	TID*060...
DMP065	6.5	4.15	●	●	1.27	TID*065...
DMP066	6.6	4.15	●	●	1.29	TID*065...
DMP067	6.7	4.15	●	●	1.31	TID*065...
DMP068	6.8	4.15	●	●	1.33	TID*065...
DMP069	6.9	4.15	●	●	1.34	TID*065...
DMP070	7	4.45	●	●	1.03	TID*070...
DMP071	7.1	4.45	●	●	1.05	TID*070...
DMP072	7.2	4.45	●	●	1.07	TID*070...
DMP073	7.3	4.45	●	●	1.08	TID*070...
DMP074	7.4	4.45	●	●	1.1	TID*070...
DMP075	7.5	4.45	●	●	1.12	TID*075...
DMP076	7.6	4.45	●	●	1.14	TID*075...
DMP077	7.7	4.45	●	●	1.16	TID*075...
DMP078	7.8	4.45	●	●	1.18	TID*075...
DMP079	7.9	4.45	●	●	1.19	TID*075...
DMP080	8	5.25	●	●	1.2	TID*080...
DMP081	8.1	5.25	●	●	1.22	TID*080...
DMP082	8.2	5.25	●	●	1.24	TID*080...
DMP083	8.3	5.25	●	●	1.25	TID*080...
DMP084	8.4	5.25	●	●	1.27	TID*080...
DMP085	8.5	5.25	●	●	1.29	TID*085...
DMP086	8.6	5.25	●	●	1.31	TID*085...
DMP087	8.7	5.25	●	●	1.33	TID*085...

		Coated	
		AH725	AH9130
P	Steel	★	★
M	Stainless	☆	☆
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	☆	☆
H	Hard materials	☆	☆

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated AH725	Coated AH9130	PL	Body
DMP088	8.8	5.25	●	●	1.35	TID*085...
DMP089	8.9	5.25	●	●	1.36	TID*085...
DMP090	9	5.65	●	●	1.37	TID*090...
DMP091	9.1	5.65	●	●	1.39	TID*090...
DMP092	9.2	5.65	●	●	1.41	TID*090...
DMP093	9.3	5.65	●	●	1.42	TID*090...
DMP094	9.4	5.65	●	●	1.44	TID*090...
DMP095	9.5	5.65	●	●	1.46	TID*095...
DMP096	9.6	5.65	●	●	1.48	TID*095...
DMP097	9.7	5.65	●	●	1.5	TID*095...
DMP098	9.8	5.65	●	●	1.52	TID*095...
DMP099	9.9	5.65	●	●	1.53	TID*095...
DMP100	10	6.05	●	●	1.47	TID*100...
DMP101	10.1	6.05	●	●	1.49	TID*100...
DMP102	10.2	6.05	●	●	1.51	TID*100...
DMP103	10.3	6.05	●	●	1.52	TID*100...
DMP104	10.4	6.05	●	●	1.54	TID*100...
DMP105	10.5	6.05	●	●	1.56	TID*105...
DMP106	10.6	6.05	●	●	1.58	TID*105...
DMP107	10.7	6.05	●	●	1.6	TID*105...
DMP108	10.8	6.05	●	●	1.62	TID*105...
DMP109	10.9	6.05	●	●	1.63	TID*105...
DMP110	11	6.45	●	●	1.67	TID*110...
DMP111	11.1	6.45	●	●	1.69	TID*110...
DMP112	11.2	6.45	●	●	1.71	TID*110...
DMP113	11.3	6.45	●	●	1.72	TID*110...
DMP114	11.4	6.45	●	●	1.74	TID*110...
DMP115	11.5	6.45	●	●	1.76	TID*115...
DMP116	11.6	6.45	●	●	1.78	TID*115...
DMP117	11.7	6.45	●	●	1.8	TID*115...
DMP118	11.8	6.45	●	●	1.82	TID*115...
DMP119	11.9	6.45	●	●	1.83	TID*115...
DMP120	12	6.8	●	●	1.82	TID*120...
DMP121	12.1	6.8	●	●	1.84	TID*120...
DMP122	12.2	6.8	●	●	1.86	TID*120...
DMP123	12.3	6.8	●	●	1.87	TID*120...
DMP124	12.4	6.8	●	●	1.89	TID*120...
DMP125	12.5	6.8	●	●	1.91	TID*125...
DMP126	12.6	6.8	●	●	1.93	TID*125...
DMP127	12.7	6.8	●	●	1.95	TID*125...
DMP128	12.8	6.8	●	●	1.97	TID*125...
DMP129	12.9	6.8	●	●	1.98	TID*125...
DMP130	13	7.4	●	●	1.96	TID*130...
DMP131	13.1	7.4	●	●	1.98	TID*130...
DMP132	13.2	7.4	●	●	2	TID*130...
DMP133	13.3	7.4	●	●	2.01	TID*130...

ø4 - ø19.9 = 2 pieces per package
ø20 - ø25.9 = 1 piece per package

● : Line up

P	Steel	★	★
M	Stainless	☆	☆
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	☆	☆
H	Hard materials	☆	☆

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated AH725	Coated AH9130	PL	Body
DMP134	13.4	7.4	●	●	2.03	TID*130...
DMP135	13.5	7.4	●	●	2.05	TID*135...
DMP136	13.6	7.4	●	●	2.07	TID*135...
DMP137	13.7	7.4	●	●	2.09	TID*135...
DMP138	13.8	7.4	●	●	2.11	TID*135...
DMP139	13.9	7.4	●	●	2.12	TID*135...
DMP140	14	7.95	●	●	2.12	TID*140...
DMP141	14.1	7.95	●	●	2.14	TID*140...
DMP142	14.2	7.95	●	●	2.16	TID*140...
DMP143	14.3	7.95	●	●	2.17	TID*140...
DMP144	14.4	7.95	●	●	2.19	TID*140...
DMP145	14.5	7.95	●	●	2.21	TID*145...
DMP146	14.6	7.95	●	●	2.23	TID*145...
DMP147	14.7	7.95	●	●	2.25	TID*145...
DMP148	14.8	7.95	●	●	2.27	TID*145...
DMP149	14.9	7.95	●	●	2.28	TID*145...
DMP150	15	8.53	●	●	2.27	TID*150...
DMP151	15.1	8.53	●	●	2.29	TID*150...
DMP152	15.2	8.53	●	●	2.31	TID*150...
DMP153	15.3	8.53	●	●	2.32	TID*150...
DMP154	15.4	8.53	●	●	2.34	TID*150...
DMP155	15.5	8.53	●	●	2.36	TID*150...
DMP156	15.6	8.53	●	●	2.38	TID*150...
DMP157	15.7	8.53	●	●	2.4	TID*150...
DMP158	15.8	8.53	●	●	2.42	TID*150...
DMP159	15.9	8.53	●	●	2.43	TID*150...
DMP160	16	9.1	●	●	2.42	TID*160...
DMP161	16.1	9.1	●	●	2.44	TID*160...
DMP162	16.2	9.1	●	●	2.46	TID*160...
DMP163	16.3	9.1	●	●	2.47	TID*160...
DMP164	16.4	9.1	●	●	2.49	TID*160...
DMP165	16.5	9.1	●	●	2.51	TID*160...
DMP166	16.6	9.1	●	●	2.53	TID*160...
DMP167	16.7	9.1	●	●	2.55	TID*160...
DMP168	16.8	9.1	●	●	2.57	TID*160...
DMP169	16.9	9.1	●	●	2.58	TID*160...
DMP170	17	9.7	●	●	2.59	TID*170...
DMP171	17.1	9.7	●	●	2.61	TID*170...
DMP172	17.2	9.7	●	●	2.63	TID*170...
DMP173	17.3	9.7	●	●	2.64	TID*170...
DMP174	17.4	9.7	●	●	2.66	TID*170...
DMP175	17.5	9.7	●	●	2.68	TID*170...
DMP176	17.6	9.7	●	●	2.7	TID*170...
DMP177	17.7	9.7	●	●	2.72	TID*170...
DMP178	17.8	9.7	●	●	2.74	TID*170...
DMP179	17.9	9.7	●	●	2.75	TID*170...
DMP180	18	10.3	●	●	2.73	TID*180...
DMP181	18.1	10.3	●	●	2.75	TID*180...
DMP182	18.2	10.3	●	●	2.77	TID*180...
DMP183	18.3	10.3	●	●	2.78	TID*180...
DMP184	18.4	10.3	●	●	2.8	TID*180...
DMP185	18.5	10.3	●	●	2.82	TID*180...
DMP186	18.6	10.3	●	●	2.84	TID*180...
DMP187	18.7	10.3	●	●	2.86	TID*180...
DMP188	18.8	10.3	●	●	2.88	TID*180...
DMP189	18.9	10.3	●	●	2.89	TID*180...
DMP190	19	10.8	●	●	2.88	TID*190...
DMP1905	19.05	10.8	●	●	2.89	TID*190...
DMP191	19.1	10.8	●	●	2.9	TID*190...
DMP192	19.2	10.8	●	●	2.92	TID*190...
DMP1927	19.27	10.8	●		2.93	TID*190...
DMP193	19.3	10.8	●	●	2.93	TID*190...
DMP194	19.4	10.8	●	●	2.95	TID*190...
DMP195	19.5	10.8	●	●	2.97	TID*190...
DMP196	19.6	10.8	●	●	2.99	TID*190...
DMP197	19.7	10.8	●	●	3.01	TID*190...

P	Steel	★	★
M	Stainless	☆	☆
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	☆	☆
H	Hard materials	☆	☆

★ : First choice
☆ : Second choice

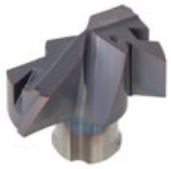
Designation	DC	LPR	Coated AH725	Coated AH9130	PL	Body
DMP198	19.8	10.8	●	●	3.03	TID*190...
DMP199	19.9	10.8	●	●	3.04	TID*190...
DMP200	20	11.4	●	●	3.02	TID*200...
DMP201	20.1	11.4	●	●	3.04	TID*200...
DMP202	20.2	11.4	●	●	3.06	TID*200...
DMP203	20.3	11.4	●	●	3.07	TID*200...
DMP204	20.4	11.4	●	●	3.09	TID*200...
DMP205	20.5	11.4	●	●	3.11	TID*200...
DMP206	20.6	11.4	●	●	3.13	TID*200...
DMP207	20.7	11.4	●	●	3.15	TID*200...
DMP208	20.8	11.4	●	●	3.17	TID*200...
DMP209	20.9	11.4	●	●	3.18	TID*200...
DMP210	21	11.98	●	●	3.18	TID*210...
DMP211	21.1	11.98	●	●	3.2	TID*210...
DMP212	21.2	11.98	●	●	3.22	TID*210...
DMP213	21.3	11.98	●	●	3.23	TID*210...
DMP214	21.4	11.98	●	●	3.25	TID*210...
DMP215	21.5	11.98	●	●	3.27	TID*210...
DMP216	21.6	11.98	●	●	3.29	TID*210...
DMP217	21.7	11.98	●	●	3.31	TID*210...
DMP218	21.8	11.98	●	●	3.33	TID*210...
DMP219	21.9	11.98	●	●	3.34	TID*210...
DMP220	22	12.56	●	●	3.32	TID*220...
DMP221	22.1	12.56	●	●	3.34	TID*220...
DMP222	22.2	12.56	●	●	3.36	TID*220...
DMP223	22.3	12.56	●	●	3.37	TID*220...
DMP224	22.4	12.56	●	●	3.39	TID*220...
DMP225	22.5	12.56	●	●	3.41	TID*220...
DMP226	22.6	12.56	●	●	3.43	TID*220...
DMP227	22.7	12.56	●	●	3.45	TID*220...
DMP228	22.8	12.56	●	●	3.47	TID*220...
DMP229	22.9	12.56	●	●	3.48	TID*220...
DMP230	23	13.13	●	●	3.46	TID*230...
DMP231	23.1	13.13	●	●	3.48	TID*230...
DMP232	23.2	13.13	●	●	3.5	TID*230...
DMP233	23.3	13.13	●	●	3.51	TID*230...
DMP234	23.4	13.13	●	●	3.53	TID*230...
DMP235	23.5	13.13	●	●	3.55	TID*230...
DMP236	23.6	13.13	●	●	3.57	TID*230...
DMP237	23.7	13.13	●	●	3.59	TID*230...
DMP238	23.8	13.13	●	●	3.61	TID*230...
DMP239	23.9	13.13	●	●	3.62	TID*230...
DMP240	24	13.7	●	●	3.62	TID*240...
DMP241	24.1	13.7	●	●	3.64	TID*240...
DMP242	24.2	13.7	●	●	3.66	TID*240...
DMP243	24.3	13.7	●	●	3.67	TID*240...
DMP244	24.4	13.7	●	●	3.69	TID*240...
DMP245	24.5	13.7	●	●	3.71	TID*240...
DMP246	24.6	13.7	●	●	3.73	TID*240...
DMP247	24.7	13.7	●	●	3.75	TID*240...
DMP248	24.8	13.7	●	●	3.77	TID*240...
DMP249	24.9	13.7	●	●	3.78	TID*240...
DMP250	25	14.3	●	●	3.8	TID*250...
DMP251	25.1	14.3	●	●	3.82	TID*250...
DMP252	25.2	14.3	●	●	3.84	TID*250...
DMP253	25.3	14.3	●	●	3.85	TID*250...
DMP254	25.4	14.3	●	●	3.87	TID*250...
DMP255	25.5	14.3	●	●	3.89	TID*250...
DMP256	25.6	14.3	●	●	3.91	TID*250...
DMP2567	25.67	14.3	●	●	3.92	TID*250...
DMP257	25.7	14.3	●	●	3.93	TID*250...
DMP258	25.8	14.3	●	●	3.95	TID*250...
DMP259	25.9	14.3	●	●	3.96	TID*250...

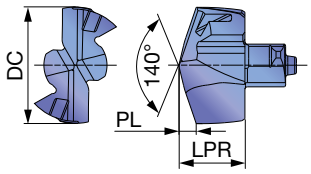
ø4 - ø19.9 = 2 pieces per package
ø20 - ø25.9 = 1 piece per package

● : Line up

New

DMM (Stainless steel and exotic material)





Tool diameter	Head diameter tolerance
ø10 - ø17.9	+0.018 / 0
ø18 - ø19.9	+0.021 / 0

P	Steel	☆		
M	Stainless	★		
K	Cast iron	☆		
N	Non-ferrous	☆		
S	Superalloys	★		
H	Hard materials	☆		

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated	PL	Body
			AH9130		
DMM100	10	6.05	●	1.47	TID*100...
DMM103	10.3	6.05	●	1.52	TID*100...
DMM105	10.5	6.05	●	1.56	TID*105...
DMM108	10.8	6.05	●	1.62	TID*105...
DMM110	11	6.45	●	1.67	TID*110...
DMM111	11.1	6.45	●	1.69	TID*110...
DMM114	11.4	6.45	●	1.74	TID*110...
DMM115	11.5	6.45	●	1.76	TID*115...
DMM118	11.8	6.45	●	1.82	TID*115...
DMM120	12	6.8	●	1.82	TID*120...
DMM121	12.1	6.8	●	1.84	TID*120...
DMM122	12.2	6.8	●	1.86	TID*120...
DMM123	12.3	6.8	●	1.87	TID*120...
DMM125	12.5	6.8	●	1.91	TID*125...
DMM126	12.6	6.8	●	1.93	TID*125...
DMM127	12.7	6.8	●	1.95	TID*125...
DMM130	13	7.4	●	1.96	TID*130...
DMM131	13.1	7.4	●	1.98	TID*130...
DMM133	13.3	7.4	●	2.01	TID*130...
DMM135	13.5	7.4	●	2.05	TID*135...
DMM138	13.8	7.4	●	2.11	TID*135...
DMM140	14	7.95	●	2.12	TID*140...
DMM141	14.1	7.95	●	2.14	TID*140...
DMM142	14.2	7.95	●	2.16	TID*140...
DMM145	14.5	7.95	●	2.21	TID*145...
DMM146	14.6	7.95	●	2.23	TID*145...

P	Steel	☆		
M	Stainless	★		
K	Cast iron	☆		
N	Non-ferrous	☆		
S	Superalloys	★		
H	Hard materials	☆		

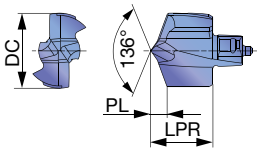
★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated	PL	Body
			AH9130		
DMM150	15	8.53	●	2.27	TID*150...
DMM152	15.2	8.53	●	2.31	TID*150...
DMM155	15.5	8.53	●	2.36	TID*150...
DMM157	15.7	8.53	●	2.4	TID*150...
DMM160	16	9.1	●	2.42	TID*160...
DMM163	16.3	9.1	●	2.47	TID*160...
DMM165	16.5	9.1	●	2.51	TID*160...
DMM166	16.6	9.1	●	2.53	TID*160...
DMM167	16.7	9.1	●	2.55	TID*160...
DMM170	17	9.7	●	2.59	TID*170...
DMM172	17.2	9.7	●	2.63	TID*170...
DMM175	17.5	9.7	●	2.68	TID*170...
DMM176	17.6	9.7	●	2.7	TID*170...
DMM177	17.7	9.7	●	2.72	TID*170...
DMM179	17.9	9.7	●	2.75	TID*170...
DMM180	18	10.3	●	2.73	TID*180...
DMM183	18.3	10.3	●	2.78	TID*180...
DMM185	18.5	10.3	●	2.82	TID*180...
DMM187	18.7	10.3	●	2.86	TID*180...
DMM190	19	10.8	●	2.88	TID*190...
DMM1905	19.05	10.8	●	2.89	TID*190...
DMM1927	19.27	10.8	●	2.93	TID*190...
DMM193	19.3	10.8	●	2.93	TID*190...
DMM195	19.5	10.8	●	2.97	TID*190...
DMM196	19.6	10.8	●	2.99	TID*190...
DMM199	19.9	10.8	●	3.04	TID*190...

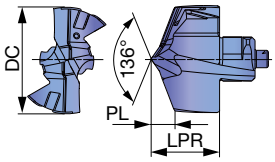
ø10 - ø19.9 = 2 pieces per package

● : New product
● : Line up

DMC (High precision hole making)



ADDMEISTER DRILL
DMC040 - DMC059



DRILLMEISTER
DMC060 - DMC259

Tool diameter	Head diameter tolerance
ø4 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

P	Steel	★
M	Stainless	☆
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	☆
H	Hard materials	☆

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated AH9130	PL	Body
DMC040	4	3.51	●	0.86	TID*040...
DMC041	4.1	3.51	●	0.88	TID*040...
DMC042	4.2	3.51	●	0.9	TID*040...
DMC043	4.3	3.51	●	0.92	TID*040...
DMC044	4.4	3.51	●	0.94	TID*040...
DMC045	4.5	3.81	●	0.97	TID*045...
DMC046	4.6	3.81	●	0.99	TID*045...
DMC047	4.7	3.81	●	1.01	TID*045...
DMC048	4.8	3.81	●	1.03	TID*045...
DMC049	4.9	3.81	●	1.05	TID*045...
DMC050	5	4.14	●	1.09	TID*050...
DMC051	5.1	4.14	●	1.11	TID*050...
DMC052	5.2	4.14	●	1.13	TID*050...
DMC053	5.3	4.14	●	1.15	TID*050...
DMC054	5.4	4.14	●	1.17	TID*050...
DMC055	5.5	4.17	●	1.22	TID*055...
DMC056	5.6	4.17	●	1.24	TID*055...
DMC057	5.7	4.17	●	1.26	TID*055...
DMC058	5.8	4.17	●	1.28	TID*055...
DMC059	5.9	4.17	●	1.3	TID*055...
DMC060	6	4	●	1.24	TID*060...
DMC061	6.1	4	●	1.26	TID*060...
DMC062	6.2	4	●	1.28	TID*060...
DMC063	6.3	4	●	1.3	TID*060...
DMC064	6.4	4	●	1.32	TID*060...
DMC065	6.5	4.3	●	1.33	TID*065...
DMC066	6.6	4.3	●	1.35	TID*065...
DMC067	6.7	4.3	●	1.37	TID*065...
DMC068	6.8	4.3	●	1.39	TID*065...
DMC069	6.9	4.3	●	1.41	TID*065...
DMC070	7	4.9	●	1.48	TID*070...
DMC071	7.1	4.9	●	1.5	TID*070...
DMC072	7.2	4.9	●	1.52	TID*070...
DMC073	7.3	4.9	●	1.54	TID*070...
DMC074	7.4	4.9	●	1.56	TID*070...
DMC075	7.5	4.9	●	1.58	TID*075...
DMC076	7.6	4.9	●	1.6	TID*075...
DMC077	7.7	4.9	●	1.62	TID*075...
DMC078	7.8	4.9	●	1.64	TID*075...
DMC079	7.9	4.9	●	1.66	TID*075...
DMC080	8	5.4	●	1.62	TID*080...
DMC081	8.1	5.4	●	1.64	TID*080...
DMC082	8.2	5.4	●	1.66	TID*080...
DMC083	8.3	5.4	●	1.68	TID*080...
DMC084	8.4	5.4	●	1.7	TID*080...
DMC085	8.5	5.4	●	1.72	TID*085...
DMC086	8.6	5.4	●	1.74	TID*085...
DMC087	8.7	5.4	●	1.76	TID*085...

P	Steel	★
M	Stainless	☆
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	☆
H	Hard materials	☆

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated AH9130	PL	Body
DMC088	8.8	5.4	●	1.78	TID*085...
DMC089	8.9	5.4	●	1.8	TID*085...
DMC090	9	5.8	●	1.91	TID*090...
DMC091	9.1	5.8	●	1.93	TID*090...
DMC092	9.2	5.8	●	1.95	TID*090...
DMC093	9.3	5.8	●	1.97	TID*090...
DMC094	9.4	5.8	●	1.99	TID*090...
DMC095	9.5	5.8	●	2.01	TID*095...
DMC096	9.6	5.8	●	2.03	TID*095...
DMC097	9.7	5.8	●	2.05	TID*095...
DMC098	9.8	5.8	●	2.07	TID*095...
DMC099	9.9	5.8	●	2.09	TID*095...
DMC100	10	6.67	●	2.09	TID*100...
DMC101	10.1	6.67	●	2.11	TID*100...
DMC102	10.2	6.67	●	2.13	TID*100...
DMC103	10.3	6.67	●	2.15	TID*100...
DMC104	10.4	6.67	●	2.17	TID*100...
DMC105	10.5	6.67	●	2.19	TID*105...
DMC106	10.6	6.67	●	2.21	TID*105...
DMC107	10.7	6.67	●	2.23	TID*105...
DMC108	10.8	6.67	●	2.25	TID*105...
DMC109	10.9	6.67	●	2.27	TID*105...
DMC110	11	7.1	●	2.32	TID*110...
DMC111	11.1	7.1	●	2.34	TID*110...
DMC112	11.2	7.1	●	2.36	TID*110...
DMC113	11.3	7.1	●	2.38	TID*110...
DMC114	11.4	7.1	●	2.4	TID*110...
DMC115	11.5	7.1	●	2.42	TID*115...
DMC116	11.6	7.1	●	2.44	TID*115...
DMC117	11.7	7.1	●	2.46	TID*115...
DMC118	11.8	7.1	●	2.48	TID*115...
DMC119	11.9	7.1	●	2.5	TID*115...
DMC120	12	7.43	●	2.45	TID*120...
DMC121	12.1	7.43	●	2.47	TID*120...
DMC122	12.2	7.43	●	2.49	TID*120...
DMC123	12.3	7.43	●	2.51	TID*120...
DMC124	12.4	7.43	●	2.53	TID*120...
DMC125	12.5	7.43	●	2.55	TID*125...
DMC126	12.6	7.43	●	2.57	TID*125...
DMC127	12.7	7.43	●	2.59	TID*125...
DMC128	12.8	7.43	●	2.61	TID*125...
DMC129	12.9	7.43	●	2.63	TID*125...
DMC130	13	8.15	●	2.71	TID*130...
DMC131	13.1	8.15	●	2.73	TID*130...
DMC132	13.2	8.15	●	2.75	TID*130...
DMC133	13.3	8.15	●	2.77	TID*130...

ø4 - ø19.9 = 2 pieces per package
ø20 - ø25.9 = 1 piece per package

● : Line up

P	Steel	★		
M	Stainless	☆		
K	Cast iron	★		
N	Non-ferrous	☆		
S	Superalloys	☆		
H	Hard materials	☆		

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated			PL	Body
			AH9130				
DMC134	13.4	8.15	●			2.79	TID*130...
DMC135	13.5	8.15	●			2.81	TID*135...
DMC136	13.6	8.15	●			2.83	TID*135...
DMC137	13.7	8.15	●			2.85	TID*135...
DMC138	13.8	8.15	●			2.87	TID*135...
DMC139	13.9	8.15	●			2.89	TID*135...
DMC140	14	8.76	●			2.93	TID*140...
DMC141	14.1	8.76	●			2.95	TID*140...
DMC142	14.2	8.76	●			2.97	TID*140...
DMC143	14.3	8.76	●			2.99	TID*140...
DMC144	14.4	8.76	●			3.01	TID*140...
DMC145	14.5	8.76	●			3.03	TID*145...
DMC146	14.6	8.76	●			3.05	TID*145...
DMC147	14.7	8.76	●			3.07	TID*145...
DMC148	14.8	8.76	●			3.09	TID*145...
DMC149	14.9	8.76	●			3.11	TID*145...
DMC150	15	9.44	●			3.18	TID*150...
DMC151	15.1	9.44	●			3.2	TID*150...
DMC152	15.2	9.44	●			3.22	TID*150...
DMC153	15.3	9.44	●			3.24	TID*150...
DMC154	15.4	9.44	●			3.26	TID*150...
DMC155	15.5	9.44	●			3.28	TID*150...
DMC156	15.6	9.44	●			3.3	TID*150...
DMC157	15.7	9.44	●			3.32	TID*150...
DMC158	15.8	9.44	●			3.34	TID*150...
DMC159	15.9	9.44	●			3.36	TID*150...
DMC160	16	10.07	●			3.39	TID*160...
DMC161	16.1	10.07	●			3.41	TID*160...
DMC162	16.2	10.07	●			3.43	TID*160...
DMC163	16.3	10.07	●			3.45	TID*160...
DMC164	16.4	10.07	●			3.47	TID*160...
DMC165	16.5	10.07	●			3.49	TID*160...
DMC166	16.6	10.07	●			3.51	TID*160...
DMC167	16.7	10.07	●			3.53	TID*160...
DMC168	16.8	10.07	●			3.55	TID*160...
DMC169	16.9	10.07	●			3.57	TID*160...
DMC170	17	10.68	●			3.57	TID*170...
DMC171	17.1	10.68	●			3.59	TID*170...
DMC172	17.2	10.68	●			3.61	TID*170...
DMC173	17.3	10.68	●			3.63	TID*170...
DMC174	17.4	10.68	●			3.65	TID*170...
DMC175	17.5	10.68	●			3.67	TID*170...
DMC176	17.6	10.68	●			3.69	TID*170...
DMC177	17.7	10.68	●			3.71	TID*170...
DMC178	17.8	10.68	●			3.73	TID*170...
DMC179	17.9	10.68	●			3.75	TID*170...
DMC180	18	11.35	●			3.78	TID*180...
DMC181	18.1	11.35	●			3.8	TID*180...
DMC182	18.2	11.35	●			3.82	TID*180...
DMC183	18.3	11.35	●			3.84	TID*180...
DMC184	18.4	11.35	●			3.86	TID*180...
DMC185	18.5	11.35	●			3.88	TID*180...
DMC186	18.6	11.35	●			3.9	TID*180...
DMC187	18.7	11.35	●			3.92	TID*180...
DMC188	18.8	11.35	●			3.94	TID*180...
DMC189	18.9	11.35	●			3.96	TID*180...
DMC190	19	11.91	●			3.99	TID*190...
DMC191	19.1	11.91	●			4.01	TID*190...
DMC192	19.2	11.91	●			4.03	TID*190...
DMC1927	19.27	11.91	●			4.04	TID*190...
DMC193	19.3	11.91	●			4.05	TID*190...
DMC194	19.4	11.91	●			4.07	TID*190...
DMC195	19.5	11.91	●			4.09	TID*190...
DMC196	19.6	11.91	●			4.11	TID*190...
DMC197	19.7	11.91	●			4.13	TID*190...
DMC198	19.8	11.91	●			4.15	TID*190...

P	Steel	★		
M	Stainless	☆		
K	Cast iron	★		
N	Non-ferrous	☆		
S	Superalloys	☆		
H	Hard materials	☆		

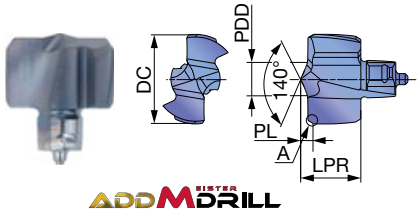
★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated			PL	Body
			AH9130				
DMC199	19.9	11.91	●			4.17	TID*190...
DMC200	20	12.62	●			4.24	TID*200...
DMC201	20.1	12.62	●			4.26	TID*200...
DMC202	20.2	12.62	●			4.28	TID*200...
DMC203	20.3	12.62	●			4.3	TID*200...
DMC204	20.4	12.62	●			4.32	TID*200...
DMC205	20.5	12.62	●			4.34	TID*200...
DMC206	20.6	12.62	●			4.36	TID*200...
DMC207	20.7	12.62	●			4.38	TID*200...
DMC208	20.8	12.62	●			4.4	TID*200...
DMC209	20.9	12.62	●			4.42	TID*200...
DMC210	21	13.2	●			4.4	TID*210...
DMC211	21.1	13.2	●			4.42	TID*210...
DMC212	21.2	13.2	●			4.44	TID*210...
DMC213	21.3	13.2	●			4.46	TID*210...
DMC214	21.4	13.2	●			4.48	TID*210...
DMC215	21.5	13.2	●			4.5	TID*210...
DMC216	21.6	13.2	●			4.52	TID*210...
DMC217	21.7	13.2	●			4.54	TID*210...
DMC218	21.8	13.2	●			4.56	TID*210...
DMC219	21.9	13.2	●			4.58	TID*210...
DMC220	22	13.84	●			4.6	TID*220...
DMC221	22.1	13.84	●			4.62	TID*220...
DMC222	22.2	13.84	●			4.64	TID*220...
DMC223	22.3	13.84	●			4.66	TID*220...
DMC224	22.4	13.84	●			4.68	TID*220...
DMC225	22.5	13.84	●			4.7	TID*220...
DMC226	22.6	13.84	●			4.72	TID*220...
DMC227	22.7	13.84	●			4.74	TID*220...
DMC228	22.8	13.84	●			4.76	TID*220...
DMC229	22.9	13.84	●			4.78	TID*220...
DMC230	23	14.51	●			4.84	TID*230...
DMC231	23.1	14.51	●			4.84	TID*220...
DMC232	23.2	14.51	●			4.86	TID*230...
DMC233	23.3	14.51	●			4.88	TID*220...
DMC234	23.4	14.51	●			4.9	TID*230...
DMC235	23.5	14.51	●			4.94	TID*230...
DMC236	23.6	14.51	●			4.94	TID*230...
DMC237	23.7	14.51	●			4.96	TID*230...
DMC238	23.8	14.51	●			4.98	TID*230...
DMC239	23.9	14.51	●			5	TID*230...
DMC240	24	15.11	●			5.03	TID*240...
DMC241	24.1	15.11	●			5.24	TID*240...
DMC242	24.2	15.11	●			5.26	TID*240...
DMC243	24.3	15.11	●			5.28	TID*240...
DMC244	24.4	15.11	●			5.3	TID*240...
DMC245	24.5	15.11	●			5.13	TID*240...
DMC246	24.6	15.11	●			5.34	TID*240...
DMC247	24.7	15.11	●			5.36	TID*240...
DMC248	24.8	15.11	●			5.38	TID*240...
DMC249	24.9	15.11	●			5.4	TID*240...
DMC250	25	15.78	●			5.28	TID*250...
DMC251	25.1	15.78	●			5.71	TID*250...
DMC252	25.2	15.78	●			5.73	TID*250...
DMC253	25.3	15.78	●			5.34	TID*250...
DMC254	25.4	15.78	●			5.77	TID*250...
DMC255	25.5	15.78	●			5.38	TID*250...
DMC256	25.6	15.78	●			5.81	TID*250...
DMC2567	25.67	15.78	●			5.42	TID*250...
DMC257	25.7	15.78	●			5.83	TID*250...
DMC258	25.8	15.78	●			5.85	TID*250...
DMC259	25.9	15.78	●			5.46	TID*250...

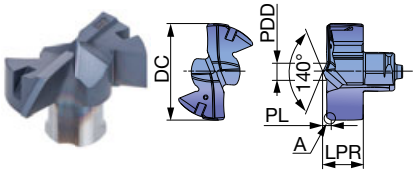
ø4 - ø19.9 = 2 pieces per package
ø20 - ø25.9 = 1 piece per package

● : Line up

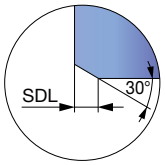
DMF (Flat geometry head)



ADDMDRILL
DMF040 - DMF059



DRILLMEISTER
DMF060 - DMF259



Detail in A

Tool diameter	Head diameter tolerance
ø4 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

P	Steel	★	
M	Stainless	☆	
K	Cast iron	★	
N	Non-ferrous	☆	
S	Superalloys	☆	
H	Hard materials	☆	

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated AH9130	SDL	PL	PDD	Body
DMF040	4	2.95	●	0.29	0.45	1.45	TID*040...
DMF045	4.5	3.28	●	0.29	0.48	1.56	TID*045...
DMF050	5	3.52	●	0.4	0.61	1.98	TID*050...
DMF051	5.1	3.52	●	0.4	0.61	1.98	TID*050...
DMF052	5.2	3.52	●	0.4	0.61	1.98	TID*050...
DMF053	5.3	3.52	●	0.4	0.61	1.98	TID*050...
DMF054	5.4	3.52	●	0.4	0.61	1.98	TID*050...
DMF055	5.5	3.52	●	0.4	0.61	2.02	TID*055...
DMF056	5.6	3.52	●	0.4	0.61	2.02	TID*055...
DMF057	5.7	3.52	●	0.4	0.61	2.02	TID*055...
DMF058	5.8	3.52	●	0.4	0.61	2.02	TID*055...
DMF059	5.9	3.52	●	0.4	0.61	2.02	TID*055...
DMF060	6	3.01	●	0.4	0.61	1.15	TID*060...
DMF061	6.1	3.01	●	0.4	0.61	1.15	TID*060...
DMF062	6.2	3.01	●	0.4	0.61	1.15	TID*060...
DMF063	6.3	3.01	●	0.4	0.61	1.15	TID*060...
DMF064	6.4	3.01	●	0.4	0.61	1.15	TID*060...
DMF065	6.5	3.28	●	0.4	0.68	1.54	TID*065...
DMF066	6.6	3.28	●	0.4	0.68	1.54	TID*065...
DMF067	6.7	3.28	●	0.4	0.68	1.54	TID*065...
DMF068	6.8	3.28	●	0.4	0.68	1.54	TID*065...
DMF069	6.9	3.28	●	0.4	0.68	1.54	TID*065...
DMF070	7	3.58	●	0.4	0.68	1.54	TID*070...
DMF071	7.1	3.58	●	0.4	0.68	1.54	TID*070...
DMF072	7.2	3.58	●	0.4	0.68	1.54	TID*070...
DMF073	7.3	3.58	●	0.4	0.68	1.54	TID*070...
DMF074	7.4	3.58	●	0.4	0.68	1.54	TID*070...
DMF075	7.5	3.58	●	0.4	0.68	1.54	TID*075...
DMF076	7.6	3.58	●	0.4	0.68	1.54	TID*075...
DMF078	7.8	3.58	●	0.4	0.68	1.54	TID*075...
DMF079	7.9	3.58	●	0.4	0.68	1.54	TID*075...
DMF080	8	4.39	●	0.7	1.09	2.44	TID*080...
DMF081	8.1	4.39	●	0.7	1.09	2.44	TID*080...
DMF082	8.2	4.39	●	0.7	1.09	2.44	TID*080...
DMF083	8.3	4.39	●	0.7	1.09	2.44	TID*080...
DMF084	8.4	4.39	●	0.7	1.09	2.44	TID*080...
DMF085	8.5	4.39	●	0.7	1.09	2.44	TID*085...
DMF086	8.6	4.39	●	0.7	1.09	2.44	TID*085...
DMF087	8.7	4.39	●	0.7	1.09	2.44	TID*085...
DMF088	8.8	4.39	●	0.7	1.09	2.44	TID*085...
DMF089	8.9	4.39	●	0.7	1.09	2.44	TID*085...
DMF090	9	4.61	●	0.7	1.11	2.55	TID*090...
DMF091	9.1	4.61	●	0.7	1.11	2.55	TID*090...
DMF092	9.2	4.61	●	0.7	1.11	2.55	TID*090...
DMF093	9.3	4.61	●	0.7	1.11	2.55	TID*090...
DMF094	9.4	4.61	●	0.7	1.11	2.55	TID*090...
DMF095	9.5	4.61	●	0.7	1.11	2.55	TID*095...
DMF096	9.6	4.61	●	0.7	1.11	2.55	TID*095...
DMF097	9.7	4.61	●	0.7	1.11	2.55	TID*095...

P	Steel	★	
M	Stainless	☆	
K	Cast iron	★	
N	Non-ferrous	☆	
S	Superalloys	☆	
H	Hard materials	☆	

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated AH9130	SDL	PL	PDD	Body
DMF098	9.8	4.61	●	0.7	1.11	2.55	TID*095...
DMF099	9.9	4.61	●	0.7	1.11	2.55	TID*095...
DMF100	10	4.72	●	0.7	1.17	2.89	TID*100...
DMF101	10.1	4.72	●	0.7	1.17	2.89	TID*100...
DMF102	10.2	4.72	●	0.7	1.17	2.89	TID*100...
DMF103	10.3	4.72	●	0.7	1.17	2.89	TID*100...
DMF104	10.4	4.72	●	0.7	1.17	2.89	TID*100...
DMF105	10.5	4.72	●	0.7	1.17	2.89	TID*105...
DMF106	10.6	4.72	●	0.7	1.17	2.89	TID*105...
DMF107	10.7	4.72	●	0.7	1.17	2.89	TID*105...
DMF108	10.8	4.72	●	0.7	1.17	2.89	TID*105...
DMF109	10.9	4.72	●	0.7	1.17	2.89	TID*105...
DMF110	11	4.9	●	0.7	1.25	2.98	TID*110...
DMF111	11.1	4.9	●	0.7	1.25	2.98	TID*110...
DMF112	11.2	4.9	●	0.7	1.25	2.98	TID*110...
DMF113	11.3	4.9	●	0.7	1.25	2.98	TID*110...
DMF114	11.4	4.9	●	0.7	1.25	2.98	TID*110...
DMF115	11.5	4.9	●	0.7	1.25	2.98	TID*115...
DMF116	11.6	4.9	●	0.7	1.25	2.98	TID*115...
DMF117	11.7	4.9	●	0.7	1.25	2.98	TID*115...
DMF118	11.8	4.9	●	0.7	1.25	2.98	TID*115...
DMF119	11.9	4.9	●	0.7	1.25	2.98	TID*115...
DMF120	12	5.21	●	0.7	1.26	3.13	TID*120...
DMF121	12.1	5.21	●	0.7	1.26	3.13	TID*120...
DMF122	12.2	5.21	●	0.7	1.26	3.13	TID*120...
DMF123	12.3	5.21	●	0.7	1.26	3.13	TID*120...
DMF124	12.4	5.21	●	0.7	1.26	3.13	TID*120...
DMF125	12.5	5.21	●	0.7	1.26	3.13	TID*125...
DMF126	12.6	5.21	●	0.7	1.26	3.13	TID*125...
DMF127	12.7	5.21	●	0.7	1.26	3.13	TID*125...
DMF128	12.8	5.21	●	0.7	1.26	3.13	TID*125...
DMF129	12.9	5.21	●	0.7	1.26	3.13	TID*125...
DMF130	13	5.53	●	0.7	1.28	3.52	TID*130...
DMF131	13.1	5.53	●	0.7	1.28	3.52	TID*130...
DMF132	13.2	5.53	●	0.7	1.28	3.52	TID*130...
DMF133	13.3	5.53	●	0.7	1.28	3.52	TID*130...
DMF134	13.4	5.53	●	0.7	1.28	3.52	TID*130...
DMF135	13.5	5.53	●	0.7	1.28	3.52	TID*135...
DMF136	13.6	5.53	●	0.7	1.28	3.52	TID*135...
DMF137	13.7	5.53	●	0.7	1.28	3.52	TID*135...
DMF138	13.8	5.53	●	0.7	1.28	3.52	TID*135...
DMF139	13.9	5.53	●	0.7	1.28	3.52	TID*135...
DMF140	14	5.96	●	0.7	1.31	3.81	TID*140...
DMF141	14.1	5.96	●	0.7	1.31	3.81	TID*140...
DMF142	14.2	5.96	●	0.7	1.31	3.81	TID*140...
DMF143	14.3	5.96	●	0.7	1.31	3.81	TID*140...

ø4 - ø19.9 = 2 pieces per package
ø20 - ø25.9 = 1 piece per package

● : Line up

P	Steel	★	
M	Stainless	☆	
K	Cast iron	★	
N	Non-ferrous	☆	
S	Superalloys	☆	
H	Hard materials	☆	

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated AH9130	SDL	PL	PDD	Body
DMF144	14.4	5.96	●	0.7	1.31	3.81	TID*140...
DMF145	14.5	5.96	●	0.7	1.31	3.81	TID*145...
DMF146	14.6	5.96	●	0.7	1.31	3.81	TID*145...
DMF147	14.7	5.96	●	0.7	1.31	3.81	TID*145...
DMF148	14.8	5.96	●	0.7	1.31	3.81	TID*145...
DMF149	14.9	5.96	●	0.7	1.31	3.81	TID*145...
DMF150	15	6.43	●	0.7	1.35	4.24	TID*150...
DMF151	15.1	6.43	●	0.7	1.35	4.24	TID*150...
DMF152	15.2	6.43	●	0.7	1.35	4.24	TID*150...
DMF153	15.3	6.43	●	0.7	1.35	4.24	TID*150...
DMF154	15.4	6.43	●	0.7	1.35	4.24	TID*150...
DMF155	15.5	6.43	●	0.7	1.35	4.24	TID*150...
DMF156	15.6	6.43	●	0.7	1.35	4.24	TID*150...
DMF157	15.7	6.43	●	0.7	1.35	4.24	TID*150...
DMF158	15.8	6.43	●	0.7	1.35	4.24	TID*150...
DMF159	15.9	6.43	●	0.7	1.35	4.24	TID*150...
DMF160	16	6.84	●	0.7	1.39	4.06	TID*160...
DMF161	16.1	6.84	●	0.7	1.39	4.06	TID*160...
DMF162	16.2	6.84	●	0.7	1.39	4.06	TID*160...
DMF163	16.3	6.84	●	0.7	1.39	4.06	TID*160...
DMF164	16.4	6.84	●	0.7	1.39	4.06	TID*160...
DMF165	16.5	6.84	●	0.7	1.39	4.06	TID*160...
DMF166	16.6	6.84	●	0.7	1.39	4.06	TID*160...
DMF167	16.7	6.84	●	0.7	1.39	4.06	TID*160...
DMF168	16.8	6.84	●	0.7	1.39	4.06	TID*160...
DMF169	16.9	6.84	●	0.7	1.39	4.06	TID*160...
DMF170	17	7.15	●	0.7	1.4	4.14	TID*170...
DMF171	17.1	7.15	●	0.7	1.4	4.14	TID*170...
DMF172	17.2	7.15	●	0.7	1.4	4.14	TID*170...
DMF173	17.3	7.15	●	0.7	1.4	4.14	TID*170...
DMF174	17.4	7.15	●	0.7	1.4	4.14	TID*170...
DMF175	17.5	7.15	●	0.7	1.4	4.14	TID*170...
DMF176	17.6	7.15	●	0.7	1.4	4.14	TID*170...
DMF177	17.7	7.15	●	0.7	1.4	4.14	TID*170...
DMF178	17.8	7.15	●	0.7	1.4	4.14	TID*170...
DMF179	17.9	7.15	●	0.7	1.4	4.14	TID*170...
DMF180	18	7.45	●	0.7	1.42	4.16	TID*180...
DMF181	18.1	7.45	●	0.7	1.42	4.16	TID*180...
DMF182	18.2	7.45	●	0.7	1.42	4.16	TID*180...
DMF183	18.3	7.45	●	0.7	1.42	4.16	TID*180...
DMF184	18.4	7.45	●	0.7	1.42	4.16	TID*180...
DMF185	18.5	7.45	●	0.7	1.42	4.16	TID*180...
DMF186	18.6	7.45	●	0.7	1.42	4.16	TID*180...
DMF187	18.7	7.45	●	0.7	1.42	4.16	TID*180...
DMF188	18.8	7.45	●	0.7	1.42	4.16	TID*180...
DMF189	18.9	7.45	●	0.7	1.42	4.16	TID*180...
DMF190	19	7.79	●	0.7	1.44	4.25	TID*190...
DMF191	19.1	7.79	●	0.7	1.44	4.25	TID*190...
DMF192	19.2	7.79	●	0.7	1.44	4.25	TID*190...
DMF193	19.3	7.79	●	0.7	1.44	4.25	TID*190...
DMF194	19.4	7.79	●	0.7	1.44	4.25	TID*190...
DMF195	19.5	7.79	●	0.7	1.44	4.25	TID*190...
DMF196	19.6	7.79	●	0.7	1.44	4.25	TID*190...
DMF197	19.7	7.79	●	0.7	1.44	4.25	TID*190...
DMF198	19.8	7.79	●	0.7	1.44	4.25	TID*190...
DMF199	19.9	7.79	●	0.7	1.44	4.25	TID*190...
DMF200	20	9.12	●	0.7	1.77	6.56	TID*200...
DMF201	20.1	9.12	●	0.7	1.77	6.56	TID*200...
DMF202	20.2	9.12	●	0.7	1.77	6.56	TID*200...
DMF203	20.3	9.12	●	0.7	1.77	6.56	TID*200...
DMF204	20.4	9.12	●	0.7	1.77	6.56	TID*200...
DMF205	20.5	9.12	●	0.7	1.77	6.56	TID*200...
DMF206	20.6	9.12	●	0.7	1.77	6.56	TID*200...
DMF207	20.7	9.12	●	0.7	1.77	6.56	TID*200...
DMF208	20.8	9.12	●	0.7	1.77	6.56	TID*200...
DMF209	20.9	9.12	●	0.7	1.77	6.56	TID*200...

P	Steel	★	
M	Stainless	☆	
K	Cast iron	★	
N	Non-ferrous	☆	
S	Superalloys	☆	
H	Hard materials	☆	

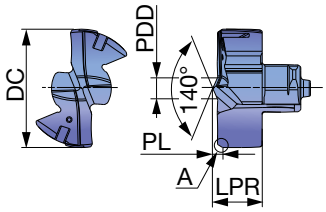
★ : First choice
☆ : Second choice

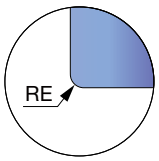
Designation	DC	LPR	Coated AH9130	SDL	PL	PDD	Body
DMF210	21	9.54	●	0.7	1.79	6.92	TID*210...
DMF211	21.1	9.54	●	0.7	1.79	6.92	TID*210...
DMF212	21.2	9.54	●	0.7	1.79	6.92	TID*210...
DMF213	21.3	9.54	●	0.7	1.79	6.92	TID*210...
DMF214	21.4	9.54	●	0.7	1.79	6.92	TID*210...
DMF215	21.5	9.54	●	0.7	1.79	6.92	TID*210...
DMF216	21.6	9.54	●	0.7	1.79	6.92	TID*210...
DMF217	21.7	9.54	●	0.7	1.79	6.92	TID*210...
DMF218	21.8	9.54	●	0.7	1.79	6.92	TID*210...
DMF219	21.9	9.54	●	0.7	1.79	6.92	TID*210...
DMF220	22	9.86	●	0.7	1.81	7.13	TID*220...
DMF221	22.1	9.86	●	0.7	1.81	7.13	TID*220...
DMF222	22.2	9.86	●	0.7	1.81	7.13	TID*220...
DMF223	22.3	9.86	●	0.7	1.81	7.13	TID*220...
DMF224	22.4	9.86	●	0.7	1.81	7.13	TID*220...
DMF225	22.5	9.86	●	0.7	1.81	7.13	TID*220...
DMF226	22.6	9.86	●	0.7	1.81	7.13	TID*220...
DMF227	22.7	9.86	●	0.7	1.81	7.13	TID*220...
DMF228	22.8	9.86	●	0.7	1.81	7.13	TID*220...
DMF229	22.9	9.86	●	0.7	1.81	7.13	TID*220...
DMF230	23	10.28	●	0.7	1.83	7.42	TID*230...
DMF231	23.1	10.28	●	0.7	1.83	7.42	TID*230...
DMF232	23.2	10.28	●	0.7	1.83	7.42	TID*230...
DMF233	23.3	10.28	●	0.7	1.83	7.42	TID*230...
DMF234	23.4	10.28	●	0.7	1.83	7.42	TID*230...
DMF235	23.5	10.28	●	0.7	1.83	7.42	TID*230...
DMF236	23.6	10.28	●	0.7	1.83	7.42	TID*230...
DMF237	23.7	10.28	●	0.7	1.83	7.42	TID*230...
DMF238	23.8	10.28	●	0.7	1.83	7.42	TID*230...
DMF239	23.9	10.28	●	0.7	1.83	7.42	TID*230...
DMF240	24	10.71	●	0.7	1.86	7.45	TID*240...
DMF241	24.1	10.71	●	0.7	1.86	7.45	TID*240...
DMF242	24.2	10.71	●	0.7	1.86	7.45	TID*240...
DMF243	24.3	10.71	●	0.7	1.86	7.45	TID*240...
DMF244	24.4	10.71	●	0.7	1.86	7.45	TID*240...
DMF245	24.5	10.71	●	0.7	1.86	7.45	TID*240...
DMF246	24.6	10.71	●	0.7	1.86	7.45	TID*240...
DMF247	24.7	10.71	●	0.7	1.86	7.45	TID*240...
DMF248	24.8	10.71	●	0.7	1.86	7.45	TID*240...
DMF249	24.9	10.71	●	0.7	1.86	7.45	TID*240...
DMF250	25	11.15	●	0.7	1.9	7.54	TID*250...
DMF251	25.1	11.15	●	0.7	1.9	7.54	TID*250...
DMF252	25.2	11.15	●	0.7	1.9	7.54	TID*250...
DMF253	25.3	11.15	●	0.7	1.9	7.54	TID*250...
DMF254	25.4	11.15	●	0.7	1.9	7.54	TID*250...
DMF255	25.5	11.15	●	0.7	1.9	7.54	TID*250...
DMF256	25.6	11.15	●	0.7	1.9	7.54	TID*250...
DMF257	25.7	11.15	●	0.7	1.9	7.54	TID*250...
DMF258	25.8	11.15	●	0.7	1.9	7.54	TID*250...
DMF259	25.9	11.15	●	0.7	1.9	7.54	TID*250...

ø4 - ø19.9 = 2 pieces per package
ø20 - ø25.9 = 1 piece per package

● : Line up

DMF-R (Flat geometry head with corner radius)





Detail in A

Tool diameter	Head diameter tolerance
ø6.5 - ø17.5	+0.018 / 0
ø20 - ø24	+0.021 / 0

P	Steel	★	
M	Stainless	☆	
K	Cast iron	★	
N	Non-ferrous	☆	
S	Superalloys	☆	
H	Hard materials	☆	

Designation	DC	LPR	Coated AH9130	RE	PL	PDD	Body
DMF065-R0.2	6.5	3.28	●	0.2	0.48	1.54	TID*065...
DMF080-R0.2	8	4.39	●	0.2	0.59	2.44	TID*080...
DMF095-R0.2	9.5	4.61	●	0.2	0.61	2.55	TID*095...
DMF110-R0.2	11	4.9	●	0.2	0.75	2.98	TID*110...

ø6.5 - ø17.5 = 2 pieces per package
ø20 - ø24 = 1 piece per package

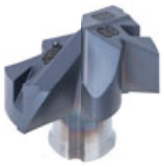
P	Steel	★	
M	Stainless	☆	
K	Cast iron	★	
N	Non-ferrous	☆	
S	Superalloys	☆	
H	Hard materials	☆	

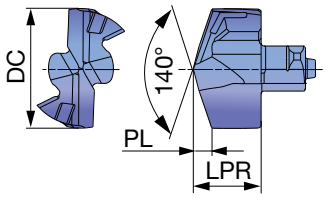
★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated AH9130	RE	PL	PDD	Body
DMF140-R0.2	14	5.96	●	0.2	0.81	3.81	TID*140...
DMF175-R0.2	17.5	7.15	●	0.2	0.9	4.14	TID*175...
DMF200-R0.2	20	9.12	●	0.2	1.27	6.56	TID*200...
DMF240-R0.2	24	10.71	●	0.2	1.36	7.45	TID*240...

● : Line up

DMH (High strength cutting edge)





Tool diameter	Head diameter tolerance
ø6 - ø17.9	+0.018 / -0.005
ø18 - ø25.9	+0.021 / -0.005

P	Steel	★
M	Stainless	☆
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	★

★ : First choice

Designation	DC	LPR	Coated AH9130	PL	Body
DMH060	6	3.85	●	1.09	TID*060...
DMH061	6.1	3.85	●	1.11	TID*060...
DMH062	6.2	3.85	●	1.13	TID*060...
DMH063	6.3	3.85	●	1.14	TID*060...
DMH064	6.4	3.85	●	1.16	TID*060...
DMH065	6.5	4.15	●	1.27	TID*065...
DMH066	6.6	4.15	●	1.29	TID*065...
DMH067	6.7	4.15	●	1.31	TID*065...
DMH068	6.8	4.15	●	1.33	TID*065...
DMH069	6.9	4.15	●	1.34	TID*065...
DMH070	7	4.45	●	1.03	TID*070...
DMH071	7.1	4.45	●	1.05	TID*070...
DMH072	7.2	4.45	●	1.07	TID*070...
DMH073	7.3	4.45	●	1.08	TID*070...
DMH074	7.4	4.45	●	1.1	TID*070...
DMH075	7.5	4.45	●	1.12	TID*075...
DMH076	7.6	4.45	●	1.14	TID*075...
DMH077	7.7	4.45	●	1.16	TID*075...
DMH078	7.8	4.45	●	1.18	TID*075...
DMH079	7.9	4.45	●	1.19	TID*075...
DMH080	8	5.25	●	1.2	TID*080...
DMH081	8.1	5.25	●	1.22	TID*080...
DMH082	8.2	5.25	●	1.24	TID*080...
DMH083	8.3	5.25	●	1.25	TID*080...
DMH084	8.4	5.25	●	1.27	TID*080...
DMH085	8.5	5.25	●	1.29	TID*085...
DMH086	8.6	5.25	●	1.31	TID*085...
DMH087	8.7	5.25	●	1.33	TID*085...
DMH088	8.8	5.25	●	1.35	TID*085...
DMH089	8.9	5.25	●	1.36	TID*085...
DMH090	9	5.65	●	1.37	TID*090...
DMH091	9.1	5.65	●	1.39	TID*090...
DMH092	9.2	5.65	●	1.41	TID*090...
DMH093	9.3	5.65	●	1.42	TID*090...
DMH094	9.4	5.65	●	1.44	TID*090...
DMH095	9.5	5.65	●	1.46	TID*095...
DMH096	9.6	5.65	●	1.48	TID*095...
DMH097	9.7	5.65	●	1.5	TID*095...
DMH098	9.8	5.65	●	1.52	TID*095...
DMH099	9.9	5.65	●	1.53	TID*095...
DMH100	10	6.05	●	1.47	TID*100...
DMH101	10.1	6.05	●	1.49	TID*100...
DMH102	10.2	6.05	●	1.51	TID*100...
DMH103	10.3	6.05	●	1.52	TID*100...
DMH104	10.4	6.05	●	1.54	TID*100...
DMH105	10.5	6.05	●	1.56	TID*105...
DMH106	10.6	6.05	●	1.58	TID*105...
DMH107	10.7	6.05	●	1.6	TID*105...

P	Steel	★
M	Stainless	☆
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	★

★ : First choice

Designation	DC	LPR	Coated AH9130	PL	Body
DMH108	10.8	6.05	●	1.62	TID*105...
DMH109	10.9	6.05	●	1.63	TID*105...
DMH110	11	6.45	●	1.67	TID*110...
DMH111	11.1	6.45	●	1.69	TID*110...
DMH112	11.2	6.45	●	1.71	TID*110...
DMH113	11.3	6.45	●	1.72	TID*110...
DMH114	11.4	6.45	●	1.74	TID*110...
DMH115	11.5	6.45	●	1.76	TID*115...
DMH116	11.6	6.45	●	1.78	TID*115...
DMH117	11.7	6.45	●	1.8	TID*115...
DMH118	11.8	6.45	●	1.82	TID*115...
DMH119	11.9	6.45	●	1.83	TID*115...
DMH120	12	6.8	●	1.82	TID*120...
DMH121	12.1	6.8	●	1.84	TID*120...
DMH122	12.2	6.8	●	1.86	TID*120...
DMH123	12.3	6.8	●	1.87	TID*120...
DMH124	12.4	6.8	●	1.89	TID*120...
DMH125	12.5	6.8	●	1.91	TID*125...
DMH126	12.6	6.8	●	1.93	TID*125...
DMH127	12.7	6.8	●	1.95	TID*125...
DMH128	12.8	6.8	●	1.97	TID*125...
DMH129	12.9	6.8	●	1.98	TID*125...
DMH130	13	7.4	●	1.96	TID*130...
DMH131	13.1	7.4	●	1.98	TID*130...
DMH132	13.2	7.4	●	2	TID*130...
DMH133	13.3	7.4	●	2.01	TID*130...
DMH134	13.4	7.4	●	2.03	TID*130...
DMH135	13.5	7.4	●	2.05	TID*135...
DMH136	13.6	7.4	●	2.07	TID*135...
DMH137	13.7	7.4	●	2.09	TID*135...
DMH138	13.8	7.4	●	2.11	TID*135...
DMH139	13.9	7.4	●	2.12	TID*135...
DMH140	14	7.95	●	2.12	TID*140...
DMH141	14.1	7.95	●	2.14	TID*140...
DMH142	14.2	7.95	●	2.16	TID*140...
DMH143	14.3	7.95	●	2.17	TID*140...
DMH144	14.4	7.95	●	2.19	TID*140...
DMH145	14.5	7.95	●	2.21	TID*145...
DMH146	14.6	7.95	●	2.23	TID*145...
DMH147	14.7	7.95	●	2.25	TID*145...
DMH148	14.8	7.95	●	2.27	TID*145...
DMH149	14.9	7.95	●	2.28	TID*145...
DMH150	15	8.53	●	2.27	TID*150...
DMH151	15.1	8.53	●	2.29	TID*150...
DMH152	15.2	8.53	●	2.31	TID*150...
DMH153	15.3	8.53	●	2.32	TID*150...

ø6 - ø19.9 = 2 pieces per package
ø20 - ø25.9 = 1 piece per package

● : Line up

P	Steel	★
M	Stainless	☆
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	★

★ : First choice

Designation	DC	LPR	Coated AH9130	PL	Body
DMH154	15.4	8.53	●	2.34	TID*150...
DMH155	15.5	8.53	●	2.36	TID*150...
DMH156	15.6	8.53	●	2.38	TID*150...
DMH157	15.7	8.53	●	2.4	TID*150...
DMH158	15.8	8.53	●	2.42	TID*150...
DMH159	15.9	8.53	●	2.43	TID*150...
DMH160	16	9.1	●	2.42	TID*160...
DMH161	16.1	9.1	●	2.44	TID*160...
DMH162	16.2	9.1	●	2.46	TID*160...
DMH163	16.3	9.1	●	2.47	TID*160...
DMH164	16.4	9.1	●	2.49	TID*160...
DMH165	16.5	9.1	●	2.51	TID*160...
DMH166	16.6	9.1	●	2.53	TID*160...
DMH167	16.7	9.1	●	2.55	TID*160...
DMH168	16.8	9.1	●	2.57	TID*160...
DMH169	16.9	9.1	●	2.58	TID*160...
DMH170	17	9.7	●	2.59	TID*170...
DMH171	17.1	9.7	●	2.61	TID*170...
DMH172	17.2	9.7	●	2.63	TID*170...
DMH173	17.3	9.7	●	2.64	TID*170...
DMH174	17.4	9.7	●	2.66	TID*170...
DMH175	17.5	9.7	●	2.68	TID*170...
DMH176	17.6	9.7	●	2.7	TID*170...
DMH177	17.7	9.7	●	2.72	TID*170...
DMH178	17.8	9.7	●	2.74	TID*170...
DMH179	17.9	9.7	●	2.75	TID*170...
DMH180	18	10.3	●	2.73	TID*180...
DMH181	18.1	10.3	●	2.75	TID*180...
DMH182	18.2	10.3	●	2.77	TID*180...
DMH183	18.3	10.3	●	2.78	TID*180...
DMH184	18.4	10.3	●	2.8	TID*180...
DMH185	18.5	10.3	●	2.82	TID*180...
DMH186	18.6	10.3	●	2.84	TID*180...
DMH187	18.7	10.3	●	2.86	TID*180...
DMH188	18.8	10.3	●	2.88	TID*180...
DMH189	18.9	10.3	●	2.89	TID*180...
DMH190	19	10.8	●	2.88	TID*190...
DMH191	19.1	10.8	●	2.9	TID*190...
DMH192	19.2	10.8	●	2.92	TID*190...
DMH193	19.3	10.8	●	2.93	TID*190...
DMH194	19.4	10.8	●	2.95	TID*190...
DMH195	19.5	10.8	●	2.97	TID*190...
DMH196	19.6	10.8	●	2.99	TID*190...
DMH197	19.7	10.8	●	3.01	TID*190...
DMH198	19.8	10.8	●	3.03	TID*190...
DMH199	19.9	10.8	●	3.04	TID*190...
DMH200	20	11.4	●	3.02	TID*200...
DMH201	20.1	11.4	●	3.04	TID*200...
DMH202	20.2	11.4	●	3.06	TID*200...
DMH203	20.3	11.4	●	3.07	TID*200...
DMH204	20.4	11.4	●	3.09	TID*200...
DMH205	20.5	11.4	●	3.11	TID*200...
DMH206	20.6	11.4	●	3.13	TID*200...
DMH207	20.7	11.4	●	3.15	TID*200...
DMH208	20.8	11.4	●	3.17	TID*200...
DMH209	20.9	11.4	●	3.18	TID*200...
DMH210	21	11.98	●	3.18	TID*210...
DMH211	21.1	11.98	●	3.2	TID*210...
DMH212	21.2	11.98	●	3.22	TID*210...
DMH213	21.3	11.98	●	3.23	TID*210...
DMH214	21.4	11.98	●	3.25	TID*210...
DMH215	21.5	11.98	●	3.27	TID*210...
DMH216	21.6	11.98	●	3.29	TID*210...
DMH217	21.7	11.98	●	3.31	TID*210...
DMH218	21.8	11.98	●	3.33	TID*210...
DMH219	21.9	11.98	●	3.34	TID*210...

P	Steel	★
M	Stainless	☆
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	★

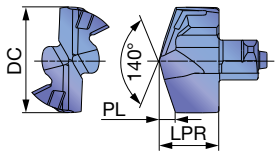
★ : First choice

Designation	DC	LPR	Coated AH9130	PL	Body
DMH220	22	12.56	●	3.32	TID*220...
DMH221	22.1	12.56	●	3.34	TID*220...
DMH222	22.2	12.56	●	3.36	TID*220...
DMH223	22.3	12.56	●	3.37	TID*220...
DMH224	22.4	12.56	●	3.39	TID*220...
DMH225	22.5	12.56	●	3.41	TID*220...
DMH226	22.6	12.56	●	3.43	TID*220...
DMH227	22.7	12.56	●	3.45	TID*220...
DMH228	22.8	12.56	●	3.47	TID*220...
DMH229	22.9	12.56	●	3.48	TID*220...
DMH230	23	13.13	●	3.46	TID*230...
DMH231	23.1	13.13	●	3.48	TID*230...
DMH232	23.2	13.13	●	3.5	TID*230...
DMH233	23.3	13.13	●	3.51	TID*230...
DMH234	23.4	13.13	●	3.53	TID*230...
DMH235	23.5	13.13	●	3.55	TID*230...
DMH236	23.6	13.13	●	3.57	TID*230...
DMH237	23.7	13.13	●	3.59	TID*230...
DMH238	23.8	13.13	●	3.61	TID*230...
DMH239	23.9	13.13	●	3.62	TID*230...
DMH240	24	13.7	●	3.62	TID*240...
DMH241	24.1	13.7	●	3.64	TID*240...
DMH242	24.2	13.7	●	3.66	TID*240...
DMH243	24.3	13.7	●	3.67	TID*240...
DMH244	24.4	13.7	●	3.69	TID*240...
DMH245	24.5	13.7	●	3.71	TID*240...
DMH246	24.6	13.7	●	3.73	TID*240...
DMH247	24.7	13.7	●	3.75	TID*240...
DMH248	24.8	13.7	●	3.77	TID*240...
DMH249	24.9	13.7	●	3.78	TID*240...
DMH250	25	14.3	●	3.8	TID*250...
DMH251	25.1	14.3	●	3.82	TID*250...
DMH252	25.2	14.3	●	3.84	TID*250...
DMH253	25.3	14.3	●	3.85	TID*250...
DMH254	25.4	14.3	●	3.87	TID*250...
DMH255	25.5	14.3	●	3.89	TID*250...
DMH256	25.6	14.3	●	3.91	TID*250...
DMH257	25.7	14.3	●	3.93	TID*250...
DMH258	25.8	14.3	●	3.95	TID*250...
DMH259	25.9	14.3	●	3.96	TID*250...

ø6 - ø19.9 = 2 pieces per package
ø20 - ø25.9 = 1 piece per package

● : Line up

DMN (Non-ferrous metals drilling)



Tool diameter	Head diameter tolerance
ø6.8 - ø17.5	+0.01 / 0
ø18 - ø19.5	+0.012 / 0

P	Steel			
M	Stainless			
K	Cast iron			
N	Non-ferrous	★		
S	Superalloys			
H	Hard materials			

★ : First choice

Designation	DC	LPR	Coated KS15F			PL	Body
DMN068	6.8	4.15	●			1.33	TID*065...
DMN078	7.8	4.45	●			1.18	TID*075...
DMN080	8	5.25	●			1.2	TID*080...
DMN085	8.5	5.25	●			1.29	TID*085...
DMN088	8.8	5.25	●			1.35	TID*085...
DMN095	9.5	5.65	●			1.46	TID*095...
DMN100	10	6.05	●			1.47	TID*100...
DMN102	10.2	6.05	●			1.51	TID*100...
DMN105	10.5	6.05	●			1.56	TID*105...
DMN108	10.8	6.05	●			1.62	TID*105...
DMN110	11	6.45	●			1.67	TID*110...
DMN115	11.5	6.45	●			1.76	TID*115...
DMN120	12	6.8	●			1.82	TID*120...
DMN123	12.3	6.8	●			1.87	TID*120...
DMN125	12.5	6.8	●			1.91	TID*125...
DMN126	12.6	6.8	●			1.93	TID*125...
DMN127	12.7	6.8	●			1.95	TID*125...
DMN130	13	7.4	●			1.96	TID*130...
DMN135	13.5	7.4	●			2.05	TID*135...

P	Steel			
M	Stainless			
K	Cast iron			
N	Non-ferrous	★		
S	Superalloys			
H	Hard materials			

★ : First choice

Designation	DC	LPR	Coated KS15F			PL	Body
DMN138	13.8	7.4	●			2.11	TID*135...
DMN140	14	7.95	●			2.12	TID*140...
DMN142	14.2	7.95	●			2.16	TID*140...
DMN145	14.5	7.95	●			2.21	TID*145...
DMN150	15	8.53	●			2.27	TID*150...
DMN152	15.2	8.53	●			2.31	TID*150...
DMN155	15.5	8.53	●			2.36	TID*150...
DMN158	15.8	8.53	●			2.42	TID*150...
DMN159	15.9	8.53	●			2.43	TID*150...
DMN160	16	9.1	●			2.42	TID*160...
DMN163	16.3	9.1	●			2.47	TID*160...
DMN165	16.5	9.1	●			2.51	TID*160...
DMN170	17	9.7	●			2.59	TID*170...
DMN175	17.5	9.7	●			2.68	TID*170...
DMN180	18	10.3	●			2.73	TID*180...
DMN185	18.5	10.3	●			2.82	TID*180...
DMN190	19	10.8	●			2.88	TID*190...
DMN195	19.5	10.8	●			2.97	TID*190...

ø6.8 - ø19.5 = 2 pieces per package

● : Line up

STANDARD CUTTING CONDITIONS

ADDMEISTER DRILL

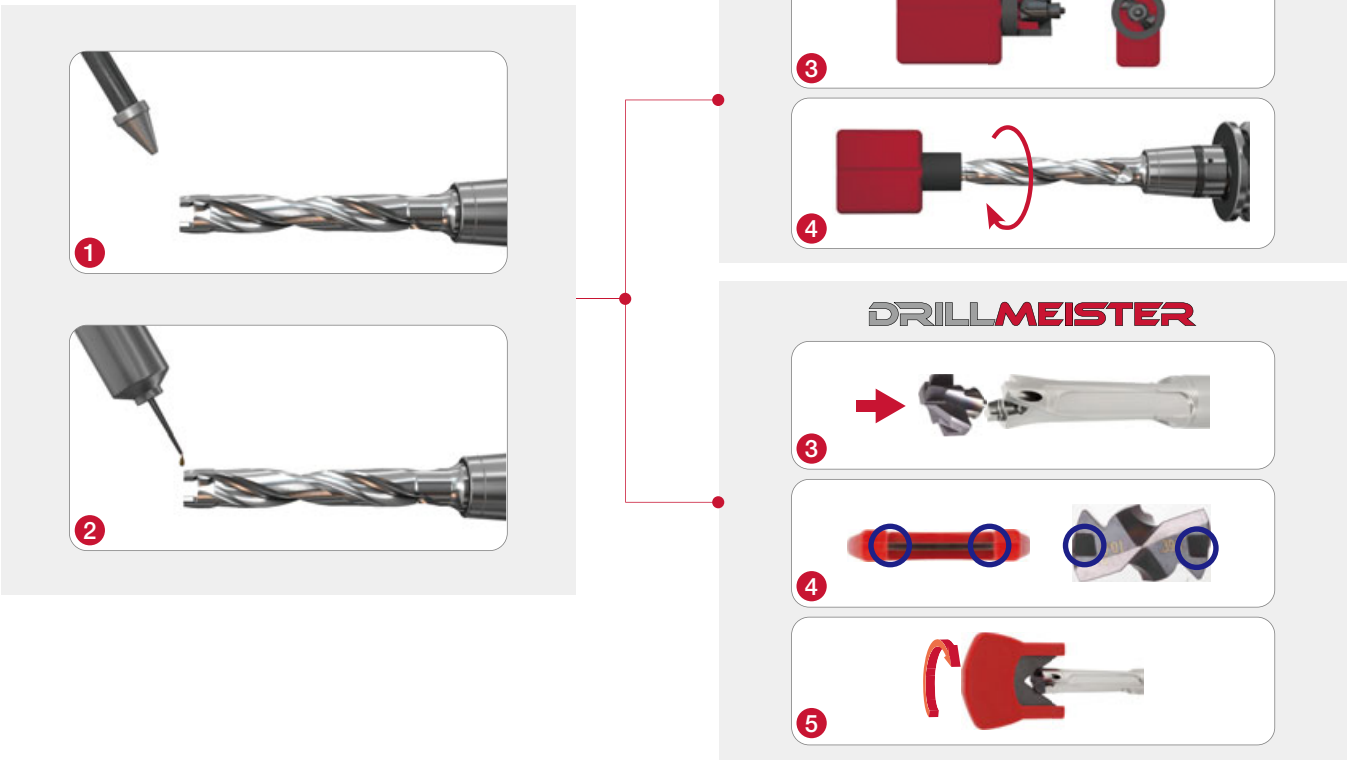
ISO	Workpiece material	Hardness	Cutting speed	Feed: *f* (mm/rev)		
				Tool diameter: DC (mm)		
			Vc (m/min)	ø4 - 4.4	ø4.5 - 4.9	ø5 - 5.9
P	Low carbon steels (C < 0.3) SS400, SM490, S25C, etc. C15E4, E275A, E355D, etc.	- 200 HB	80 - 140	0.04 - 0.07	0.04 - 0.08	0.07 - 0.13
P	High carbon steels (C > 0.3) S45C, S55C, etc. C45, C55, etc.	- 300 HB	70 - 120	0.04 - 0.07	0.04 - 0.08	0.07 - 0.13
P	Low alloy steels SCM415, etc. 18CrMo4, etc.	- 200 HB	70 - 120	0.04 - 0.06	0.05 - 0.08	0.07 - 0.13
P	Alloy steels SCM440, SCr420, etc. 42CrMo4, 20Cr4, etc.	- 300 HB	40 - 90	0.04 -0.07	0.05 - 0.08	0.07 - 0.13
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	- 250 HB	30 - 70	-	-	0.04 - 0.08
K	Grey cast irons FC250, etc. GG25, etc.	150 - 250 HB	80 - 180	0.04 - 0.08	0.04 - 0.08	0.1 - 0.15
K	Ductile cast irons FCD700, etc. GGG70, etc.	150 - 250 HB	80 - 140	0.04 - 0.08	0.04 - 0.08	0.1 - 0.15
N	Aluminium alloys ADC12, etc. AlSi11Cu3, etc.	-	80 - 220	-	-	-
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	20 - 50	-	-	-
S	Nickel-based alloys	- 40 HRC	20 - 50	-	-	-
H	Hardened steel	- 50 HRC	20 - 50	-	-	-

DRILLMEISTER

ISO	Workpiece material	Hardness	Cutting speed	Feed: *f* (mm/rev)						
				Tool diameter: DC (mm)						
			Vc (m/min)	ø6 - 7.9	ø8 - 9.9	ø10 - ø11.9	ø12 - ø13.9	ø14 - ø15.9	ø16 - ø19.9	ø20 - ø25.9
P	Low carbon steels (C < 0.3) SS400, SM490, S25C, etc. C15E4, E275A, E355D, etc.	- 200 HB	80 - 140	0.09 - 0.13	0.12 - 0.25	0.15 - 0.28	0.18 - 0.3	0.2 - 0.35	0.25 - 0.45	0.25 - 0.45
P	High carbon steels (C > 0.3) S45C, S55C, etc. C45, C55, etc.	- 300 HB	70 - 120	0.09 - 0.13	0.12 - 0.25	0.15 - 0.28	0.18 - 0.3	0.2 - 0.35	0.25 - 0.45	0.25 - 0.45
P	Low alloy steels SCM415, etc. 18CrMo4, etc.	- 200 HB	70 - 120	0.08 - 0.13	0.11 - 0.25	0.14 - 0.28	0.16 - 0.32	0.18 - 0.35	0.23 - 0.4	0.25 - 0.45
P	Alloy steels SCM440, SCr420, etc. 42CrMo4, 20Cr4, etc.	- 300 HB	40 - 90	0.08 - 0.13	0.11 - 0.25	0.14 - 0.28	0.16 - 0.32	0.18 - 0.35	0.23 - 0.4	0.25 - 0.45
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	- 250 HB	30 - 70	0.08 - 0.1	0.1 - 0.15	0.12 - 0.18	0.14 - 0.2	0.16 - 0.24	0.16 - 0.26	0.18 - 0.3
K	Grey cast irons FC250, etc. GG25, etc.	150 - 250 HB	80 - 180	0.12 - 0.18	0.15 - 0.3	0.2 - 0.35	0.25 - 0.4	0.3 - 0.45	0.35 - 0.55	0.35 - 0.6
K	Ductile cast irons FCD700, etc. GGG70, etc.	150 - 250 HB	80 - 140	0.12 - 0.18	0.15 - 0.3	0.2 - 0.35	0.25 - 0.4	0.3 - 0.45	0.35 - 0.55	0.35 - 0.6
N	Aluminium alloys ADC12, etc. AlSi11Cu3, etc.	-	80 - 220	0.1 - 0.2	0.2 - 0.35	0.25 - 0.4	0.3 - 0.45	0.35 - 0.5	0.4 - 0.6	0.5 - 0.75
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	20 - 50	0.05 - 0.07	0.06 - 0.12	0.08 - 0.15	0.1 - 0.28	0.12 - 0.2	0.14 - 0.22	0.18 - 0.27
S	Nickel-based alloys	- 40 HRC	20 - 50	0.05 - 0.07	0.06 - 0.11	0.08 - 0.13	0.1 - 0.15	0.12 - 0.18	0.12 - 0.22	0.14 - 0.22
H	Hardened steel	- 50 HRC	20 - 50	0.05 - 0.07	0.06 - 0.12	0.08 - 0.15	0.1 - 0.18	0.12 - 0.2	0.14 - 0.22	0.16 - 0.25

- Cutting conditions in the above table show standard cutting conditions
- Cutting conditions may change due to the rigidity and power of the machine and the workpiece material
- Machined hole diameter may change depending upon the rigidity of the machine tool or cutting conditions

● Drilling head mounting procedure



● Instruction for proper head mounting

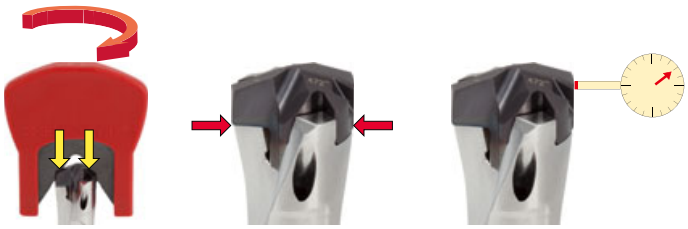


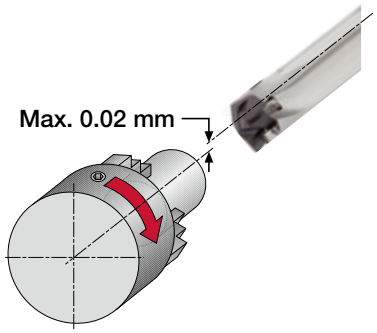
Fig. #1 Fig. #2 Fig. #3

Procedures

① Thoroughly clean the contacting areas on the drill body and the head with compressed air, lubricate them, and put the drill head in the pocket.
② Place the clamping key in the grooves on the drill head. Push the head in the pocket with equal torque on the right and the left sides. Rotate the clamping key to lock the head in the pocket completely. (Fig. #1).
③ Be sure that there is no gap in the contact surfaces between the head and the drill body. Use a 0.01 mm shim to check for the gap. (Fig. #2)
④ If there is a gap thicker than 0.01 mm, unclamp the head and return to procedure No. ① .
⑤ Measure the run-out at the margin of the drill head. Run-out must be 0.05 mm or smaller. (Fig. #3) (Recommended value: 0.02 mm or smaller)
If the run-out exceeds 0.05 mm, unclamp the head and return to procedure No. ① .

Note: #1: If the clamping torque is not equally applied on the right and the left sides of the drill head, there may be a gap between the head and the body, which increases the run-out of the head.
Note: #2: Low accuracy in holding the drill body may affect the run-out. If the run-out is large, check the accuracy in holding the drill body.

● Alignment recommendation

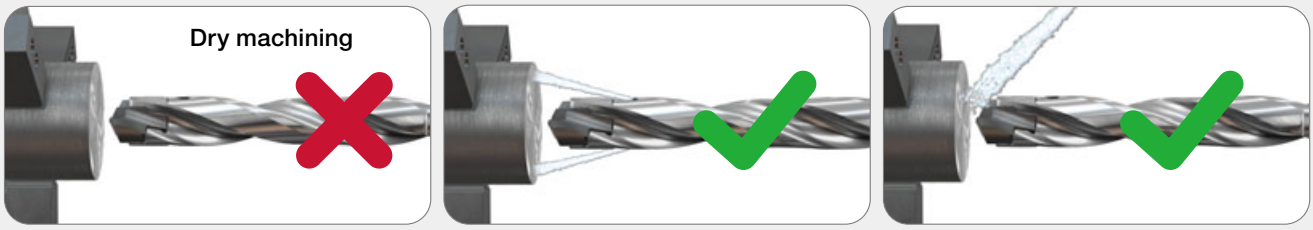


● Runout recommendation

ADDMEISTERDRILL
Max. 0.02 mm

DRILLMEISTER
Ideal : ≤ 0.02 mm
Acceptable : ≤ 0.05 mm
Not acceptable : > 0.05 mm

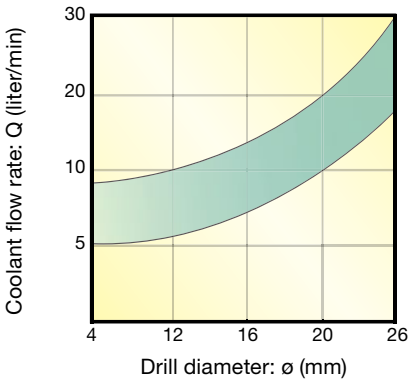
● Coolant recommendation

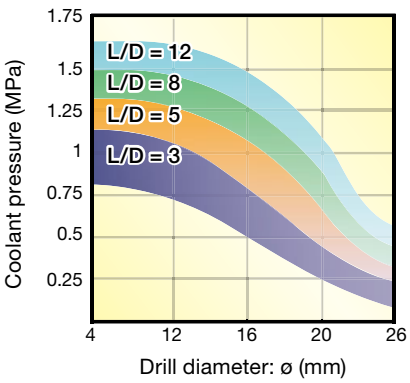


ADDMDRILL
Up to 2XD

DRILLMEISTER
If the hole depth exceeds 2xD, it is recommended to add a dwell or step cycle for better chip evacuation.

● Recommended coolant flow rate and pressures

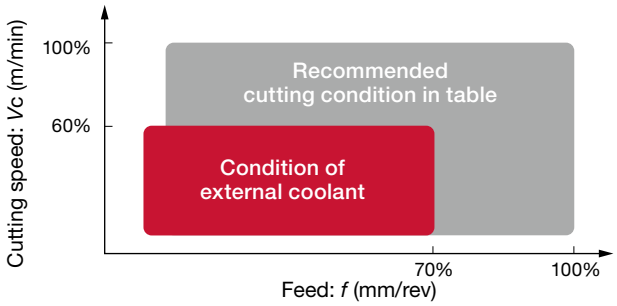




Over 2xD drilling with External coolant

In environments without internal coolant, external coolant supply is necessary.The recommended cutting conditions should be reduced from the listed parameters based on the material and hole depth. For drills longer than 2xD, it is recommended to use a step or pecking cycle operation to cool the cutting edge and facilitate chip evacuation.

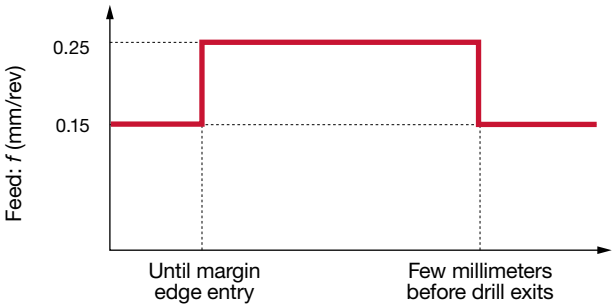
2xD drilling in P material



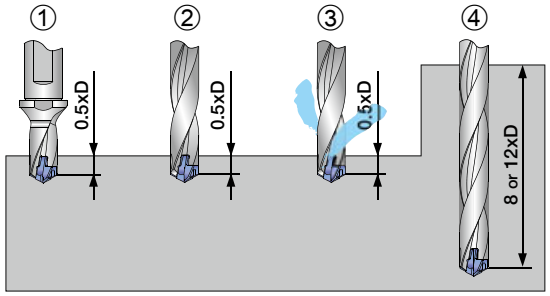
Over 8xD drilling

For drilling operations exceeding 8xD, a stable drill entry is essential. To ensure excellent drill entry, DMC heads are recommended. Additionally, for L/D ratios of 8 and 12, it is advisable to start with cutting speeds and feeds between the minimum and medium values listed above for the initial few depths. After establishing drill entry, the feed rate can be increased based on target productivity goals.

12xD drilling in P material of through hole depth
DC = 12 mm



● Tips when using 8xD and 12xD drills



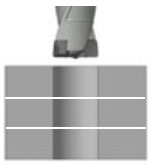
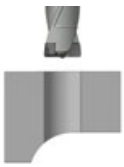
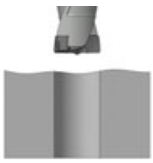
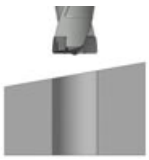
① Drill a pilot hole in the depth of 0.5xD.
The same head diameter should be used for the pre-hole and the main drilling process.
② Rotate the drill at a low speed (eg. 100 rpm). While maintaining the drill speed, slowly feed into the pilot hole for several millimeters from the entry.
③ Activate the internal coolant and increase the drill rotation to the required speed.
④ Drill to the required depth using the recommended cutting parameters.

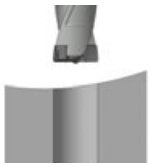
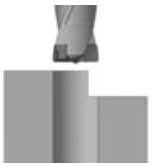
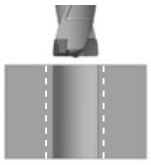
Note: Use DMC-style drill head for deep holes from 8xD up to 12xD depths without a pilot hole.

● Application range and recommended tool lengths for application irregularities

Please use the shortest tool length possible

✓ OK
× Impossible

Application	Stacked plate 	Complex exit 	Rough / cast surface 	Inclined surface Max.12° 
ADDMEISTERDRILL	×	×	×	×
DRILLMEISTER	✓	✓ Up to 8xD	✓ Up to 5xD	✓ Up to 3xD
Recommended head	DMP / DMM / DMH / DMC	DMF	DMC / DMF	DMF
Feed: *f* (mm/rev)	Pecking cycle recommended	Set the feed rate to 50% from the recommended value.		

Application	Curved surface 	Hole expansion 	Plunging 	Counter boring 
ADDMEISTERDRILL	×	×	×	×
DRILLMEISTER	✓ Up to 3xD	✓ Up to 3xD	✓ Up to 3xD	✓ Up to 8xD
Recommended head	DMF / DMC	DMF	DMF	DMP / DMM / DMC / DMF
Feed: *f* (mm/rev)	Set the feed rate to 50% from the recommended value.			Pecking cycle recommended

● Head combinations of pre-hole to main hole

		Pre-hole		
		DMP/DMH/DMN/DMM	DMC	DMF
Hole	DMP/DMH/DMN/DMM	Good 	Not good 	Not good 
	DMC	Good 	Good 	Good 
	DMF	Not good 	Not good 	Good 

● Holders recommended for M/C

TID-F...

First choice


Power chuck


Collet chuck


Side lock

TID-R...

First choice

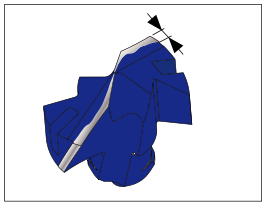

Hydro chuck

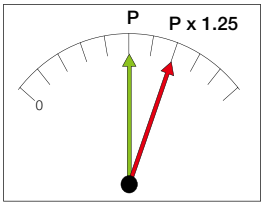

Power chuck


Collet chuck

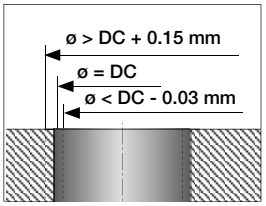
● When to change drill heads (Criteria for the end of tool life)

Replace the drill head when any of the following issues occur during machining.

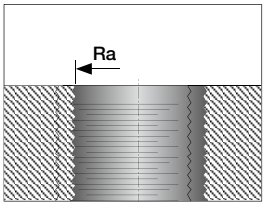

Width of corner wear reaches



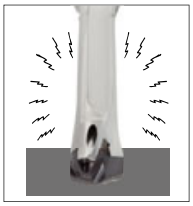
Spindle load exceeds 125% of the normal value



Hole diameter is 0.15 mm larger or 0.03 mm smaller than the drill diameter



Surface roughness deterioration


Vibration or unusual noise

DRILLMEISTER : 0.2 - 0.3 mm
ADDMEISTERDRILL : 0.1 - 0.2 mm

● When to change drill heads (Criteria for the end of tool life)

For your safety, it is recommended to replace drill bodies that reached the fatigue life with new drill bodies. To determine the fatigue life, Measure the torque value required to unlock the drill head with a torque driver. When the torque value required is equal to or smaller than the values listed below for respective head sizes, replace the drill body with a new one.

* The clamping key can be connected with general torque drivers.

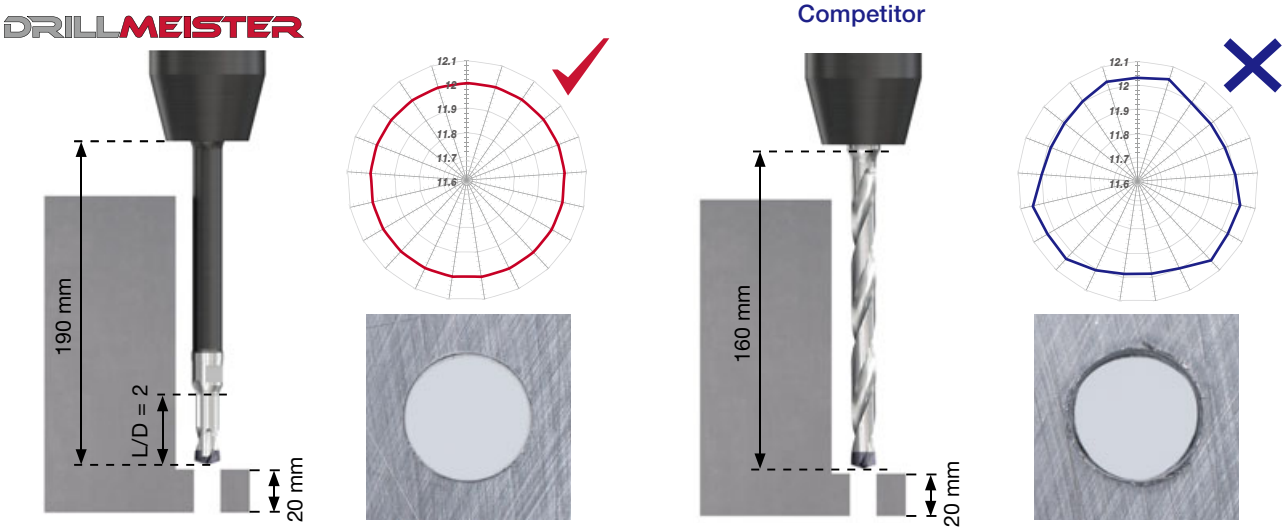
Video

Clamping key for measuring un-clamping torque Designation	Head Designation	Recommended value of un-clamping torque that means usable limit of a drill body (N·m)	(cN·m)
KHS-TID6-9.99	DM*060-069	0.15	15
	DM*070-079	0.15	15
	DM*080-089	0.15	15
	DM*090-099	0.15	15
KHS-TID10-19.99	DM*100-109	0.2	20
	DM*110-119	0.2	20
	DM*120-129	0.25	25
	DM*130-139	0.25	25
	DM*140-149	0.3	30
	DM*150-159	0.3	30
	DM*160-169	0.35	35
	DM*170-179	0.35	35
	DM*180-189	0.4	40
	DM*190-199	0.4	40
KHS-TID20-26.99	DM*200-209	0.5	50
	DM*210-219	0.5	50
	DM*220-229	0.6	60
	DM*230-239	0.6	60
	DM*240-249	0.6	60
	DM*250-259	0.6	60

Modular System

- TungFlex and TungMeister tooling systems ensure optimal toolholder combination, allowing stable drilling operation even with long overhang tool set up.
- Quick change capability in the machine helps minimize machine downtime
- Standard drilling depth of 2xD or 3xD

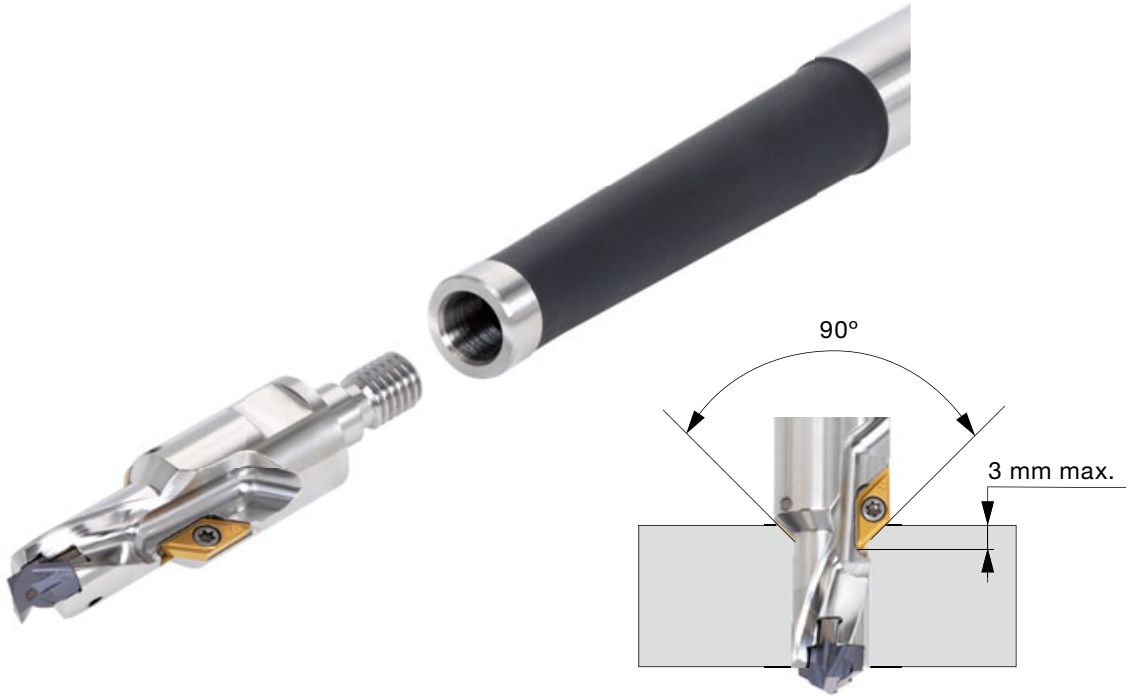
Excellent hole quality vs. competitors



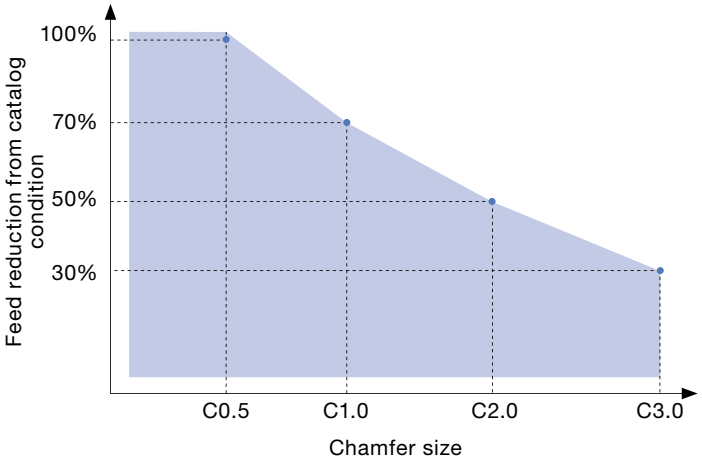
Drill	: 12 mm, L/D = 2
Drill head	: DMP120
Grade	: AH9130
Workpiece material	: High carbon steel / S55C, C55
Cutting speed	: *Vc* = 100 m/min
Feed	: *f* = 0.3 mm/rev
Hole depth	: *H* = 20 mm
Coolant	: Wet (Internal)

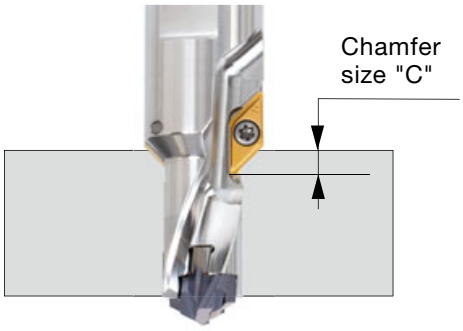
Drill body with chamfering insert with a TungFlex connection

- Drilling and chamfering can be done with one tool
- Dedicated line up for pre-thread drilling of metric and UNF threads
- Stable chamfering capability with less chattering due to dedicated insert design for chamfering
- Easy to extend tool overhang by combining with existing TungFlex shanks



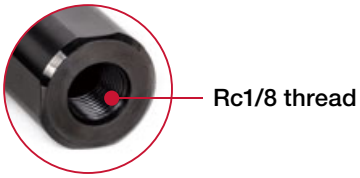
Machining stability changes depending on the amount of chamfering.
Adjust the cutting feed based on the table below during chamfer edge contact to work piece.





Dedicated design for Swiss type machines

- Allows standard TID-F bodies (flange type) to be used without additional machining
- Easy tool change in the machine with side lock system
- Tool can be replaced with minimal misalignment
- Internal lubrication enables high-efficiency machining



Line up overview

Drill diameter (mm)	Drill body designation	Shank diameter of sleeve (mm)						
		ø16	ø19.05	ø20	ø22	ø25	ø25.4	ø32
ø6 - ø9.9	TID***F12...	○	○	○	○	○	○	○
ø10 - ø14.9	TID***F16...		○	○	○	○	○	○
ø15 - ø17.9	TID***F20...					○	○	○

Designation system

BLM 254 - 16 L F

(1) (2) (3) (4)


Flange


Round

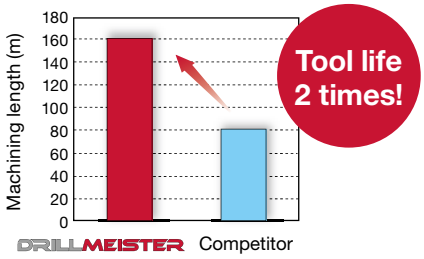
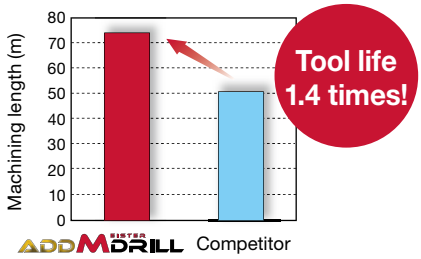
(1) Shank diameter of sleeve (mm)	
254	ø25.4

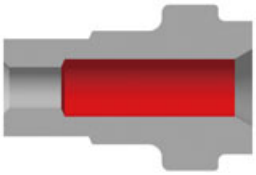
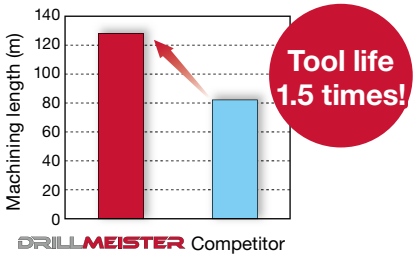
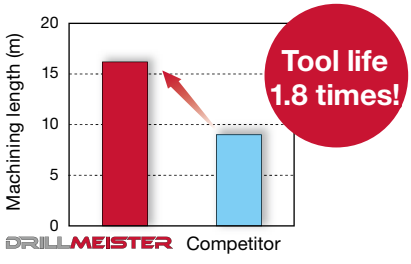
(2) Shank diameter of drill (mm)	
16	ø16

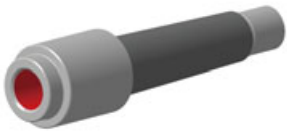
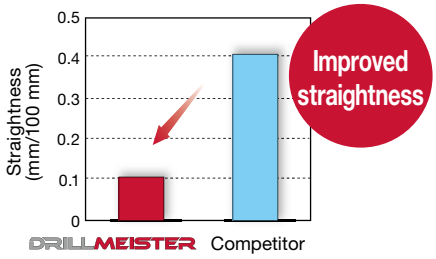
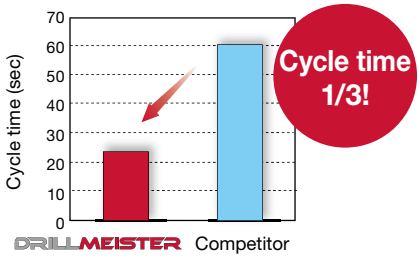
(3) Length (mm)	
L	Long
S	Short

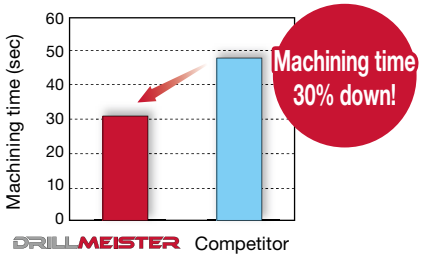
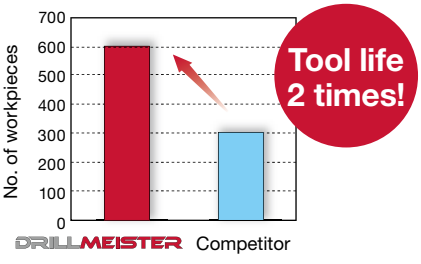
(4) Shape of sleeve	
F	Flange
R	Round

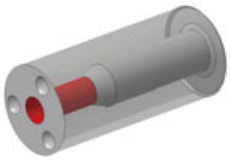
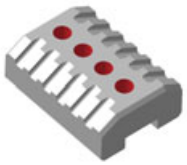
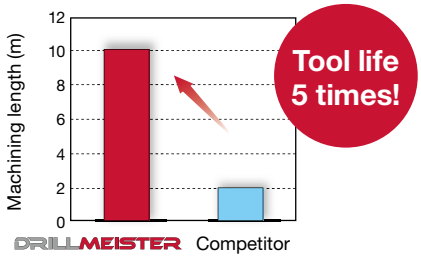
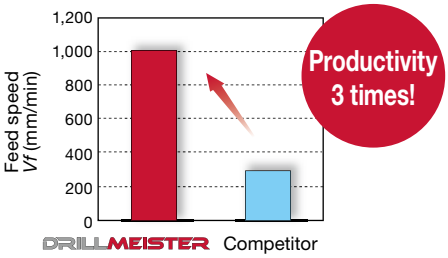
PRACTICAL EXAMPLES

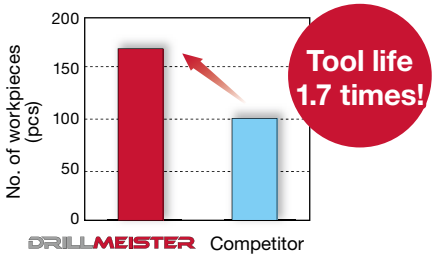
	Workpiece type	Cylinder block	Flange part
	Drill body	TID115F16-8	TID050R06-5
	Head	DMC115	DMP050
	Grade	AH9130	AH725
	Workpiece material	FC250 / GG25 / 250	S45C / C45
		 K	 P
Cutting conditions	Cutting speed : *Vc* (m/min)	100	100
	Feed : *f* (mm/rev)	0.2	0.1
	Feed speed : *Vf* (mm/min)	554	636.9
	Drill diameter : DC (mm)	11.5	5
	Hole depth : *H* (mm)	80	20
	Coolant	Wet (Internal coolant)	Wet (Internal and external coolant)
	Machine	Horizontal M/C	Vertical M/C
	Results	 Competitor tools have occasionally broken due to bending holes. **DMC** heads offer machining stability with self-centering geometry and double margins. The AH9130 grade achieved twice the tool life of the competitor, even at higher cutting speeds.	 The combination of sharp cutting edges and efficient coolant supply has demonstrated a 1.4 times longer tool life compared to solid drills.

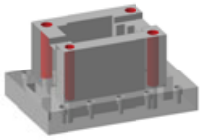
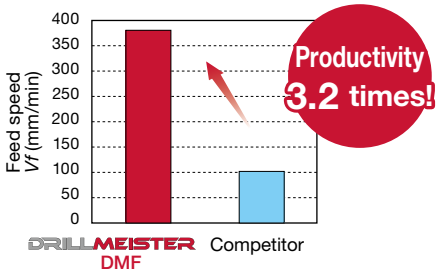
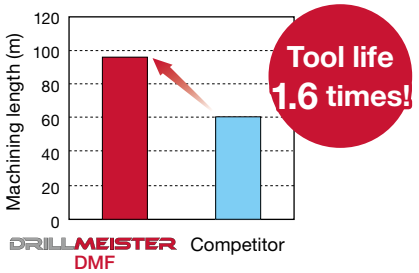
	Workpiece type	Drive pinion shaft blank	New Tube sheet
	Drill body	TID200F32-5	TID190F25-5
	Head	DMP200	DMM1927
	Grade	AH9130	AH9130
	Workpiece material	SCr420 / 20Cr4	Duplex
		 P	 M
Cutting conditions	Cutting speed : *Vc* (m/min)	100	53
	Feed : *f* (mm/rev)	0.31	0.13
	Feed speed : *Vf* (mm/min)	398	101
	Drill diameter : DC (mm)	20	19.27
	Hole depth : *H* (mm)	104	38.1
	Coolant	Wet (Internal coolant)	Wet (Internal coolant)
	Machine	Vertical M/C	Vertical M/C
	Results	 The excellent wear resistance of AH9130 achieves 1.5 times longer life than existing replaceable head drill.	 **DMM** head is specially designed for stainless steel machining, achieving stable chip control and tool life. Achieving 1.8 times longer tool life.

Workpiece type		Output shaft	Mold base
Drill body		TID140F16-8	TID180R25-12
Head		DMC140	DMC180
Grade		AH9130	AH9130
Workpiece material		SCM415	S55C / C55
		 P	 P
Cutting conditions	Cutting speed : *Vc* (m/min)	120	120
	Feed : *f* (mm/rev)	0.3	0.25
	Feed speed : *Vf* (mm/min)	600	531
	Drill diameter : *DC* (mm)	14	18
	Hole depth : *H* (mm)	80	200
	Coolant	Wet (Internal coolant)	Wet (Internal coolant)
	Machine	Horizontal M/C	Horizontal M/C
Results		 With the competitor's drill, the hole quality could not satisfy the straightness required. **DrillMeister's DMC** drill head improved the hole straightness to 1/4 of the competitor's.	 **DMC** does not require a guide hole. It achieved three times higher productivity than the current process by eliminating the guide hole step and increasing cutting speed and feed rate.

Workpiece type		Deff case	Wheel hub
Drill body		TID145F16-5	TID135R14-3.5
Head		DMF145	DMH137
Grade		AH9130	AH9130
Workpiece material		FCD600 / GGG60 / 600-3	S40C
		 K	 P
Cutting conditions	Cutting speed : *Vc* (m/min)	100	150
	Feed : *f* (mm/rev)	0.25	0.32
	Feed speed : *Vf* (mm/min)	594	115.8
	Drill diameter : *DC* (mm)	14.5	13.7
	Hole depth : *H* (mm)	20	15
	Coolant	Wet (Internal coolant)	Wet (Internal coolant)
	Machine	Vertical M/C	Vertical M/C
Results		 **DMF** head consolidates spot facing and drilling operations on uneven cast surfaces, improving machining time.	 The combination of reinforced geometry **DMH** and advanced wear resistant grade AH9130 demonstrates double tool life.

Workpiece type		Mold	Electric part
Drill body		TID170F20-5	TID140F15-3
Head		DMH170	DMN142
Grade		AH9130	KS15F
Workpiece material		SKD11 (50HRC)	A5052
		 H	 N
Cutting conditions	Cutting speed : *Vc* (m/min)	30	135
	Feed : *f* (mm/rev)	0.2	0.33
	Feed speed : *Vf* (mm/min)	112	1,000
	Drill diameter : DC (mm)	17	14.2
	Hole depth : *H* (mm)	80	15
	Coolant	Wet (Internal coolant)	Wet (Internal coolant)
	Machine	Swiss lathe	Vertical M/C
Results		 Compared to the indexable drill, the **DMH** demonstrates a tool life that is five times longer, thanks to the highly wear-resistant grade AH9130.	 Productivity is tripled by using a dedicated head that can be applied with the same tool body.

Workpiece type		Manufacturing machine part
Drill body		TID065F12-1.5
Head		DMP069
Grade		AH725
Workpiece material		Ni alloy
		 S
Cutting conditions	Cutting speed : *Vc* (m/min)	54
	Feed : *f* (mm/rev)	0.08
	Feed speed : *Vf* (mm/min)	199.4
	Drill diameter : DC (mm)	6.9
	Hole depth : *H* (mm)	5.1
	Coolant	Wet (Internal coolant)
	Machine	Horizontal M/C
Results		 Tool life is increased by 1.7 times compared to competitor's head-changeable drills, due to lower cutting force and efficient chip evacuation.

Workpiece type		Mold insert	Sleeve
Drill body		TID200F25-8	TID095F12-1.5
Head		DMF200-R0.2	DMF095-R0.2
Grade		AH9130	AH9130
Workpiece material		Tool steel before hardening  P	Low carbon steel C 0.13%  P
Cutting conditions	Cutting speed : *Vc* (m/min)	100	90
	Feed : *f* (mm/rev)	0.25	0.1
	Feed speed : *Vf* (mm/min)	379	302
	Drill diameter : DC (mm)	20	9.5
	Hole depth : *H* (mm)	140	20
	Coolant	Wet (Internal coolant)	Wet (Internal coolant)
	Machine	Vertical M/C BT40	Swiss lathe
Results		 Thanks to the reduced chattering of the **DrillMeister DMF**, even at 8xD, high-feed machining is possible, resulting in a 3.2 times increase in machining efficiency.	 **DrillMeister DMF** excels in tool life, achieving 1.6 times the tool life compared to existing head-exchangeable drills.

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