

NEW PRODUCT NEWS

DRILL•RUSH



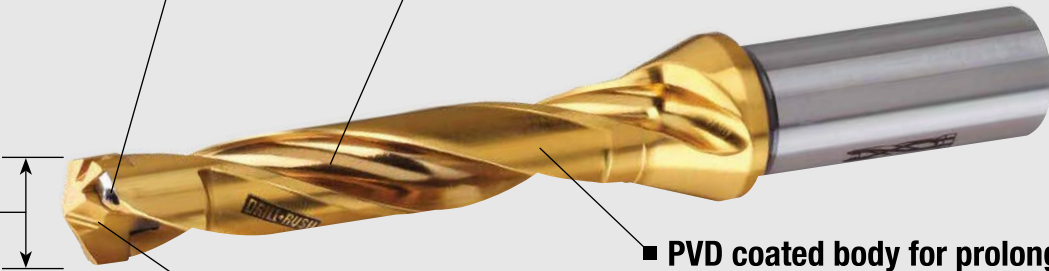
New Head-changeable Drill



DRILLRUSH

New head-changeable drill

FEATURES

- 
- Twisted coolant hole with optimum flute design
 - Polished flute for smooth chip evacuation
 - PVD coated body for prolonged body life
 - Innovative quick change system
 - New TT9080 grade - Long tool life
 - One drill body can cover different diameter of head
- Target market
: Heat exchanger, Automotive[®], Mold&Die[®], Aerospace[®], Railway[®], Shipbuilding[®]

TaeguTec, the market leader of insert type indexable drills, is pleased to introduce the all new DRILLRUSH guaranteeing excellent performance and high productivity.

With optimized edge geometry, innovative clamping structure, the new DRILLRUSH shows remarkable performance compared to the existing solid carbide or other conventional drills. A user-friendly clamping mechanism including a clamping key enables easy and convenient drill head indexing on the machine spindle. Moreover, not only is it more efficient than screw clamping but also cost effective requiring less set up time.

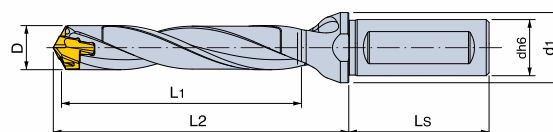
Engineered for precision, the DRILLRUSH body design ensures stable performance even after repeated head indexing; the cutting edge design together with twisted coolant channels aid high speed machining with improved productivity.

The DRILLRUSH has other advantages as well, its PVD coated body means longer tool life while polished flutes allow smooth chip evacuation and high hole accuracy. New TT9080 grade multi-layered coating and special treatment of drill heads add to the tool's endurance.

The DRILLRUSH is built to maximize cost efficiency; a range of different diameter drill heads and various cutting edge geometries used on the same tool body cut overall production costs.

The new DRILLRUSH is now available from 10.0 to 19.9mm diameter ranges (in 0.1 increments) while the drill body comes in 3xD, 5xD, and 8xD type.

Holder



3xD

Designation	D	L ₁	d	d ₁	L ₂	LS	Pocket size	Key
TCD 100-104-16T3-3D	10.0-10.4	30	16	20	46.2	48	10	K TCD D100-D199
TCD 105-109-16T3-3D	10.5-10.9	32	16	20	47.7	48	10	
TCD 110-114-16T3-3D	11.0-11.4	33	16	20	49.6	48	11	
TCD 115-119-16T3-3D	11.5-11.9	35	16	20	51.1	48	11	
TCD 120-124-16T3-3D	12.0-12.4	36	16	20	53.0	48	12	
TCD 125-129-16T3-3D	12.5-12.9	37	16	20	54.5	48	12	
TCD 130-134-16T3-3D	13.0-13.4	39	16	20	56.6	48	13	
TCD 135-139-16T3-3D	13.5-13.9	41	16	20	58.1	48	13	
TCD 140-144-16T3-3D	14.0-14.4	42	16	20	62.1	48	14	
TCD 145-149-16T3-3D	14.5-14.9	44	16	20	63.6	48	14	
TCD 150-159-20T3-3D	15.0-15.9	45	20	25	68.7	50	15	
TCD 160-169-20T3-3D	16.0-16.9	48	20	25	73.3	50	16	
TCD 170-179-20T3-3D	17.0-17.9	51	20	25	77.9	50	17	
TCD 180-189-25T2-3D	18.0-18.9	54	25	32	82.5	56	18	
TCD 190-199-25T2-3D	19.0-19.9	57	25	32	87.0	56	19	

5xD

Designation	D	L ₁	d	d ₁	L ₂	LS	Pocket size	Key
TCD 100-104-16T3-5D	10.0-10.4	50	16	20	66.2	48	10	K TCD D100-D199
TCD 105-109-16T3-5D	10.5-10.9	53	16	20	68.7	48	10	
TCD 110-114-16T3-5D	11.0-11.4	55	16	20	71.6	48	11	
TCD 115-119-16T3-5D	11.5-11.9	58	16	20	74.1	48	11	
TCD 120-124-16T3-5D	12.0-12.4	60	16	20	77.0	48	12	
TCD 125-129-16T3-5D	12.5-12.9	62	16	20	79.5	48	12	
TCD 130-134-16T3-5D	13.0-13.4	65	16	20	82.6	48	13	
TCD 135-139-16T3-5D	13.5-13.9	68	16	20	85.1	48	13	
TCD 140-144-16T3-5D	14.0-14.4	70	16	20	90.2	48	14	
TCD 145-149-16T3-5D	14.5-14.9	73	16	20	92.7	48	14	
TCD 150-159-20T3-5D	15.0-15.9	75	20	25	98.7	50	15	
TCD 160-169-20T3-5D	16.0-16.9	80	20	25	105.3	50	16	
TCD 170-179-20T3-5D	17.0-17.9	85	20	25	111.9	50	17	
TCD 180-189-25T2-5D	18.0-18.9	90	25	32	118.5	56	18	
TCD 190-199-25T2-5D	19.0-19.9	95	25	32	125.0	56	19	

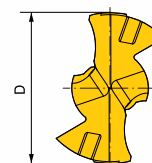
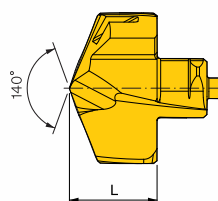
8xD

Designation	D	L ₁	d	d ₁	L ₂	LS	Pocket size	Key
TCD 100-104-16T3-8D	10.0-10.4	80	16	20	96.2	48	10	K TCD D100-D199
TCD 105-109-16T3-8D	10.5-10.9	84	16	20	100.2	48	10	
TCD 110-114-16T3-8D	11.0-11.4	88	16	20	104.6	48	11	
TCD 115-119-16T3-8D	11.5-11.9	92	16	20	108.6	48	11	
TCD 120-124-16T3-8D	12.0-12.4	96	16	20	113.0	48	12	
TCD 125-129-16T3-8D	12.5-12.9	100	16	20	117.0	48	12	
TCD 130-134-16T3-8D	13.0-13.4	104	16	20	121.6	48	13	
TCD 135-139-16T3-8D	13.5-13.9	108	16	20	125.6	48	13	
TCD 140-144-16T3-8D	14.0-14.4	112	16	20	132.1	48	14	
TCD 145-149-16T3-8D	14.5-14.9	116	16	20	136.2	48	14	
TCD 150-159-20T3-8D	15.0-15.9	120	20	25	143.7	50	15	
TCD 160-169-20T3-8D	16.0-16.9	128	20	25	153.3	50	16	
TCD 170-179-20T3-8D	17.0-17.9	136	20	25	162.9	50	17	
TCD 180-189-25T2-8D	18.0-18.9	144	25	32	172.5	56	18	
TCD 190-199-25T2-8D	19.0-19.9	152	25	32	182.0	56	19	

Drill head



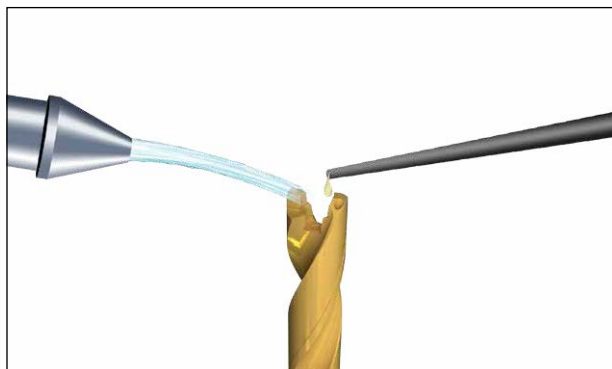
• Grade: TT9080



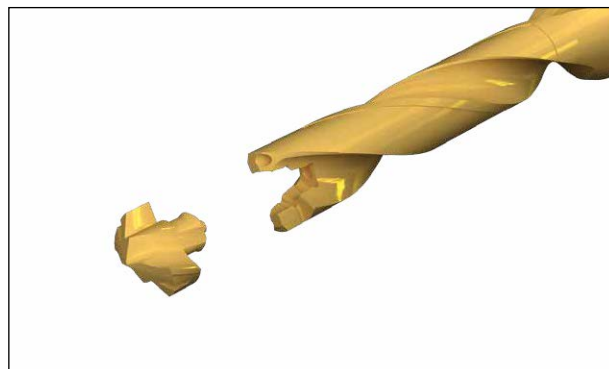
Designation	D	L	Pocket Size
TCD-100-P	10.0	6.2	10
TCD-101-P	10.1	6.2	10
TCD-102-P	10.2	6.2	10
TCD-103-P	10.3	6.2	10
TCD-104-P	10.4	6.2	10
TCD-105-P	10.5	6.2	10
TCD-106-P	10.6	6.2	10
TCD-107-P	10.7	6.2	10
TCD-108-P	10.8	6.2	10
TCD-109-P	10.9	6.2	10
TCD-110-P	11.0	6.6	11
TCD-111-P	11.1	6.6	11
TCD-112-P	11.2	6.6	11
TCD-113-P	11.3	6.6	11
TCD-114-P	11.4	6.6	11
TCD-115-P	11.5	6.6	11
TCD-116-P	11.6	6.6	11
TCD-117-P	11.7	6.6	11
TCD-118-P	11.8	6.6	11
TCD-119-P	11.9	6.6	11
TCD-120-P	12.0	7.0	12
TCD-121-P	12.1	7.0	12
TCD-122-P	12.2	7.0	12
TCD-123-P	12.3	7.0	12
TCD-124-P	12.4	7.0	12
TCD-125-P	12.5	7.0	12
TCD-126-P	12.6	7.0	12
TCD-127-P	12.7	7.0	12
TCD-128-P	12.8	7.0	12
TCD-129-P	12.9	7.0	12
TCD-130-P	13.0	7.6	13
TCD-131-P	13.1	7.6	13
TCD-132-P	13.2	7.6	13
TCD-133-P	13.3	7.6	13
TCD-134-P	13.4	7.6	13
TCD-135-P	13.5	7.6	13
TCD-136-P	13.6	7.6	13
TCD-137-P	13.7	7.6	13
TCD-138-P	13.8	7.6	13
TCD-139-P	13.9	7.6	13
TCD-140-P	14.0	8.1	14
TCD-141-P	14.1	8.1	14
TCD-142-P	14.2	8.1	14
TCD-143-P	14.3	8.1	14
TCD-144-P	14.4	8.1	14
TCD-145-P	14.5	8.1	14
TCD-146-P	14.6	8.1	14
TCD-147-P	14.7	8.1	14
TCD-148-P	14.8	8.1	14
TCD-149-P	14.9	8.1	14

Designation	D	L	Pocket Size
TCD-150-P	15.0	8.7	15
TCD-151-P	15.1	8.7	15
TCD-152-P	15.2	8.7	15
TCD-153-P	15.3	8.7	15
TCD-154-P	15.4	8.7	15
TCD-155-P	15.5	8.7	15
TCD-156-P	15.6	8.7	15
TCD-157-P	15.7	8.7	15
TCD-158-P	15.8	8.7	15
TCD-159-P	15.9	8.7	15
TCD-160-P	16.0	9.3	16
TCD-161-P	16.1	9.3	16
TCD-162-P	16.2	9.3	16
TCD-163-P	16.3	9.3	16
TCD-164-P	16.4	9.3	16
TCD-165-P	16.5	9.3	16
TCD-166-P	16.6	9.3	16
TCD-167-P	16.7	9.3	16
TCD-168-P	16.8	9.3	16
TCD-169-P	16.9	9.3	16
TCD-170-P	17.0	9.9	17
TCD-171-P	17.1	9.9	17
TCD-172-P	17.2	9.9	17
TCD-173-P	17.3	9.9	17
TCD-174-P	17.4	9.9	17
TCD-175-P	17.5	9.9	17
TCD-176-P	17.6	9.9	17
TCD-177-P	17.7	9.9	17
TCD-178-P	17.8	9.9	17
TCD-179-P	17.9	9.9	17
TCD-180-P	18.0	10.5	18
TCD-181-P	18.1	10.5	18
TCD-182-P	18.2	10.5	18
TCD-183-P	18.3	10.5	18
TCD-184-P	18.4	10.5	18
TCD-185-P	18.5	10.5	18
TCD-186-P	18.6	10.5	18
TCD-187-P	18.7	10.5	18
TCD-188-P	18.8	10.5	18
TCD-189-P	18.9	10.5	18
TCD-190-P	19.0	11.0	19
TCD-191-P	19.1	11.0	19
TCD-192-P	19.2	11.0	19
TCD-193-P	19.3	11.0	19
TCD-194-P	19.4	11.0	19
TCD-195-P	19.5	11.0	19
TCD-196-P	19.6	11.0	19
TCD-197-P	19.7	11.0	19
TCD-198-P	19.8	11.0	19
TCD-199-P	19.9	11.0	19

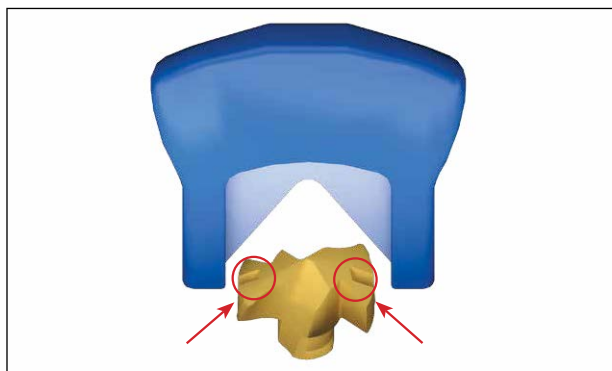
Set up - Drilling head mounting procedure



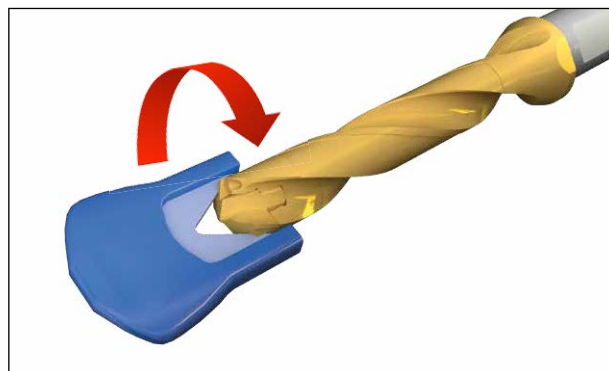
1. Clean the pocket and put oil



2. Mount the drill head on the pocket



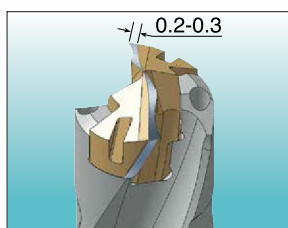
3. Insert key into the slot head



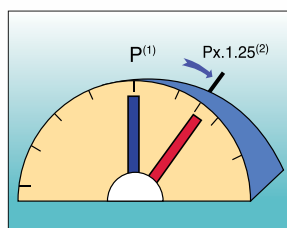
4. Tighten the head by rotating the key CW

Indication of head wear

Wear Limit

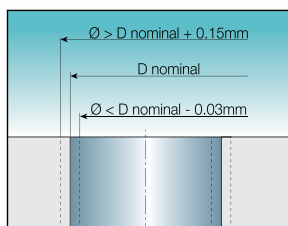


Power Restriction

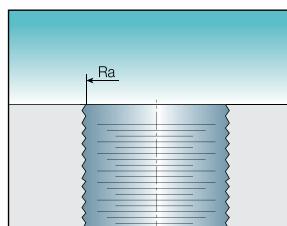


⁽¹⁾ New drilling head
⁽²⁾ Worn-out drilling head

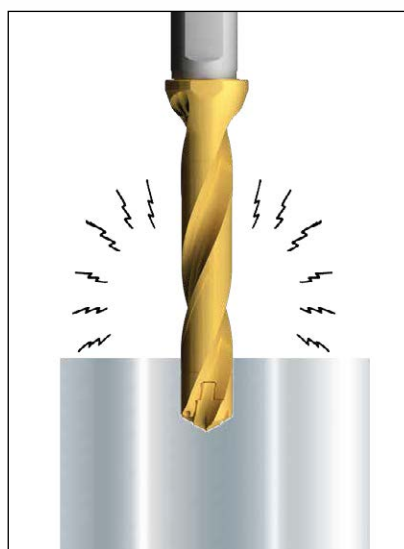
Diameter Change



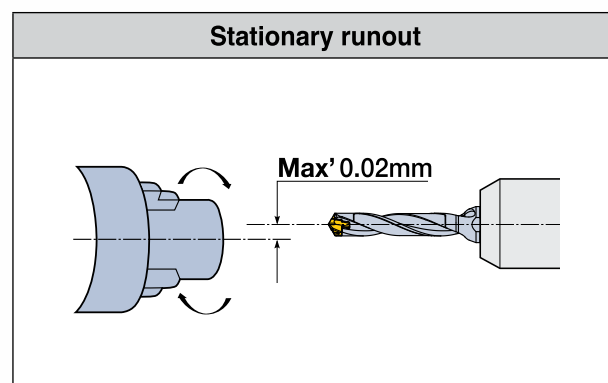
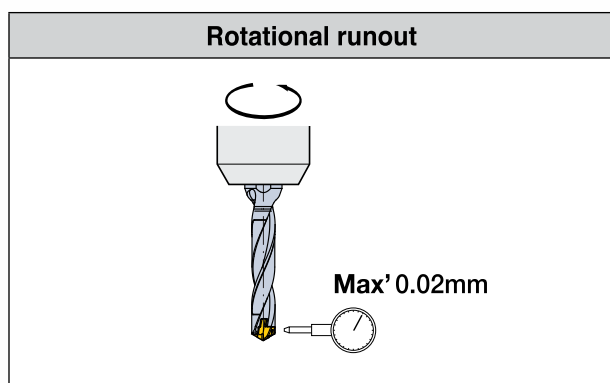
Surface Finish Declines



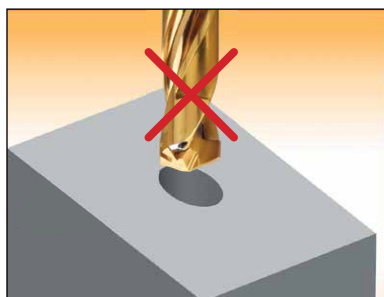
Vibration Noise Drastically Increases



Maximum runout



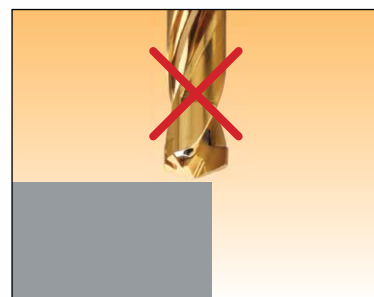
Drilling limitation



Inclined surface

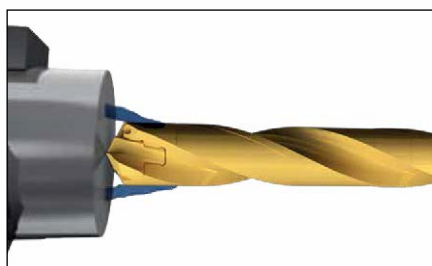


Cross hole

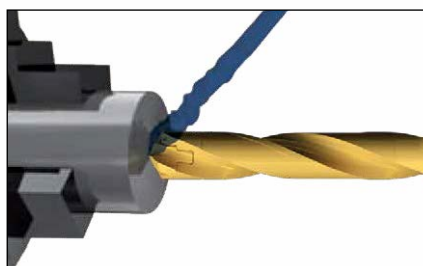


Interrupted cutting

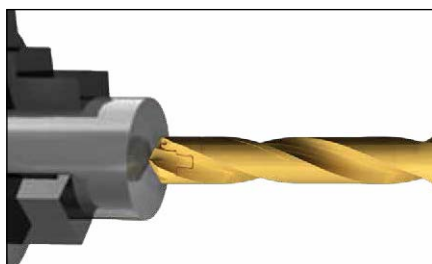
Coolant recommendations



Internal coolant



External coolant
up to 3xD



Dry cutting

Recommended cutting conditions - According to DIN/ISO513 and VDI 3323

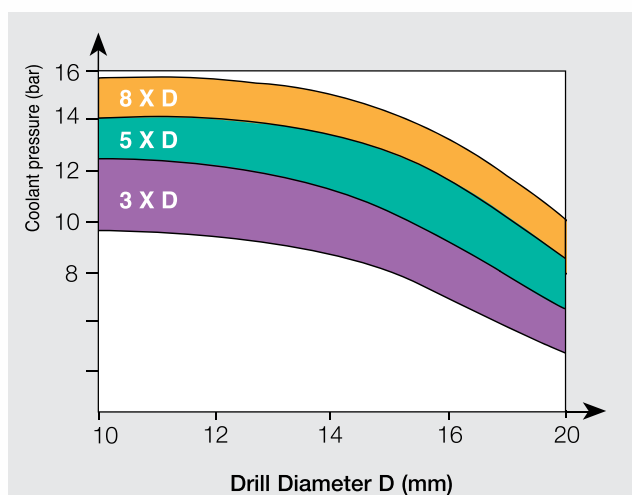
ISO	Material	Condition	Tensile strength Rm(N/mm2)	Hardness (HB)	Mtl. No.	Cutting speed Vc(m/min)	DRILLRUSH				
							Feed vs. Drill diameter(mm/rev)				
							D= 10-11.9	D= 12-13.9	D= 14-15.9	D= 16-19.9	D= 20-25.9
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C Annealed	420	125	1	80-110-140					
		>=0.25%C Annealed	650	190	2	80-105-130	0.15	0.18	0.20	0.25	0.25
		<0.55%C Quenched and tempered	850	250	3	80-100-120	0.21	0.24	0.27	0.35	0.35
		>=0.55%C Annealed	750	220	4	70-90-110	0.28	0.30	0.35	0.45	0.45
		Quenched and tempered	1000	300	5	50-70-90					
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed	600	200	6	70-95-120	0.14	0.16	0.18	0.23	0.25
			930	275	7	70-90-110	0.21	0.24	0.26	0.31	0.35
		Quenched and tempered	1000	300	8	50-70-90	0.28	0.32	0.35	0.40	0.45
			1200	350	9	40-55-70					
	High alloy steel, cast steel and tool steel.	Annealed	680	200	10	50-70-90	0.12	0.15	0.18	0.20	0.22
		Quenched and tempered	1100	325	11	40-60-80	0.17	0.20	0.23	0.25	0.27
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12	40-55-70	0.12	0.14	0.16	0.16	0.18
		Martensitic	820	240	13	40-55-70	0.15	0.17	0.20	0.21	0.24
		Austenitic	600	180	14	30-50-70	0.18	0.20	0.24	0.26	0.30
K	Gray cast iron (GG)	Ferritic		160	15	90-125-160					
		Pearlitic		250	16	80-110-140					
	Cast iron nodular (GGG)	Ferritic		180	17	90-135-180	0.20	0.25	0.30	0.35	0.35
		Pearlitic		260	18	80-110-140	0.27	0.32	0.37	0.45	0.37
	Malleable cast iron	Ferritic		130	19	90-125-160	0.35	0.40	0.45	0.55	0.60
		Pearlitic		230	20	80-110-140					
N	Aluminum - wrought alloy	Not cureable		60	21	90-155-220					
		Cured		100	22	90-155-220					
	Aluminum-cast, alloyed	<=12% Si Not cureable		75	23	90-155-220	0.25	0.30	0.35	0.40	0.45
		Cured		90	24	90-155-220	0.32	0.37	0.42	0.50	0.57
		>12% Si High temp.		130	25	80-120-160	0.40	0.45	0.50	0.60	0.70
	Copper alloys	>1% Pb Free cutting		110	26	90-155-220					
		Brass		90	27	90-155-220					
	Non-metallic	Electrolitic copper		100	28	90-155-220					
		Duroplastics, fiber plastics			29						
S	High temp. alloys	Fe based Annealed		200	31	30-45-60					
		Cured		280	32	20-35-50	0.08	0.10	0.12	0.12	0.14
		Ni or Annealed		250	33	20-35-50	0.10	0.12	0.15	0.16	0.18
		Cured		350	34	20-35-50	0.13	0.15	0.18	0.20	0.22
		Co based Cast		320	35	20-35-50					
	Titanium, Ti alloys		RM400		36	20-35-50	0.08	0.10	0.12	0.14	0.16
							0.11	0.14	0.16	0.18	0.20
		Alpha+beta alloys cured	RM1050		37	20-35-50	0.15	0.18	0.20	0.22	0.25
H	Hardened steel	Hardened		55HRC	38	20-35-50	0.08	0.10	0.12	0.14	0.16
		Hardened		60HRC	39	20-35-50	0.11	0.14	0.16	0.18	0.20
	Chilled cast iron	Cast		400	40		0.15	0.18	0.20	0.22	0.25
	Cast iron nodular	Hardened		55HRC	41						

* For over 8xD, please reduce the cutting condition.

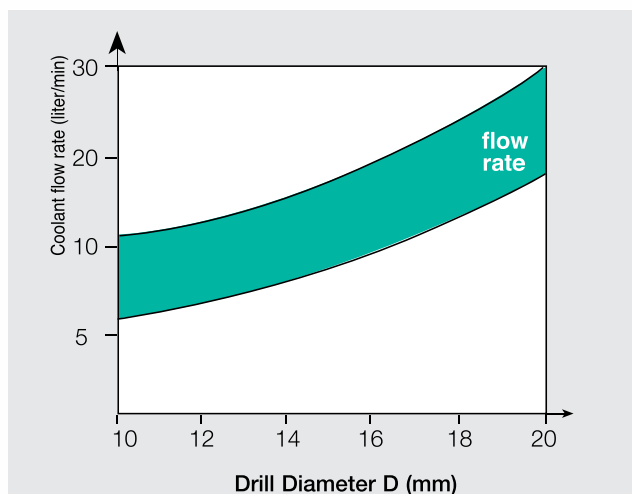
* For more information of material groups, see the TaeguTec concise catalogue "Material conversion Table" section.

■ Steel
 ■ Stainless steel
 ■ Cast iron
 ■ Nonferrous
 ■ High temp. alloys
 ■ Hardened steel

Recommended coolant pressure (bar)



Recommended coolant flow rate (liter/min)



Packing

Clamping key for DRILLRUSH head is enclosed in each holder.

Holder



Drill head



• Packing size: 1pc