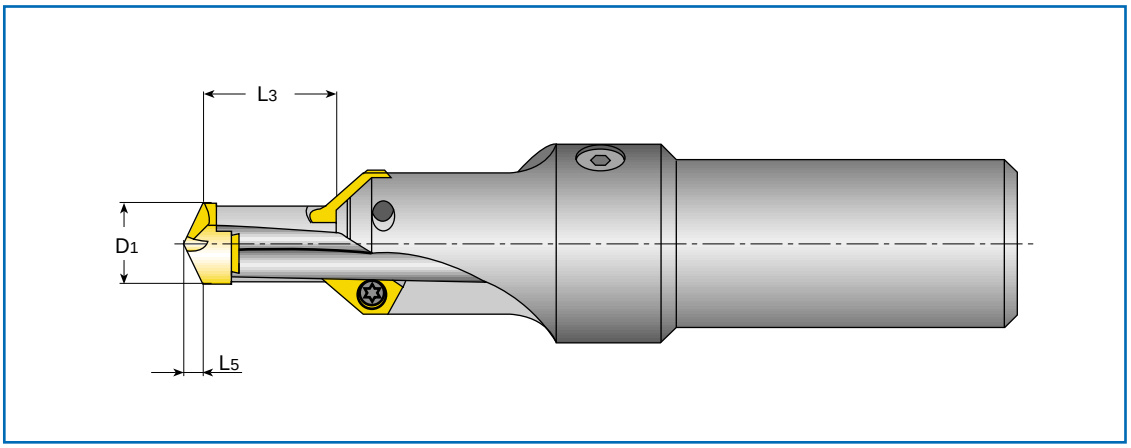


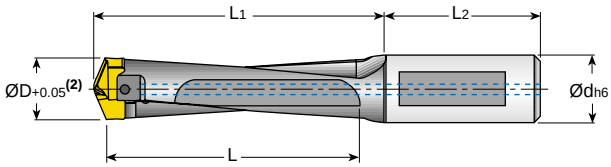
Centering Hole Data

Designation	Drill Dia. D_1	L_5	Min-Max UNI-CHAMDRILL Adjustment in CHAMRING-L_3
DCM 075-026-8B-3.5D	7.5	1.36	11.0-20.5
DCM 080-028-8B-3.5D	8.0	1.46	12.5-21.5
DCM 085-029-9B-3.5D	8.5	1.55	13.5-25.0
DCM 090-031-9B-3.5D	9.0	1.64	14.0-25.5
DCM 095-033-10B-3.5D	9.5	1.73	15.5-27.5
DCM 100-033-10B-3.5D	10.0	1.82	12.5-26.5
DCM 105-034-11B-3.5D	10.5	1.91	12.5-27.5
DCM 110-036-11B-3.5D	11.0	2.00	16.0-29.0
DCM 115-038-12B-3.5D	11.5	2.09	13.5-31.0
DCM 120-042-12B-3.5D	12.0	2.18	17.0-33.0
DCM 125-042-13B-3.5D	12.5	2.27	17.0-35.0
DCM 130-042-13B-3.5D	13.0	2.36	19.0-36.0
DCM 135-044-14B-3.5D	13.5	2.45	17.0-37.0
DCM 140-048-14B-3.5D	14.0	2.54	19.0-39.0
DCM 145-050-15B-3.5D	14.5	2.63	17.5-39.5
DCM 150-052-15B-3.5D	15.0	2.72	22.5-41.0
DCM 160-052-16B-3.5D	16.0	2.81	23.5-46.5
DCM 170-055-17B-3.5D	17.0	2.91	25.5-49.5
DCM 180-060-18B-3.5D	18.0	2.99	28.0-54.0
DCM 190-062-19B-3.5D	19.0	3.28	29.0-60.0
DCM 200-066-20B-3.5D	20.0	3.64	33.0-63.5

DCM Indexable head Drills Type B[3]

Drilling Depth 3.5xD

Range Ø7.5 to Ø20.9



DCM

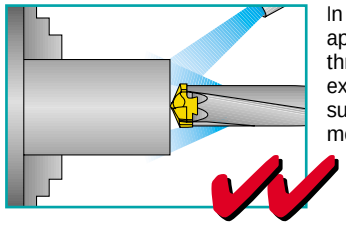
ØD(1) Range	L	Designation	d	L1	L2	Pocket Size	Key	Drilling Heads
7.5-7.9	26	DCM 075-026-8B-3.5D	8	33.7	43	8	K DCM-8	
8-8.4	28	DCM 080-028-8B-3.5D	8	35.9	43	8	K DCM-8	
8.5-8.9	29	DCM 085-029-9B-3.5D	9	36.9	43	9	K DCM-9	
9-9.4	31	DCM 090-031-9B-3.5D	9	39.1	43	9	K DCM-9	
9.5-9.9	33	DCM 095-033-10B-3.5D	10	40.3	43	10	K DCM-10	
100-10.4	33	DCM 100-033-10B-3.5D	10	43.0	43	10	K DCM-10	IDI
10.5-10.9	34	DCM 105-034-11B-3.5D	11	44.8	43	11	K DCM-11	
11.0-11.4	36	DCM 110-036-11B-3.5D	11	46.9	43	11	K DCM-11	
11.5-11.9	38	DCM 115-038-12B-3.5D	12	48.6	43	12	K DCM-12	
12.0-12.4	42	DCM 120-042-12B-3.5D	12	50.8	43	12	K DCM-12	
12.5-12.9	42	DCM 125-042-13B-3.5D	13	52.6	43	13	K DCM-13	
13.0-13.4	42	DCM 130-042-13B-3.5D	13	54.5	45	13	K DCM-13	
13.5-13.9	44	DCM 135-044-14B-3.5D	14	56.2	45	14	K DCM-14	
14.0-14.4	48	DCM 140-048-14B-3.5D	14	59.2	45	14	K DCM-14	
14.5-14.9	50	DCM 145-050-15B-3.5D	15	60.9	45	15	K DCM-15	
15.0-15.9	52	DCM 150-052-15B-3.5D	15	63.1	45	15	K DCM-15	
16.0-16.9	52	DCM 160-052-16B-3.5D	16	67.0	48	16	K DCM-16	
17.0-17.9	55	DCM 170-055-17B-3.5D	17	73.6	48	17	K DCM-17	
18.0-18.9	60	DCM 180-060-18B-3.5D	18	78.3	48	18	K DCM-18	
19.0-19.9	62	DCM 190-062-19B-3.5D	19	81.8	54	19	K DCM-19	
20.0-20.9	66	DCM 200-066-20B-3.5D	20	84.6	54	20	K DCM-20	

(1) Do not mount amaller drilling heads than specified range for drill body.
(2) Hole tolerance in average conditions; however; it can be higher or lower according to machine and tooling conditions.
(3) Drill design without a flange. To be used with standard CHAMRING chamfering rings. Can be used for tailor made shamfering rings.

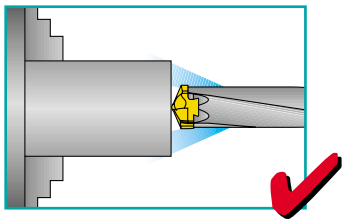
CHAMDRILL

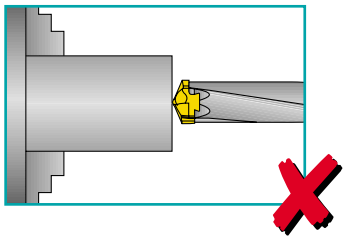
User Guide

Coolant

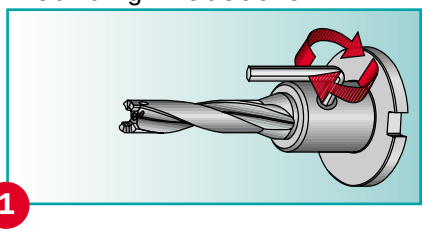


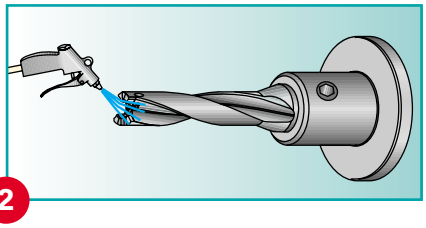
In stationary drill applications both through tool and external coolant supply is recommended.

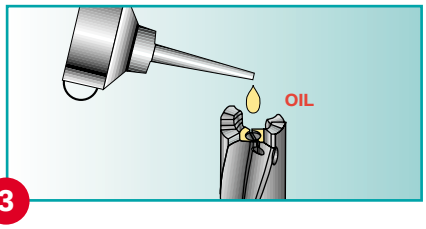


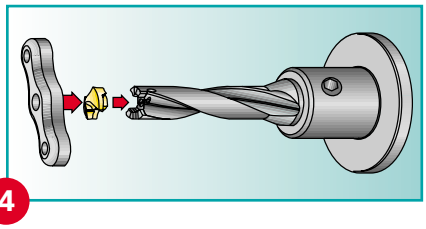


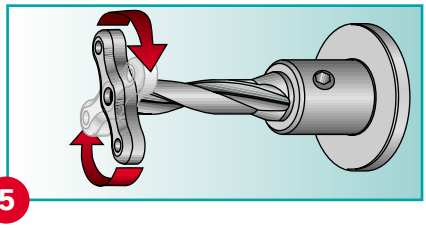
Drilling Heads Mounting Procedure











Machining Data

Following is machining data for the DCM drills.

ISO	Material	Condition	Hardness HB	Cutting Speed Vc m/min	Feed vs. Drill Diameter mm/rev					
					D=8-10	D=11-12	D=13-14	D=15-16	D=17-20	D=21-25
P	Non-alloy steel and cast steel, free cutting steel <0.25%	Annealed	125	50-130	0.12-0.2	0.15-0.25	0.2-0.3	0.25-0.35	0.25-0.45	0.25-0.45
	Non-alloy steel and cast steel, free cutting steel >=0.25%	Annealed	190	100-120						
	Non-alloy steel and cast steel, free cutting steel < 0.55%	Quenched and tempered	250	90-110						
	Non-alloy steel and cast steel, free cutting steel >=0.55%	Annealed	220	90-120						
		Quenched and tempered	300	70-90						
	Low alloy steel and cast steel (less than 5% alloying elements)	Annealed	200	80-130	0.12-0.2	0.15-0.25	0.2-0.3	0.25-0.35	0.3-0.4	0.3-0.45
		Quenched and tempered	275	70-110						
			300	60-90						
			350	40-70						
	High alloyed steel, cast steel, and tool steel	Annealed	200	50-80	0.12-0.2	0.12-0.22	0.15-0.25	0.2-0.28	0.25-0.33	0.25-0.35
		Quenched and tempered	325	40-70						
M	Stainless steel and cast steel	Ferritic/martensitic	200	20-50	0.08-0.14	0.1-0.16	0.12-0.18	0.14-0.2	0.16-0.24	0.15-0.28
		Martensitic	240	20-50						
		Austenitic	180	20-50						
K	Cast iron nodular (GGG)	Ferritic/pearlitic	180	90140	0.2-0.3	0.25-0.35	0.3-0.4	0.35-0.45	0.4-0.5	0.4-0.6
		Pearlitic	260	80-130						
	Grey cast iron (GG)	Ferritic	160	100-180						
		Pearlitic	250							
	Malleable cast iron	Ferritic	130	90-160						
		Pearlitic	230							
N	Aluminum-wrought alloy <=12% Si	Not cureable	60	90-160	0.2-0.35	0.25-0.4	0.3-0.45	0.35-0.5	0.4-0.6	0.4-0.65
	Aluminum-wrought alloy <=12% Si	Cured	100							
	Aluminum-cast, alloyed >12% Si >1% Pb	Not cureable	75							
	Aluminum-cast, alloyed >12% Si >1% Pb	Cured	90							
	Aluminum-cast, alloyed >12% Si >1% Pb	High temperature	130	80-120						
	Aluminum-cast, alloyed >12% Si >1% Pb	Free cutting	110	90-160						
	Copper alloys	Brass	90							
	Copper alloys	Electrolitic copper	100							
	Non metalic	Duroplastics, fiber plastics								
	Non metalic	Hard rubber								
S	High temp. alloys Fe based	Annealed	200	30-50	0.05-0.1	0.08-0.13	0.1-0.15	0.12-0.18	0.12-0.2	0.12-0.22
	High temp. alloys Fe based	Cured	280	20-40						
	Super alloys Ni or Co based	Annealed	250							
	Super alloys Ni or Co based	Cured	350							
	Super alloys Ni or Co based	Cast	320							
	Titanium Ti alloys			20-50	0.06-0.12	0.09-0.15	0.12-0.18	0.15-0.2	0.15-0.23	0.15-0.25
	Titanium Ti alloys	Alpha+beta alloys cured								
H	Hardened steel	Hardened	55 HRC	20-50	0.06-0.12	0.09-0.15	0.12-0.18	0.15-0.2	0.15-0.23	0.15-0.25
	Hardened steel	Hardened	60 HRC							
	Chilled cast iron	Cast	400							
	Cast iron	Hardened	55 HRC							

* Grades: first choice IC908.
* For material group number please refer to our general catalog instructions.
* Chipformer should be selected based on our geometry range recommendations.
* When using external coolant supply only, reduce cutting speed by 10%.
* Use internal coolant supply when machining austenitic stainless steel.