

DRILLING

13-2024

APRIL 2024

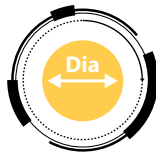
METRIC/IMPERIAL

NPA

New Product Announcement



No Setup Time



Small Diameter



Easy to Use



SUMOCHAM MULTI-MASTER

Modular SUMOCHAM Drill with a Multi-Master Connection



No Setup Time



Small Diameter



Easy to Use

NPA

New Product Announcement

SUMOCHAM MULTI-MASTER

Highlights

New Modular SUMOCHAM Drills with a Multi-Master Connection for Easy Adaptation and Setup

ISCAR introduces a new drill line based on the successful SUMOCHAM Family. The new tools feature straight flutes and a Multi-Master connection for easy adaptation and adjustment on diverse machines and for different applications. The modular SUMOCHAM drill with a Multi-Master connection is designed to provide an easy and quick change not only for drill heads, but for drill bodies as well, making it a versatile tool for drilling applications. Additionally, the modular design allows customization and flexibility in terms of length and diameter.

Features

The tools can be mounted on a large variety of standard MULTI-MASTER shanks and adaptors.

- NO SETUP time for drilling tools and for drilling heads.
- Internal coolant.

The new SUMOCHAM / Multi-Master drill can mount any of the SUMOCHAM drilling heads intended for different applications and for all types of materials such as: ICP, ICK, ICM, ICN, FCP, ICG, HCP, QCP and more.

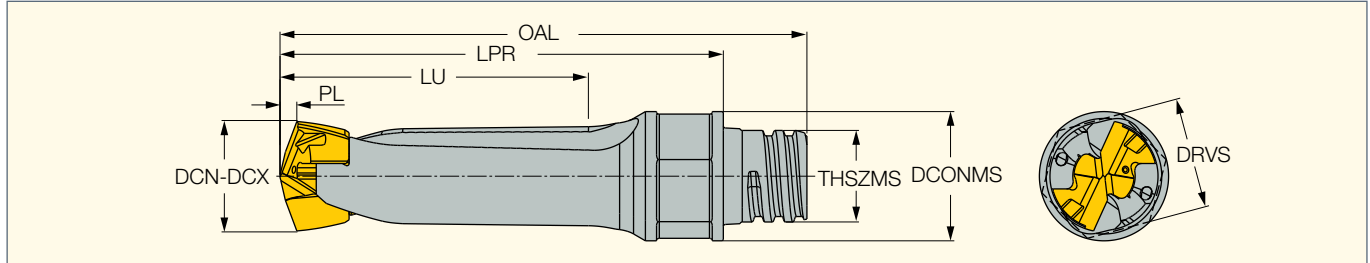
[Click for Short Video](#)

SUMOCHAM MULTI-MASTER

DCN-MM

Modular SUMOCHAM Drills with a MULTI-MASTER Connection

<https://www.iscar.com/eCatalog/Family.aspx?num=4841&mapp=DR&GFSTYP=M&srch=1>



M E T R I C											
Designation	DCN ⁽²⁾	DCX ⁽³⁾	DCONMS	LU	LPR	PL	OAL	THSZMS	SSC ⁽⁴⁾	MIID ⁽⁵⁾	DRVS ⁽⁶⁾
New DCN 040-008-MMT05-2D ⁽¹⁾	4.00	4.40	7.60	8.62	22.00	0.620	28.75	T05	4	ICP 040	5.5
New DCN 045-009-MMT05-2D ⁽¹⁾	4.50	4.90	7.60	9.66	23.30	0.660	30.05	T05	4.5	ICP 045	5.5
New DCN 050-010-MMT06-2D ⁽¹⁾	5.00	5.40	9.60	10.73	27.30	0.730	33.55	T06	5	ICP 050	8.0
New DCN 055-011-MMT06-2D ⁽¹⁾	5.50	5.90	9.60	11.81	27.50	0.810	33.80	T06	5.5	ICP 055	8.0
New DCN 060-012-MMT06-2D	6.00	6.40	9.60	12.96	27.90	0.960	34.20	T06	6	ICP 060	8.0
New DCN 065-013-MMT06-2D	6.50	6.90	9.60	14.18	29.50	1.180	35.80	T06	6.5	ICP 065	8.0
New DCN 070-014-MMT06-2D	7.00	7.40	9.60	15.01	30.10	1.010	36.39	T06	7	ICP 070	8.0
New DCN 075-015-MMT06-2D	7.50	7.90	9.60	16.01	31.10	1.100	37.40	T06	7.5	ICP 075	8.0
New DCN 080-016-MMT06-2D	8.00	8.40	9.60	17.18	32.90	1.200	39.19	T06	8	ICP 080	8.0
New DCN 085-017-MMT06-2D	8.50	8.90	9.60	18.29	33.90	1.290	40.19	T06	8.5	ICP 085	8.0
New DCN 090-018-MMT08-2D	9.00	9.40	11.60	19.35	37.40	1.350	44.90	T08	9	ICP 090	10.0
New DCN 095-019-MMT08-2D	9.50	9.90	11.60	20.44	38.40	1.440	45.90	T08	9.5	ICP 095	10.0
New DCN 100-020-MMT08-2D	10.00	10.40	11.60	21.50	39.80	1.500	47.30	T08	10	ICP 100	10.0

- (1) The SK DCN key is supplied with the insert
- (2) Cutting diameter minimum
- (3) Cutting diameter maximum
- (4) Seat size code
- (5) Master insert identification
- (6) Torque key size

Spare Parts



Designation	Clamping Key
DCN 060-012-MMT06-2D	K DCN 6-9.99-Y
DCN 065-013-MMT06-2D	K DCN 6-9.99-Y
DCN 070-014-MMT06-2D	K DCN 6-9.99
DCN 075-015-MMT06-2D	K DCN 6-9.99
DCN 080-016-MMT06-2D	K DCN 6-9.99
DCN 085-017-MMT06-2D	K DCN 6-9.99
DCN 090-018-MMT08-2D	K DCN 6-9.99
DCN 095-019-MMT08-2D	K DCN 6-9.99
DCN 100-020-MMT08-2D	K DCN 10-13.99

SUMOCHAM MULTI-MASTER

Cutting conditions for DCN-MM tools (metric)

Material Groups						Cutting parameters												
ISO	Material	Condition	Tensile Strength [N/mm ²]	Hardness, HB	Group	Diameter range, mm	D=4-4.9	D=5-5.9	D=6-7.9	D=8-9.9	D=10-10.99							
						Cutting speed, Vc [m/min]	Cutting feed, f [mm/rev]											
P	non-alloy steel and cast steel, free cutting steel	< 0.25 %C	annealed	420	125	1	70-90-110	0.04 0.055 0.065	0.07 0.09 0.11	0.09 0.11 0.13	0.12 0.17 0.22	0.15 0.21 0.28						
		≥ 0.25 %C	annealed	650	190	2	70-100-120											
		< 0.55 %C	quenched and tempered	850	250	3	70-90-110											
		≥ 0.55 %C	quenched and tempered	1000	300	5	50-70-90											
	low alloy and cast steel	less than 5% of alloying elements	annealed	600	200	6	70-90-110	0.04	0.08	0.09	0.12	0.14						
			quenched and tempered	930	275	7	60-80-100	0.055	0.10	0.12	0.18	0.21						
			quenched and tempered	1000	300	8	50-70-90	0.065	0.12	0.14	0.24	0.28						
			quenched and tempered	1200	350	9	40-55-70											
	high alloyed steel, cast steel and tool steel	annealed	680	200	10	45-65-85	0.05	0.07	0.09	0.11	0.12							
		quenched and tempered	1100	325	11	40-60-80	0.06	0.08	0.10	0.14	0.16							
stainless steel and cast steel	ferritic/martensitic	annealed	680	200	12	40-55-70	0.04	0.05	0.07	0.09	0.11							
		quenched and tempered	820	240	13		0.05	0.06	0.08	0.11	0.14							
		quenched and tempered	820	240	13		0.06	0.07	0.09	0.13	0.16							
M	stainless steel and cast steel	Austenitic, duplex	600	180	14	40-50-60	0.04	0.05	0.07	0.09	0.11							
							0.05	0.06	0.08	0.11	0.13							
K	nodular cast iron (GGG)	ferritic/pearlitic		180	15	80-120-140	0.04	0.10	0.12	0.15	0.20							
		pearlitic/martensitic		260	16	70-100-120												
	cast iron nodular GGG	ferritic	160	17	80-125-150	0.06						0.13	0.15	0.22	0.27			
		pearlitic	250	18	80-100-120	0.08						0.15	0.18	0.30	0.35			
	malleable cast iron	ferritic	130	19	80-120-140	0.08						0.15	0.18	0.30	0.35			
pearlitic	230	20	80-100-120															
N	aluminum-wrought alloys	not hardenable		60	21	90-150-180	0.05	0.10	0.15	0.20	0.25							
		hardenable		100	22													
	aluminum-cast alloys	≤ 12% Si	not hardenable		75							23						
			hardenable		90							24						
	copper alloys	> 12% Si	high temperature free cutting		130							25	80-100-140	0.12	0.17	0.22	0.27	0.32
			> 1% Pb	brass								110	26					
	electrolytic copper				28													
S	high temperature alloys	Fe based	annealed		200	31	30-45-55	0.03	0.04	0.05	0.06	0.08						
			hardened		280	32	20-30-45						0.04	0.05	0.06	0.08	0.10	
		Ni or Co based	annealed		250	33												
			hardened		350	34												
	titanium alloys	pure	cast		320	35		0.05	0.06	0.07	0.11	0.13						
			alpha+beta alloys hardened		400	36	0.03						0.04	0.05	0.06	0.08		
			1050		37	20-35-45	0.04	0.05	0.06	0.08	0.10							
H	hardened steel	hardened				38	20-30-40	-	-	0.05	0.06	0.08						
		55 HRC				0.06				0.09	0.11							
		60 HRC				39				0.07	0.12	0.15						

■ Recommended cutting data
 As a starting value, the middle of the recommended machining range should be used.
 Then, according to the wear results, conditions can be changed to optimize performance.
 The data refers to IC908 grade

- When using external coolant supply only, pecking cycle is recommended.
- When using external coolant supply only, reduce cutting speed by 25%
- Use internal coolant supply when machining austenitic stainless steel

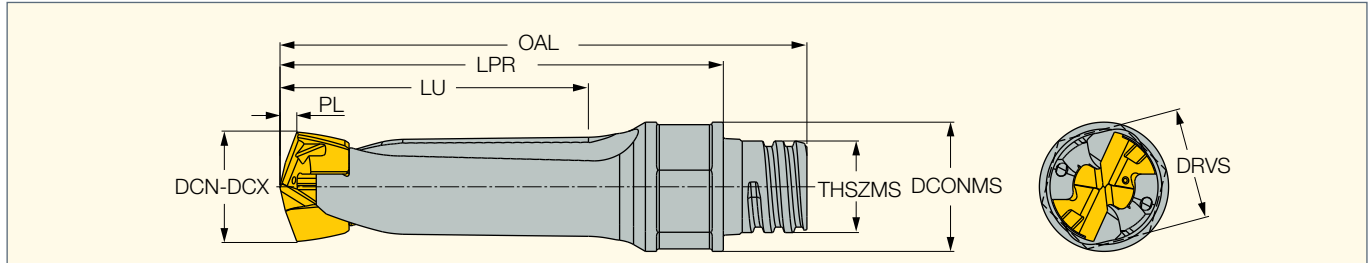
■ Machining Stainless Steel is not recommended with QCP & HCP geometry
 For technical information regarding QCP/HCP see More Info.

SUMOCHAM MULTI-MASTER

DCN-MM

Modular SUMOCHAM Drills are Dedicated for Multi-Spindle and Swiss-Type Machines with a MULTI-MASTER Connection

<https://www.iscar.com/eCatalog/Family.aspx?num=4841&mapp=DR&GFSTYP=I&srch=1>



I N C H											
Designation	DCN ⁽²⁾	DCX ⁽³⁾	DCONMS	LU	LPR	PL	OAL	THSZMS	SSC ⁽⁴⁾	MIID ⁽⁵⁾	DRVS ⁽⁶⁾
New DCN 0157-031-MMT05-2D ⁽¹⁾	.157	.173	.299	.3394	.866	.02440	1.132	T05	4	ICP 0157	.217
New DCN 0177-035-MMT05-2D ⁽¹⁾	.177	.193	.299	.3803	.917	.02598	1.183	T05	4.5	ICP 0177	.217
New DCN 0197-039-MMT06-2D ⁽¹⁾	.197	.213	.378	.4224	1.075	.02874	1.321	T06	5	ICP 0197	.315
New DCN 0216-043-MMT06-2D ⁽¹⁾	.217	.232	.378	.4650	1.083	.03188	1.331	T06	5.5	ICP 0216	.315
New DCN 0236-047-MMT06-2D	.236	.252	.378	.5102	1.098	.03779	1.346	T06	6	ICP 0236	.315
New DCN 0256-051-MMT06-2D	.256	.272	.378	.5583	1.161	.04645	1.409	T06	6.5	ICP 0256	.315
New DCN 0275-055-MMT06-2D	.276	.291	.378	.5909	1.185	.03976	1.433	T06	7	ICP 0275	.315
New DCN 0295-059-MMT06-2D	.295	.311	.378	.6303	1.224	.04330	1.472	T06	7.5	ICP 0295	.315
New DCN 0315-063-MMT06-2D	.315	.331	.378	.6764	1.295	.04724	1.543	T06	8	ICP 0315	.315
New DCN 0335-067-MMT06-2D	.335	.350	.378	.7201	1.335	.05078	1.582	T06	8.5	ICP 0335	.315
New DCN 0354-071-MMT08-2D	.354	.370	.457	.7618	1.472	.05314	1.768	T08	9	ICP 0354	.394
New DCN 0374-075-MMT08-2D	.374	.390	.457	.8047	1.512	.05669	1.807	T08	9.5	ICP 0374	.394
New DCN 0394-079-MMT08-2D	.394	.409	.457	.8465	1.567	.05905	1.862	T08	10	ICP 0394	.394

- (1) The SK DCN key is supplied with the insert
- (2) Cutting diameter minimum
- (3) Cutting diameter maximum
- (4) Seat size code (5) Master insert identification
- (6) Torque key size

Spare Parts



Designation	Clamping Key
DCN 0236-047-MMT06-2D	K DCN 6-9.99-Y
DCN 0256-051-MMT06-2D	K DCN 6-9.99-Y
DCN 0275-055-MMT06-2D	K DCN 6-9.99
DCN 0295-059-MMT06-2D	K DCN 6-9.99
DCN 0315-063-MMT06-2D	K DCN 6-9.99
DCN 0335-067-MMT06-2D	K DCN 6-9.99
DCN 0354-071-MMT08-2D	K DCN 6-9.99
DCN 0374-075-MMT08-2D	K DCN 6-9.99
DCN 0394-079-MMT08-2D	K DCN 10-13.99

SUMOCHAM MULTI-MASTER

Cutting conditions for DCN-MM tools (inch)

Material Groups						Cutting parameters						
ISO	Material	Condition	Tensile Strength [ksi]	Hardness, HB	Group	Diameter range, inch	D=-.157-.193	D=-.197-.232	D=-.236-.311	D=-.315-.390	D=-.394-.432	
						Cutting speed, Vc SFM						Cutting feed, f [IPR]
P	non-alloy steel and cast steel, free cutting steel	< 0.25 %C	annealed	61	125	1	230-300-360	.0016	.0022	.0035	.0047	.0059
		≥ 0.25 %C	annealed	94	190	2	230-330-400					
		< 0.55 %C	quenched and tempered	123	250	3	230-300-360					
			annealed	109	220	4	200-260-330					
	low alloy and cast steel	less than 5% of alloying elements	quenched and tempered	145	300	5	165-230-300					
			annealed	87	200	6	230-300-360					
			quenched and tempered	135	275	7	200-260-330					
		high alloyed steel, cast steel and tool steel	quenched and tempered	145	300	8	165-230-300					
			quenched and tempered	174	350	9	130-180-230					
			annealed	99	200	10	150-215-280					
stainless steel and cast steel	ferritic/martensitic	quenched and tempered	160	325	11	130-200-260						
		annealed	99	200	12	130-180-230						
		martensitic	119	240	13	130-180-230						
M	stainless steel and cast steel	Austenitic, duplex	87	180	14	130-165-200	.0016	.0020	.0028	.0035	.0043	
K	nodular cast iron (GGG)	ferritic/pearlitic		180	15	260-400-460	.0016	.0024	.0051	.0071	.0118	
		pearlitic/martensitic		260	16	230-330-400						
	cast iron nodular GGG	ferritic	160	17	260-410-500							
		pearlitic	250	18	260-330-400							
	malleable cast iron	ferritic	130	19	260-400-460							
N	aluminum-wrought alloys	not hardenable		60	21	300-500-600	.0020	.0040	.0059	.0079	.0098	
		hardenable		100	22							
		not hardenable		75	23							
	aluminum-cast alloys	≤ 12% Si	hardenable		90							24
		> 12% Si	high temperature	130	25							260-330-460
	copper alloys	> 1% Pb	free cutting		110							26
			brass		100							27
electrolytic copper				28	300-500-600							
S	high temperature alloys	Fe based	annealed		200	31	330-500-600	.0012	.0016	.0020	.0024	.0031
			hardened		280	32						
		Ni or Co based	annealed		250	33	215-330-500					
			hardened		350	34						
	titanium alloys	alpha+beta alloys hardened	cast		320	35						
			pure		58	190	36					
					152	310	37					
H	hardened steel	hardened		55 HRC	38	215-330-425	-	-	.0020	.0024	.0031	
		hardened		60 HRC	39				.0024	.0035	.0043	
		hardened		60 HRC	39				.0028	.0047	.0059	

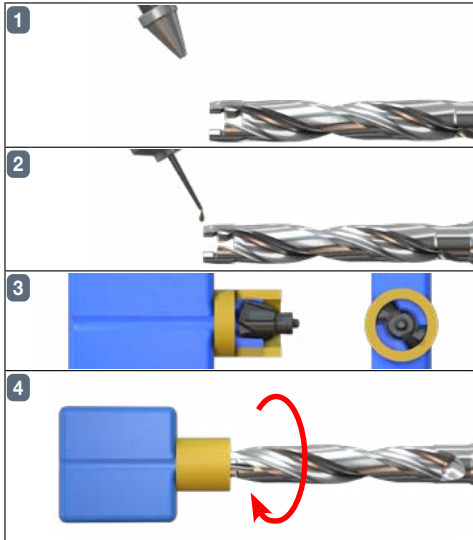
- Recommended cutting data
- As a starting value, the middle of the recommended machining range should be used.
- Then, according to the wear results, conditions can be changed to optimize performance.
- The data refers to IC908 grade
- When using external coolant supply only, pecking cycle is recommended.
- When using external coolant supply only, reduce cutting speed by 25%
- Use internal coolant supply when machining austenitic stainless steel

Machining Stainless Steel is not recommended with QCP & HCP geometry
 For technical information regarding QCP/HCP see More Info.

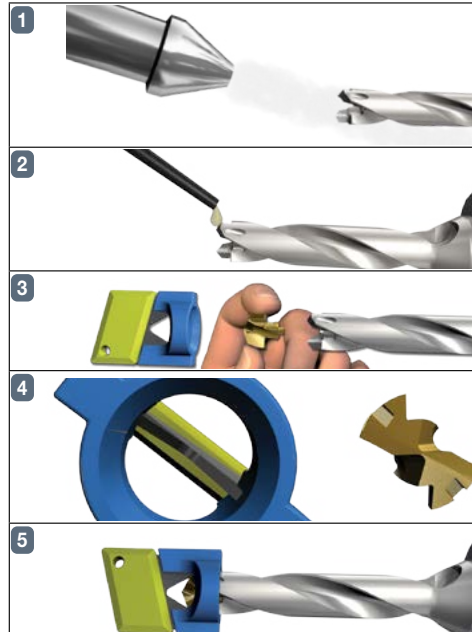


SUMOCHAM MULTI-MASTER

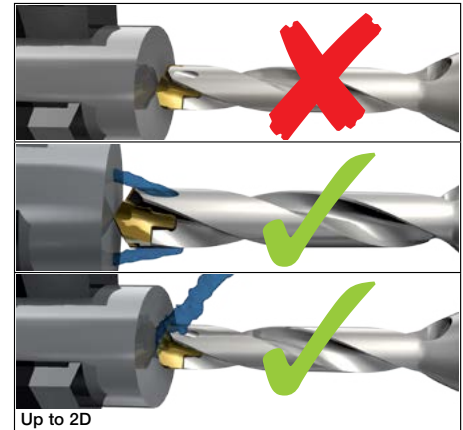
Drilling Head Dia. 4.0-5.99mm (.157-.232")
Mounting Procedure



Drilling Head 6.0-10.4 mm (.256-.409")
Mounting Procedure

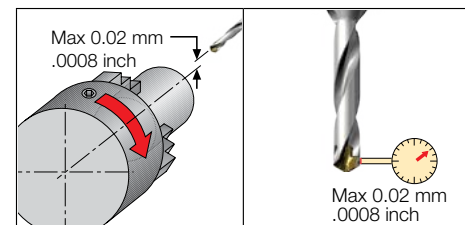


Coolant Recommendations

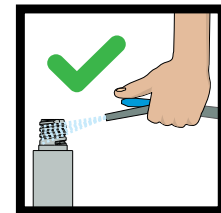
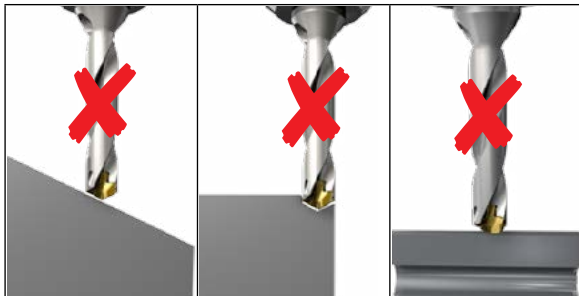


Up to 2D

Maximum Runout, Misalignment



Drilling Limitations



Do not apply lubricant to the threaded connection



Thread Size	Key ⁽¹⁾	Tightening Torque (N x m)	Tightening Torque (Lbf x in)
T05	MM KEY 6x4	7	60
T06	MM KEY 8x5	10	90
T08	MM KEY 10x7	15	130