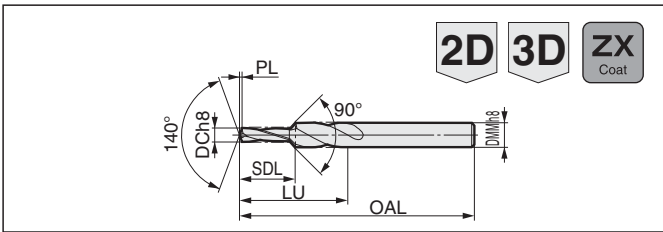




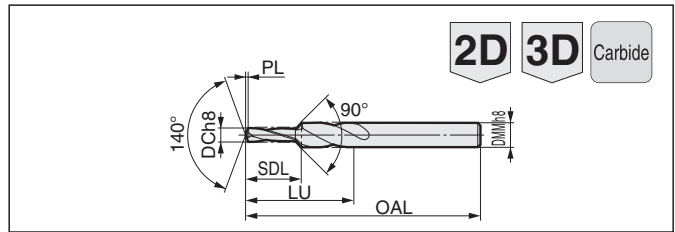
External Coolant Supply (S2K Type / S3K Type)

Carbon Steel, Alloy Steel	Tempered Steel	Hardened Steel	Stainless Steel	Ti Alloy	Heat-resistant Steels	Cast Iron	Ductile Cast Iron	Aluminum Alloy	Copper Alloy	Composite CFRP
Up to 0.28%	From 0.28%	Up to 45HRC	From 45HRC							
○	○	○				○	○			



External Coolant Supply (S2G Type / S3G Type)

Carbon Steel, Alloy Steel	Tempered Steel	Hardened Steel	Stainless Steel	Ti Alloy	Heat-resistant Steels	Cast Iron	Ductile Cast Iron	Aluminum Alloy	Copper Alloy	Composite CFRP
Up to 0.28%	From 0.28%	Up to 45HRC	From 45HRC							
						○	○	○	○	



Tap Size	Diameter DC (mm)	Hole Depth (L/D)	Stock	Cat. No.	Dimensions (mm)				Shank DMM (mm)
					Cutting Edge SDL	Effective Length LU	Total length OAL	Tip PL	
M5	4.3	2		MDW 043S2K	10	17.9	78.8	0.8	7
				043S3K	15	22.2	83.8	0.8	
M6	5.1	2		MDW 051S2K	12	20.8	84.9	0.9	8
				051S3K	18	25.9	90.9	0.9	
M8	6.8	2		MDW 068S2K	16	27.0	97.2	1.2	10
				068S3K	24	33.8	105.2	1.2	
M10	8.5	2		MDW 085S2K	20	33.3	113.5	1.5	12
				085S3K	30	41.8	123.5	1.5	
M12	10.3	2		MDW 103S2K	24	40.0	125.9	1.9	14
				103S3K	36	50.3	139.9	1.9	

Grade: ACZ70

Tap Size	Diameter DC (mm)	Hole Depth (L/D)	Stock	Cat. No.	Dimensions (mm)				Shank DMM (mm)
					Cutting Edge SDL	Effective Length LU	Total length OAL	Tip PL	
M5	4.3	2		MDW 043S2G	10	17.9	78.8	0.8	7
				043S3G	15	22.2	83.8	0.8	
M6	5.1	2		MDW 051S2G	12	20.8	84.9	0.9	8
				051S3G	18	25.9	90.9	0.9	
M8	6.8	2		MDW 068S2G	16	27.0	97.2	1.2	10
				068S3G	24	33.8	105.2	1.2	
M10	8.5	2		MDW 085S2G	20	33.3	113.5	1.5	12
				085S3G	30	41.8	123.5	1.5	
M12	10.3	2		MDW 103S2G	24	40.0	125.9	1.9	14
				103S3G	36	50.3	139.9	1.9	

Grade: KH03

Non-standard sizes can be made to order. Please advise the required dimensions (total length, flute length, diameters etc.)

Non-standard sizes can be made to order. Please advise the required dimensions (total length, flute length, diameters etc.)

Recommended Cutting Conditions (S2K Type / S3K Type)

(v_c : Cutting Speed m/min f : Feed Rate mm/rev)

Drill Diameter DC (mm)	Cutting Conditions	Soft Steel/General Steel (Up to 300HB)	Stainless Steel (Up to 200HB)	Gray Cast Iron FC250	Ductile Cast Iron FCD450
Up to ϕ 3.0	v_c	30 - 50 - 60	10 - 25 - 40	40 - 50 - 70	35 - 45 - 60
	f	0.10 - 0.15 - 0.20	0.06 - 0.08 - 0.12	0.15 - 0.20 - 0.25	0.12 - 0.15 - 0.20
Up to ϕ 5.0	v_c	40 - 60 - 80	15 - 30 - 55	40 - 50 - 70	40 - 50 - 60
	f	0.15 - 0.20 - 0.25	0.08 - 0.10 - 0.15	0.15 - 0.20 - 0.30	0.15 - 0.20 - 0.25
Up to ϕ 10.0	v_c	50 - 80 - 110	15 - 40 - 60	50 - 60 - 80	50 - 60 - 70
	f	0.20 - 0.25 - 0.35	0.10 - 0.15 - 0.20	0.20 - 0.30 - 0.35	0.20 - 0.25 - 0.35
Up to ϕ 16.0	v_c	60 - 80 - 120	20 - 40 - 60	60 - 80 - 100	50 - 60 - 80
	f	0.25 - 0.30 - 0.35	0.10 - 0.15 - 0.20	0.25 - 0.30 - 0.35	0.25 - 0.30 - 0.35
Up to ϕ 25.0	v_c	60 - 90 - 120	20 - 40 - 60	60 - 80 - 100	50 - 60 - 80
	f	0.25 - 0.30 - 0.40	0.10 - 0.15 - 0.20	0.25 - 0.30 - 0.35	0.25 - 0.30 - 0.35

Min. - Optimum - Max.

Recommended Cutting Conditions (S2G Type / S3G Type)

(v_c : Cutting Speed m/min f : Feed Rate mm/rev)

Drill Diameter DC (mm)	Cutting Conditions	Gray Cast Iron FC250	Aluminum Alloy
Up to ϕ 3.0	v_c	30 - 50 - 70	50 - 70 - 90
	f	0.12 - 0.15 - 0.18	0.20 - 0.25 - 0.30
Up to ϕ 5.0	v_c	30 - 50 - 70	60 - 80 - 100
	f	0.14 - 0.17 - 0.20	0.20 - 0.28 - 0.35
Up to ϕ 10.0	v_c	40 - 60 - 80	70 - 90 - 110
	f	0.16 - 0.20 - 0.24	0.25 - 0.32 - 0.40
Up to ϕ 20.0	v_c	50 - 70 - 90	80 - 100 - 120
	f	0.18 - 0.22 - 0.26	0.25 - 0.35 - 0.45

Min. - Optimum - Max.

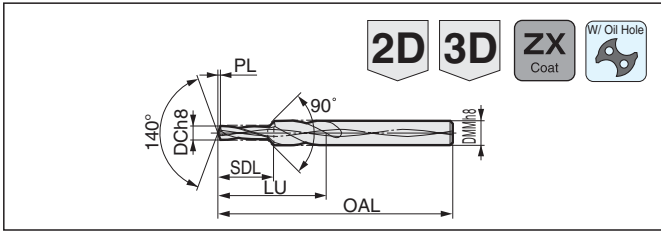
SHK Type
SHG Type



Super MultiDrill
S Type

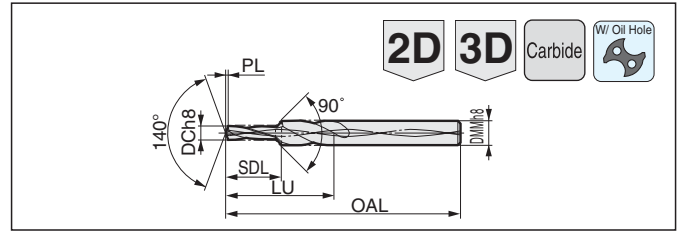
Internal Coolant Supply (S2HK Type / S3HK Type)

Carbon Steel	Alloy Steel	Tempered Steel	Hardened Steel	Stainless Steel	Ti Alloy	Heat-resistant Steels	Cast Iron	Ductile Cast Iron	Aluminum Alloy	Copper Alloy	Composite CFRP
Up to 0.28%	From 0.29%	Up to 45HRC	From 46HRC								
○	○	○					○	○			



Internal Coolant Supply (S2HG Type / S3HG Type)

Carbon Steel	Alloy Steel	Tempered Steel	Hardened Steel	Stainless Steel	Ti Alloy	Heat-resistant Steels	Cast Iron	Ductile Cast Iron	Aluminum Alloy	Copper Alloy	Composite CFRP
Up to 0.28%	From 0.29%	Up to 45HRC	From 46HRC								
							○	○	○	○	



Tap Size	Diameter DC (mm)	Hole Depth (L/D)	Stock	Cat. No.	Dimensions (mm)				Shank DMM (mm)
					Cutting Edge SDL	Effective Length LU	Total length OAL	Tip PL	
M5	4.3	2		MDW 043S2HK	10	17.9	78.8	0.8	7
				043S3HK	15	22.2	83.8	0.8	
M6	5.1	2		MDW 051S2HK	12	20.8	84.9	0.9	8
				051S3HK	18	25.9	90.9	0.9	
M8	6.8	2		MDW 068S2HK	16	27.0	97.2	1.2	10
				068S3HK	24	33.8	105.2	1.2	
M10	8.5	2		MDW 085S2HK	20	33.3	113.5	1.5	12
				085S3HK	30	41.8	123.5	1.5	
M12	10.3	2		MDW 103S2HK	24	40.0	125.9	1.9	14
				103S3HK	36	50.3	139.9	1.9	

Grade: ACZ70S

Tap Size	Diameter DC (mm)	Hole Depth (L/D)	Stock	Cat. No.	Dimensions (mm)				Shank DMM (mm)
					Cutting Edge SDL	Effective Length LU	Total length OAL	Tip PL	
M5	4.3	2		MDW 043S2HG	10	17.9	78.8	0.8	7
				043S3HG	15	22.2	83.8	0.8	
M6	5.1	2		MDW 051S2HG	12	20.8	84.9	0.9	8
				051S3HG	18	25.9	90.9	0.9	
M8	6.8	2		MDW 068S2HG	16	27.0	97.2	1.2	10
				068S3HG	24	33.8	105.2	1.2	
M10	8.5	2		MDW 085S2HG	20	33.3	113.5	1.5	12
				085S3HG	30	41.8	123.5	1.5	
M12	10.3	2		MDW 103S2HG	24	40.0	125.9	1.9	14
				103S3HG	36	50.3	139.9	1.9	

Grade: KH03

Non-standard sizes can be made to order. Please advise the required dimensions (total length, flute length, diameters etc.)

The recommended cutting conditions for the S2HG Type/S3HG Type are 70% of the cutting speeds of the S2HK Type/S3HK Type.

Non-standard sizes can be made to order. Please advise the required dimensions (total length, flute length, diameters etc.)

Recommended Cutting Conditions (S2HK Type / S3HK Type) (v_c: Cutting Speed m/min f: Feed Rate mm/rev)

Drill Diameter DC (mm)	Cutting Conditions	Soft Steel/General Steel (Up to 300HB)	Stainless Steel (Up to 200HB)	Gray Cast Iron FC250	Ductile Cast Iron FCD450
Up to ø3.0	v _c	30 - 60 - 90	30 - 40 - 50	50 - 70 - 90	40 - 50 - 80
	f	0.10 - 0.15 - 0.20	0.06 - 0.08 - 0.12	0.15 - 0.20 - 0.25	0.12 - 0.15 - 0.20
Up to ø5.0	v _c	50 - 70 - 100	30 - 40 - 60	50 - 70 - 90	40 - 50 - 80
	f	0.15 - 0.20 - 0.25	0.08 - 0.10 - 0.15	0.15 - 0.20 - 0.30	0.15 - 0.20 - 0.25
Up to ø10.0	v _c	70 - 90 - 120	40 - 50 - 80	60 - 80 - 100	50 - 60 - 90
	f	0.20 - 0.25 - 0.35	0.10 - 0.15 - 0.20	0.20 - 0.30 - 0.35	0.20 - 0.25 - 0.35
Up to ø16.0	v _c	80 - 100 - 140	50 - 60 - 80	70 - 90 - 120	60 - 70 - 100
	f	0.25 - 0.30 - 0.35	0.10 - 0.15 - 0.20	0.25 - 0.30 - 0.35	0.25 - 0.30 - 0.35
Up to ø25.0	v _c	80 - 100 - 150	50 - 60 - 80	70 - 90 - 120	60 - 70 - 100
	f	0.25 - 0.30 - 0.40	0.10 - 0.15 - 0.20	0.25 - 0.30 - 0.35	0.25 - 0.30 - 0.35

Min. - **Optimum** - Max.

J

Drilling

Solid

Special

Indexable

Reamer

Brazed

Others