SUMITOMO
CARBIDE - CBN - DIAMOND

Tooling News E-184

Coated Carbide Drills for Steel & Cast Iron

SumiDrill Power **SDPX** series

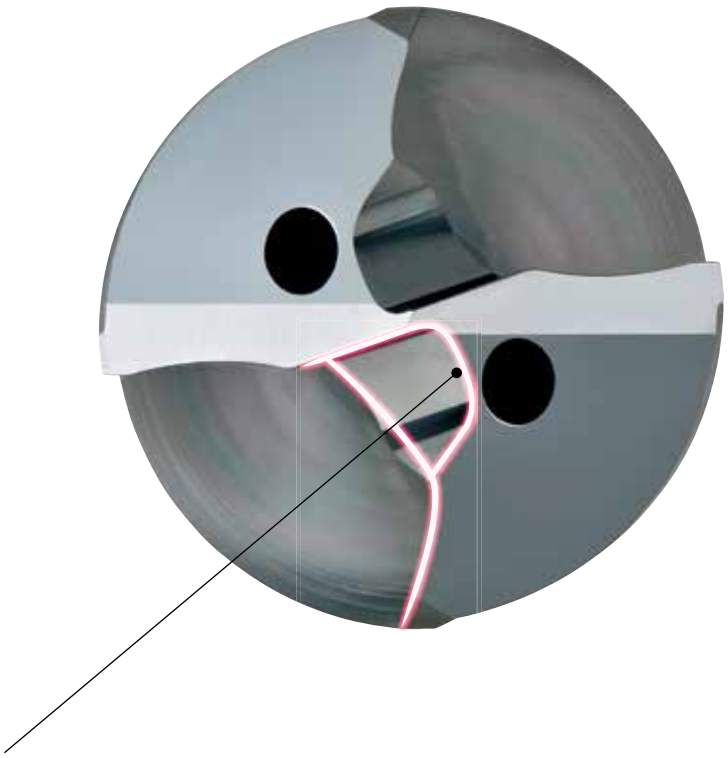
Towards a new era of high-efficiency drilling

RP THINNING with extremely low cutting resistance
HF Coat realizing superb wear resistance and thermal resistance

P M K N S H

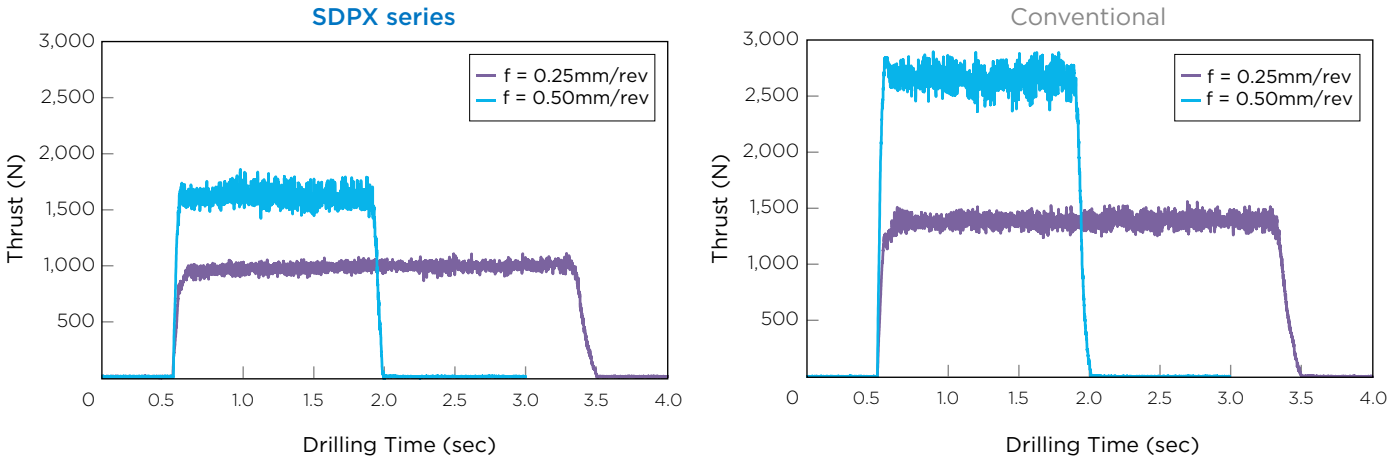
SUMITOMO ELECTRIC GROUP

Low cutting resistance stabilizes high-efficiency drilling



RP THINNING

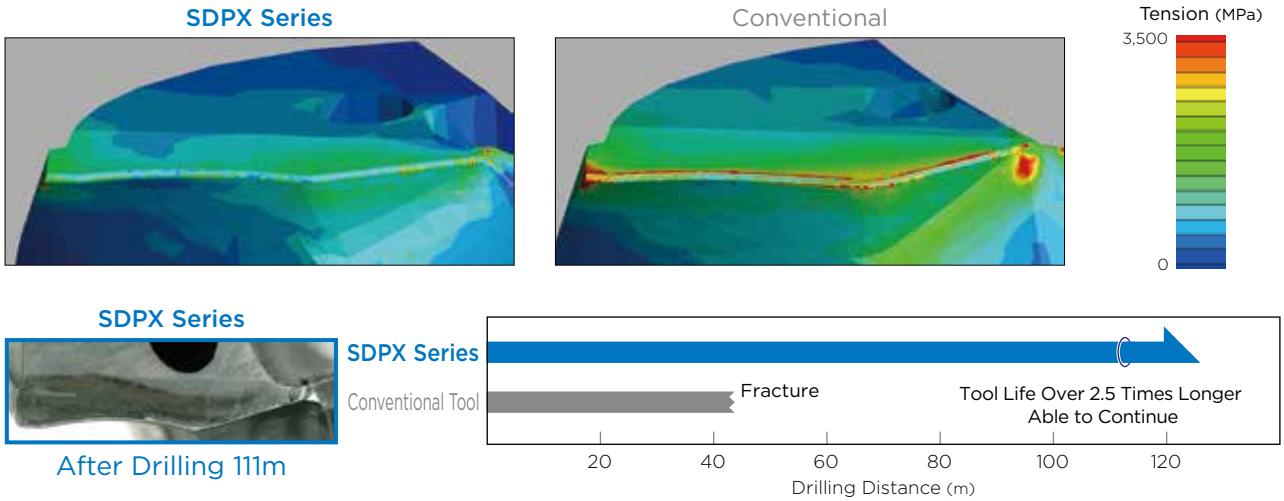
- **Wide chip pocket enables smooth chip evacuation and reduced cutting, resistance ensuring stable drilling even in high-efficiency conditions**



Work Material: C50 Tool: SDPX 0800S08H05 Cutting Conditions: vc = 80m/min H = 38mm (Through)
Wet (Water-soluble, Internal Coolant Supply)

New Cutting Edge Shape

● **Optimised cutting edge shape suppresses stress concentration and prevents chipping even in high-efficiency drilling with high cutting edge load**



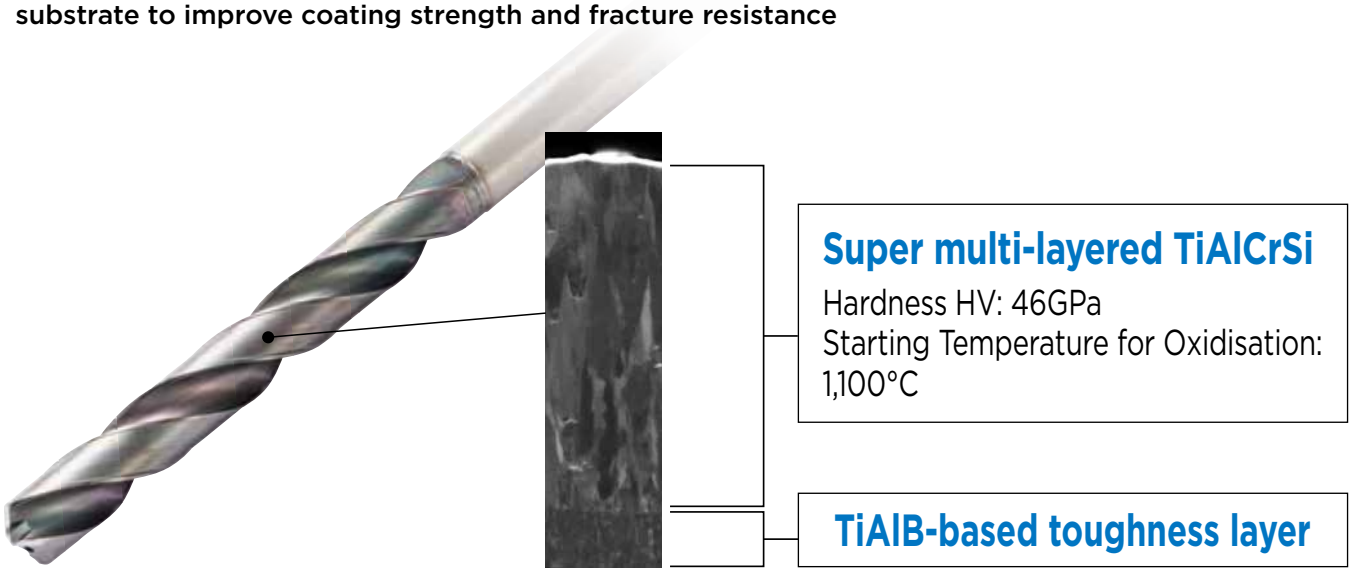
Work Material: C50 Tool: SDPX 0800S08H05 Cutting Conditions: vc = 140m/min f = 0.40mm/rev H = 38mm (Through)
Wet (Water-soluble, Internal Coolant Supply)

New Grade PCH70

HF Coat

● **TiAlCrSi-based super multi-layered coating realises excellent wear resistance and thermal resistance**

Tough TiAlB-based coating is employed on the carbide substrate to improve coating strength and fracture resistance

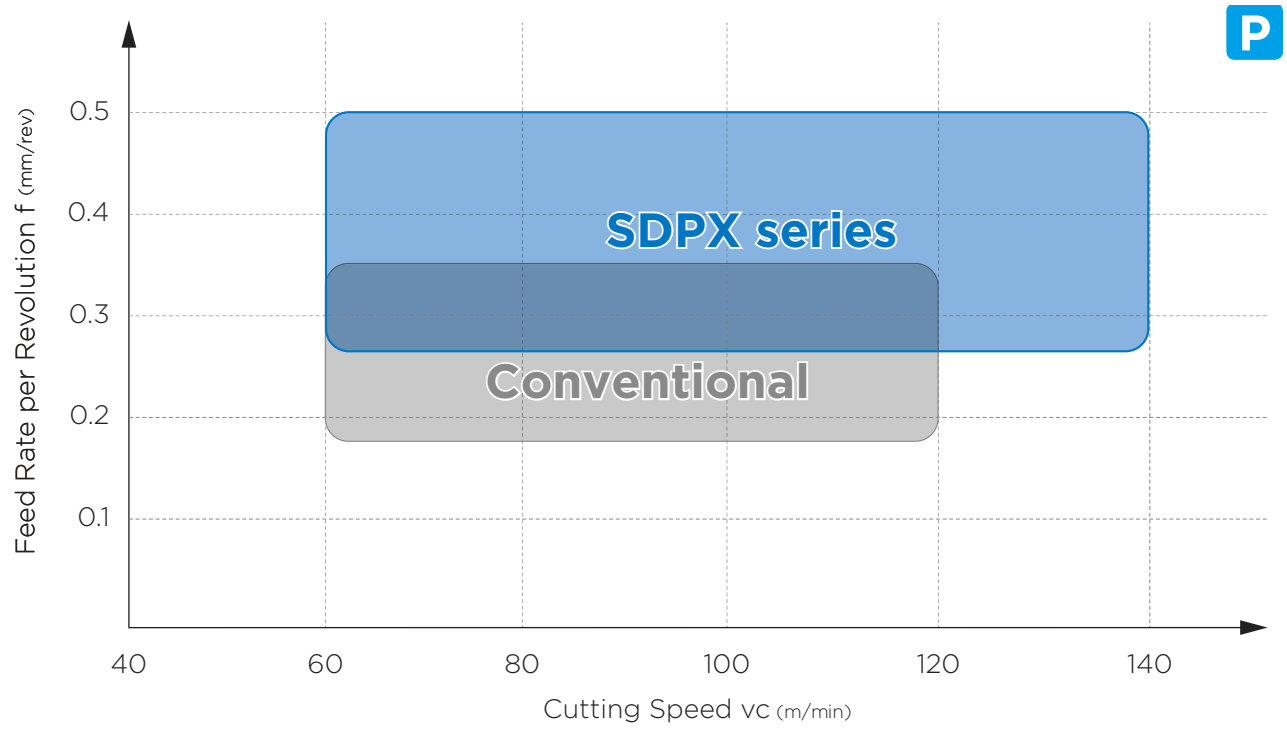


Balances wear and fracture resistance

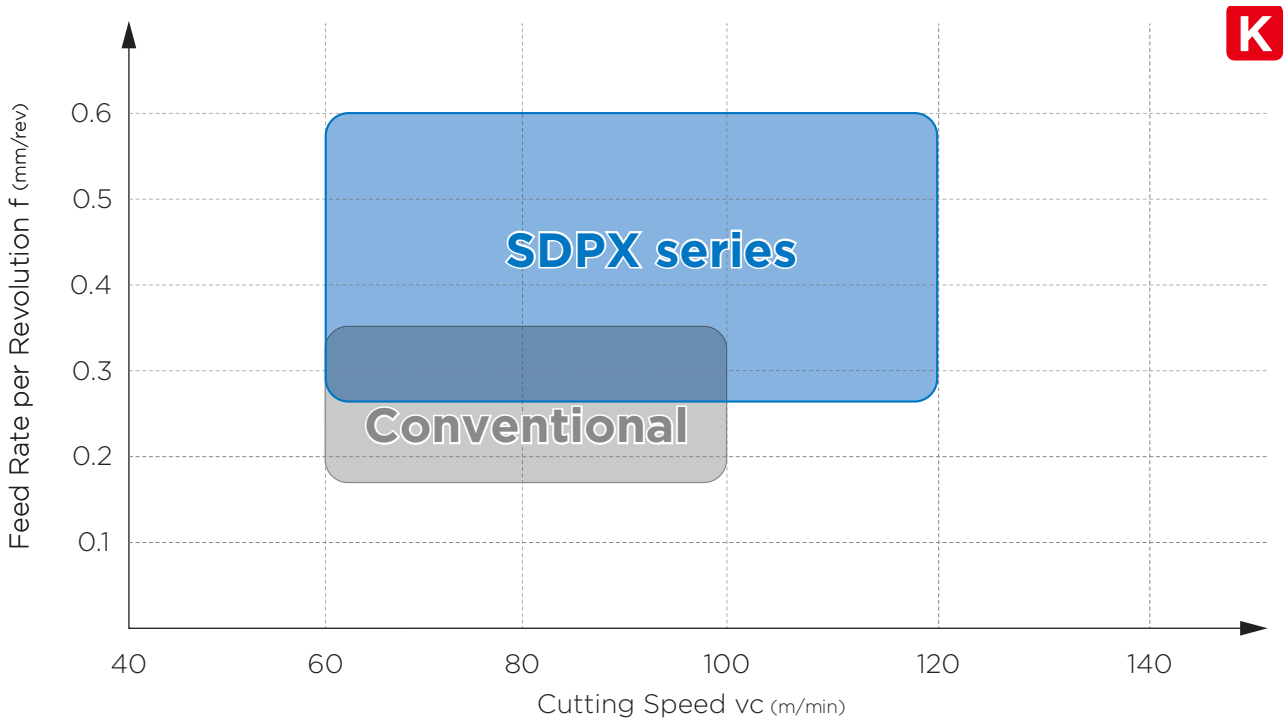
Realises unprecedented high-efficiency drilling

● **High-efficiency drilling realises increased production capacity and yield**

Efficiency Comparison in Steel Drilling (Diameter: ø8mm)



Efficiency Comparison in Cast Iron Drilling (Diameter: ø8mm)



● **Contributes to reduced costs through high-efficiency drilling**

Costs per Hour

Personnel Costs
Machinery Depreciation Costs
Facility Costs
Electricity Costs, etc.

×

Drilling Time
Work hours reduced through high-efficiency drilling

→ Costs per Product

The impact of tool performance is significant

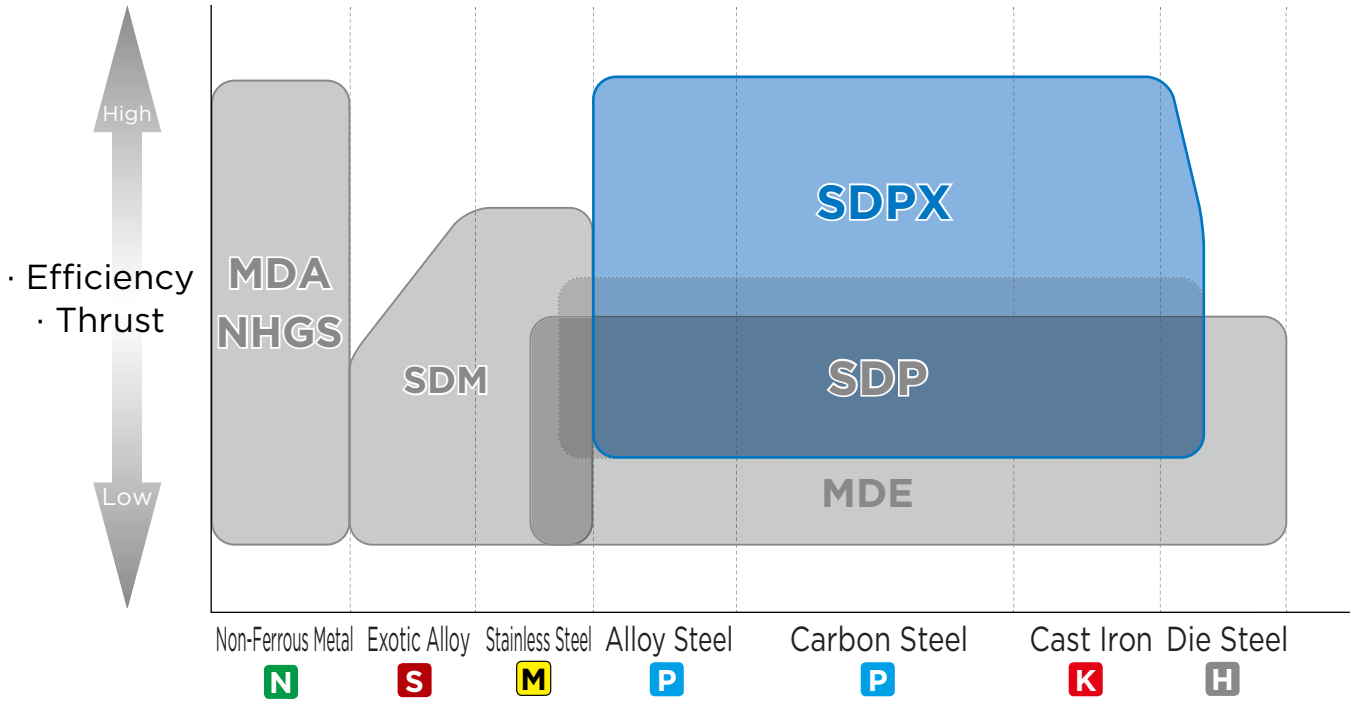
Tool Cost
Material Costs, etc.

The impact of tooling costs is small

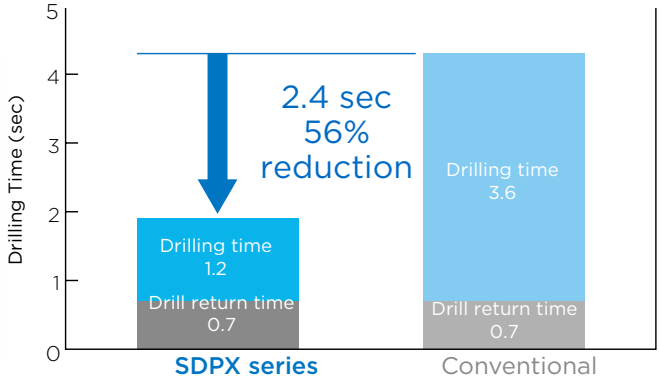
Reduced drilling time enables the reduction of personnel costs and other hourly costs

(Example of cost calculation)

● **Solid Carbide Drill Lineup by Work Material**



High-efficiency Drilling Performance 1 Reduced Cycle Time (Cylinder Component)



SDPX Series

After Drilling 1,500 pcs

Conventional

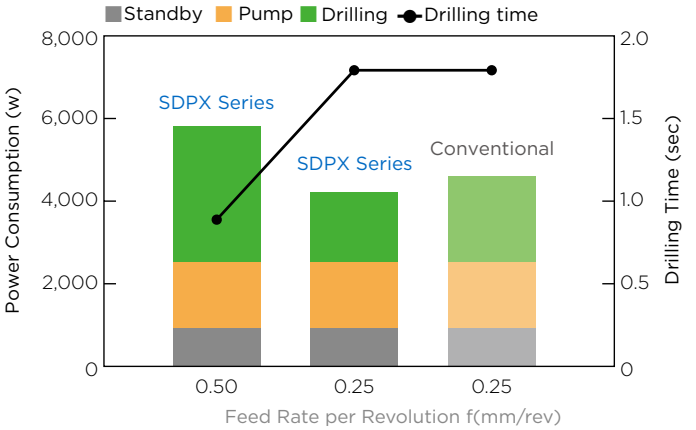
After Drilling 500 pcs

Work Material: 42CrM04, Tool: SDPX 0600S06H05					
Cutting Conditions: MDH series	vc = **80**m/min	f = **0.35**mm/rev	H = 25mm (Blind)	Wet (Water-soluble, Internal Coolant Supply)	
Conventional Tool	vc = 51m/min	f = 0.19mm/rev	H = 25mm (Blind)	Wet (Water-soluble, Internal Coolant Supply)	

Approx. 3 times the drilling efficiency and 3 times longer tool life

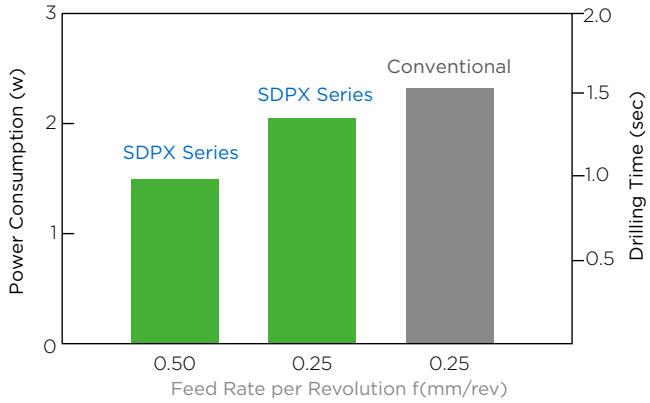
High-efficiency Drilling Performance 2 Power Saving GX

Power Consumption and Drilling Time per Hole



Power consumption x drilling time

Power Consumption per Hole

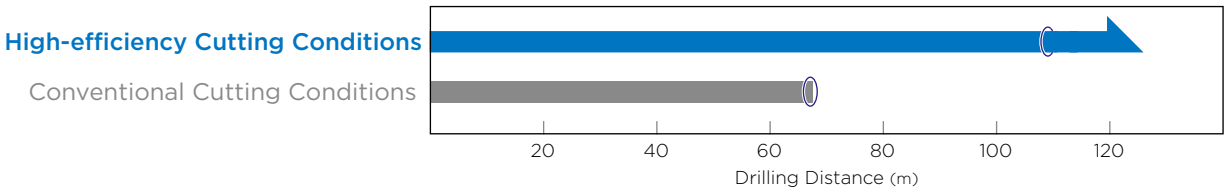


Work Material: C50, Tool: SDPX 0800S08H05 Cutting Conditions:	vc = 80m/min		H = 38mm (Through)		
				Wet (Water-soluble, Internal Coolant Supply)	

*Power consumption is based on calculations made at Sumitomo-owned facilities and may vary with operating environment.

High-efficiency drilling dramatically reduces drilling power consumption

High-efficiency Drilling Performance 3 Longer Tool Life



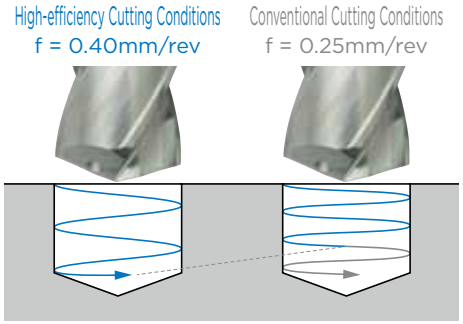
SDXX series

High-efficiency Cutting Conditions
After Drilling 111m

SDPX series

Conventional Cutting Conditions
After Drilling 67m

*Tool life varies based on the workpiece and operating environment.
The above does not guarantee that tool life will be extended.



Reduced peripheral abrasion distance suppresses wear.

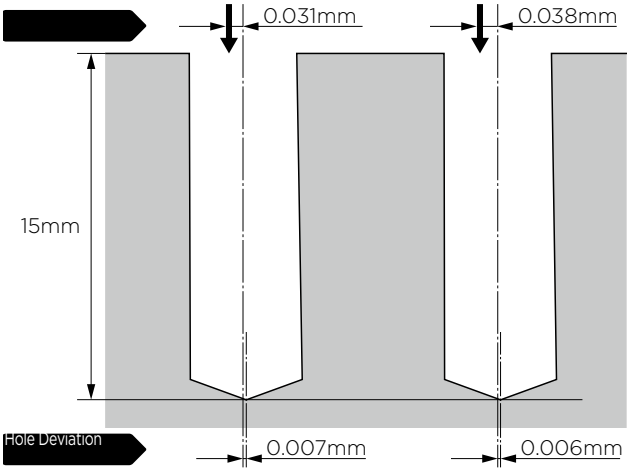
Work Material: C50, Tool: SDPX 0800S08H05					
High-efficiency Cutting Conditions:	vc = **140**m/min	f = **0.40**mm/rev	H = 38mm (Through)	Wet (Water-soluble, Internal Coolant Supply)
Conventional Cutting Conditions:	vc = 80m/min	f = 0.25mm/rev	H = 38mm (Through)	Wet (Water-soluble, Internal Coolant Supply)

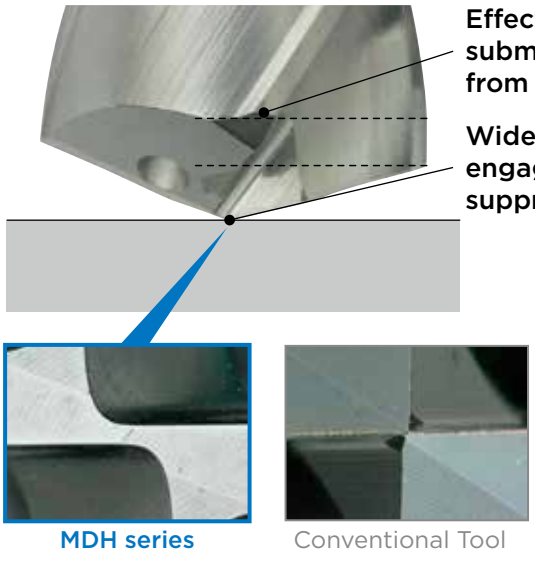
2.8 times the drilling efficiency and 1.3 times longer tool life

High-efficiency Drilling Performance 4 Hole Accuracy Comparison

SDPX Series
f=0.50mm/rev
Drilling reference

Conventional
f=0.50mm/rev
Drilling reference





Effective use of submargin from entrance

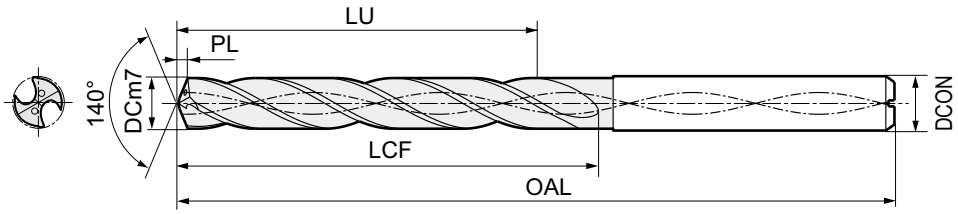
Wide chisel edge engages firmly to suppress slanting

MDH series

Conventional Tool

Work Material: C50, Tool: SDPX 0800S08H05
Cutting Conditions: vc = 100m/min Wet (Water-soluble, Internal Coolant Supply)

Hole position precision and deviation equivalent to conventional cutting conditions, even at twice the drilling efficiency



■ Diameter ø3.0 to 4.3mm

Dimensions (mm)

Dia. DC	Hole Depth (L/D)	Cat. No.	Stock	Effective Length LU	Flute Length LCF	Overall Length OAL	Tip PL	Shank Dia. DCON
3,0	3	SDPX0300S06H03	●	15,0	19,5	61,5	0,5	6,0
3,0	5	SDPX0300S06H05	●	22,0	26,5	65,5		
3,0	7	SDPX0300S06H07	●	26,0	30,5	69,5		
3,1	3	SDPX0310S06H03	●	15,0	19,6	61,6	0,6	6,0
3,1	5	SDPX0310S06H05	●	22,0	26,6	65,6		
3,1	7	SDPX0310S06H07	●	26,0	30,6	69,6		
3,2	3	SDPX0320S06H03	●	14,8	19,6	61,6	0,6	6,0
3,2	5	SDPX0320S06H05	●	21,8	26,6	65,6		
3,2	7	SDPX0320S06H07	●	25,8	30,6	69,6		
3,3	3	SDPX0330S06H03	●	14,7	19,6	61,6	0,6	6,0
3,3	5	SDPX0330S06H05	●	21,7	26,6	65,6		
3,3	7	SDPX0330S06H07	●	25,7	30,6	69,6		
3,4	3	SDPX0340S06H03	●	14,5	19,6	61,6	0,6	6,0
3,4	5	SDPX0340S06H05	●	21,5	26,6	65,6		
3,4	7	SDPX0340S06H07	●	31,0	36,1	74,6		
3,5	3	SDPX0350S06H03	●	14,4	19,6	61,6	0,6	6,0
3,5	5	SDPX0350S06H05	●	21,4	26,6	65,6		
3,5	7	SDPX0350S06H07	●	30,9	36,1	74,6		
3,6	3	SDPX0360S06H03	❑	14,3	19,7	61,7	0,7	6,0
3,6	5	SDPX0360S06H05	❑	21,3	26,7	65,7		
3,6	7	SDPX0360S06H07	❑	30,8	36,2	74,7		
3,7	3	SDPX0370S06H03	●	14,2	19,7	61,7	0,7	6,0
3,7	5	SDPX0370S06H05	●	21,2	26,7	65,7		
3,7	7	SDPX0370S06H07	●	30,7	36,2	74,7		
3,8	3	SDPX0380S06H03	●	18,0	23,7	65,7	0,7	6,0
3,8	5	SDPX0380S06H05	●	30,0	35,7	73,7		
3,8	7	SDPX0380S06H07	●	32,5	38,2	74,7		
3,9	3	SDPX0390S06H03	❑	17,9	23,7	65,7	0,7	6,0
3,9	5	SDPX0390S06H05	●	29,9	35,7	73,7		
3,9	7	SDPX0390S06H07	❑	32,4	38,2	74,7		
4,0	3	SDPX0400S06H03	●	17,7	23,7	65,7	0,7	6,0
4,0	5	SDPX0400S06H05	●	29,7	35,7	73,7		
4,0	7	SDPX0400S06H07	●	32,2	38,2	74,7		
4,1	3	SDPX0410S06H03	●	17,6	23,7	65,7	0,7	6,0
4,1	5	SDPX0410S06H05	●	29,6	35,7	73,7		
4,1	7	SDPX0410S06H07	●	32,1	38,2	74,7		
4,2	3	SDPX0420S06H03	●	17,5	23,8	65,8	0,8	6,0
4,2	5	SDPX0420S06H05	●	29,5	35,8	73,8		
4,2	7	SDPX0420S06H07	●	32,0	38,3	74,8		
4,3	3	SDPX0430S06H03	●	17,4	23,8	65,8	0,8	6,0
4,3	5	SDPX0430S06H05	●	29,4	35,8	73,8		
4,3	7	SDPX0430S06H07	●	40,4	46,8	84,8		

■ Diameter ø4.4 to 5.7mm

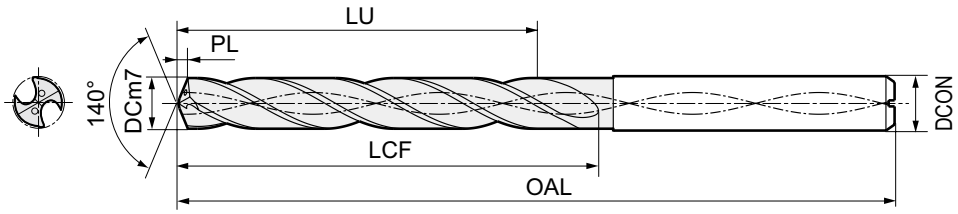
Dimensions (mm)

Dia. DC	Hole Depth (L/D)	Cat. No.	Stock	Effective Length LU	Flute Length LCF	Overall Length OAL	Tip PL	Shank Dia. DCON
4,4	3	SDPX0440S06H03	❑	17,2	23,8	65,8	0,8	6,0
4,4	5	SDPX0440S06H05	●	29,2	35,8	73,8		
4,4	7	SDPX0440S06H07	❑	40,2	46,8	84,8		
4,5	3	SDPX0450S06H03	●	17,1	23,8	65,8	0,8	6,0
4,5	5	SDPX0450S06H05	●	29,1	35,8	73,8		
4,5	7	SDPX0450S06H07	●	40,1	46,8	84,8		
4,6	3	SDPX0460S06H03	●	16,9	23,8	65,8	0,8	6,0
4,6	5	SDPX0460S06H05	●	28,9	35,8	73,8		
4,6	7	SDPX0460S06H07	●	39,9	46,8	84,8		
4,65	3	SDPX0465S06H03	❑	16,8	23,8	65,8	0,8	6,0
4,65	5	SDPX0465S06H05	●	28,8	35,8	73,8		
4,65	7	SDPX0465S06H07	●	39,8	46,8	84,8		
4,7	3	SDPX0470S06H03	❑	16,9	23,9	65,9	0,9	6,0
4,7	5	SDPX0470S06H05	●	28,9	35,9	73,9		
4,7	7	SDPX0470S06H07	❑	39,9	46,9	84,9		
4,8	3	SDPX0480S06H03	●	20,7	27,9	65,9	0,9	6,0
4,8	5	SDPX0480S06H05	●	36,7	43,9	81,9		
4,8	7	SDPX0480S06H07	●	44,7	51,9	89,9		
4,9	3	SDPX0490S06H03	●	20,6	27,9	65,9	0,9	6,0
4,9	5	SDPX0490S06H05	●	36,6	43,9	81,9		
4,9	7	SDPX0490S06H07	❑	44,6	51,9	89,9		
5,0	3	SDPX0500S06H03	●	20,4	27,9	65,9	0,9	6,0
5,0	5	SDPX0500S06H05	●	36,4	43,9	81,9		
5,0	7	SDPX0500S06H07	●	44,4	51,9	89,9		
5,1	3	SDPX0510S06H03	●	20,3	27,9	65,9	0,9	6,0
5,1	5	SDPX0510S06H05	●	36,3	43,9	81,9		
5,1	7	SDPX0510S06H07	●	44,3	51,9	89,9		
5,2	3	SDPX0520S06H03	●	20,1	27,9	65,9	0,9	6,0
5,2	5	SDPX0520S06H05	●	36,1	43,9	81,9		
5,2	7	SDPX0520S06H07	●	44,1	51,9	89,9		
5,3	3	SDPX0530S06H03	●	20,1	28,0	66,0	1,0	6,0
5,3	5	SDPX0530S06H05	●	36,1	44,0	82,0		
5,3	7	SDPX0530S06H07	●	44,1	52,0	90,0		
5,4	3	SDPX0540S06H03	❑	19,9	28,0	66,0	1,0	6,0
5,4	5	SDPX0540S06H05	●	35,9	44,0	82,0		
5,4	7	SDPX0540S06H07	❑	50,9	59,0	97,0		
5,5	3	SDPX0550S06H03	●	19,8	28,0	66,0	1,0	6,0
5,5	5	SDPX0550S06H05	●	35,8	44,0	82,0		
5,5	7	SDPX0550S06H07	●	50,8	59,0	97,0		
5,55	3	SDPX0555S06H03	●	19,7	28,0	66,0	1,0	6,0
5,55	5	SDPX0555S06H05	●	35,7	44,0	82,0		
5,55	7	SDPX0555S06H07	●	50,7	59,0	97,0		
5,6	3	SDPX0560S06H03	●	19,6	28,0	66,0	1,0	6,0
5,6	5	SDPX0560S06H05	●	35,6	44,0	82,0		
5,6	7	SDPX0560S06H07	●	50,6	59,0	97,0		
5,7	3	SDPX0570S06H03	●	19,5	28,0	66,0	1,0	6,0
5,7	5	SDPX0570S06H05	●	35,5	44,0	82,0		
5,7	7	SDPX0570S06H07	●	50,5	59,0	97,0		

● Euro stock ❑ On request

SDPX Series

Carbon Steel/ Alloy Steel up to 0.28% | Carbon Steel/ Alloy Steel from 0.29% | Tempered Steel | Cast Iron | Ductile Cast Iron | HF Coat | 3D | 5D | 7D



■ Diameter ø5.8 to 7.1mm

Dimensions (mm)

Dia. DC	Hole Depth (L/D)	Cat. No.	Stock	Effective Length LU	Flute Length LCF	Overall Length OAL	Tip PL	Shank Dia. DCON
5,8	3	SDPX0580S06H03	●	19,4	28,1	66,1	1,1	6,0
5,8	5	SDPX0580S06H05	●	35,4	44,1	82,1		
5,8	7	SDPX0580S06H07	●	50,4	59,1	97,1		
5,9	3	SDPX0590S06H03	❑	19,3	28,1	66,1	1,1	6,0
5,9	5	SDPX0590S06H05	●	35,3	44,1	82,1		
5,9	7	SDPX0590S06H07	❑	50,3	59,1	97,1		
6,0	3	SDPX0600S06H03	●	19,1	28,1	66,1	1,1	6,0
6,0	5	SDPX0600S06H05	●	35,1	44,1	82,1		
6,0	7	SDPX0600S06H07	●	50,1	59,1	97,1		
6,1	3	SDPX0610S08H03	●	25,0	34,1	79,1	1,1	8,0
6,1	5	SDPX0610S08H05	●	44,0	53,1	91,1		
6,1	7	SDPX0610S08H07	❑	59,0	68,1	106,1		
6,2	3	SDPX0620S08H03	●	24,8	34,1	79,1	1,1	8,0
6,2	5	SDPX0620S08H05	●	43,8	53,1	91,1		
6,2	7	SDPX0620S08H07	●	58,8	68,1	106,1		
6,3	3	SDPX0630S08H03	●	24,7	34,1	79,1	1,1	8,0
6,3	5	SDPX0630S08H05	●	43,7	53,1	91,1		
6,3	7	SDPX0630S08H07	❑	58,7	68,1	106,1		
6,4	3	SDPX0640S08H03	●	24,6	34,2	79,2	1,2	8,0
6,4	5	SDPX0640S08H05	●	43,6	53,2	91,2		
6,4	7	SDPX0640S08H07	●	58,6	68,2	106,2		
6,5	3	SDPX0650S08H03	●	24,5	34,2	79,2	1,2	8,0
6,5	5	SDPX0650S08H05	●	43,5	53,2	91,2		
6,5	7	SDPX0650S08H07	●	58,5	68,2	106,2		
6,6	3	SDPX0660S08H03	●	24,3	34,2	79,2	1,2	8,0
6,6	5	SDPX0660S08H05	●	43,3	53,2	91,2		
6,6	7	SDPX0660S08H07	●	58,3	68,2	106,2		
6,7	3	SDPX0670S08H03	❑	24,2	34,2	79,2	1,2	8,0
6,7	5	SDPX0670S08H05	●	43,2	53,2	91,2		
6,7	7	SDPX0670S08H07	●	58,2	68,2	106,2		
6,8	3	SDPX0680S08H03	●	24,0	34,2	79,2	1,2	8,0
6,8	5	SDPX0680S08H05	●	43,0	53,2	91,2		
6,8	7	SDPX0680S08H07	●	58,0	68,2	106,2		
6,9	3	SDPX0690S08H03	●	24,0	34,3	79,3	1,3	8,0
6,9	5	SDPX0690S08H05	●	43,0	53,3	91,3		
6,9	7	SDPX0690S08H07	●	68,0	78,3	116,3		
7,0	3	SDPX0700S08H03	●	23,8	34,3	79,3	1,3	8,0
7,0	5	SDPX0700S08H05	●	42,8	53,3	91,3		
7,0	7	SDPX0700S08H07	●	67,8	78,3	116,3		
7,1	3	SDPX0710S08H03	●	29,7	40,3	79,3	1,3	8,0
7,1	5	SDPX0710S08H05	●	42,7	53,3	91,3		
7,1	7	SDPX0710S08H07	●	67,7	78,3	116,3		

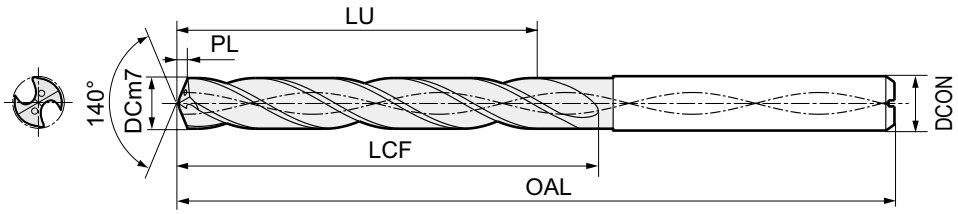
■ Diameter ø7.2 to 8.5mm

Dimensions (mm)

Dia. DC	Hole Depth (L/D)	Cat. No.	Stock	Effective Length LU	Flute Length LCF	Overall Length OAL	Tip PL	Shank Dia. DCON
7,2	3	SDPX0720S08H03	●	29,5	40,3	79,3	1,3	8,0
7,2	5	SDPX0720S08H05	●	42,5	53,3	91,3		
7,2	7	SDPX0720S08H07	❑	67,5	78,3	116,3		
7,3	3	SDPX0730S08H03	●	29,4	40,3	79,3	1,3	8,0
7,3	5	SDPX0730S08H05	●	42,4	53,3	91,3		
7,3	7	SDPX0730S08H07	●	67,4	78,3	116,3		
7,4	3	SDPX0740S08H03	●	29,2	40,3	79,3	1,3	8,0
7,4	5	SDPX0740S08H05	●	42,2	53,3	91,3		
7,4	7	SDPX0740S08H07	●	67,2	78,3	116,3		
7,5	3	SDPX0750S08H03	●	29,2	40,4	79,4	1,4	8,0
7,5	5	SDPX0750S08H05	●	42,2	53,4	91,4		
7,5	7	SDPX0750S08H07	●	67,2	78,4	116,4		
7,6	3	SDPX0760S08H03	●	29,0	40,4	79,4	1,4	8,0
7,6	5	SDPX0760S08H05	●	42,0	53,4	91,4		
7,6	7	SDPX0760S08H07	❑	67,0	78,4	116,4		
7,7	3	SDPX0770S08H03	●	28,9	40,4	79,4	1,4	8,0
7,7	5	SDPX0770S08H05	●	41,9	53,4	91,4		
7,7	7	SDPX0770S08H07	●	66,9	78,4	116,4		
7,8	3	SDPX0780S08H03	●	28,7	40,4	79,4	1,4	8,0
7,8	5	SDPX0780S08H05	●	41,7	53,4	91,4		
7,8	7	SDPX0780S08H07	●	66,7	78,4	116,4		
7,9	3	SDPX0790S08H03	●	28,6	40,4	79,4	1,4	8,0
7,9	5	SDPX0790S08H05	●	41,6	53,4	91,4		
7,9	7	SDPX0790S08H07	❑	66,6	78,4	116,4		
8,0	3	SDPX0800S08H03	●	28,5	40,5	79,5	1,5	8,0
8,0	5	SDPX0800S08H05	●	41,5	53,5	91,5		
8,0	7	SDPX0800S08H07	●	66,5	78,5	116,5		
8,1	3	SDPX0810S10H03	●	34,4	46,5	88,5	1,5	10,0
8,1	5	SDPX0810S10H05	●	48,4	60,5	102,5		
8,1	7	SDPX0810S10H07	●	76,4	88,5	130,5		
8,2	3	SDPX0820S10H03	●	34,2	46,5	88,5	1,5	10,0
8,2	5	SDPX0820S10H05	●	48,2	60,5	102,5		
8,2	7	SDPX0820S10H07	●	76,2	88,5	130,5		
8,3	3	SDPX0830S10H03	●	34,1	46,5	88,5	1,5	10,0
8,3	5	SDPX0830S10H05	●	48,1	60,5	102,5		
8,3	7	SDPX0830S10H07	❑	76,1	88,5	130,5		
8,4	3	SDPX0840S10H03	●	33,9	46,5	88,5	1,5	10,0
8,4	5	SDPX0840S10H05	●	47,9	60,5	102,5		
8,4	7	SDPX0840S10H07	●	75,9	88,5	130,5		
8,5	3	SDPX0850S10H03	●	33,8	46,5	88,5	1,5	10,0
8,5	5	SDPX0850S10H05	●	47,8	60,5	102,5		
8,5	7	SDPX0850S10H07	●	75,8	88,5	130,5		

● Euro stock ❑ On request

Carbon Steel/ Alloy Steel up to 0.28% | Carbon Steel/ Alloy Steel from 0.29% | Tempered Steel | Cast Iron | Ductile Cast Iron | HF Coat | 3D | 5D | 7D



■ Diameter ø8.6 to 9.9mm

Dimensions (mm)

Dia. DC	Hole Depth (L/D)	Cat. No.	Stock	Effective Length LU	Flute Length LCF	Overall Length OAL	Tip PL	Shank Dia. DCON
8,6	3	SDPX0860S10H03	●	33,7	46,6	88,6	1,6	10,0
8,6	5	SDPX0860S10H05	●	47,7	60,6	102,6		
8,6	7	SDPX0860S10H07	●	75,7	88,6	130,6		
8,7	3	SDPX0870S10H03	●	33,6	46,6	88,6	1,6	10,0
8,7	5	SDPX0870S10H05	●	47,6	60,6	102,6		
8,7	7	SDPX0870S10H07	●	75,6	88,6	130,6		
8,8	3	SDPX0880S10H03	●	33,4	46,6	88,6	1,6	10,0
8,8	5	SDPX0880S10H05	●	47,4	60,6	102,6		
8,8	7	SDPX0880S10H07	●	75,4	88,6	130,6		
8,9	3	SDPX0890S10H03	●	33,3	46,6	88,6	1,6	10,0
8,9	5	SDPX0890S10H05	●	47,3	60,6	102,6		
8,9	7	SDPX0890S10H07	❑	75,3	88,6	130,6		
9,0	3	SDPX0900S10H03	●	33,1	46,6	88,6	1,6	10,0
9,0	5	SDPX0900S10H05	●	47,1	60,6	102,6		
9,0	7	SDPX0900S10H07	●	75,1	88,6	130,6		
9,1	3	SDPX0910S10H03	●	33,1	46,7	88,7	1,7	10,0
9,1	5	SDPX0910S10H05	●	47,1	60,7	102,7		
9,1	7	SDPX0910S10H07	●	83,1	96,7	138,7		
9,2	3	SDPX0920S10H03	❑	32,9	46,7	88,7	1,7	10,0
9,2	5	SDPX0920S10H05	●	46,9	60,7	102,7		
9,2	7	SDPX0920S10H07	●	82,9	96,7	138,7		
9,3	3	SDPX0930S10H03	●	32,8	46,7	88,7	1,7	10,0
9,3	5	SDPX0930S10H05	●	46,8	60,7	102,7		
9,3	7	SDPX0930S10H07	●	82,8	96,7	138,7		
9,4	3	SDPX0940S10H03	●	32,6	46,7	88,7	1,7	10,0
9,4	5	SDPX0940S10H05	●	46,6	60,7	102,7		
9,4	7	SDPX0940S10H07	●	82,6	96,7	138,7		
9,5	3	SDPX0950S10H03	●	32,5	46,7	88,7	1,7	10,0
9,5	5	SDPX0950S10H05	●	46,5	60,7	102,7		
9,5	7	SDPX0950S10H07	●	82,5	96,7	138,7		
9,6	3	SDPX0960S10H03	●	32,3	46,7	88,7	1,7	10,0
9,6	5	SDPX0960S10H05	●	46,3	60,7	102,7		
9,6	7	SDPX0960S10H07	❑	82,3	96,7	138,7		
9,7	3	SDPX0970S10H03	●	32,3	46,8	88,8	1,8	10,0
9,7	5	SDPX0970S10H05	●	46,3	60,8	102,8		
9,7	7	SDPX0970S10H07	●	82,3	96,8	138,8		
9,8	3	SDPX0980S10H03	●	32,1	46,8	88,8	1,8	10,0
9,8	5	SDPX0980S10H05	●	46,1	60,8	102,8		
9,8	7	SDPX0980S10H07	●	82,1	96,8	138,8		
9,9	3	SDPX0990S10H03	●	32,0	46,8	88,8	1,8	10,0
9,9	5	SDPX0990S10H05	●	46,0	60,8	102,8		
9,9	7	SDPX0990S10H07	●	82,0	96,8	138,8		

■ Diameter ø10.0 to 11.3mm

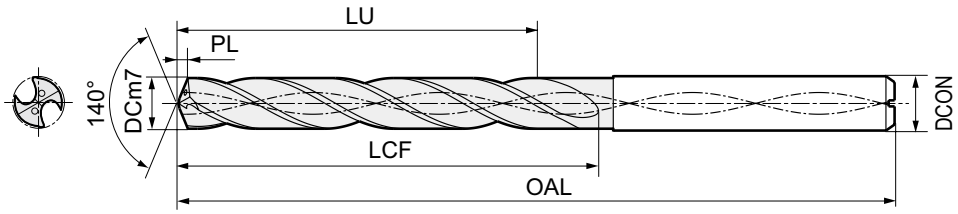
Dimensions (mm)

Dia. DC	Hole Depth (L/D)	Cat. No.	Stock	Effective Length LU	Flute Length LCF	Overall Length OAL	Tip PL	Shank Dia. DCON
10,0	3	SDPX1000S10H03	●	31,8	46,8	88,8	1,8	10,0
10,0	5	SDPX1000S10H05	●	45,8	60,8	102,8		
10,0	7	SDPX1000S10H07	●	81,8	96,8	138,8		
10,1	3	SDPX1010S12H03	●	39,7	54,8	101,8	1,8	12,0
10,1	5	SDPX1010S12H05	●	55,7	70,8	117,8		
10,1	7	SDPX1010S12H07	●	92,7	107,8	154,8		
10,2	3	SDPX1020S12H03	●	39,6	54,9	101,9	1,9	12,0
10,2	5	SDPX1020S12H05	●	55,6	70,9	117,9		
10,2	7	SDPX1020S12H07	●	92,6	107,9	154,9		
10,3	3	SDPX1030S12H03	●	39,5	54,9	101,9	1,9	12,0
10,3	5	SDPX1030S12H05	●	55,5	70,9	117,9		
10,3	7	SDPX1030S12H07	❑	92,5	107,9	154,9		
10,4	3	SDPX1040S12H03	●	39,3	54,9	101,9	1,9	12,0
10,4	5	SDPX1040S12H05	●	55,3	70,9	117,9		
10,4	7	SDPX1040S12H07	●	92,3	107,9	154,9		
10,5	3	SDPX1050S12H03	●	39,2	54,9	101,9	1,9	12,0
10,5	5	SDPX1050S12H05	●	55,2	70,9	117,9		
10,5	7	SDPX1050S12H07	●	92,2	107,9	154,9		
10,6	3	SDPX1060S12H03	●	39,0	54,9	101,9	1,9	12,0
10,6	5	SDPX1060S12H05	●	55,0	70,9	117,9		
10,6	7	SDPX1060S12H07	❑	92,0	107,9	154,9		
10,7	3	SDPX1070S12H03	❑	38,9	54,9	101,9	1,9	12,0
10,7	5	SDPX1070S12H05	●	54,9	70,9	117,9		
10,7	7	SDPX1070S12H07	❑	91,9	107,9	154,9		
10,8	3	SDPX1080S12H03	●	38,8	55,0	102,0	2,0	12,0
10,8	5	SDPX1080S12H05	●	54,8	71,0	118,0		
10,8	7	SDPX1080S12H07	●	91,8	108,0	155,0		
10,9	3	SDPX1090S12H03	❑	38,7	55,0	102,0	2,0	12,0
10,9	5	SDPX1090S12H05	❑	54,7	71,0	118,0		
10,9	7	SDPX1090S12H07	❑	91,7	108,0	155,0		
11,0	3	SDPX1100S12H03	●	38,5	55,0	102,0	2,0	12,0
11,0	5	SDPX1100S12H05	●	54,5	71,0	118,0		
11,0	7	SDPX1100S12H07	●	91,5	108,0	155,0		
11,1	3	SDPX1110S12H03	●	38,4	55,0	102,0	2,0	12,0
11,1	5	SDPX1110S12H05	●	54,4	71,0	118,0		
11,1	7	SDPX1110S12H07	❑	99,4	116,0	163,0		
11,2	3	SDPX1120S12H03	●	38,2	55,0	102,0	2,0	12,0
11,2	5	SDPX1120S12H05	●	54,2	71,0	118,0		
11,2	7	SDPX1120S12H07	●	99,2	116,0	163,0		
11,3	3	SDPX1130S12H03	❑	38,2	55,1	102,1	2,1	12,0
11,3	5	SDPX1130S12H05	●	54,2	71,1	118,1		
11,3	7	SDPX1130S12H07	●	99,2	116,1	163,1		

● Euro stock ❑ On request

SDPX Series

Carbon Steel/ Alloy Steel up to 0.28% | Carbon Steel/ Alloy Steel from 0.29% | Tempered Steel | Cast Iron | Ductile Cast Iron | HF Coat | 3D | 5D | 7D



■ Diameter ø11.4 to 12.7mm

Dimensions (mm)

Dia. DC	Hole Depth (L/D)	Cat. No.	Stock	Effective Length LU	Flute Length LCF	Overall Length OAL	Tip PL	Shank Dia. DCON
11,4	3	SDPX1140S12H03	●	38,0	55,1	102,1	2,1	12,0
11,4	5	SDPX1140S12H05	●	54,0	71,1	118,1		
11,4	7	SDPX1140S12H07	❑	99,0	116,1	163,1		
11,5	3	SDPX1150S12H03	●	37,9	55,1	102,1	2,1	12,0
11,5	5	SDPX1150S12H05	●	53,9	71,1	118,1		
11,5	7	SDPX1150S12H07	●	98,9	116,1	163,1		
11,6	3	SDPX1160S12H03	❑	37,7	55,1	102,1	2,1	12,0
11,6	5	SDPX1160S12H05	❑	53,7	71,1	118,1		
11,6	7	SDPX1160S12H07	●	98,7	116,1	163,1		
11,7	3	SDPX1170S12H03	●	37,6	55,1	102,1	2,1	12,0
11,7	5	SDPX1170S12H05	●	53,6	71,1	118,1		
11,7	7	SDPX1170S12H07	●	98,6	116,1	163,1		
11,8	3	SDPX1180S12H03	●	37,4	55,1	102,1	2,1	12,0
11,8	5	SDPX1180S12H05	●	53,4	71,1	118,1		
11,8	7	SDPX1180S12H07	●	98,4	116,1	163,1		
11,9	3	SDPX1190S12H03	❑	37,4	55,2	102,2	2,2	12,0
11,9	5	SDPX1190S12H05	❑	53,4	71,2	118,2		
11,9	7	SDPX1190S12H07	❑	98,4	116,2	163,2		
12,0	3	SDPX1200S12H03	●	37,2	55,2	102,2	2,2	12,0
12,0	5	SDPX1200S12H05	●	53,2	71,2	118,2		
12,0	7	SDPX1200S12H07	●	98,2	116,2	163,2		
12,1	3	SDPX1210S14H03	❑	42,1	60,2	107,2	2,2	14,0
12,1	5	SDPX1210S14H05	●	59,1	77,2	124,2		
12,1	7	SDPX1210S14H07	❑	117,1	135,2	182,2		
12,2	3	SDPX1220S14H03	●	41,9	60,2	107,2	2,2	14,0
12,2	5	SDPX1220S14H05	●	58,9	77,2	124,2		
12,2	7	SDPX1220S14H07	❑	116,9	135,2	182,2		
12,3	3	SDPX1230S14H03	❑	41,8	60,2	107,2	2,2	14,0
12,3	5	SDPX1230S14H05	●	58,8	77,2	124,2		
12,3	7	SDPX1230S14H07	❑	116,8	135,2	182,2		
12,4	3	SDPX1240S14H03	❑	41,7	60,3	107,3	2,3	14,0
12,4	5	SDPX1240S14H05	●	58,7	77,3	124,3		
12,4	7	SDPX1240S14H07	❑	116,7	135,3	182,3		
12,5	3	SDPX1250S14H03	●	41,6	60,3	107,3	2,3	14,0
12,5	5	SDPX1250S14H05	●	58,6	77,3	124,3		
12,5	7	SDPX1250S14H07	●	116,6	135,3	182,3		
12,6	3	SDPX1260S14H03	❑	41,4	60,3	107,3	2,3	14,0
12,6	5	SDPX1260S14H05	●	58,4	77,3	124,3		
12,6	7	SDPX1260S14H07	❑	116,4	135,3	182,3		
12,7	3	SDPX1270S14H03	❑	41,3	60,3	107,3	2,3	14,0
12,7	5	SDPX1270S14H05	●	58,3	77,3	124,3		
12,7	7	SDPX1270S14H07	❑	116,3	135,3	182,3		

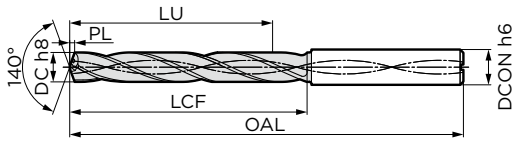
■ Diameter ø12.8 to 14.0mm

Dimensions (mm)

Dia. DC	Hole Depth (L/D)	Cat. No.	Stock	Effective Length LU	Flute Length LCF	Overall Length OAL	Tip PL	Shank Dia. DCON
12,8	3	SDPX1280S14H03	❑	41,1	60,3	107,3	2,3	14,0
12,8	5	SDPX1280S14H05	●	58,1	77,3	124,3		
12,8	7	SDPX1280S14H07	❑	116,1	135,3	182,3		
12,9	3	SDPX1290S14H03	❑	41,0	60,3	107,3	2,3	14,0
12,9	5	SDPX1290S14H05	❑	58,0	77,3	124,3		
12,9	7	SDPX1290S14H07	❑	116,0	135,3	182,3		
13,0	3	SDPX1300S14H03	●	40,9	60,4	107,4	2,4	14,0
13,0	5	SDPX1300S14H05	●	57,9	77,4	124,4		
13,0	7	SDPX1300S14H07	●	115,9	135,4	182,4		
13,1	3	SDPX1310S14H03	❑	40,8	60,4	107,4	2,4	14,0
13,1	5	SDPX1310S14H05	●	57,8	77,4	124,4		
13,1	7	SDPX1310S14H07	❑	115,8	135,4	182,4		
13,2	3	SDPX1320S14H03	❑	40,6	60,4	107,4	2,4	14,0
13,2	5	SDPX1320S14H05	●	57,6	77,4	124,4		
13,2	7	SDPX1320S14H07	❑	115,6	135,4	182,4		
13,3	3	SDPX1330S14H03	❑	40,5	60,4	107,4	2,4	14,0
13,3	5	SDPX1330S14H05	❑	57,5	77,4	124,4		
13,3	7	SDPX1330S14H07	❑	115,5	135,4	182,4		
13,4	3	SDPX1340S14H03	❑	40,3	60,4	107,4	2,4	14,0
13,4	5	SDPX1340S14H05	●	57,3	77,4	124,4		
13,4	7	SDPX1340S14H07	❑	115,3	135,4	182,4		
13,5	3	SDPX1350S14H03	●	40,3	60,5	107,5	2,5	14,0
13,5	5	SDPX1350S14H05	●	57,3	77,5	124,5		
13,5	7	SDPX1350S14H07	●	115,3	135,5	182,5		
13,6	3	SDPX1360S14H03	❑	40,1	60,5	107,5	2,5	14,0
13,6	5	SDPX1360S14H05	❑	57,1	77,5	124,5		
13,6	7	SDPX1360S14H07	❑	115,1	135,5	182,5		
13,7	3	SDPX1370S14H03	❑	40,0	60,5	107,5	2,5	14,0
13,7	5	SDPX1370S14H05	●	57,0	77,5	124,5		
13,7	7	SDPX1370S14H07	❑	115,0	135,5	182,5		
13,8	3	SDPX1380S14H03	❑	39,8	60,5	107,5	2,5	14,0
13,8	5	SDPX1380S14H05	●	56,8	77,5	124,5		
13,8	7	SDPX1380S14H07	❑	114,8	135,5	182,5		
13,9	3	SDPX1390S14H03	❑	39,7	60,5	107,5	2,5	14,0
13,9	5	SDPX1390S14H05	●	56,7	77,5	124,5		
13,9	7	SDPX1390S14H07	❑	114,7	135,5	182,5		
14,0	3	SDPX1400S14H03	●	39,5	60,5	107,5	2,5	14,0
14,0	5	SDPX1400S14H05	●	56,5	77,5	124,5		
14,0	7	SDPX1400S14H07	●	114,5	135,5	182,5		

● Euro stock ❑ On request

Fig 1



■ Diameter ø14.1 to 15.3mm

Dimensions (mm)

Dia. DC	Hole Depth (L/D)	Cat. No.	Stock	Effective Length LU	Flute Length LCF	Overall Length OAL	Tip PL	Shank Dia. DCON
14,1	3	SDPX1410S16H03	❑	43,5	64,6	114,6	2,6	16,0
14,1	5	SDPX1410S16H05	❑	61,5	82,6	132,6		
14,1	7	SDPX1410S16H07	❑	132,5	153,6	203,6		
14,2	3	SDPX1420S16H03	❑	43,3	64,6	114,6	2,6	16,0
14,2	5	SDPX1420S16H05	❑	61,3	82,6	132,6		
14,2	7	SDPX1420S16H07	❑	132,3	153,6	203,6		
14,3	3	SDPX1430S16H03	❑	43,2	64,6	114,6	2,6	16,0
14,3	5	SDPX1430S16H05	❑	61,2	82,6	132,6		
14,3	7	SDPX1430S16H07	❑	132,2	153,6	203,6		
14,4	3	SDPX1440S16H03	❑	43,0	64,6	114,6	2,6	16,0
14,4	5	SDPX1440S16H05	❑	61,0	82,6	132,6		
14,4	7	SDPX1440S16H07	❑	132,0	153,6	203,6		
14,5	3	SDPX1450S16H03	●	42,9	64,6	114,6	2,6	16,0
14,5	5	SDPX1450S16H05	●	60,9	82,6	132,6		
14,5	7	SDPX1450S16H07	❑	131,9	153,6	203,6		
14,6	3	SDPX1460S16H03	❑	42,8	64,7	114,7	2,7	16,0
14,6	5	SDPX1460S16H05	❑	60,8	82,7	132,7		
14,6	7	SDPX1460S16H07	❑	131,8	153,7	203,7		
14,7	3	SDPX1470S16H03	❑	42,7	64,7	114,7	2,7	16,0
14,7	5	SDPX1470S16H05	❑	60,7	82,7	132,7		
14,7	7	SDPX1470S16H07	❑	131,7	153,7	203,7		
14,8	3	SDPX1480S16H03	❑	42,5	64,7	114,7	2,7	16,0
14,8	5	SDPX1480S16H05	❑	60,5	82,7	132,7		
14,8	7	SDPX1480S16H07	❑	131,5	153,7	203,7		
14,9	3	SDPX1490S16H03	❑	42,4	64,7	114,7	2,7	16,0
14,9	5	SDPX1490S16H05	❑	60,4	82,7	132,7		
14,9	7	SDPX1490S16H07	❑	131,4	153,7	203,7		
15,0	3	SDPX1500S16H03	●	42,2	64,7	114,7	2,7	16,0
15,0	5	SDPX1500S16H05	●	60,2	82,7	132,7		
15,0	7	SDPX1500S16H07	❑	131,2	153,7	203,7		
15,1	3	SDPX1510S16H03	❑	42,1	64,7	114,7	2,7	16,0
15,1	5	SDPX1510S16H05	❑	60,1	82,7	132,7		
15,1	7	SDPX1510S16H07	❑	131,1	153,7	203,7		
15,2	3	SDPX1520S16H03	❑	42,0	64,8	114,8	2,8	16,0
15,2	5	SDPX1520S16H05	❑	60,0	82,8	132,8		
15,2	7	SDPX1520S16H07	❑	131,0	153,8	203,8		
15,3	3	SDPX1530S16H03	❑	41,9	64,8	114,8	2,8	16,0
15,3	5	SDPX1530S16H05	❑	59,9	82,8	132,8		
15,3	7	SDPX1530S16H07	❑	130,9	153,8	203,8		

■ Diameter ø15.4 to 16.0mm

Dimensions (mm)

Dia. DC	Hole Depth (L/D)	Cat. No.	Stock	Effective Length LU	Flute Length LCF	Overall Length OAL	Tip PL	Shank Dia. DCON
15,4	3	SDPX1540S16H03	❑	41,7	64,8	114,8	2,8	16,0
15,4	5	SDPX1540S16H05	❑	59,7	82,8	132,8		
15,4	7	SDPX1540S16H07	❑	130,7	153,8	203,8		
15,5	3	SDPX1550S16H03	●	41,6	64,8	114,8	2,8	16,0
15,5	5	SDPX1550S16H05	●	59,6	82,8	132,8		
15,5	7	SDPX1550S16H07	❑	130,6	153,8	203,8		
15,6	3	SDPX1560S16H03	❑	41,4	64,8	114,8	2,8	16,0
15,6	5	SDPX1560S16H05	❑	59,4	82,8	132,8		
15,6	7	SDPX1560S16H07	❑	130,4	153,8	203,8		
15,7	3	SDPX1570S16H03	❑	41,4	64,9	114,9	2,9	16,0
15,7	5	SDPX1570S16H05	❑	59,4	82,9	132,9		
15,7	7	SDPX1570S16H07	❑	130,4	153,9	203,9		
15,8	3	SDPX1580S16H03	❑	41,2	64,9	114,9	2,9	16,0
15,8	5	SDPX1580S16H05	❑	59,2	82,9	132,9		
15,8	7	SDPX1580S16H07	❑	130,2	153,9	203,9		
15,9	3	SDPX1590S16H03	❑	41,1	64,9	114,9	2,9	16,0
15,9	5	SDPX1590S16H05	❑	59,1	82,9	132,9		
15,9	7	SDPX1590S16H07	❑	130,1	153,9	203,9		
16,0	3	SDPX1600S16H03	●	40,9	64,9	114,9	2,9	16,0
16,0	5	SDPX1600S16H05	●	58,9	82,9	132,9		
16,0	7	SDPX1600S16H07	❑	129,9	153,9	203,9		

● Euro stock ❑ On request

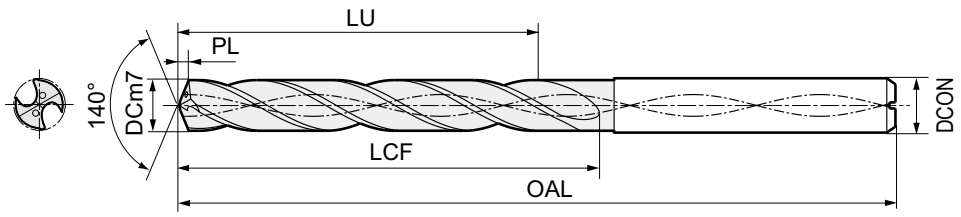
■ Recommended Cutting Conditions

Material Group						SDPX ____S__H0_ PCH70						
ISO 513	Material	Type/Structure	Rm N/mm²	Hardness HB30	Eignung	Vc=m/min	Ø 3.0-4.0mm Feed rate (mm/U)	Ø 4.1-6.0 mm Feed rate (mm/U)	Ø 6.1-8.0 mm Feed rate (mm/U)	Ø 8.1-10.0 mm Feed rate (mm/U)	Ø 10.1-13.0 mm Feed rate (mm/U)	Ø 13.1-16.0 mm Feed rate (mm/U)
P	Carbon steel Cast steel	free cutting steel			◉	60-**80**-140	0.15-**0.24**-0.35	0.15-**0.30**-0.35	0.20-**0.40**-0.50	0.20-**0.45**-0.50	0.25-**0.45**-0.55	0.25-**0.50**-0.60
		construction steel	400		◉	60-**80**-140	0.15-**0.24**-0.35	0.15-**0.30**-0.35	0.20-**0.40**-0.50	0.20-**0.45**-0.50	0.25-**0.45**-0.55	0.25-**0.50**-0.60
		case-hardened steel			◉	60-**80**-140	0.15-**0.24**-0.35	0.15-**0.30**-0.35	0.20-**0.40**-0.50	0.20-**0.45**-0.50	0.25-**0.45**-0.55	0.25-**0.50**-0.60
		heat-treatable steel	700	235	◉	60-**80**-140	0.15-**0.24**-0.35	0.15-**0.30**-0.35	0.20-0.40-0.50	0.20-**0.45**-0.50	0.25-**0.45**-0.55	0.25-**0.50**-0.60
		spring steel		300	◉	30-**40**-50	0.05-**0.07**-0.11	0.07-**0.09**-0.13	0.08-**0.12**-0.16	0.09-**0.15**-0.20	0.10-**0.18**-0.22	0.10-**0.20**-0.25
	Low alloy steel Cast steel	case-hardened steel			◉	60-**80**-100	0.12-**0.24**-0.30	0.15-**0.28**-0.35	0.20-**0.36**-0.45	0.20-**0.40**-0.45	0.22-**0.43**-0.50	0.22-**0.45**-0.55
		heat -treatable steel	600	180	◉	60-**80**-100	0.12-**0.24**-0.30	0.15-**0.28**-0.35	0.20-**0.36**-0.45	0.20-**0.40**-0.45	0.22-**0.43**-0.50	0.22-**0.45**-0.55
		bearing steel	<850	200	◉	60-**80**-100	0.12-**0.24**-0.30	0.15-**0.28**-0.35	0.20-**0.36**-0.45	0.20-**0.40**-0.45	0.22-**0.43**-0.50	0.22-**0.45**-0.55
		nitriding steel	<1000	275	◉	50-**70**-90	0.12-**0.24**-0.28	0.15-**0.28**-0.32	0.20-**0.36**-0.40	0.20-**0.40**-0.42	0.22-**0.43**-0.47	0.22-**0.45**-0.50
	High alloy steel	Tool steel			◎	30-**50**-60	0.08-**0.10**-0.15	0.10-**0.13**-0.24	0.12-**0.20**-0.28	0.15-**0.23**-0.30	0.18-**0.25**-0.35	0.20-**0.28**-0.40
		hot work steel			◎	30-**50**-60	0.08-**0.10**-0.15	0.10-**0.13**-0.24	0.12-**0.20**-0.28	0.15-**0.23**-0.30	0.18-**0.25**-0.35	0.20-**0.28**-0.40
K	Cast iron GG	pearlitic	>250		◉	60-**90**-120	0.15-**0.28**-0.35	0.18-**0.35**-0.50	0.20-**0.50**-0.60	0.22-**0.55**-0.65	0.25-**0.60**-0.70	0.25-**0.60**-0.75
	Cast iron GGG		>450		◉	60-**80**-100	0.15-**0.25**-0.30	0.18-**0.33**-0.40	0.20-**0.40**-0.50	0.22-**0.45**-0.55	0.25-**0.50**-0.60	0.25-**0.55**-0.65
N	Aluminum Al-wrought alloys	pure aluminum										
		wrought alloys										
	Aluminum Cast alloys	Si<=12%										
		Si>12%			O	80-**110**-140	0.15-**0.18**-0.20	0.15-**0.20**-0.25	0.20-**0.25**-0.30	0.20-**0.30**-0.35	0.25-**0.30**-0.38	0.25-**0.30**-0.40
		Al - Mg alloys										
	Zinc die-cast	Zn alloys										
	Copper alloys	Copper										
		Brass			◎	80-**100**-180	0.15-**0.18**-0.20	0.15-**0.20**-0.25	0.20-**0.25**-0.30	0.20-**0.30**-0.35	0.25-**0.30**-0.38	0.25-**0.30**-0.40
		Bronze										
H	Hardened steel	45 HRC			◎	30-**40**-50	0.08-**0.10**-0.15	0.10-**0.15**-0.18	0.12-**0.20**-0.25	0.15-**0.20**-0.25	0.15-**0.22**-0.28	0.15-**0.25**-0.30
		55 HRC										
		60 HRC										
		>60 HRC										

1. The recommended cutting conditions above are for cases where internal supply of a water-soluble coolant is used.
2. Can also be used for MQL drilling.
3. If using non-water-soluble coolant, reduce the cutting speed and feed rate by 20-30% and ensure that sufficient coolant is supplied.
4. When mounting the drill in the collet, make sure that runout around the cutting edge is no greater than 0.02mm.
5. Make sure the flute does not enter the collet.
6. If the surface of the workpiece is abnormally shaped (tilted, interrupted etc.), reduce the feed rate to about half when feeding the drill in the workpiece.
*If stable drilling is still not possible, pre-drilling of a flat surface with a Flat MULTIDRILL MDF series drill is recommended.
7. When performing interrupted through drilling, reduce the feed rate to about half the feed rate used prior to this process.
8. If abnormalities such as noise or vibration occur, change the cutting conditions accordingly.

◉ Preferred choice ◎ Suitable O Possible

MULTIDRILL SDPX Series Made-To-Order Request Sheet



■ Equipment Information

Manufacturer :

Type : ☐ Vertical Machining Centre ☐ Horizontal Machining Centre ☐ Lathe

Spindle :

Coolant : ☐ Water-soluble ☐ Oil-based ☐ MQL

Coolant Supply : ☐ Internal Coolant Supply ☐ External Coolant Supply

■ Workpiece Information

Part Name :

Work Material :

Work Material Hardness :

Hole type : ☐ Through Hole ☐ Blind Hole

Interrupted Drilling : ☐ Yes ☐ No

Hole Depth :

Distance of Collision Point :

■ Workpiece Shape

■ Required Precision

Hole Dia. Tolerance :

Surface Roughness :

Hole Positioning Accuracy :

Other :

■ Current Tool

Cutting Conditions : vc = m/min f = mm/rev

Tool Life:

Tool Life Criteria:

Chamfered Cutting Edge:

After filling in the required dimensions and other information, contact our nearest sales office or distributor.

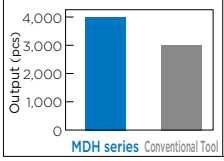
Feel free to contact us with other requests as well.

Company Name/Contact

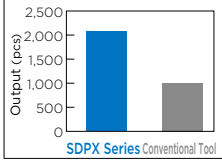
■ Remarks

■ Application Examples

Steel 20CrNi2Mo Tool Holder	Sumitomo	Conventional Tool
Lathe	Tool	SDPX1030S12H08	—
	Diameter (mm)	ø10.3	ø10.3
	L/D	8	8
	vc (m/min)	80	80
	f (mm/rev)	0.45	0.35
	Coolant	Wet (Water-soluble, Internal Coolant Supply)	Wet (Water-soluble, Internal Coolant Supply)
	Results	Approx. 1.3 times the efficiency and 1.35 times the tool life of conventional tools



Steel 100 Cr6 Tooling Component	Sumitomo	Conventional Tool
Lathe (Hole drilling depth: 51mm)	Tool	SDPX0950S10H05	—
	Diameter (mm)	ø9.5	ø9.5
	L/D	5	5
	vc (m/min)	100	100
	f (mm/rev)	0.30	0.15
	Coolant	Wet (Oil-based, Internal Coolant Supply)	Wet (Oil-based, Internal Coolant Supply)
	Results	Twice the efficiency and at least twice the tool life of conventional tools

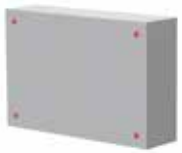


Steel 34CrM04 Ring Gear	Sumitomo	Conventional Tool
Vertical Machining Centre	Tool	SDPX1350S14H05	—
	Diameter (mm)	ø13.5	ø13.5
	L/D	5	5
	vc (m/min)	91	91
	f (mm/rev)	0.40	0.20
	Coolant	Wet (Internal Coolant Supply)	Wet (Internal Coolant Supply)
	Results	Twice the efficiency and tool life of conventional tools

After drilling 240 holes

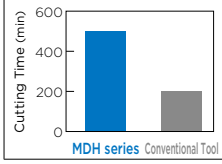
Steel 100 Cr6 Automotive Component	Sumitomo	Conventional Tool
Multi-spindle Lathe	Tool	MDH0470S06H05	—
	Diameter (mm)	ø4.7	ø4.7
	L/D	5	5
	vc (m/min)	32	32
	f (mm/rev)	0.30	0.12
	Coolant	Wet (Internal Coolant Supply)	Wet (Internal Coolant Supply)
	Results	2.5 times the efficiency of conventional tools

Cast Iron GG25 Industrial Machine Component	Sumitomo	Conventional Tool
Horizontal Machining Centre BT50	Tool	SDPX0510S06H05	—
	Diameter (mm)	ø5.1	ø5.1
	L/D	5	5
	vc (m/min)	70	70
	f (mm/rev)	0.30	0.20
	Coolant	Wet (Water-soluble, External Coolant Supply)	Wet (Water-soluble, External Coolant Supply)
	Results	1.5 times the efficiency of conventional tools with the same tool life



After drilling 5,100 holes

Cast Iron GG25 Housing	Sumitomo	Competitor's Product
Vertical Machining Centre	Tool	SDPX0870S10H05	—
	Diameter (mm)	ø8.7	ø8.7
	L/D	5	5
	vc (m/min)	85	85
	f (mm/rev)	0.40	0.20
	Coolant	Wet (Water-soluble, Internal Coolant Supply)	Wet (Water-soluble, Internal Coolant Supply)
	Results	Twice the efficiency and 2.5 times the tool life of competitors' products



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