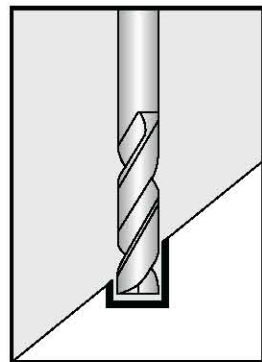


[CTS BOTTOM DRILL Cutting Condition]

WORK-PIECE	GREY CAST IRON CARBON STEELS		ALLOY STEELS PREHARDENED STEELS		MOLD&DIE STEELS		HARDENED STEELS STAINLESS STEELS		DUCTILE CAST IRON		ALUMINIUM ALLOY STEELS		ALUMINIUM	
	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)
3	8,150	0.05	7,120	0.05	3,790	0.05	2,650	0.03	7,180	0.04	17,400	0.06	12,500	0.05
4	6,100	0.07	5,260	0.07	2,870	0.06	2,000	0.04	5,280	0.06	12,850	0.08	9,550	0.07
5	4,920	0.08	4,240	0.08	2,260	0.08	1,600	0.05	4,210	0.07	10,300	0.10	7,650	0.09
6	4,100	0.09	3,540	0.1	1,840	0.09	1,300	0.06	3,550	0.09	8,750	0.12	6,400	0.10
8	3,080	0.14	2,660	0.13	1,400	0.12	1,000	0.08	2,670	0.12	6,480	0.16	4,750	0.14
10	2,400	0.17	2,110	0.17	1,100	0.15	800	0.10	2,110	0.15	5,230	0.20	3,800	0.17
12	2,000	0.21	1,750	0.21	950	0.18	650	0.12	1,740	0.18	4,330	0.24	3,200	0.21

※ When using non-water soluble oil, the RPM and V should be lowered by 20%.



Sloping surface machining

* For slope drilling, the conditions in the table above must be reduced depending on the slope angle.

Sloping surface rake	Cutting Condition	
	RPM	fn (mm/rev)
0 ~ 15°	100%	100%
15° ~ 30°	100%	50% ↓
30° ~	70% ↓	30% ↓

[PF50, P50, HP50 series]

WORKPIECE	CARBON STEELS(C<0.3%) ALLOY STEELS/SS400 SCM-710N/mm ²		CARBON STEELS(C≥0.3%) ALLOY STEELS/SS50C SCM-1060N/mm ²		SUJ2- SUS440		SKD61 HRc34-43		HRc43-48		SKD11 HRc48-53		CAST IRON FC 250-350		DUCTILE FC 400-500	
	V	80~125m/min	80~125m/min	63~80m/min	40~63m/min	32~45m/min	25~36m/min	80~125m/min	63~90m/min							
DIAMETER (mm)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)
2	12,000	0.06-0.08	12,000	0.06-0.08	11,000	0.06-0.08	8,000	0.06-0.08	6,000	0.05-0.07	4,500	0.03-0.06	15,000	0.06-0.08	11,000	0.06-0.08
3	9,600	0.09-0.12	9,600	0.09-0.12	7,500	0.09-0.12	5,300	0.09-0.12	4,000	0.07-0.11	3,200	0.05-0.09	10,000	0.09-0.12	7,600	0.09-0.12
4	8,000	0.10-0.15	8,000	0.10-0.15	5,650	0.10-0.15	4,000	0.10-0.15	3,000	0.08-0.13	2,600	0.06-0.10	8,000	0.10-0.15	6,000	0.10-0.15
5	6,400	0.12-0.18	6,400	0.12-0.18	4,550	0.12-0.18	3,300	0.12-0.18	2,400	0.10-0.15	2,000	0.08-0.12	6,400	0.12-0.18	4,800	0.12-0.18
6	5,300	0.14-0.20	5,300	0.14-0.20	3,800	0.14-0.20	2,750	0.14-0.20	2,000	0.12-0.18	1,700	0.09-0.15	5,300	0.14-0.20	4,000	0.14-0.20
8	4,000	0.16-0.24	4,000	0.16-0.24	2,850	0.16-0.24	2,100	0.16-0.24	1,500	0.14-0.22	1,300	0.12-0.20	4,000	0.16-0.24	3,000	0.16-0.24
10	3,200	0.18-0.27	3,200	0.18-0.27	2,250	0.18-0.27	1,700	0.18-0.27	1,200	0.15-0.25	1,000	0.13-0.23	3,200	0.18-0.27	2,400	0.18-0.27
12	2,650	0.20-0.30	2,650	0.20-0.30	1,900	0.20-0.30	1,400	0.20-0.30	1,000	0.17-0.26	850	0.14-0.24	2,700	0.20-0.30	2,000	0.20-0.30
14	2,300	0.22-0.35	2,300	0.22-0.35	1,600	0.22-0.35	1,200	0.22-0.35	860	0.18-0.30	730	0.15-0.26	2,300	0.22-0.35	1,700	0.22-0.35
16	2,000	0.25-0.36	2,000	0.25-0.36	1,400	0.25-0.36	1,050	0.25-0.36	760	0.20-0.32	640	0.16-0.26	2,000	0.25-0.36	1,500	0.25-0.36
18	1,800	0.28-0.38	1,800	0.28-0.38	1,250	0.28-0.38	920	0.28-0.38	670	0.23-0.33	570	0.18-0.28	1,800	0.28-0.38	1,350	0.28-0.38
20	1,600	0.30-0.40	1,600	0.30-0.40	1,150	0.30-0.40	850	0.30-0.40	600	0.25-0.35	500	0.20-0.30	1,600	0.30-0.40	1,200	0.30-0.40

[SF503, SF505, SF508, PI503, PI505 Series]

WORKPIECE	CARBON STEELS(C<0.3%) ALLOY STEELS/SS400 SCM-710N/mm ²		CARBON STEELS(C≥0.3%) ALLOY STEELS/SS50C SCM-1060N/mm ²		SUJ2- SUS440		SKD61 HRc34-43		HRc43-48		SKD11 HRc48-53		CAST IRON FC 250-350		DUCTILE FC 400-500	
	V	80~150m/min	80~150m/min	63~100m/min	40~70m/min	32~50m/min	25~40m/min	80~150m/min	63~100m/min							
DIAMETER (mm)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)	RPM	fn (mm/rev)
3	12,000	0.09-0.12	13,000	0.09-0.12	7,600	0.09-0.12	6,400	0.09-0.12	5,300	0.07-0.11	3,800	0.05-0.09	12,000	0.09-0.12	8,500	0.09-0.12
4	9,500	0.1-0.15	10,000	0.1-0.15	5,700	0.1-0.15	4,800	0.1-0.15	4,000	0.08-0.13	2,950	0.06-0.1	9,000	0.1-0.15	6,350	0.1-0.15
5	7,600	0.12-0.18	8,000	0.12-0.18	4,600	0.12-0.18	3,800	0.12-0.18	3,200	0.1-0.15	2,300	0.08-0.12	7,600	0.12-0.18	5,100	0.12-0.18
6	6,400	0.14-0.20	6,600	0.14-0.20	3,800	0.14-0.20	3,200	0.14-0.20	2,650	0.12-0.18	1,900	0.09-0.15	6,400	0.14-0.20	4,250	0.14-0.20
8	4,800	0.16-0.24	5,000	0.16-0.24	2,900	0.16-0.24	2,400	0.16-0.24	2,000	0.14-0.22	1,450	0.12-0.2	4,800	0.16-0.24	3,200	0.16-0.24
10	3,800	0.18-0.27	4,000	0.18-0.27	2,300	0.18-0.27	1,900	0.18-0.27	1,600	0.15-0.25	1,150	0.13-0.23	3,800	0.18-0.27	2,550	0.18-0.27
12	3,200	0.20-0.30	3,300	0.20-0.30	1,900	0.20-0.30	1,600	0.20-0.30	1,300	0.17-0.26	950	0.14-0.24	3,200	0.20-0.30	2,100	0.20-0.30
14	2,700	0.22-0.35	2,800	0.22-0.35	1,600	0.22-0.35	1,350	0.22-0.35	1,150	0.18-0.3	800	0.15-0.26	2,700	0.22-0.35	1,800	0.22-0.35
16	2,400	0.25-0.36	2,500	0.25-0.36	1,400	0.25-0.36	1,200	0.25-0.36	1,000	0.2-0.32	700	0.16-0.26	2,400	0.25-0.36	1,600	0.25-0.36
18	2,100	0.28-0.38	2,200	0.28-0.38	1,300	0.28-0.38	1,100	0.28-0.38	900	0.23-0.33	650	0.18-0.28	2,100	0.28-0.38	1,400	0.28-0.38
20	1,900	0.30-0.40	2,000	0.30-0.40	1,150	0.30-0.40	1,000	0.30-0.40	800	0.25-0.35	600	0.2-0.3	1,900	0.30-0.40	1,250	0.30-0.40

- SF503(3xD) : fn 100%
- SF505(5xD) : fn 90%
- SF508(8xD) : fn 70~80%