

DC					Hole Depth l/d	Coolant (Int./Ext.)	Stock DP7020	Order Number	Dimensions											
Metric (mm)	Decimal	Fraction	Wire / Letter	Thread size					LCF		LH		OAL		LF		PL		DCON	
	(inch)								mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
19.6	.7717				3	Int.	□	MMS1960X3DB	103.6	4.079	103.6	4.079	164.6	6.480	161	6.339	3.6	.142	20	.787
					5	Int.	□	MMS1960X5DB	143.6	5.654	143.6	5.654	204.6	8.055	201	7.913	3.6	.142	20	.787
19.7	.7756				3	Int.	□	MMS1970X3DB	103.6	4.079	103.6	4.079	164.6	6.480	161	6.339	3.6	.142	20	.787
					5	Int.	□	MMS1970X5DB	143.6	5.654	143.6	5.654	204.6	8.055	201	7.913	3.6	.142	20	.787
19.8	.7795				3	Int.	□	MMS1980X3DB	103.6	4.079	103.6	4.079	164.6	6.480	161	6.339	3.6	.142	20	.787
					5	Int.	□	MMS1980X5DB	143.6	5.654	143.6	5.654	204.6	8.055	201	7.913	3.6	.142	20	.787
19.844	.7812	25/32			3	Int.	●	MMS1984X3D200	103.6	4.079	103.6	4.079	164.6	6.480	161	6.339	3.6	.142	20	.787
					5	Int.	●	MMS1984X5D200	143.6	5.654	143.6	5.654	204.6	8.055	201	7.913	3.6	.142	20	.787
19.9	.7835				3	Int.	□	MMS1990X3DB	103.6	4.079	103.6	4.079	164.6	6.480	161	6.339	3.6	.142	20	.787
					5	Int.	□	MMS1990X5DB	143.6	5.654	143.6	5.654	204.6	8.055	201	7.913	3.6	.142	20	.787
20.0	.7874				3	Int.	●	MMS2000X3DB	103.6	4.079	103.6	4.079	164.6	6.480	161	6.339	3.6	.142	20	.787
					5	Int.	●	MMS2000X5DB	143.6	5.654	143.6	5.654	204.6	8.055	201	7.913	3.6	.142	20	.787

## RECOMMENDED CUTTING CONDITIONS

### MMS

Work Material	Austenitic Stainless Steel (≤200HB)				Austenitic Stainless Steel (>200HB)			
	AISI 304, 316 etc.				AISI 304LN, 316LN etc.			
	Drill Dia. DC		Cutting Speed (Min.—Max.) (SFM)	Feed (Min.—Max.) (IPR)	Cutting Speed (Min.—Max.) (SFM)		Feed (Min.—Max.) (IPR)	
inch	mm	inch			mm			
	.1181	3.0	260 (195—330)	.0051 (.0031—.0071)	195 (150—260)	.0039 (.0020—.0059)		
	.1575	4.0	260 (195—330)	.0059 (.0039—.0079)	195 (150—260)	.0047 (.0031—.0071)		
	.1969	5.0	260 (195—330)	.0059 (.0039—.0079)	195 (150—260)	.0047 (.0031—.0071)		
	.2480	6.3	260 (195—330)	.0067 (.0047—.0087)	195 (150—260)	.0059 (.0039—.0079)		
	.3150	8.0	260 (195—330)	.0075 (.0055—.0094)	195 (150—260)	.0067 (.0047—.0087)		
	.3937	10.0	195 (150—230)	.0079 (.0059—.0098)	165 (130—195)	.0071 (.0051—.0091)		
	.4724	12.0	195 (150—230)	.0083 (.0063—.0102)	165 (130—195)	.0075 (.0055—.0094)		
	.6299	16.0	195 (150—230)	.0087 (.0067—.0106)	165 (130—195)	.0079 (.0059—.0098)		
	.7874	20.0	195 (150—230)	.0091 (.0071—.0110)	165 (130—195)	.0083 (.0063—.0102)		

Work Material	Duplex Steel (≤280HB)				Ferritic, Martensitic Stainless Steel (≤200HB)			
	AISI 329 etc.				AISI 410, 430 etc.			
	Drill Dia. DC		Cutting Speed (Min.—Max.) (SFM)	Feed (Min.—Max.) (IPR)	Cutting Speed (Min.—Max.) (SFM)		Feed (Min.—Max.) (IPR)	
inch	mm	inch			mm			
	.1181	3.0	165 (130—195)	.0039 (.0020—.0059)	260 (195—330)	.0051 (.0031—.0071)		
	.1575	4.0	165 (130—195)	.0047 (.0031—.0071)	260 (195—330)	.0059 (.0039—.0079)		
	.1969	5.0	165 (130—195)	.0047 (.0031—.0071)	260 (195—330)	.0059 (.0039—.0079)		
	.2480	6.3	165 (130—195)	.0059 (.0039—.0079)	260 (195—330)	.0067 (.0047—.0087)		
	.3150	8.0	165 (130—195)	.0067 (.0047—.0087)	260 (195—330)	.0075 (.0055—.0094)		
	.3937	10.0	130 (100—165)	.0071 (.0051—.0091)	195 (150—260)	.0079 (.0059—.0098)		
	.4724	12.0	130 (100—165)	.0075 (.0055—.0094)	195 (150—260)	.0083 (.0063—.0102)		
	.6299	16.0	130 (100—165)	.0079 (.0059—.0098)	195 (150—260)	.0087 (.0067—.0106)		
	.7874	20.0	130 (100—165)	.0083 (.0063—.0102)	195 (150—260)	.0083 (.0071—.0110)		

(Note 1) For stable machining, internal coolant supply with high pressure is recommended.

(Note 2) Emulsion type of water coolant is recommended.

(Note 3) Recommended cutting conditions are for machining under the conditions of favorable machining environment and coolant. Please lower the cutting conditions if there is a problem in the rigidity of machine and workpiece, and coolant property or discharge amount.

(Note 4) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

# DRILLING (SOLID CARBIDE)



Drill Dia. DC		Ferritic, Martensitic Stainless Steel (>200HB)		PH Stainless Steel (<450HB)	
		AISI 431, 420 etc.		S17400, S17700 etc.	
inch	mm	Cutting Speed (Min. – Max.) (SFM)	Feed (Min. – Max.) (IPR)	Cutting Speed (Min. – Max.) (SFM)	Feed (Min. – Max.) (IPR)
<b>.1181</b>	<b>3.0</b>	195 (150–260)	.0039 (.0020–.0059)	165 (130–195)	.0039 (.0020–.0059)
<b>.1575</b>	<b>4.0</b>	195 (150–260)	.0047 (.0031–.0071)	165 (130–195)	.0047 (.0031–.0071)
<b>.1969</b>	<b>5.0</b>	195 (150–260)	.0047 (.0031–.0071)	165 (130–195)	.0047 (.0031–.0071)
<b>.2480</b>	<b>6.3</b>	195 (150–260)	.0059 (.0039–.0079)	165 (130–195)	.0059 (.0039–.0079)
<b>.3150</b>	<b>8.0</b>	195 (150–260)	.0067 (.0047–.0087)	165 (130–195)	.0067 (.0047–.0087)
<b>.3937</b>	<b>10.0</b>	165 (130–195)	.0071 (.0051–.0091)	130 (100–165)	.0071 (.0051–.0091)
<b>.4724</b>	<b>12.0</b>	165 (130–195)	.0075 (.0055–.0094)	130 (100–165)	.0075 (.0055–.0094)
<b>.6299</b>	<b>16.0</b>	165 (130–195)	.0079 (.0059–.0098)	130 (100–165)	.0079 (.0059–.0098)
<b>.7874</b>	<b>20.0</b>	165 (130–195)	.0083 (.0063–.0102)	130 (100–165)	.0083 (.0063–.0102)

(Note 1) For stable machining, internal coolant supply with high pressure is recommended.

(Note 2) Emulsion type of water coolant is recommended.

(Note 3) Recommended cutting conditions are for machining under the conditions of favorable machining environment and coolant. Please lower the cutting conditions if there is a problem in the rigidity of machine and workpiece, and coolant property or discharge amount.

(Note 4) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

## STAINLESS STEEL CROSS REFERENCE LIST

Work Material	No	USA	Japan	Germany	
		AISI/SAE	JIS	W-no.	DIN
Ferritic, Martensitic Stainless Steel	1	416	SUS416	1.4005	X12CrS3
		410	SUS410	1.4006	X10Cr13
		430	SUS430	1.4016	X6Cr17
		434	SUS434	1.4113	X6CrMo17
		430Ti	SUS430LX	1.4510	X6CrTi17
		409	—	1.4512	X6CrTi12
	2	420	SUS420J1	1.4021	X20Cr13
		431	SUS431	1.4057	X20CrNi17-2
		420	SUS420J2	1.4028	X30Cr13
		440C	SUS440C	1.4125	X10CrMo17
PH Stainless Steel	3	630 (17-4PH)	SUS630	1.4542	X5CrNiCuNb16 4
		S15500 (15-5PH)	—	1.4545	—
		631 (17-7PH)	SUS631	1.4568	X7CrNiAl17 7
Austenitic Stainless Steel	4	304	SUS304	1.4301	X5CrNi18 10
		305	SUS305	1.4303	X5CrNi8-12
		303	SUS303	1.4305	X12CrNiS18-9
		304L	SUS304L	1.4307	X2CrNi19-11
		316	SUS316	1.4401	X5CrNiMo17 12 2
		304LN	SUS304LN	1.4311	X2CrNiN18 10
	5	316L	SUS316L	1.4404	X2CrNiMo17 12 2
		316LN	SUS316LN	1.4406	X2CrNiMoN17 12 2
		—	SUS316L	1.4435	X2CrNiMo18 14 3
		317L	SUS317L	1.4438	X2CrNiMo18 15 4
		N08926	—	1.4529	X1NiCrMoCuN25 20 7
		321	SUS321	1.4541	X6CrNiTi18-10
		347	SUS347	1.4550	X6CrNiNb18-10
		316Ti	SUS316Ti	1.4571	X6CrNiMoTi17 12 2
Duplex Steel	6	—	—	1.4362	X2CrNiN23 4
		S32750	SCS14A	1.4410	X2CrNiMoN25 7 4
		329	SUS329J1	1.4460	X3CrNiMoN27 5 2
		S31803	SUS329J3L	1.4462	X2CrNiMoN22 5 3