Cutting Conditions

NACHI นาชิ

• AQUA Drills Stub L9550

High-Speed Drilling in Wet Condition

Work Material / Drilling Condition / Dia. of Drill mm	Structural Steels Carbon Steels Cast Irons SS, S C, FC		Alloy Steels SCM Pre-Hardended Steels SCM NAK, HPM		Mold Steels Stainless Steels Hardended Steels (35~40HRC) SKD		Hardened Steels (40~50HRC)		Ductile Cast Iron FCD	
	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min
3	16000	1700	11000	1100	7400	780	5300	480	11000	660
5	9600	1700	6400	1100	4500	780	3200	480	6400	640
8	6000	1600	4000	1100	2800	750	2000	460	4000	640
10	4800	1500	3200	1000	2200	710	1600	440	3200	640
12	4000	1500	2700	1000	1900	700	1300	410	2700	640
16	3000	1300	2000	900	1400	630	1000	380	2000	620
20	2400	1000	1600	730	1100	510	800	310	1600	540

Drilling in Dry Condition

Work Material / Drilling Condition / Dia. of Drill mm	Structural Steels Carbon Steels Cast Irons SS, S C, FC		Alloy Steels SCM Pre-Hardended Steels SCM NAK, HPM		Mold Steels Stainless Steels Hardended Steels (35~40HRC) SKD		Hardened Steels (40~50HRC)		Ductile Cast Iron FCD	
	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min
3	8500	640	6900	520	3700	280	2700	160	6900	410
5	5100	640	4100	520	2200	280	1600	160	4100	410
8	3200	610	2600	500	1400	270	1000	150	2600	410
10	2500	590	2100	480	1100	260	800	150	2100	400
12	2100	560	1700	460	900	250	700	140	1700	400
16	1600	510	1300	420	700	220	500	130	1300	400
20	1300	450	1000	330	550	170	400	100	1000	350

• AQUA Drills Regular L9552

High-Speed Drilling in Wet Condition

Work Material / Drilling Condition / Dia. of Drill mm	Structural Steels Carbon Steels Cast Irons SS, S C, FC		Alloy Steels SCM Pre-Hardended Steels SCM NAK, HPM		Mold Steels Stainless Steels Hardended Steels (35~40HRC)		Hardened Steels (40~50HRC)		Ductile Cast Iron FCD	
	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min
3	16000	1550	11000	1000	7400	700	5300	430	11000	600
5	9600	1550	6400	1000	4500	700	3200	430	6400	580
8	6000	1450	4000	1000	2800	680	2000	400	4000	580
10	4800	1350	3200	900	2200	640	1600	400	3200	580
12	4000	1350	2700	900	1900	630	1300	370	2700	580
16	3000	1200	2000	800	1400	570	1000	340	2000	560
20	2400	950	1600	630	1100	440	800	280	1600	500

Drilling in Dry Condition

Work Material / Drilling Condition / Dia. of Drill mm	Structural Steels Carbon Steels Cast Irons SS, S C, FC		Alloy Steels SCM Pre-Hardended Steels SCM NAK, HPM		Mold Steels Stainless Steels Hardended Steels (35~40HRC)		Hardened Steels (40~50HRC)		Ductile Cast Iron FCD	
	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min
3	8500	580	6900	470	3700	250	2700	150	6900	370
5	5100	580	4100	470	2200	250	1600	150	4100	370
8	3200	550	2600	450	1400	240	1000	140	2600	370
10	2500	530	2100	430	1100	240	800	140	2100	360
12	2100	500	1700	410	900	230	700	130	1700	360
16	1600	460	1300	380	700	200	500	120	1300	360
20	1300	400	1000	310	550	160	400	110	1000	330

1) Drilling Aluminium Alloys, Light Metals, Stainless Steels are not recommended.
2) Use air blow for cooling and the chips exclusion in dry process.
3) By sparks during cutting, or heat by breakage, or hot chips, there is danger of fire. Take fire prevention measure.
4) Adjust drilling condition when unusual vibration, difference sound occur by cutting.