

**DH451, DH452, DH453** SERIES with **COOLANT HOLES**

VC = M/MIN  
RPM = rev./min.  
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)		Vc	Parameter	Drill Diameter (mm)			
					1.0	2.0			3.0	4.0	5.0	6.0
P	2	Non-alloy steel	70	RPM	22280	11140	100	RPM	10610	7960	6370	5310
				FEED	0.02-0.04	0.04-0.06			0.04-0.10	0.06-0.12	0.12-0.18	0.14-0.20
	3	Non-alloy steel	70	RPM	22280	11140	100	RPM	7430	5570	4460	3710
				FEED	0.02-0.04	0.04-0.06			0.04-0.10	0.06-0.12	0.12-0.18	0.14-0.20
6	Low alloy steel	70	RPM	22280	11140	100	RPM	7430	5570	4460	3710	
			FEED	0.02-0.04	0.04-0.06			0.04-0.10	0.06-0.12	0.12-0.18	0.14-0.20	
7	Low alloy steel	50	RPM	15920	7960	70	RPM	5310	3980	3180	2650	
			FEED	0.02-0.04	0.04-0.06			0.04-0.10	0.06-0.12	0.12-0.18	0.14-0.20	
M	12	Stainless steel	40	RPM	12730	6370	50	RPM	5310	3980	3180	2650
				FEED	0.02-0.04	0.02-0.04			0.03-0.05	0.05-0.09	0.07-0.11	0.08-0.12
	13	Stainless steel	25	RPM	7960	3980	40	RPM	4240	3180	2550	2120
FEED				0.02-0.04	0.02-0.04	0.03-0.05			0.05-0.09	0.07-0.11	0.08-0.12	
14	Stainless steel	45	RPM	14320	7160	60	RPM	6370	4770	3820	3180	
			FEED	0.02-0.04	0.02-0.04			0.04-0.06	0.06-0.10	0.08-0.12	0.09-0.13	
N	21	Aluminum-wrought alloy	130	RPM	41380	20690	180	RPM	19100	14320	11460	9550
				FEED	0.04~0.10	0.08~0.14			0.14~0.20	0.19~0.25	0.20~0.26	0.22~0.28
	22	Aluminum-wrought alloy	130	RPM	41380	20690	180	RPM	19100	14320	11460	9550
				FEED	0.04~0.10	0.08~0.14			0.14~0.20	0.19~0.25	0.20~0.26	0.22~0.28
23	Aluminum-cast, alloyed	110	RPM	35010	17510	160	RPM	16980	12730	10190	8490	
			FEED	0.04~0.10	0.08~0.14			0.14~0.20	0.19~0.25	0.20~0.26	0.22~0.28	
24	Aluminum-cast, alloyed	110	RPM	35010	17510	160	RPM	16980	12730	10190	8490	
			FEED	0.04~0.10	0.08~0.14			0.14~0.20	0.19~0.25	0.20~0.26	0.22~0.28	
25	Aluminum-cast, alloyed	90	RPM	28650	14320	130	RPM	13790	10350	8280	6900	
			FEED	0.04~0.08	0.06~0.10			0.12~0.18	0.16~0.22	0.17~0.23	0.19~0.25	
S	37	Titanium Alloys	25	RPM	7960	3980	40	RPM	4240	3180	2550	2120
				FEED	0.01-0.03	0.01-0.03			0.02-0.04	0.04-0.08	0.06-0.10	0.07-0.11

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)						
					8.0	10.0	12.0	14.0	16.0	18.0	20.0
P	2	Non-alloy steel	100	RPM	3980	3180	2650	2270	1990	1770	1590
				FEED	0.16-0.22	0.18-0.24	0.19-0.27	0.21-0.39	0.23-0.31	0.26-0.36	0.28-0.38
	3	Non-alloy steel	100	RPM	2790	2230	1860	1590	1390	1240	1110
				FEED	0.16-0.22	0.18-0.24	0.19-0.27	0.21-0.39	0.23-0.31	0.26-0.36	0.28-0.38
6	Low alloy steel	100	RPM	2790	2230	1860	1590	1390	1240	1110	
			FEED	0.16-0.22	0.18-0.24	0.19-0.27	0.21-0.39	0.23-0.31	0.26-0.36	0.28-0.38	
7	Low alloy steel	70	RPM	1990	1590	1330	1140	990	880	800	
			FEED	0.16-0.22	0.18-0.24	0.19-0.27	0.21-0.39	0.23-0.31	0.26-0.36	0.28-0.38	
M	12	Stainless steel	50	RPM	1990	1590	1330	1140	990	880	800
				FEED	0.09-0.13	0.10-0.15	0.11-0.16	0.12-0.17	0.13-0.18	0.14-0.19	0.15-0.20
	13	Stainless steel	40	RPM	1590	1270	1060	910	800	710	640
FEED				0.09-0.13	0.10-0.15	0.11-0.16	0.12-0.17	0.13-0.18	0.14-0.19	0.15-0.20	
14	Stainless steel	60	RPM	2390	1910	1590	1360	1190	1060	950	
			FEED	0.10-0.14	0.11-0.16	0.12-0.17	0.13-0.18	0.14-0.19	0.15-0.20	0.16-0.21	
N	21	Aluminum-wrought alloy	180	RPM	7160	5730	4770	4090	3580	3180	2860
				FEED	0.24~0.30	0.26~0.32	0.28~0.34	0.30~0.36	0.32~0.38	0.33~0.43	0.35~0.45
	22	Aluminum-wrought alloy	180	RPM	7160	5730	4770	4090	3580	3180	2860
				FEED	0.24~0.30	0.26~0.32	0.28~0.34	0.30~0.36	0.32~0.38	0.33~0.43	0.35~0.45
23	Aluminum-cast, alloyed	160	RPM	6370	5090	4240	3640	3180	2830	2550	
			FEED	0.24~0.30	0.26~0.32	0.28~0.34	0.30~0.36	0.32~0.38	0.33~0.43	0.35~0.45	
24	Aluminum-cast, alloyed	160	RPM	6370	5090	4240	3640	3180	2830	2550	
			FEED	0.24~0.30	0.26~0.32	0.28~0.34	0.30~0.36	0.32~0.38	0.33~0.43	0.35~0.45	
25	Aluminum-cast, alloyed	130	RPM	5170	4140	3450	2960	2590	2300	2070	
			FEED	0.21~0.27	0.23~0.29	0.25~0.31	0.27~0.33	0.28~0.34	0.28~0.38	0.30~0.40	
S	37	Titanium Alloys	40	RPM	1590	1270	1060	910	800	710	640
				FEED	0.08-0.12	0.09-0.14	0.10-0.15	0.11-0.16	0.12-0.17	0.13-0.18	0.14-0.19

► Recommend to reduce the feed rate as following

**Feed 100%** : DH451(3xD), DH452(5xD) **Feed 85%** : DH453(8xD)