



## TYPHOON PU-HPU

HIGH PERFORMANCE - UNIVERSAL APPLICATION

- Universal high performance drills for ISO P, M, K, N, S.
- Punte universali ad alto rendimento per applicazione su materiali ISO P, M, K, N, S.
- Universelle Hochleistungsbohrer für Anwendungen auf den Materialien ISO P, M, K, N, S.
- Forets universels haute performance pour des applications sur des matériaux ISO P, M, K, N, S.
- Puntas universales de alto rendimiento para aplicación en materiales ISO P, M, K, N, S.
- Универсальные высокопроизводительные сверла для обработки материалов по ISO P, M, K, N, S.

INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

**TYPHOON PU-HPU**
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**PU**

**HPU**


- Self-centering geometry for accurate holes
- Reinforced geometry for higher feed rate
- Wide flute for smoother chip ejection
- Straight cutting edge: high chipping resistance and short chip shape
- Thicker chisel edge: enables higher feed rate
- 45° chamfer for wear and chipping protection
- Selected substrate and last generation coating for great wear resistance and long life even at high cutting speed



- Affûtage autocentré pour des trous précis
- Géométrie renforcée pour des vitesses d'avance élevées
- Géométrie des goujures large pour une évacuation meilleure des copeaux
- Géométrie de l'arête rectiligne : très robuste, elle permet de former des copeaux courts
- Géométrie de l'arête transversale : épaissie pour permettre des avancements plus élevés
- Angles de l'arête biseautés à 45° pour les protéger de l'usure et des éclats
- Substrat en carbure et revêtement spécifique pour garantir une longue durée à des vitesses de coupe élevées



- Affilatura autocentrante per fori precisi
- Geometria rinforzata per elevati avanzamenti
- Geometria gole ampia per una migliore evacuazione dei trucioli
- Geometria del tagliente rettilineo: molto robusta che permette di formare trucioli corti
- Geometria del tagliente trasversale: inspessita per consentire avanzamenti più elevati
- Spigoli del tagliente smussati a 45° per proteggerli da usura e scheggiature
- Substrato in metallo duro e rivestimento specifici per garantire lunga durata anche a velocità di taglio elevate



- Afilado autocentrante para agujeros precisos
- Geometría reforzada para elevados avances
- Geometría de las ranuras amplia para una mejor evacuación de las virutas
- Geometría del filo rectilíneo: muy resistente, que permite formar virutas cortas
- Geometría del filo transversal: engrosada para permitir avances más elevados
- Ángulos del filo redondeados a 45° para protegerlos del desgaste y astillado
- Sustrato en metal duro y revestimiento específicos para garantizar una larga duración incluso a velocidades de corte elevadas



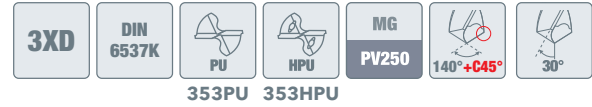
- Selbstzentrierender Schliff für präzise Bohrungen
- Verstärkte Geometrie für erhöhten Vorschub
- Breite Geometrie der Nuten für eine verbesserte Späneabführung
- Gerade Geometrie der Schneidkante: äußerst robust, wodurch kurze Späne erzeugt werden
- Transversale Geometrie der Schneidkante: verstärkt für erhöhten Vorschub
- Im 45°-Winkel angefasste Schneidkanten zum Schutz gegen Verschleiß und Absplintern
- Trägermaterial aus Hartmetall und spezielle Beschichtung zur Gewährleistung einer langen Lebensdauer auch bei hohen Schnittgeschwindigkeiten



- Самоцентрирующаяся заточка для сверления отверстий высокой точности
- Усиленная геометрия для работы с высокими подачами
- Широкие канавки для хорошего отвода стружки
- Прямые режущие кромки: формирование короткой стружки и предотвращение ее пакетирования
- Увеличенная перемычка: позволяет увеличить подачу
- Фаски 45° для защиты от износа и пакетирования стружки
- Специальное покрытие последнего поколения для повышения стойкости и надежности при работе с высокими скоростями резания

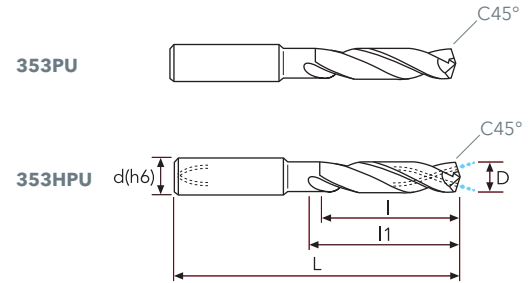
# 353PU-353HPU

universal application, high productivity,  
PU and HPU (through coolant)



P	M	K	N	S	H
★	★	★	☆	★	

★ 1st choice ☆ suitable



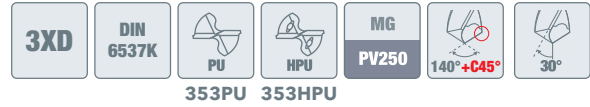
D(m7)	D Tol.	d(h6)	l	l1	L	353PU		353HPU	
						EDP No.	Stock	EDP No.	Stock
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3.10	+0.016/+0.004	6	14	20	62	353PU0310	●	353HPU0310	●
3.20	+0.016/+0.004	6	14	20	62	353PU0320	●	353HPU0320	●
3.30	+0.016/+0.004	6	14	20	62	353PU0330	●	353HPU0330	●
3.40	+0.016/+0.004	6	14	20	62	353PU0340	●	353HPU0340	●
3.50	+0.016/+0.004	6	14	20	62	353PU0350	●	353HPU0350	●
3.60	+0.016/+0.004	6	14	20	62	353PU0360	●	353HPU0360	●
3.70	+0.016/+0.004	6	14	20	62	353PU0370	●	353HPU0370	●
3.80	+0.016/+0.004	6	17	24	66	353PU0380	●	353HPU0380	●
3.90	+0.016/+0.004	6	17	24	66	353PU0390	●	353HPU0390	●
4.00	+0.016/+0.004	6	17	24	66	353PU0400	●	353HPU0400	●
4.10	+0.016/+0.004	6	17	24	66	353PU0410	●	353HPU0410	●
4.20	+0.016/+0.004	6	17	24	66	353PU0420	●	353HPU0420	●
4.30	+0.016/+0.004	6	17	24	66	353PU0430	●	353HPU0430	●
4.40	+0.016/+0.004	6	17	24	66	353PU0440	●	353HPU0440	●
4.50	+0.016/+0.004	6	17	24	66	353PU0450	●	353HPU0450	●
4.60	+0.016/+0.004	6	17	24	66	353PU0460	●	353HPU0460	●
4.70	+0.016/+0.004	6	17	24	66	353PU0470	●	353HPU0470	●
4.80	+0.016/+0.004	6	20	28	66	353PU0480	●	353HPU0480	●
4.90	+0.016/+0.004	6	20	28	66	353PU0490	●	353HPU0490	●
5.00	+0.016/+0.004	6	20	28	66	353PU0500	●	353HPU0500	●
5.10	+0.016/+0.004	6	20	28	66	353PU0510	●	353HPU0510	●
5.20	+0.016/+0.004	6	20	28	66	353PU0520	●	353HPU0520	●
5.30	+0.016/+0.004	6	20	28	66	353PU0530	●	353HPU0530	●
5.40	+0.016/+0.004	6	20	28	66	353PU0540	●	353HPU0540	●
5.50	+0.016/+0.004	6	20	28	66	353PU0550	●	353HPU0550	●
5.60	+0.016/+0.004	6	20	28	66	353PU0560	●	353HPU0560	●
5.70	+0.016/+0.004	6	20	28	66	353PU0570	●	353HPU0570	●
5.80	+0.016/+0.004	6	20	28	66	353PU0580	●	353HPU0580	●
5.90	+0.016/+0.004	6	20	28	66	353PU0590	●	353HPU0590	●
6.00	+0.016/+0.004	6	20	28	66	353PU0600	●	353HPU0600	●
6.10	+0.021/+0.006	8	24	34	79	353PU0610	●	353HPU0610	●
6.20	+0.021/+0.006	8	24	34	79	353PU0620	●	353HPU0620	●
6.30	+0.021/+0.006	8	24	34	79	353PU0630	●	353HPU0630	●
6.40	+0.021/+0.006	8	24	34	79	353PU0640	●	353HPU0640	●
6.50	+0.021/+0.006	8	24	34	79	353PU0650	●	353HPU0650	●
6.60	+0.021/+0.006	8	24	34	79	353PU0660	●	353HPU0660	●
6.70	+0.021/+0.006	8	24	34	79	353PU0670	●	353HPU0670	●
6.80	+0.021/+0.006	8	24	34	79	353PU0680	●	353HPU0680	●

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CARBIDE BURRS

● stock standard ○ non-standard stock ▽ stock exhaustion

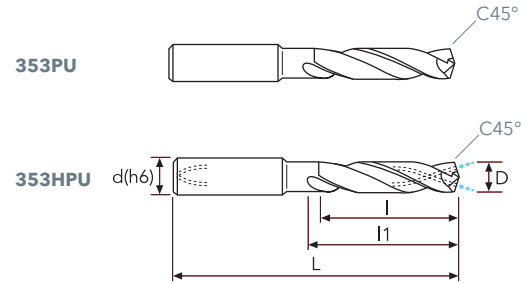
# 353PU-353HPU

universal application, high productivity,  
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★	★	★	☆	★	

★ 1st choice ☆ suitable

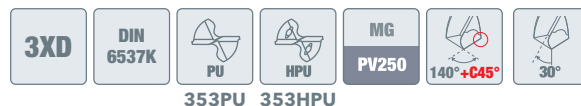


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						EDP No.	Stock	EDP No.	Stock
6.90	+0.021/+0.006	8	24	34	79	353PU0690	●	353HPU0690	●
7.00	+0.021/+0.006	8	24	34	79	353PU0700	●	353HPU0700	●
7.10	+0.021/+0.006	8	29	41	79	353PU0710	●	353HPU0710	●
7.20	+0.021/+0.006	8	29	41	79	353PU0720	●	353HPU0720	●
7.30	+0.021/+0.006	8	29	41	79	353PU0730	●	353HPU0730	●
7.40	+0.021/+0.006	8	29	41	79	353PU0740	●	353HPU0740	●
7.50	+0.021/+0.006	8	29	41	79	353PU0750	●	353HPU0750	●
7.60	+0.021/+0.006	8	29	41	79	353PU0760	●	353HPU0760	●
7.70	+0.021/+0.006	8	29	41	79	353PU0770	●	353HPU0770	●
7.80	+0.021/+0.006	8	29	41	79	353PU0780	●	353HPU0780	●
7.90	+0.021/+0.006	8	29	41	79	353PU0790	●	353HPU0790	●
8.00	+0.021/+0.006	8	29	41	79	353PU0800	●	353HPU0800	●
8.10	+0.021/+0.006	10	35	47	89	353PU0810	●	353HPU0810	●
8.20	+0.021/+0.006	10	35	47	89	353PU0820	●	353HPU0820	●
8.30	+0.021/+0.006	10	35	47	89	353PU0830	●	353HPU0830	●
8.40	+0.021/+0.006	10	35	47	89	353PU0840	●	353HPU0840	●
8.50	+0.021/+0.006	10	35	47	89	353PU0850	●	353HPU0850	●
8.60	+0.021/+0.006	10	35	47	89	353PU0860	●	353HPU0860	●
8.70	+0.021/+0.006	10	35	47	89	353PU0870	●	353HPU0870	●
8.80	+0.021/+0.006	10	35	47	89	353PU0880	●	353HPU0880	●
8.90	+0.021/+0.006	10	35	47	89	353PU0890	●	353HPU0890	●
9.00	+0.021/+0.006	10	35	47	89	353PU0900	●	353HPU0900	●
9.10	+0.021/+0.006	10	35	47	89	353PU0910	●	353HPU0910	●
9.20	+0.021/+0.006	10	35	47	89	353PU0920	●	353HPU0920	●
9.30	+0.021/+0.006	10	35	47	89	353PU0930	●	353HPU0930	●
9.40	+0.021/+0.006	10	35	47	89	353PU0940	●	353HPU0940	●
9.50	+0.021/+0.006	10	35	47	89	353PU0950	●	353HPU0950	●
9.60	+0.021/+0.006	10	35	47	89	353PU0960	●	353HPU0960	●
9.70	+0.021/+0.006	10	35	47	89	353PU0970	●	353HPU0970	●
9.80	+0.021/+0.006	10	35	47	89	353PU0980	●	353HPU0980	●
9.90	+0.021/+0.006	10	35	47	89	353PU0990	●	353HPU0990	●
10.00	+0.021/+0.006	10	35	47	89	353PU1000	●	353HPU1000	●
10.10	+0.025/+0.007	12	40	55	102	353PU1010	●	353HPU1010	●
10.20	+0.025/+0.007	12	40	55	102	353PU1020	●	353HPU1020	●
10.30	+0.025/+0.007	12	40	55	102	353PU1030	●	353HPU1030	●
10.40	+0.025/+0.007	12	40	55	102	353PU1040	●	353HPU1040	●
10.50	+0.025/+0.007	12	40	55	102	353PU1050	●	353HPU1050	●
10.60	+0.025/+0.007	12	40	55	102	353PU1060	●	353HPU1060	●
10.70	+0.025/+0.007	12	40	55	102	353PU1070	●	353HPU1070	●

● stock standard ○ non-standard stock ▽ stock exhaustion

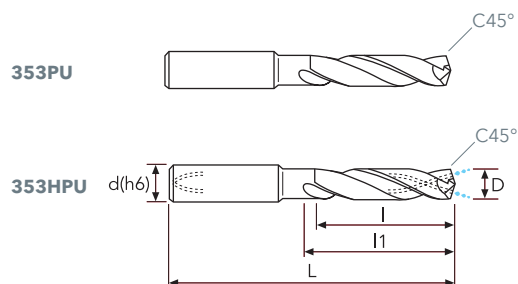
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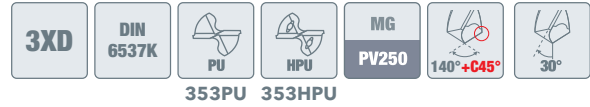
D(m7)	D Tol.	d(h6)	l	l1	L	353PU		353HPU	
						EDP No.	Stock	EDP No.	Stock
10.80	+0.025/+0.007	12	40	55	102	353PU1080	●	353HPU1080	●
10.90	+0.025/+0.007	12	40	55	102	353PU1090	●	353HPU1090	●
11.00	+0.025/+0.007	12	40	55	102	353PU1100	●	353HPU1100	●
11.10	+0.025/+0.007	12	40	55	102	353PU1110	●	353HPU1110	●
11.20	+0.025/+0.007	12	40	55	102	353PU1120	●	353HPU1120	●
11.30	+0.025/+0.007	12	40	55	102	353PU1130	●	353HPU1130	●
11.40	+0.025/+0.007	12	40	55	102	353PU1140	●	353HPU1140	●
11.50	+0.025/+0.007	12	40	55	102	353PU1150	●	353HPU1150	●
11.60	+0.025/+0.007	12	40	55	102	353PU1160	●	353HPU1160	●
11.70	+0.025/+0.007	12	40	55	102	353PU1170	●	353HPU1170	●
11.80	+0.025/+0.007	12	40	55	102	353PU1180	●	353HPU1180	●
11.90	+0.025/+0.007	12	40	55	102	353PU1190	●	353HPU1190	●
12.00	+0.025/+0.007	12	40	55	102	353PU1200	●	353HPU1200	●
12.10	+0.025/+0.007	14	43	60	107	353PU1210	●	353HPU1210	●
12.20	+0.025/+0.007	14	43	60	107	353PU1220	●	353HPU1220	●
12.30	+0.025/+0.007	14	43	60	107	353PU1230	●	353HPU1230	●
12.40	+0.025/+0.007	14	43	60	107	353PU1240	●	353HPU1240	●
12.50	+0.025/+0.007	14	43	60	107	353PU1250	●	353HPU1250	●
12.60	+0.025/+0.007	14	43	60	107	353PU1260	●	353HPU1260	●
12.70	+0.025/+0.007	14	43	60	107	353PU1270	●	353HPU1270	●
12.80	+0.025/+0.007	14	43	60	107	353PU1280	●	353HPU1280	●
12.90	+0.025/+0.007	14	43	60	107	353PU1290	●	353HPU1290	●
13.00	+0.025/+0.007	14	43	60	107	353PU1300	●	353HPU1300	●
13.10	+0.025/+0.007	14	43	60	107	353PU1310	●	353HPU1310	●
13.20	+0.025/+0.007	14	43	60	107	353PU1320	●	353HPU1320	●
13.30	+0.025/+0.007	14	43	60	107	353PU1330	●	353HPU1330	●
13.40	+0.025/+0.007	14	43	60	107	353PU1340	●	353HPU1340	●
13.50	+0.025/+0.007	14	43	60	107	353PU1350	●	353HPU1350	●
13.60	+0.025/+0.007	14	43	60	107	353PU1360	●	353HPU1360	●
13.70	+0.025/+0.007	14	43	60	107	353PU1370	●	353HPU1370	●
13.80	+0.025/+0.007	14	43	60	107	353PU1380	●	353HPU1380	●
13.90	+0.025/+0.007	14	43	60	107	353PU1390	●	353HPU1390	●
14.00	+0.025/+0.007	14	43	60	107	353PU1400	●	353HPU1400	●
14.10	+0.025/+0.007	16	45	65	115	353PU1410	●	353HPU1410	●
14.20	+0.025/+0.007	16	45	65	115	353PU1420	●	353HPU1420	●
14.30	+0.025/+0.007	16	45	65	115	353PU1430	●	353HPU1430	●
14.50	+0.025/+0.007	16	45	65	115	353PU1450	●	353HPU1450	●
14.60	+0.025/+0.007	16	45	65	115	353PU1460	●	353HPU1460	●
14.70	+0.025/+0.007	16	45	65	115	353PU1470	●		

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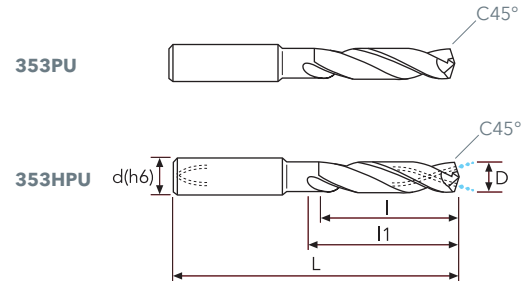
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D(m7)	D Tol.	d(h6)	l	l1	L	353PU		353HPU	
						EDP No.	Stock	EDP No.	Stock
14.80	+0.025/+0.007	16	45	65	115	353PU1480	●	353HPU1480	●
15.00	+0.025/+0.007	16	65	65	115	353PU1500	●	353HPU1500	●
15.10	+0.025/+0.007	16	65	65	115	353PU1510	●	353HPU1510	●
15.20	+0.025/+0.007	16	65	65	115	353PU1520	●	353HPU1520	●
15.30	+0.025/+0.007	16	65	65	115	353PU1530	●	353HPU1530	●
15.50	+0.025/+0.007	16	65	65	115	353PU1550	●	353HPU1550	●
15.60	+0.025/+0.007	16	65	65	115	353PU1560	●	353HPU1560	●
15.70	+0.025/+0.007	16	65	65	115	353PU1570	●	353HPU1570	●
15.80	+0.025/+0.007	16	65	65	115	353PU1580	●	353HPU1580	●
16.00	+0.025/+0.007	16	65	65	115	353PU1600	●	353HPU1600	●
16.10	+0.025/+0.007	18	73	73	123			353HPU1610	●
16.20	+0.025/+0.007	18	73	73	123			353HPU1620	●
16.30	+0.025/+0.007	18	73	73	123			353HPU1630	●
16.50	+0.025/+0.007	18	73	73	123	353PU1650	●	353HPU1650	●
16.70	+0.025/+0.007	18	73	73	123			353HPU1670	●
16.80	+0.025/+0.007	18	73	73	123			353HPU1680	●
17.00	+0.025/+0.007	18	73	73	123	353PU1700	●	353HPU1700	●
17.10	+0.025/+0.007	18	73	73	123			353HPU1710	●
17.20	+0.025/+0.007	18	73	73	123			353HPU1720	●
17.50	+0.025/+0.007	18	73	73	123	353PU1750	●	353HPU1750	●
17.60	+0.025/+0.007	18	73	73	123			353HPU1760	●
17.70	+0.025/+0.007	18	73	73	123			353HPU1770	●
17.80	+0.025/+0.007	18	73	73	123			353HPU1780	●
18.00	+0.025/+0.007	18	73	73	123	353PU1800	●	353HPU1800	●
18.10	+0.029/+0.008	20	79	79	131			353HPU1810	●
18.20	+0.029/+0.008	20	79	79	131			353HPU1820	●
18.30	+0.029/+0.008	20	79	79	131			353HPU1830	●
18.50	+0.029/+0.008	20	79	79	131	353PU1850	●	353HPU1850	●
18.60	+0.029/+0.008	20	79	79	131			353HPU1860	●
18.70	+0.029/+0.008	20	79	79	131			353HPU1870	●
18.80	+0.029/+0.008	20	79	79	131			353HPU1880	●
19.00	+0.029/+0.008	20	79	79	131	353PU1900	●	353HPU1900	●
19.20	+0.029/+0.008	20	79	79	131			353HPU1920	●
19.30	+0.029/+0.008	20	79	79	131			353HPU1930	●
19.50	+0.029/+0.008	20	79	79	131	353PU1950	●	353HPU1950	●
19.60	+0.029/+0.008	20	79	79	131			353HPU1960	●
19.80	+0.029/+0.008	20	79	79	131			353HPU1980	●
20.00	+0.029/+0.008	20	79	79	131	353PU2000	●	353HPU2000	●

● stock standard ○ non-standard stock ▽ stock exhaustion

### 353PU

	Material Group ISO 513	P1 P2			P3 P4			P5			P6		
	Hardness/Rm	500-700 N/mm <sup>2</sup>			600-1000 N/mm <sup>2</sup>			900-1200 N/mm <sup>2</sup>			1200-1400 N/mm <sup>2</sup>		
	Vc (m/min)	110-130			90-110			60-80			40-60		
	D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)
3	12740	0.110	1400	10620	0.094	990	7430	0.083	610	5310	0.066	350	
4	9550	0.120	1150	7960	0.102	810	5570	0.090	500	3980	0.072	290	
5	7640	0.130	990	6370	0.111	700	4460	0.098	430	3180	0.078	250	
6	6370	0.145	920	5310	0.123	650	3720	0.109	400	2650	0.087	230	
7	5460	0.160	870	4550	0.136	620	3180	0.120	380	2270	0.096	220	
8	4780	0.175	840	3980	0.149	590	2790	0.131	370	1990	0.105	210	
9	4250	0.190	810	3540	0.162	570	2480	0.143	350	1770	0.114	200	
10	3820	0.205	780	3180	0.174	550	2230	0.154	340	1590	0.123	200	
11	3470	0.220	760	2900	0.187	540	2030	0.165	330	1450	0.132	190	
12	3180	0.240	760	2650	0.204	540	1860	0.180	330	1330	0.144	190	
13	2940	0.260	760	2450	0.221	540	1710	0.195	330	1220	0.156	190	
14	2730	0.285	780	2270	0.242	550	1590	0.214	340	1140	0.171	190	
15	2550	0.310	790	2120	0.264	560	1490	0.233	350	1060	0.186	200	
16	2390	0.335	800	1990	0.285	570	1390	0.251	350	1000	0.201	200	
17	2250	0.360	810	1870	0.306	570	1310	0.270	350	940	0.216	200	
18	2120	0.385	820	1770	0.327	580	1240	0.289	360	880	0.231	200	
19	2010	0.410	820	1680	0.349	590	1170	0.308	360	840	0.246	210	
20	1910	0.435	830	1590	0.370	590	1110	0.326	360	800	0.261	210	

### 353HPU

	Material Group ISO 513	P1 P2			P3 P4			P5			P6		
	Hardness/Rm	500-700 N/mm <sup>2</sup>			600-1000 N/mm <sup>2</sup>			900-1200 N/mm <sup>2</sup>			1200-1400 N/mm <sup>2</sup>		
	Vc (m/min)	140-160			120-150			90-110			60-80		
	D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)
3	15920	0.127	2010	13800	0.114	1570	10620	0.101	1070	7430	0.089	660	
4	11940	0.150	1790	10350	0.135	1390	7960	0.120	950	5570	0.105	580	
5	9550	0.173	1650	8280	0.155	1290	6370	0.138	880	4460	0.121	540	
6	7960	0.196	1560	6900	0.176	1210	5310	0.156	830	3720	0.137	510	
7	6820	0.219	1490	5910	0.197	1160	4550	0.175	800	3180	0.153	490	
8	5970	0.242	1440	5180	0.217	1130	3980	0.193	770	2790	0.169	470	
9	5310	0.265	1400	4600	0.238	1100	3540	0.212	750	2480	0.185	460	
10	4780	0.288	1370	4140	0.259	1070	3180	0.230	730	2230	0.201	450	
11	4340	0.299	1300	3760	0.269	1010	2900	0.239	690	2030	0.209	420	
12	3980	0.322	1280	3450	0.290	1000	2650	0.258	680	1860	0.225	420	
13	3670	0.345	1270	3180	0.311	990	2450	0.276	680	1710	0.242	410	
14	3410	0.368	1250	2960	0.331	980	2270	0.294	670	1590	0.258	410	
15	3180	0.391	1240	2760	0.352	970	2120	0.313	660	1490	0.274	410	
16	2990	0.414	1240	2590	0.373	970	1990	0.331	660	1390	0.290	400	
17	2810	0.426	1200	2440	0.383	930	1870	0.340	640	1310	0.298	390	
18	2650	0.437	1160	2300	0.393	900	1770	0.350	620	1240	0.306	380	
19	2510	0.449	1130	2180	0.404	880	1680	0.359	600	1170	0.314	370	
20	2390	0.460	1100	2070	0.414	860	1590	0.368	590	1110	0.322	360	

- INFO
- TYPHOON TA-HTA-4HTA
- TYPHOON PU-HPU
- TYPHOON SUH
- TYPHOON ALH
- TYPHOON HRC
- TYPHOON SUH MINI
- TYPHOON HL
- C-SD-TA
- LFTA
- SUTA
- HSS-HSS/CO DRILLS
- G2
- MDTA
- HF-VH/UP
- MEF
- ALU
- MEX
- UH
- HSS/CO-HSSP END MILLS
- CARBIDE BURRS

### 353PU

Material Group ISO 513	M1 M2			M3			M4			M5		
	< 750 N/mm <sup>2</sup>			550-850 N/mm <sup>2</sup>			650-950 N/mm <sup>2</sup>			850-1200 N/mm <sup>2</sup>		
	45-55			35-45			25-35			20-30		
Vc (m/min)	n	fn	Vf	n	fn	Vf	n	fn	Vf	n	fn	Vf
D (mm)	(rpm)	(mm/rev)	(mm/min)	(rpm)	(mm/rev)	(mm/min)	(rpm)	(mm/rev)	(mm/min)	(rpm)	(mm/rev)	(mm/min)
3	5310	0.077	410	4250	0.065	280	3180	0.058	180	2650	0.046	120
4	3980	0.084	330	3180	0.071	230	2390	0.063	150	1990	0.050	100
5	3180	0.091	290	2550	0.077	200	1910	0.068	130	1590	0.055	90
6	2650	0.102	270	2120	0.086	180	1590	0.076	120	1330	0.061	80
7	2270	0.112	250	1820	0.095	170	1360	0.084	110	1140	0.067	80
8	1990	0.123	240	1590	0.104	170	1190	0.092	110	1000	0.074	70
9	1770	0.133	240	1420	0.113	160	1060	0.100	110	880	0.080	70
10	1590	0.144	230	1270	0.122	150	960	0.108	100	800	0.086	70
11	1450	0.154	220	1160	0.131	150	870	0.116	100	720	0.092	70
12	1330	0.168	220	1060	0.143	150	800	0.126	100	660	0.101	70
13	1220	0.182	220	980	0.155	150	730	0.137	100	610	0.109	70
14	1140	0.200	230	910	0.170	150	680	0.150	100	570	0.120	70
15	1060	0.217	230	850	0.184	160	640	0.163	100	530	0.130	70
16	1000	0.235	230	800	0.199	160	600	0.176	110	500	0.141	70
17	940	0.252	240	750	0.214	160	560	0.189	110	470	0.151	70
18	880	0.270	240	710	0.229	160	530	0.202	110	440	0.162	70
19	840	0.287	240	670	0.244	160	500	0.215	110	420	0.172	70
20	800	0.305	240	640	0.259	170	480	0.228	110	400	0.183	70



### 353HPU

Material Group ISO 513	M1 M2			M3			M4			M5		
	< 750 N/mm <sup>2</sup>			550-850 N/mm <sup>2</sup>			650-950 N/mm <sup>2</sup>			850-1200 N/mm <sup>2</sup>		
	60-80			50-70			35-45			20-40		
Vc (m/min)	n	fn	Vf	n	fn	Vf	n	fn	Vf	n	fn	Vf
D (mm)	(rpm)	(mm/rev)	(mm/min)	(rpm)	(mm/rev)	(mm/min)	(rpm)	(mm/rev)	(mm/min)	(rpm)	(mm/rev)	(mm/min)
3	7430	0.082	610	6370	0.066	420	4250	0.058	240	3180	0.049	160
4	5570	0.097	540	4780	0.078	370	3180	0.068	220	2390	0.058	140
5	4460	0.112	500	3820	0.090	340	2550	0.078	200	1910	0.067	130
6	3720	0.127	470	3180	0.102	320	2120	0.089	190	1590	0.076	120
7	3180	0.142	450	2730	0.114	310	1820	0.099	180	1360	0.085	120
8	2790	0.157	440	2390	0.126	300	1590	0.110	170	1190	0.094	110
9	2480	0.172	430	2120	0.138	290	1420	0.120	170	1060	0.103	110
10	2230	0.187	420	1910	0.150	290	1270	0.131	170	960	0.112	110
11	2030	0.194	390	1740	0.155	270	1160	0.136	160	870	0.117	100
12	1860	0.209	390	1590	0.167	270	1060	0.147	160	800	0.126	100
13	1710	0.224	380	1470	0.179	260	980	0.157	150	730	0.135	100
14	1590	0.239	380	1360	0.191	260	910	0.167	150	680	0.144	100
15	1490	0.254	380	1270	0.203	260	850	0.178	150	640	0.152	100
16	1390	0.269	370	1190	0.215	260	800	0.188	150	600	0.161	100
17	1310	0.277	360	1120	0.221	250	750	0.194	150	560	0.166	90
18	1240	0.284	350	1060	0.227	240	710	0.199	140	530	0.170	90
19	1170	0.292	340	1010	0.233	240	670	0.204	140	500	0.175	90
20	1110	0.299	330	960	0.239	230	640	0.209	130	480	0.179	90





### 353PU

	Material Group ISO 513	K1			K2			K3			K4		
	Hardness/Rm	150-250 HB			150-350 HB			120-260 HB			250-500 HB		
	Vc (m/min)	110-130			90-110			60-80			40-60		
	D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)
3	12740	0.110	1400	10620	0.094	990	7430	0.083	610	5310	0.066	350	
4	9550	0.120	1150	7960	0.102	810	5570	0.090	500	3980	0.072	290	
5	7640	0.130	990	6370	0.111	700	4460	0.098	430	3180	0.078	250	
6	6370	0.145	920	5310	0.123	650	3720	0.109	400	2650	0.087	230	
7	5460	0.160	870	4550	0.136	620	3180	0.120	380	2270	0.096	220	
8	4780	0.175	840	3980	0.149	590	2790	0.131	370	1990	0.105	210	
9	4250	0.190	810	3540	0.162	570	2480	0.143	350	1770	0.114	200	
10	3820	0.205	780	3180	0.174	550	2230	0.154	340	1590	0.123	200	
11	3470	0.220	760	2900	0.187	540	2030	0.165	330	1450	0.132	190	
12	3180	0.240	760	2650	0.204	540	1860	0.180	330	1330	0.144	190	
13	2940	0.260	760	2450	0.221	540	1710	0.195	330	1220	0.156	190	
14	2730	0.285	780	2270	0.242	550	1590	0.214	340	1140	0.171	190	
15	2550	0.310	790	2120	0.264	560	1490	0.233	350	1060	0.186	200	
16	2390	0.335	800	1990	0.285	570	1390	0.251	350	1000	0.201	200	
17	2250	0.360	810	1870	0.306	570	1310	0.270	350	940	0.216	200	
18	2120	0.385	820	1770	0.327	580	1240	0.289	360	880	0.231	200	
19	2010	0.410	820	1680	0.349	590	1170	0.308	360	840	0.246	210	
20	1910	0.435	830	1590	0.370	590	1110	0.326	360	800	0.261	210	

### 353HPU

	Material Group ISO 513	K1			K2			K3			K4		
	Hardness/Rm	150-250 HB			150-350 HB			120-260 HB			250-500 HB		
	Vc (m/min)	120-140			100-120			80-100			60-80		
	D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)
3	13800	0.127	1750	11680	0.114	1330	9550	0.101	970	7430	0.089	660	
4	10350	0.150	1550	8760	0.135	1180	7170	0.120	860	5570	0.105	580	
5	8280	0.173	1430	7010	0.155	1090	5730	0.138	790	4460	0.121	540	
6	6900	0.196	1350	5840	0.176	1030	4780	0.156	750	3720	0.137	510	
7	5910	0.219	1290	5000	0.197	980	4090	0.175	710	3180	0.153	490	
8	5180	0.242	1250	4380	0.217	950	3580	0.193	690	2790	0.169	470	
9	4600	0.265	1220	3890	0.238	930	3180	0.212	670	2480	0.185	460	
10	4140	0.288	1190	3500	0.259	910	2870	0.230	660	2230	0.201	450	
11	3760	0.299	1120	3180	0.269	860	2610	0.239	620	2030	0.209	420	
12	3450	0.322	1110	2920	0.290	850	2390	0.258	620	1860	0.225	420	
13	3180	0.345	1100	2690	0.311	840	2200	0.276	610	1710	0.242	410	
14	2960	0.368	1090	2500	0.331	830	2050	0.294	600	1590	0.258	410	
15	2760	0.391	1080	2340	0.352	820	1910	0.313	600	1490	0.274	410	
16	2590	0.414	1070	2190	0.373	820	1790	0.331	590	1390	0.290	400	
17	2440	0.426	1040	2060	0.383	790	1690	0.340	580	1310	0.298	390	
18	2300	0.437	1010	1950	0.393	770	1590	0.350	560	1240	0.306	380	
19	2180	0.449	980	1840	0.404	740	1510	0.359	540	1170	0.314	370	
20	2070	0.460	950	1750	0.414	720	1430	0.368	530	1110	0.322	360	

- INFO
- TYPHOON TA-HTA-4HTA
- TYPHOON PU-HPU
- TYPHOON SUH
- TYPHOON ALH
- TYPHOON HRC
- TYPHOON SUH MINI
- TYPHOON HL
- C-SD-TA
- LFTA
- SUTA
- HSS-HSS/CO DRILLS
- G2
- MDTA
- HF-VH/UP
- MEF
- ALU
- MEX
- UH
- HSS/CO-HSSP END MILLS
- CARBIDE BURRS

### 353PU

	Material Group ISO 513	N1 > 5%Si			N2			N3 N4					
	Hardness/Rm												
	Vc (m/min)	220-260			200-240			160-200					
D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)				
3	25480	0.132	3360	23350	0.119	2770	19110	0.106	2020				
4	19110	0.144	2750	17520	0.130	2270	14330	0.115	1650				
5	15290	0.156	2390	14010	0.140	1970	11460	0.125	1430				
6	12740	0.174	2220	11680	0.157	1830	9550	0.139	1330				
7	10920	0.192	2100	10010	0.173	1730	8190	0.154	1260				
8	9550	0.210	2010	8760	0.189	1660	7170	0.168	1200				
9	8490	0.228	1940	7780	0.205	1600	6370	0.182	1160				
10	7640	0.246	1880	7010	0.221	1550	5730	0.197	1130				
11	6950	0.264	1830	6370	0.238	1510	5210	0.211	1100				
12	6370	0.288	1830	5840	0.259	1510	4780	0.230	1100				
13	5880	0.312	1830	5390	0.281	1510	4410	0.250	1100				
14	5460	0.342	1870	5000	0.308	1540	4090	0.274	1120				
15	5100	0.372	1900	4670	0.335	1560	3820	0.298	1140				
16	4780	0.402	1920	4380	0.362	1580	3580	0.322	1150				
17	4500	0.432	1940	4120	0.389	1600	3370	0.346	1160				
18	4250	0.462	1960	3890	0.416	1620	3180	0.370	1180				
19	4020	0.492	1980	3690	0.443	1630	3020	0.394	1190				
20	3820	0.522	1990	3500	0.470	1640	2870	0.418	1200				



### 353HPU

	Material Group ISO 513	N1 > 5%Si			N2			N3 N4					
	Hardness/Rm												
	Vc (m/min)	240-280			220-260			180-220					
D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)				
3	27600	0.152	4190	25480	0.139	3550	21230	0.111	2360				
4	20700	0.179	3710	19110	0.164	3140	15920	0.132	2090				
5	16560	0.207	3430	15290	0.190	2900	12740	0.152	1930				
6	13800	0.235	3240	12740	0.215	2740	10620	0.172	1830				
7	11830	0.262	3100	10920	0.240	2620	9100	0.192	1750				
8	10350	0.290	3000	9550	0.266	2540	7960	0.213	1690				
9	9200	0.317	2920	8490	0.291	2470	7080	0.233	1650				
10	8280	0.345	2860	7640	0.316	2420	6370	0.253	1610				
11	7530	0.359	2700	6950	0.329	2290	5790	0.263	1520				
12	6900	0.386	2670	6370	0.354	2260	5310	0.283	1500				
13	6370	0.414	2640	5880	0.380	2230	4900	0.304	1490				
14	5910	0.442	2610	5460	0.405	2210	4550	0.324	1470				
15	5520	0.469	2590	5100	0.430	2190	4250	0.344	1460				
16	5180	0.497	2570	4780	0.455	2180	3980	0.364	1450				
17	4870	0.511	2490	4500	0.468	2110	3750	0.374	1400				
18	4600	0.524	2410	4250	0.481	2040	3540	0.385	1360				
19	4360	0.538	2350	4020	0.493	1980	3350	0.395	1320				
20	4140	0.552	2290	3820	0.506	1930	3180	0.405	1290				



- INFO
- TYPHOON TA-HTA-4HTA
- TYPHOON PU-HPU
- TYPHOON SUH
- TYPHOON ALH
- TYPHOON HRC
- TYPHOON SUH MINI
- TYPHOON HL
- C-SD-TA
- LFTA
- SUTA
- HSS-HSS/CO DRILLS
- G2
- MDTA
- HF VH/UP
- MEF
- ALU
- MEX
- UH
- HSS/CO-HSSP END MILLS
- CARBIDE BURRS

### 353PU

	Material Group ISO 513	S1 S2			S3			S4			S5		
	Hardness/Rm	< 35 HRC			35-45 HRC								
	Vc (m/min)	30-40			20-30			35-45			25-35		
	D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)
3	3720	0.050	180	2650	0.035	90	4250	0.047	200	3180	0.040	130	
4	2790	0.054	150	1990	0.038	80	3180	0.051	160	2390	0.043	100	
5	2230	0.059	130	1590	0.041	70	2550	0.056	140	1910	0.047	90	
6	1860	0.065	120	1330	0.046	60	2120	0.062	130	1590	0.052	80	
7	1590	0.072	110	1140	0.050	60	1820	0.068	120	1360	0.058	80	
8	1390	0.079	110	1000	0.055	60	1590	0.075	120	1190	0.063	70	
9	1240	0.086	110	880	0.060	50	1420	0.081	120	1060	0.068	70	
10	1110	0.092	100	800	0.065	50	1270	0.088	110	960	0.074	70	
11	1010	0.099	100	720	0.069	50	1160	0.094	110	870	0.079	70	
12	930	0.108	100	660	0.076	50	1060	0.103	110	800	0.086	70	
13	860	0.117	100	610	0.082	50	980	0.111	110	730	0.094	70	
14	800	0.128	100	570	0.090	50	910	0.122	110	680	0.103	70	
15	740	0.140	100	530	0.098	50	850	0.133	110	640	0.112	70	
16	700	0.151	110	500	0.106	50	800	0.143	110	600	0.121	70	
17	660	0.162	110	470	0.113	50	750	0.154	120	560	0.130	70	
18	620	0.173	110	440	0.121	50	710	0.165	120	530	0.139	70	
19	590	0.185	110	420	0.129	50	670	0.175	120	500	0.148	70	
20	560	0.196	110	400	0.137	50	640	0.186	120	480	0.157	80	

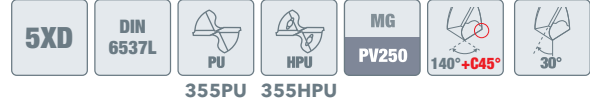
### 353HPU

	Material Group ISO 513	S1 S2			S3			S4			S5		
	Hardness/Rm	< 35 HRC			35-45 HRC								
	Vc (m/min)	40-60			25-45			50-70			40-60		
	D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)
3	5310	0.057	300	3720	0.040	150	6370	0.054	340	5310	0.046	240	
4	3980	0.067	270	2790	0.047	130	4780	0.064	310	3980	0.054	210	
5	3180	0.078	250	2230	0.054	120	3820	0.074	280	3180	0.062	200	
6	2650	0.088	230	1860	0.062	110	3180	0.084	270	2650	0.070	190	
7	2270	0.098	220	1590	0.069	110	2730	0.093	260	2270	0.079	180	
8	1990	0.109	220	1390	0.076	110	2390	0.103	250	1990	0.087	170	
9	1770	0.119	210	1240	0.083	100	2120	0.113	240	1770	0.095	170	
10	1590	0.129	210	1110	0.091	100	1910	0.123	230	1590	0.104	160	
11	1450	0.135	200	1010	0.094	100	1740	0.128	220	1450	0.108	160	
12	1330	0.145	190	930	0.101	90	1590	0.138	220	1330	0.116	150	
13	1220	0.155	190	860	0.109	90	1470	0.147	220	1220	0.124	150	
14	1140	0.166	190	800	0.116	90	1360	0.157	210	1140	0.132	150	
15	1060	0.176	190	740	0.123	90	1270	0.167	210	1060	0.141	150	
16	1000	0.186	190	700	0.130	90	1190	0.177	210	1000	0.149	150	
17	940	0.191	180	660	0.134	90	1120	0.182	200	940	0.153	140	
18	880	0.197	170	620	0.138	90	1060	0.187	200	880	0.157	140	
19	840	0.202	170	590	0.141	80	1010	0.192	190	840	0.161	140	
20	800	0.207	170	560	0.145	80	960	0.197	190	800	0.166	130	

- INFO
- TYPHOON TA-HTA-4HTA
- TYPHOON PU-HPU
- TYPHOON SUH
- TYPHOON ALH
- TYPHOON HRC
- TYPHOON SUH MINI
- TYPHOON HL
- C-SD-TA
- LFTA
- SUTA
- HSS-HSS/CO DRILLS
- G2
- MDTA
- HF-VH/UP
- MEF
- ALU
- MEX
- UH
- HSS/CO-HSSP END MILLS
- CARBIDE BURRS

# 355PU-355HPU

universal application, high productivity,  
PU and HPU (through coolant)



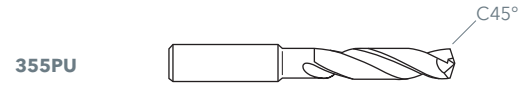
355PU



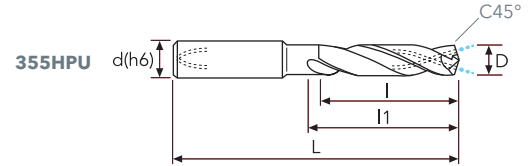
355HPU

P	M	K	N	S	H
★	★	★	☆	★	

★ 1st choice ☆ suitable



355PU



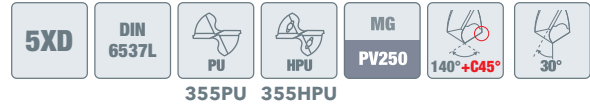
355HPU

D(m7)	D Tol.	d(h6)	l	l1	L	355PU		355HPU	
						EDP No.	Stock	EDP No.	Stock
3.00	+0.012/+0.002	6	23	28	66	355PU0300	●	355HPU0300	●
3.10	+0.016/+0.004	6	23	28	66	355PU0310	●	355HPU0310	●
3.20	+0.016/+0.004	6	23	28	66	355PU0320	●	355HPU0320	●
3.25	+0.016/+0.004	6	23	28	66			355HPU0325	●
3.30	+0.016/+0.004	6	23	28	66	355PU0330	●	355HPU0330	●
3.40	+0.016/+0.004	6	23	28	66	355PU0340	●	355HPU0340	●
3.50	+0.016/+0.004	6	23	28	66	355PU0350	●	355HPU0350	●
3.60	+0.016/+0.004	6	23	28	66	355PU0360	●	355HPU0360	●
3.70	+0.016/+0.004	6	23	28	66	355PU0370	●	355HPU0370	●
3.80	+0.016/+0.004	6	29	36	74	355PU0380	●	355HPU0380	●
3.90	+0.016/+0.004	6	29	36	74	355PU0390	●	355HPU0390	●
4.00	+0.016/+0.004	6	29	36	74	355PU0400	●	355HPU0400	●
4.10	+0.016/+0.004	6	29	36	74	355PU0410	●	355HPU0410	●
4.20	+0.016/+0.004	6	29	36	74	355PU0420	●	355HPU0420	●
4.30	+0.016/+0.004	6	29	36	74	355PU0430	●	355HPU0430	●
4.40	+0.016/+0.004	6	29	36	74	355PU0440	●	355HPU0440	●
4.50	+0.016/+0.004	6	29	36	74	355PU0450	●	355HPU0450	●
4.60	+0.016/+0.004	6	29	36	74	355PU0460	●	355HPU0460	●
4.65	+0.016/+0.004	6	29	36	74			355HPU0465	●
4.70	+0.016/+0.004	6	29	36	74	355PU0470	●	355HPU0470	●
4.80	+0.016/+0.004	6	35	44	82	355PU0480	●	355HPU0480	●
4.90	+0.016/+0.004	6	35	44	82	355PU0490	●	355HPU0490	●
5.00	+0.016/+0.004	6	35	44	82	355PU0500	●	355HPU0500	●
5.10	+0.016/+0.004	6	35	44	82	355PU0510	●	355HPU0510	●
5.20	+0.016/+0.004	6	35	44	82	355PU0520	●	355HPU0520	●
5.30	+0.016/+0.004	6	35	44	82	355PU0530	●	355HPU0530	●
5.40	+0.016/+0.004	6	35	44	82	355PU0540	●	355HPU0540	●
5.50	+0.016/+0.004	6	35	44	82	355PU0550	●	355HPU0550	●
5.55	+0.016/+0.004	6	35	44	82			355HPU0555	●
5.60	+0.016/+0.004	6	35	44	82	355PU0560	●	355HPU0560	●
5.70	+0.016/+0.004	6	35	44	82	355PU0570	●	355HPU0570	●
5.80	+0.016/+0.004	6	35	44	82	355PU0580	●	355HPU0580	●
5.90	+0.016/+0.004	6	35	44	82	355PU0590	●	355HPU0590	●
6.00	+0.016/+0.004	6	35	44	82	355PU0600	●	355HPU0600	●
6.10	+0.021/+0.006	8	43	53	91	355PU0610	●	355HPU0610	●
6.20	+0.021/+0.006	8	43	53	91	355PU0620	●	355HPU0620	●
6.30	+0.021/+0.006	8	43	53	91	355PU0630	●	355HPU0630	●
6.40	+0.021/+0.006	8	43	53	91	355PU0640	●	355HPU0640	●
6.50	+0.021/+0.006	8	43	53	91	355PU0650	●	355HPU0650	●

● stock standard ○ non-standard stock ▽ stock exhaustion

# 355PU-355HPU

universal application, high productivity,  
PU and HPU (through coolant)



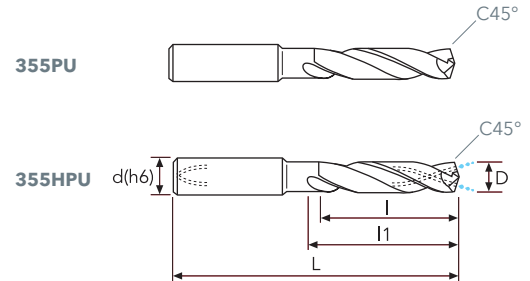
355PU



355HPU

P	M	K	N	S	H
★	★	★	☆	★	

★ 1st choice ☆ suitable



D(m7)	D Tol.	d(h6)	l	l1	L	355PU		355HPU	
						EDP No.	Stock	EDP No.	Stock
6.60	+0.021/+0.006	8	43	53	91	355PU0660	●	355HPU0660	●
6.70	+0.021/+0.006	8	43	53	91	355PU0670	●	355HPU0670	●
6.80	+0.021/+0.006	8	43	53	91	355PU0680	●	355HPU0680	●
6.90	+0.021/+0.006	8	43	53	91	355PU0690	●	355HPU0690	●
7.00	+0.021/+0.006	8	43	53	91	355PU0700	●	355HPU0700	●
7.10	+0.021/+0.006	8	43	53	91	355PU0710	●	355HPU0710	●
7.20	+0.021/+0.006	8	43	53	91	355PU0720	●	355HPU0720	●
7.30	+0.021/+0.006	8	43	53	91	355PU0730	●	355HPU0730	●
7.40	+0.021/+0.006	8	43	53	91	355PU0740	●	355HPU0740	●
7.45	+0.021/+0.006	8	43	53	91			355HPU0745	●
7.50	+0.021/+0.006	8	43	53	91	355PU0750	●	355HPU0750	●
7.60	+0.021/+0.006	8	43	53	91	355PU0760	●	355HPU0760	●
7.70	+0.021/+0.006	8	43	53	91	355PU0770	●	355HPU0770	●
7.80	+0.021/+0.006	8	43	53	91	355PU0780	●	355HPU0780	●
7.90	+0.021/+0.006	8	43	53	91	355PU0790	●	355HPU0790	●
8.00	+0.021/+0.006	8	43	53	91	355PU0800	●	355HPU0800	●
8.10	+0.021/+0.006	10	49	61	103	355PU0810	●	355HPU0810	●
8.20	+0.021/+0.006	10	49	61	103	355PU0820	●	355HPU0820	●
8.30	+0.021/+0.006	10	49	61	103	355PU0830	●	355HPU0830	●
8.40	+0.021/+0.006	10	49	61	103	355PU0840	●	355HPU0840	●
8.50	+0.021/+0.006	10	49	61	103	355PU0850	●	355HPU0850	●
8.60	+0.021/+0.006	10	49	61	103	355PU0860	●	355HPU0860	●
8.70	+0.021/+0.006	10	49	61	103	355PU0870	●	355HPU0870	●
8.80	+0.021/+0.006	10	49	61	103	355PU0880	●	355HPU0880	●
8.90	+0.021/+0.006	10	49	61	103	355PU0890	●	355HPU0890	●
9.00	+0.021/+0.006	10	49	61	103	355PU0900	●	355HPU0900	●
9.10	+0.021/+0.006	10	49	61	103	355PU0910	●	355HPU0910	●
9.20	+0.021/+0.006	10	49	61	103	355PU0920	●	355HPU0920	●
9.25	+0.021/+0.006	10	49	61	103			355HPU0925	●
9.30	+0.021/+0.006	10	49	61	103	355PU0930	●	355HPU0930	●
9.40	+0.021/+0.006	10	49	61	103	355PU0940	●	355HPU0940	●
9.45	+0.021/+0.006	10	49	61	103			355HPU0945	●
9.50	+0.021/+0.006	10	61	61	103	355PU0950	●	355HPU0950	●
9.60	+0.021/+0.006	10	61	61	103	355PU0960	●	355HPU0960	●
9.70	+0.021/+0.006	10	61	61	103	355PU0970	●	355HPU0970	●
9.80	+0.021/+0.006	10	61	61	103	355PU0980	●	355HPU0980	●
9.90	+0.021/+0.006	10	61	61	103	355PU0990	●	355HPU0990	●
10.00	+0.021/+0.006	10	61	61	103	355PU1000	●	355HPU1000	●
10.10	+0.025/+0.007	12	71	71	118	355PU1010	●	355HPU1010	●

INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

● stock standard ○ non-standard stock ▽ stock exhaustion

# 355PU-355HPU

universal application, high productivity,  
PU and HPU (through coolant)

5XD

DIN  
6537L

PU

HPU

MG  
PV250

140°+C45°

30°

**355PU 355HPU**



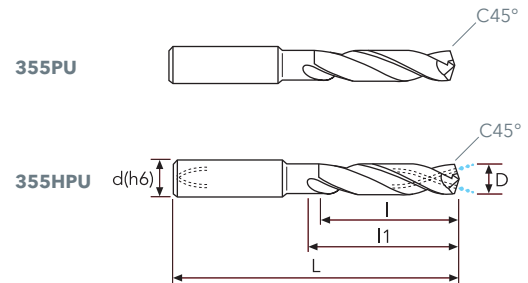
355PU



355HPU

P	M	K	N	S	H
★	★	★	☆	★	

★ 1st choice ☆ suitable

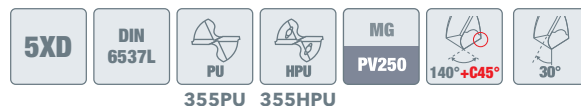


D(m7)	D Tol.	d(h6)	l	l1	L	355PU		355HPU	
						EDP No.	Stock	EDP No.	Stock
10.20	+0.025/+0.007	12	71	71	118	355PU1020	●	355HPU1020	●
10.30	+0.025/+0.007	12	71	71	118	355PU1030	●	355HPU1030	●
10.40	+0.025/+0.007	12	71	71	118	355PU1040	●	355HPU1040	●
10.50	+0.025/+0.007	12	71	71	118	355PU1050	●	355HPU1050	●
10.60	+0.025/+0.007	12	71	71	118	355PU1060	●	355HPU1060	●
10.70	+0.025/+0.007	12	71	71	118	355PU1070	●	355HPU1070	●
10.80	+0.025/+0.007	12	71	71	118	355PU1080	●	355HPU1080	●
10.90	+0.025/+0.007	12	71	71	118	355PU1090	●	355HPU1090	●
11.00	+0.025/+0.007	12	71	71	118	355PU1100	●	355HPU1100	●
11.10	+0.025/+0.007	12	71	71	118	355PU1110	●	355HPU1110	●
11.20	+0.025/+0.007	12	71	71	118	355PU1120	●	355HPU1120	●
11.25	+0.025/+0.007	12	71	71	118			355HPU1125	●
11.30	+0.025/+0.007	12	71	71	118	355PU1130	●	355HPU1130	●
11.40	+0.025/+0.007	12	71	71	118	355PU1140	●	355HPU1140	●
11.50	+0.025/+0.007	12	71	71	118	355PU1150	●	355HPU1150	●
11.60	+0.025/+0.007	12	71	71	118	355PU1160	●	355HPU1160	●
11.70	+0.025/+0.007	12	71	71	118	355PU1170	●	355HPU1170	●
11.80	+0.025/+0.007	12	71	71	118	355PU1180	●	355HPU1180	●
11.90	+0.025/+0.007	12	71	71	118	355PU1190	●	355HPU1190	●
12.00	+0.025/+0.007	12	71	71	118	355PU1200	●	355HPU1200	●
12.10	+0.025/+0.007	14	77	77	124	355PU1210	●	355HPU1210	●
12.20	+0.025/+0.007	14	77	77	124	355PU1220	●	355HPU1220	●
12.30	+0.025/+0.007	14	77	77	124			355HPU1230	●
12.40	+0.025/+0.007	14	77	77	124			355HPU1240	●
12.50	+0.025/+0.007	14	77	77	124	355PU1250	●	355HPU1250	●
12.60	+0.025/+0.007	14	77	77	124			355HPU1260	●
12.70	+0.025/+0.007	14	77	77	124	355PU1270	●	355HPU1270	●
12.80	+0.025/+0.007	14	77	77	124	355PU1280	●	355HPU1280	●
12.90	+0.025/+0.007	14	77	77	124			355HPU1290	●
13.00	+0.025/+0.007	14	77	77	124	355PU1300	●	355HPU1300	●
13.10	+0.025/+0.007	14	77	77	124	355PU1310	●	355HPU1310	●
13.20	+0.025/+0.007	14	77	77	124	355PU1320	●	355HPU1320	●
13.30	+0.025/+0.007	14	77	77	124	355PU1330	●	355HPU1330	●
13.40	+0.025/+0.007	14	77	77	124			355HPU1340	●
13.50	+0.025/+0.007	14	77	77	124	355PU1350	●	355HPU1350	●
13.60	+0.025/+0.007	14	77	77	124			355HPU1360	●
13.70	+0.025/+0.007	14	77	77	124	355PU1370	●	355HPU1370	●
13.80	+0.025/+0.007	14	77	77	124	355PU1380	●	355HPU1380	●
13.90	+0.025/+0.007	14	77	77	124			355HPU1390	●

● stock standard ○ non-standard stock ▽ stock exhaustion

# 355PU-355HPU

universal application, high productivity,  
PU and HPU (through coolant)



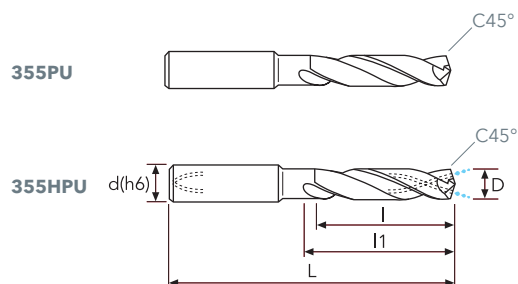
355PU



355HPU

P	M	K	N	S	H
★	★	★	☆	★	

★ 1st choice ☆ suitable



D(m7)	D Tol.	d(h6)	l	l1	L	355PU		355HPU	
						EDP No.	Stock	EDP No.	Stock
14.00	+0.025/+0.007	14	77	77	124	355PU1400	●	355HPU1400	●
14.10	+0.025/+0.007	16	83	83	133			355HPU1410	●
14.20	+0.025/+0.007	16	83	83	133			355HPU1420	●
14.30	+0.025/+0.007	16	83	83	133			355HPU1430	●
14.40	+0.025/+0.007	16	83	83	133			355HPU1440	●
14.50	+0.025/+0.007	16	83	83	133	355PU1450	●	355HPU1450	●
14.60	+0.025/+0.007	16	83	83	133			355HPU1460	●
14.70	+0.025/+0.007	16	83	83	133			355HPU1470	●
14.80	+0.025/+0.007	16	83	83	133			355HPU1480	●
14.90	+0.025/+0.007	16	83	83	133			355HPU1490	●
15.00	+0.025/+0.007	16	83	83	133	355PU1500	●	355HPU1500	●
15.10	+0.025/+0.007	16	83	83	133			355HPU1510	●
15.20	+0.025/+0.007	16	83	83	133			355HPU1520	●
15.30	+0.025/+0.007	16	83	83	133	355PU1530	●	355HPU1530	●
15.40	+0.025/+0.007	16	83	83	133			355HPU1540	●
15.50	+0.025/+0.007	16	83	83	133	355PU1550	●	355HPU1550	●
15.60	+0.025/+0.007	16	83	83	133			355HPU1560	●
15.70	+0.025/+0.007	16	83	83	133			355HPU1570	●
15.80	+0.025/+0.007	16	83	83	133	355PU1580	●	355HPU1580	●
15.90	+0.025/+0.007	16	83	83	133			355HPU1590	●
16.00	+0.025/+0.007	16	83	83	133	355PU1600	●	355HPU1600	●
16.10	+0.025/+0.007	18	93	93	143			355HPU1610	●
16.20	+0.025/+0.007	18	93	93	143			355HPU1620	●
16.30	+0.025/+0.007	18	93	93	143			355HPU1630	●
16.40	+0.025/+0.007	18	93	93	143			355HPU1640	●
16.50	+0.025/+0.007	18	93	93	143	355PU1650	●	355HPU1650	●
16.60	+0.025/+0.007	18	93	93	143			355HPU1660	●
16.70	+0.025/+0.007	18	93	93	143			355HPU1670	●
16.80	+0.025/+0.007	18	93	93	143			355HPU1680	●
16.90	+0.025/+0.007	18	93	93	143			355HPU1690	●
17.00	+0.025/+0.007	18	93	93	143	355PU1700	●	355HPU1700	●
17.10	+0.025/+0.007	18	93	93	143			355HPU1710	●
17.20	+0.025/+0.007	18	93	93	143			355HPU1720	●
17.30	+0.025/+0.007	18	93	93	143			355HPU1730	●
17.40	+0.025/+0.007	18	93	93	143			355HPU1740	●
17.50	+0.025/+0.007	18	93	93	143	355PU1750	●	355HPU1750	●
17.60	+0.025/+0.007	18	93	93	143			355HPU1760	●
17.70	+0.025/+0.007	18	93	93	143			355HPU1770	●
17.80	+0.025/+0.007	18	93	93	143			355HPU1780	●

- INFO
- TYPHOON TA-HTA-4HTA
- TYPHOON PU-HPU
- TYPHOON SUH
- TYPHOON ALH
- TYPHOON HRC
- TYPHOON SUH MINI
- TYPHOON HL
- C-SD-TA
- LFTA
- SUTA
- HSS-HSS/CO DRILLS
- G2
- MDTA
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- MEF
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- MEX
- UH
- HSS/CO-HSSP END MILLS
- CARBIDE BURRS

● stock standard ○ non-standard stock ▽ stock exhaustion

# 355PU-355HPU

universal application, high productivity,  
PU and HPU (through coolant)

5XD

DIN 6537L

MG  
PV250

**355PU 355HPU**



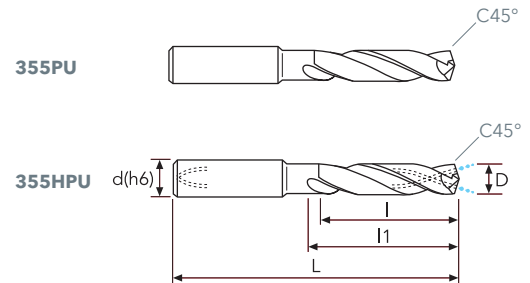
355PU



355HPU

P	M	K	N	S	H
★	★	★	☆	★	

★ 1st choice ☆ suitable



D(m7)	D Tol.	d(h6)	l	l1	L	355PU		355HPU	
						EDP No.	Stock	EDP No.	Stock
17.90	+0.025/+0.007	18	93	93	143			355HPU1790	●
18.00	+0.025/+0.007	18	93	93	143	355PU1800	●	355HPU1800	●
18.10	+0.029/+0.008	20	101	101	153			355HPU1810	●
18.20	+0.029/+0.008	20	101	101	153			355HPU1820	●
18.30	+0.029/+0.008	20	101	101	153			355HPU1830	●
18.40	+0.029/+0.008	20	101	101	153			355HPU1840	●
18.50	+0.029/+0.008	20	101	101	153	355PU1850	●	355HPU1850	●
18.60	+0.029/+0.008	20	101	101	153			355HPU1860	●
18.70	+0.029/+0.008	20	101	101	153			355HPU1870	●
18.80	+0.029/+0.008	20	101	101	153			355HPU1880	●
18.90	+0.029/+0.008	20	101	101	153			355HPU1890	●
19.00	+0.029/+0.008	20	101	101	153	355PU1900	●	355HPU1900	●
19.10	+0.029/+0.008	20	101	101	153			355HPU1910	●
19.20	+0.029/+0.008	20	101	101	153			355HPU1920	●
19.30	+0.029/+0.008	20	101	101	153			355HPU1930	●
19.40	+0.029/+0.008	20	101	101	153			355HPU1940	●
19.50	+0.029/+0.008	20	101	101	153	355PU1950	●	355HPU1950	●
19.60	+0.029/+0.008	20	101	101	153			355HPU1960	●
19.70	+0.029/+0.008	20	101	101	153			355HPU1970	●
19.80	+0.029/+0.008	20	101	101	153			355HPU1980	●
19.90	+0.029/+0.008	20	101	101	153			355HPU1990	●
20.00	+0.029/+0.008	20	101	101	153	355PU2000	●	355HPU2000	●

● stock standard ○ non-standard stock ▽ stock exhaustion



### 355PU

	Material Group ISO 513	P1 P2			P3 P4			P5			P6		
	Hardness/Rm	500-700 N/mm <sup>2</sup>			600-1000 N/mm <sup>2</sup>			900-1200 N/mm <sup>2</sup>			1200-1400 N/mm <sup>2</sup>		
	Vc (m/min)	100-120			80-100			50-70			30-50		
	D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)
3	11680	0.094	1090	9550	0.075	710	6370	0.065	420	4250	0.047	200	
4	8760	0.102	890	7170	0.082	590	4780	0.071	340	3180	0.051	160	
5	7010	0.111	770	5730	0.088	510	3820	0.077	300	2550	0.055	140	
6	5840	0.123	720	4780	0.099	470	3180	0.086	270	2120	0.062	130	
7	5000	0.136	680	4090	0.109	440	2730	0.095	260	1820	0.068	120	
8	4380	0.149	650	3580	0.119	430	2390	0.104	250	1590	0.074	120	
9	3890	0.162	630	3180	0.129	410	2120	0.113	240	1420	0.081	110	
10	3500	0.174	610	2870	0.139	400	1910	0.122	230	1270	0.087	110	
11	3180	0.187	590	2610	0.150	390	1740	0.131	230	1160	0.094	110	
12	2920	0.204	600	2390	0.163	390	1590	0.143	230	1060	0.102	110	
13	2690	0.221	590	2200	0.177	390	1470	0.155	230	980	0.111	110	
14	2500	0.242	610	2050	0.194	400	1360	0.170	230	910	0.121	110	
15	2340	0.264	620	1910	0.211	400	1270	0.184	230	850	0.132	110	
16	2190	0.285	620	1790	0.228	410	1190	0.199	240	800	0.142	110	
17	2060	0.306	630	1690	0.245	410	1120	0.214	240	750	0.153	110	
18	1950	0.327	640	1590	0.262	420	1060	0.229	240	710	0.164	120	
19	1840	0.349	640	1510	0.279	420	1010	0.244	250	670	0.174	120	
20	1750	0.370	650	1430	0.296	420	960	0.259	250	640	0.185	120	

### 355HPU

	Material Group ISO 513	P1 P2			P3 P4			P5			P6		
	Hardness/Rm	500-700 N/mm <sup>2</sup>			600-1000 N/mm <sup>2</sup>			900-1200 N/mm <sup>2</sup>			1200-1400 N/mm <sup>2</sup>		
	Vc (m/min)	130-150			110-130			80-100			50-70		
	D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)
3	14860	0.108	1600	12740	0.081	1030	9550	0.065	620	6370	0.054	340	
4	11150	0.127	1420	9550	0.095	910	7170	0.076	550	4780	0.064	300	
5	8920	0.147	1310	7640	0.110	840	5730	0.088	500	3820	0.073	280	
6	7430	0.166	1230	6370	0.125	790	4780	0.100	480	3180	0.083	260	
7	6370	0.186	1180	5460	0.139	760	4090	0.111	460	2730	0.093	250	
8	5570	0.205	1140	4780	0.154	740	3580	0.123	440	2390	0.103	250	
9	4950	0.225	1110	4250	0.169	720	3180	0.135	430	2120	0.112	240	
10	4460	0.244	1090	3820	0.183	700	2870	0.147	420	1910	0.122	230	
11	4050	0.254	1030	3470	0.191	660	2610	0.152	400	1740	0.127	220	
12	3720	0.274	1020	3180	0.205	650	2390	0.164	390	1590	0.137	220	
13	3430	0.293	1010	2940	0.220	650	2200	0.176	390	1470	0.147	220	
14	3180	0.313	990	2730	0.235	640	2050	0.188	380	1360	0.156	210	
15	2970	0.332	990	2550	0.249	640	1910	0.199	380	1270	0.166	210	
16	2790	0.352	980	2390	0.264	630	1790	0.211	380	1190	0.176	210	
17	2620	0.362	950	2250	0.271	610	1690	0.217	370	1120	0.181	200	
18	2480	0.371	920	2120	0.279	590	1590	0.223	350	1060	0.186	200	
19	2350	0.381	900	2010	0.286	570	1510	0.229	350	1010	0.191	190	
20	2230	0.391	870	1910	0.293	560	1430	0.235	340	960	0.196	190	

- INFO
- TYPHOON TA-HTA-4HTA
- TYPHOON PU-HPU
- TYPHOON SUH
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- TYPHOON HL
- C-SD-TA
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- MDTA
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- MEF
- ALU
- MEX
- UH
- HSS/CO-HSSP END MILLS
- CARBIDE BURRS

### 355PU

	Material Group ISO 513	M1 M2			M3			M4			M5		
	Hardness/Rm	< 750 N/mm <sup>2</sup>			550-850 N/mm <sup>2</sup>			650-950 N/mm <sup>2</sup>			850-1200 N/mm <sup>2</sup>		
	Vc (m/min)	40-50			30-40			25-35			20-30		
	D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)
<b>3</b>	4780	0.065	310	3720	0.052	190	3180	0.046	150	2650	0.033	90	
<b>4</b>	3580	0.071	260	2790	0.057	160	2390	0.050	120	1990	0.036	70	
<b>5</b>	2870	0.077	220	2230	0.062	140	1910	0.054	100	1590	0.039	60	
<b>6</b>	2390	0.086	210	1860	0.069	130	1590	0.060	100	1330	0.043	60	
<b>7</b>	2050	0.095	200	1590	0.076	120	1360	0.067	90	1140	0.048	50	
<b>8</b>	1790	0.104	190	1390	0.083	120	1190	0.073	90	1000	0.052	50	
<b>9</b>	1590	0.113	180	1240	0.090	110	1060	0.079	80	880	0.057	50	
<b>10</b>	1430	0.122	170	1110	0.098	110	960	0.085	80	800	0.061	50	
<b>11</b>	1300	0.131	170	1010	0.105	110	870	0.092	80	720	0.065	50	
<b>12</b>	1190	0.143	170	930	0.114	110	800	0.100	80	660	0.071	50	
<b>13</b>	1100	0.155	170	860	0.124	110	730	0.108	80	610	0.077	50	
<b>14</b>	1020	0.170	170	800	0.136	110	680	0.119	80	570	0.085	50	
<b>15</b>	960	0.184	180	740	0.148	110	640	0.129	80	530	0.092	50	
<b>16</b>	900	0.199	180	700	0.159	110	600	0.140	80	500	0.100	50	
<b>17</b>	840	0.214	180	660	0.171	110	560	0.150	80	470	0.107	50	
<b>18</b>	800	0.229	180	620	0.183	110	530	0.160	80	440	0.115	50	
<b>19</b>	750	0.244	180	590	0.195	120	500	0.171	90	420	0.122	50	
<b>20</b>	720	0.259	190	560	0.207	120	480	0.181	90	400	0.129	50	



### 355HPU

	Material Group ISO 513	M1 M2			M3			M4			M5		
	Hardness/Rm	< 750 N/mm <sup>2</sup>			550-850 N/mm <sup>2</sup>			650-950 N/mm <sup>2</sup>			850-1200 N/mm <sup>2</sup>		
	Vc (m/min)	50-70			40-60			30-40			20-30		
	D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)
<b>3</b>	6370	0.070	450	5310	0.056	300	3720	0.049	180	2650	0.042	110	
<b>4</b>	4780	0.083	390	3980	0.066	260	2790	0.058	160	1990	0.050	100	
<b>5</b>	3820	0.095	360	3180	0.076	240	2230	0.067	150	1590	0.057	90	
<b>6</b>	3180	0.108	340	2650	0.086	230	1860	0.076	140	1330	0.065	90	
<b>7</b>	2730	0.121	330	2270	0.097	220	1590	0.085	130	1140	0.072	80	
<b>8</b>	2390	0.133	320	1990	0.107	210	1390	0.093	130	1000	0.080	80	
<b>9</b>	2120	0.146	310	1770	0.117	210	1240	0.102	130	880	0.088	80	
<b>10</b>	1910	0.159	300	1590	0.127	200	1110	0.111	120	800	0.095	80	
<b>11</b>	1740	0.165	290	1450	0.132	190	1010	0.116	120	720	0.099	70	
<b>12</b>	1590	0.178	280	1330	0.142	190	930	0.125	120	660	0.107	70	
<b>13</b>	1470	0.191	280	1220	0.152	190	860	0.133	110	610	0.114	70	
<b>14</b>	1360	0.203	280	1140	0.163	190	800	0.142	110	570	0.122	70	
<b>15</b>	1270	0.216	270	1060	0.173	180	740	0.151	110	530	0.130	70	
<b>16</b>	1190	0.229	270	1000	0.183	180	700	0.160	110	500	0.137	70	
<b>17</b>	1120	0.235	260	940	0.188	180	660	0.165	110	470	0.141	70	
<b>18</b>	1060	0.241	260	880	0.193	170	620	0.169	100	440	0.145	60	
<b>19</b>	1010	0.248	250	840	0.198	170	590	0.173	100	420	0.149	60	
<b>20</b>	960	0.254	240	800	0.203	160	560	0.178	100	400	0.152	60	



CUTTING PARAMETERS

### 355PU

	Material Group ISO 513	K1			K2			K3			K4		
	Hardness/Rm	150-250 HB			150-350 HB			120-260 HB			250-500 HB		
	Vc (m/min)	100-120			80-100			50-70			30-50		
	D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)
3	11680	0.094	1090	9550	0.075	710	6370	0.065	420	4250	0.047	200	
4	8760	0.102	890	7170	0.082	590	4780	0.071	340	3180	0.051	160	
5	7010	0.111	770	5730	0.088	510	3820	0.077	300	2550	0.055	140	
6	5840	0.123	720	4780	0.099	470	3180	0.086	270	2120	0.062	130	
7	5000	0.136	680	4090	0.109	440	2730	0.095	260	1820	0.068	120	
8	4380	0.149	650	3580	0.119	430	2390	0.104	250	1590	0.074	120	
9	3890	0.162	630	3180	0.129	410	2120	0.113	240	1420	0.081	110	
10	3500	0.174	610	2870	0.139	400	1910	0.122	230	1270	0.087	110	
11	3180	0.187	590	2610	0.150	390	1740	0.131	230	1160	0.094	110	
12	2920	0.204	600	2390	0.163	390	1590	0.143	230	1060	0.102	110	
13	2690	0.221	590	2200	0.177	390	1470	0.155	230	980	0.111	110	
14	2500	0.242	610	2050	0.194	400	1360	0.170	230	910	0.121	110	
15	2340	0.264	620	1910	0.211	400	1270	0.184	230	850	0.132	110	
16	2190	0.285	620	1790	0.228	410	1190	0.199	240	800	0.142	110	
17	2060	0.306	630	1690	0.245	410	1120	0.214	240	750	0.153	110	
18	1950	0.327	640	1590	0.262	420	1060	0.229	240	710	0.164	120	
19	1840	0.349	640	1510	0.279	420	1010	0.244	250	670	0.174	120	
20	1750	0.370	650	1430	0.296	420	960	0.259	250	640	0.185	120	

### 355HPU

	Material Group ISO 513	K1			K2			K3			K4		
	Hardness/Rm	150-250 HB			150-350 HB			120-260 HB			250-500 HB		
	Vc (m/min)	110-130			90-110			65-85			45-65		
	D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)
3	12740	0.108	1370	10620	0.097	1030	7960	0.086	680	5840	0.075	440	
4	9550	0.127	1210	7960	0.114	910	5970	0.102	610	4380	0.089	390	
5	7640	0.147	1120	6370	0.132	840	4780	0.117	560	3500	0.103	360	
6	6370	0.166	1060	5310	0.150	790	3980	0.133	530	2920	0.116	340	
7	5460	0.186	1010	4550	0.167	760	3410	0.149	510	2500	0.130	330	
8	4780	0.205	980	3980	0.185	740	2990	0.164	490	2190	0.144	310	
9	4250	0.225	960	3540	0.202	720	2650	0.180	480	1950	0.157	310	
10	3820	0.244	930	3180	0.220	700	2390	0.196	470	1750	0.171	300	
11	3470	0.254	880	2900	0.229	660	2170	0.203	440	1590	0.178	280	
12	3180	0.274	870	2650	0.246	650	1990	0.219	440	1460	0.192	280	
13	2940	0.293	860	2450	0.264	650	1840	0.235	430	1350	0.205	280	
14	2730	0.313	850	2270	0.282	640	1710	0.250	430	1250	0.219	270	
15	2550	0.332	850	2120	0.299	630	1590	0.266	420	1170	0.233	270	
16	2390	0.352	840	1990	0.317	630	1490	0.282	420	1090	0.246	270	
17	2250	0.362	810	1870	0.326	610	1410	0.289	410	1030	0.253	260	
18	2120	0.371	790	1770	0.334	590	1330	0.297	400	970	0.260	250	
19	2010	0.381	770	1680	0.343	580	1260	0.305	380	920	0.267	250	
20	1910	0.391	750	1590	0.352	560	1190	0.313	370	880	0.274	240	

- INFO
- TYPHOON TA-HTA-4HTA
- TYPHOON PU-HPU
- TYPHOON SUH
- TYPHOON ALH
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- TYPHOON HL
- C-SD-TA
- LFTA
- SUTA
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- MEF
- ALU
- MEX
- UH
- HSS/CO-HSSP END MILLS
- CARBIDE BURRS

### 355PU

	Material Group ISO 513	N1 > 5%Si			N2			N3 N4		
	Hardness/Rm									
	Vc (m/min)	200-240			180-220			140-180		
D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	
3	23350	0.112	2620	21230	0.101	2140	16990	0.090	1530	
4	17520	0.122	2140	15920	0.110	1750	12740	0.098	1250	
5	14010	0.133	1860	12740	0.119	1520	10190	0.106	1080	
6	11680	0.148	1730	10620	0.133	1410	8490	0.118	1000	
7	10010	0.163	1630	9100	0.147	1340	7280	0.131	950	
8	8760	0.179	1560	7960	0.161	1280	6370	0.143	910	
9	7780	0.194	1510	7080	0.174	1230	5660	0.155	880	
10	7010	0.209	1470	6370	0.188	1200	5100	0.167	850	
11	6370	0.224	1430	5790	0.202	1170	4630	0.180	830	
12	5840	0.245	1430	5310	0.220	1170	4250	0.196	830	
13	5390	0.265	1430	4900	0.239	1170	3920	0.212	830	
14	5000	0.291	1450	4550	0.262	1190	3640	0.233	850	
15	4670	0.316	1480	4250	0.285	1210	3400	0.253	860	
16	4380	0.342	1500	3980	0.308	1220	3180	0.273	870	
17	4120	0.367	1510	3750	0.330	1240	3000	0.294	880	
18	3890	0.393	1530	3540	0.353	1250	2830	0.314	890	
19	3690	0.418	1540	3350	0.376	1260	2680	0.335	900	
20	3500	0.444	1550	3180	0.399	1270	2550	0.355	910	



### 355HPU

	Material Group ISO 513	N1 > 5%Si			N2			N3 N4		
	Hardness/Rm									
	Vc (m/min)	230-270			210-250			170-210		
D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	
3	26540	0.129	3420	24420	0.116	2840	20170	0.090	1820	
4	19900	0.152	3030	18310	0.137	2510	15130	0.107	1620	
5	15920	0.176	2800	14650	0.158	2320	12100	0.123	1490	
6	13270	0.199	2650	12210	0.179	2190	10080	0.140	1410	
7	11370	0.223	2530	10460	0.201	2100	8640	0.156	1350	
8	9950	0.246	2450	9160	0.222	2030	7560	0.172	1300	
9	8850	0.270	2390	8140	0.243	1980	6720	0.189	1270	
10	7960	0.293	2330	7320	0.264	1930	6050	0.205	1240	
11	7240	0.305	2210	6660	0.274	1830	5500	0.213	1170	
12	6630	0.328	2180	6100	0.296	1800	5040	0.230	1160	
13	6120	0.352	2150	5630	0.317	1780	4650	0.246	1150	
14	5690	0.375	2140	5230	0.338	1770	4320	0.263	1140	
15	5310	0.399	2120	4880	0.359	1750	4030	0.279	1130	
16	4980	0.422	2100	4580	0.380	1740	3780	0.296	1120	
17	4680	0.434	2030	4310	0.391	1680	3560	0.304	1080	
18	4420	0.446	1970	4070	0.401	1630	3360	0.312	1050	
19	4190	0.457	1920	3860	0.412	1590	3180	0.320	1020	
20	3980	0.469	1870	3660	0.422	1550	3030	0.328	1000	



### 355PU

	Material Group ISO 513	S1 S2			S3			S4			S5		
	Hardness/Rm	< 35 HRC			35-45 HRC								
	Vc (m/min)	25-35			15-25			30-40			20-30		
	D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)
3	3180	0.042	130	2120	0.029	60	3720	0.040	150	2650	0.034	90	
4	2390	0.046	110	1590	0.032	50	2790	0.044	120	1990	0.037	70	
5	1910	0.050	90	1270	0.035	40	2230	0.047	110	1590	0.040	60	
6	1590	0.055	90	1060	0.039	40	1860	0.053	100	1330	0.044	60	
7	1360	0.061	80	910	0.043	40	1590	0.058	90	1140	0.049	60	
8	1190	0.067	80	800	0.047	40	1390	0.064	90	1000	0.054	50	
9	1060	0.073	80	710	0.051	40	1240	0.069	90	880	0.058	50	
10	960	0.078	80	640	0.055	40	1110	0.074	80	800	0.063	50	
11	870	0.084	70	580	0.059	30	1010	0.080	80	720	0.067	50	
12	800	0.092	70	530	0.064	30	930	0.087	80	660	0.073	50	
13	730	0.099	70	490	0.070	30	860	0.094	80	610	0.080	50	
14	680	0.109	70	450	0.076	30	800	0.104	80	570	0.087	50	
15	640	0.119	80	420	0.083	30	740	0.113	80	530	0.095	50	
16	600	0.128	80	400	0.090	40	700	0.122	90	500	0.103	50	
17	560	0.138	80	370	0.096	40	660	0.131	90	470	0.110	50	
18	530	0.147	80	350	0.103	40	620	0.140	90	440	0.118	50	
19	500	0.157	80	340	0.110	40	590	0.149	90	420	0.125	50	
20	480	0.166	80	320	0.116	40	560	0.158	90	400	0.133	50	

### 355HPU

	Material Group ISO 513	S1 S2			S3			S4			S5		
	Hardness/Rm	< 35 HRC			35-45 HRC								
	Vc (m/min)	35-55			20-40			45-65			35-55		
	D (mm)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)	n (rpm)	fn (mm/rev)	Vf (mm/min)
3	4780	0.048	230	3180	0.034	110	5840	0.046	270	4780	0.039	190	
4	3580	0.057	200	2390	0.040	100	4380	0.054	240	3580	0.046	160	
5	2870	0.066	190	1910	0.046	90	3500	0.063	220	2870	0.053	150	
6	2390	0.075	180	1590	0.052	80	2920	0.071	210	2390	0.060	140	
7	2050	0.084	170	1360	0.059	80	2500	0.079	200	2050	0.067	140	
8	1790	0.092	170	1190	0.065	80	2190	0.088	190	1790	0.074	130	
9	1590	0.101	160	1060	0.071	80	1950	0.096	190	1590	0.081	130	
10	1430	0.110	160	960	0.077	70	1750	0.104	180	1430	0.088	130	
11	1300	0.114	150	870	0.080	70	1590	0.109	170	1300	0.091	120	
12	1190	0.123	150	800	0.086	70	1460	0.117	170	1190	0.099	120	
13	1100	0.132	150	730	0.092	70	1350	0.125	170	1100	0.106	120	
14	1020	0.141	140	680	0.099	70	1250	0.134	170	1020	0.113	110	
15	960	0.150	140	640	0.105	70	1170	0.142	170	960	0.120	110	
16	900	0.158	140	600	0.111	70	1090	0.150	160	900	0.127	110	
17	840	0.163	140	560	0.114	60	1030	0.155	160	840	0.130	110	
18	800	0.167	130	530	0.117	60	970	0.159	150	800	0.134	110	
19	750	0.172	130	500	0.120	60	920	0.163	150	750	0.137	100	
20	720	0.176	130	480	0.123	60	880	0.167	150	720	0.141	100	

- INFO
- TYPHOON TA-HTA-4HTA
- TYPHOON PU-HPU
- TYPHOON SUH
- TYPHOON ALH
- TYPHOON HRC
- TYPHOON SUH MINI
- TYPHOON HL
- C-SD-TA
- LFTA
- SUTA
- HSS-HSS/CO DRILLS
- G2
- MDTA
- HF-VH/UP
- MEF
- ALU
- MEX
- UH
- HSS/CO-HSSP END MILLS
- CARBIDE BURRS