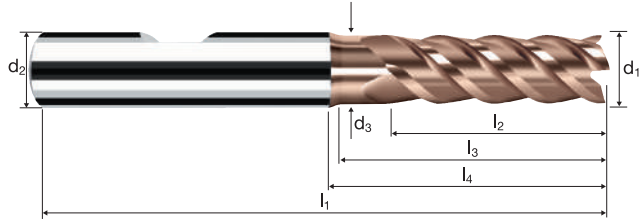


Cylindrical end mills HX

Smooth-edged, medium length version, short neck
High-performance penetration edge



HM λ 45°
XA γ -10°

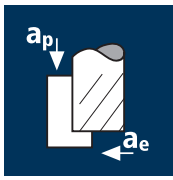


Roughing HPC **Roughing HDC** **Finishing**

HRC 48-56 HRC 56-60 HRC > 60 HSS

Ø Code	d ₁ e8	d ₂ h6	d ₃	l ₁	l ₂	l ₃	l ₄	r	α	z	DURO-Si	
											H8614	H8514
180	3.00	6.00	2.80	63	11.00	18.00	24.37	0.100	4.5°	4	●	
220	4.00	6.00	3.70	63	13.00	22.00	26.82	0.100	3.5°	4	●	
260	5.00	6.00	4.60	63	16.00	24.00	27.27	0.100	1.5°	4	●	
300	6.00	6.00	5.50	63	21.00	25.34	26.00	0.150	0.0°	4	●	
391	8.00	8.00	7.40	72	31.00	34.79	35.50	0.150	0.0°	4	●	
450	10.00	10.00	9.20	84	37.00	42.20	43.00	0.200	0.0°	4	●	
501	12.00	12.00	11.00	97	44.00	50.13	51.00	0.200	0.0°	4	●	
610	16.00	16.00	15.00	108	53.00	58.13	59.00	0.200	0.0°	4	●	
682	20.00	20.00	19.00	122	62.00	70.13	71.00	0.200	0.0°	4	●	

Application

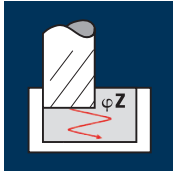


Material

Hardened tool steel
52 - 56 HRC

H

d1 [mm]	z	v _c [m/min]	f _s [mm]	a _p [mm]	a _e [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	q _Z [°]
3.00	4	60	0.009	3.000	1.800	6365	230	1.2	5°
4.00	4	60	0.013	4.000	2.400	4775	250	2.4	5°
5.00	4	60	0.017	5.000	3.000	3820	260	3.9	5°
6.00	4	60	0.021	7.500	3.600	3185	265	7.2	5°
8.00	4	60	0.028	10.000	4.800	2385	265	12.8	5°
10.00	4	60	0.035	12.500	6.000	1910	265	20.1	5°
12.00	4	60	0.042	15.000	7.200	1590	265	28.9	5°
16.00	4	60	0.050	20.000	9.600	1195	240	45.8	5°
20.00	4	60	0.060	25.000	12.000	955	230	68.8	5°



Hardened tool steel
> 60 HRC

H

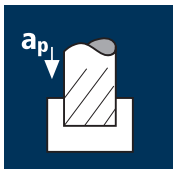
3.00	4	25	0.004	3.000	1.800	2655	40	0.2	3°
4.00	4	25	0.006	4.000	2.400	1990	50	0.5	4°
5.00	4	25	0.008	5.000	3.000	1590	50	0.8	5°
6.00	4	25	0.009	6.000	3.600	1325	50	1.0	5°
8.00	4	25	0.011	8.000	4.800	995	45	1.7	5°
10.00	4	25	0.015	10.000	6.000	795	50	2.9	5°
12.00	4	25	0.018	12.000	7.200	665	50	4.1	5°
16.00	4	25	0.023	16.000	9.600	495	45	7.0	5°
20.00	4	25	0.025	20.000	12.000	400	40	9.5	3°

High speed steel,
hardened
64 - 70 HRC

H

3.00	4	15	0.005	2.250	0.450	1590	30	0.0	3°
4.00	4	15	0.006	3.000	0.600	1195	30	0.1	4°
5.00	4	15	0.008	3.750	0.750	955	30	0.1	5°
6.00	4	15	0.006	4.500	3.600	795	20	0.3	5°
8.00	4	15	0.008	6.000	4.800	595	20	0.6	5°
10.00	4	15	0.010	7.500	6.000	475	20	0.9	5°
12.00	4	15	0.012	9.000	7.200	400	20	1.2	5°
16.00	4	15	0.016	12.000	9.600	300	20	2.2	5°
20.00	4	15	0.020	15.000	12.000	240	20	3.4	3°

Application

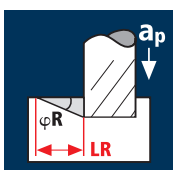


Material

Hardened tool steel
52 - 56 HRC

H

d1 [mm]	z	v _c [m/min]	f _s [mm]	a _p [mm]	a _e [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	q _R [°]	LR [mm]
3.00	4	50	0.010	3.000	3.000	5305	210	1.9	5°	34.3
4.00	4	50	0.013	4.000	4.000	3980	205	3.3	5°	45.7
5.00	4	50	0.017	5.000	5.000	3185	215	5.4	5°	57.2
6.00	4	50	0.021	6.000	6.000	2655	225	8.0	5°	68.6
8.00	4	50	0.028	8.000	8.000	1990	225	14.3	5°	91.4
10.00	4	50	0.035	10.000	10.000	1590	225	22.3	5°	114.3
12.00	4	50	0.042	12.000	12.000	1325	225	32.1	5°	137.2
16.00	4	50	0.064	8.000	16.000	995	255	32.6	5°	91.4
20.00	4	50	0.075	10.000	20.000	795	240	47.7	5°	114.3



Hardened tool steel
> 60 HRC

H

3.00	4	20	0.004	3.000	3.000	2120	35	0.3	3°	57.2
4.00	4	20	0.006	4.000	4.000	1590	40	0.6	4°	57.2
5.00	4	20	0.008	5.000	5.000	1275	40	1.0	5°	57.2
6.00	4	20	0.009	6.000	6.000	1060	40	1.4	5°	68.6
8.00	4	20	0.011	8.000	8.000	795	35	2.2	5°	91.4
10.00	4	20	0.015	10.000	10.000	635	40	3.8	5°	114.3
12.00	4	20	0.020	12.000	12.000	530	40	6.1	5°	137.2
16.00	4	20	0.032	8.000	16.000	400	50	6.5	5°	91.4
20.00	4	20	0.040	10.000	20.000	320	50	10.2	3°	190.8

High speed steel,
hardened
64 - 70 HRC

H

3.00	4	10	0.003	1.500	3.000	1060	15	0.1	3°	28.6
4.00	4	10	0.004	2.000	4.000	795	15	0.1	4°	28.6
5.00	4	10	0.005	2.500	5.000	635	15	0.2	5°	28.6
6.00	4	10	0.006	3.000	6.000	530	15	0.2	5°	34.3
8.00	4	10	0.008	4.000	8.000	400	15	0.4	5°	45.7
10.00	4	10	0.010	5.000	10.000	320	15	0.6	5°	57.2
12.00	4	10	0.012	6.000	12.000	265	15	0.9	5°	68.6
16.00	4	10	0.016	8.000	16.000	200	15	1.6	5°	91.4
20.00	4	10	0.020	10.000	20.000	160	15	2.5	3°	190.8

Precise cutting data for other applications and materials can be found in the cutting data software **ToolExpert 2.0**

