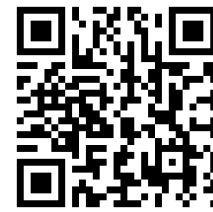


# data sheet 3023



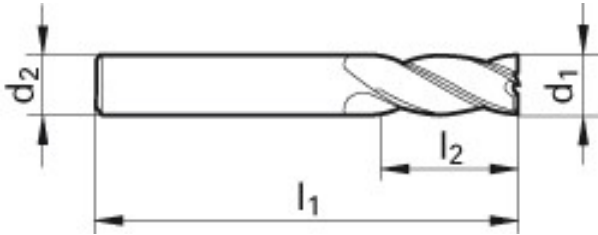
<b>Description</b>	XL end mills (4-fluted)
<b>Cutting direction</b>	right hand
<b>Tool material</b>	Carbide
<b>cutting edge radius</b>	edge
<b>Surface finish</b>	FIRE
<b>Coolant</b>	without
<b>Type</b>	N
<b>Standard</b>	Guhring standard
<b>on shank</b>	DIN 6535-HA
<b>product line</b>	standard
<b>discount group</b>	117

Materials	N/mm <sup>2</sup>	v <sub>c</sub>	VRC	infeed
	<=	ft/min		
Common structural steels	500	<b>328 - 427</b>	<b>45</b>	10% - 16%
	850	<b>328 - 394</b>	<b>44</b>	10% - 16%
Free-cutting steels	850	<b>328 - 427</b>	<b>44</b>	10% - 16%
	1000	<b>230 - 328</b>	<b>43</b>	10% - 16%
Unalloyed heat-treatable steels	700	<b>328 - 427</b>	<b>44</b>	10% - 16%
	850	<b>295 - 361</b>	<b>44</b>	10% - 16%
	1000	<b>230 - 328</b>	<b>43</b>	10% - 16%
Alloyed heat-treatable steels	1000	<b>295 - 361</b>	<b>43</b>	10% - 16%
	1200	230 - 328	42	10% - 16%
Unalloyed case hardened steels	750	<b>361 - 459</b>	<b>44</b>	10% - 16%
Alloyed case hardened steels	1000	<b>295 - 361</b>	<b>44</b>	10% - 16%
	1200	230 - 295	43	10% - 16%
Nitriding steels	1000	<b>361 - 459</b>	<b>44</b>	10% - 16%
	1200	295 - 361	42	10% - 16%
Tool steels	850	<b>295 - 361</b>	<b>44</b>	10% - 16%
	1000	246 - 312	42	10% - 16%
High speed steels	1000	180 - 230	43	10% - 16%
Cast iron	240 HB	<b>394 - 492</b>	<b>44</b>	10% - 16%
	300 HB	<b>328 - 459</b>	<b>43</b>	10% - 16%
Spheroidal graphite iron and malleable cast iron	240 HB	<b>328 - 427</b>	<b>44</b>	10% - 16%
	300 HB	<b>295 - 361</b>	<b>43</b>	10% - 16%
Chilled cast iron	350 HB	197 - 262	41	10% - 16%
Cast materials CGI	220 HB	<b>394 - 492</b>	<b>44</b>	10% - 16%
	300 HB	<b>328 - 459</b>	<b>43</b>	10% - 16%
Cast materials ADI	1000	<b>295 - 361</b>	<b>44</b>	10% - 16%
	1400	230 - 295	43	10% - 16%
Ti and Ti-alloys	850	<b>115 - 148</b>	<b>42</b>	10% - 16%
	1200	82 - 115	41	10% - 16%

d1[in]	41	42	43	44	45
<=	f <sub>z</sub> [in]				
<b>0.1181</b>	0.0002	0.0003	0.0004	0.0004	0.0004
<b>0.1969</b>	0.0004	0.0006	0.0008	0.0008	0.0009
<b>0.2362</b>	0.0005	0.0007	0.0009	0.001	0.0011

# GUHRING Navigator

0.315	0.0007	0.0009	0.0013	0.0013	0.0014
0.3937	0.001	0.0012	0.0015	0.0015	0.0017
0.4724	0.0012	0.0014	0.0018	0.0019	0.002
0.6299	0.0015	0.0018	0.0021	0.0023	0.0025
0.7874	0.0018	0.0022	0.0026	0.0029	0.0031



	nominal Ø d1 [mm]	Shank Ø d2 [mm]	Protruding length [mm]	Cutting edge length l2 [mm]	incision length [mm]	Total length l1 [mm]	Flute length [mm]	usable length [mm]	No. of slots
3	3	47	20	0,05	75	23,5	47	4	
4	4	47	25	0,05	75	29	47	4	
5	5	47	30	0,05	75	35	47	4	
6	6	39	30	0,05	75	36	39	4	
8	8	64	40	0,1	100	46,5	64	4	
10	10	60	40	0,1	100	48	60	4	
12	12	105	45	0,1	150	55	105	4	
14	14	105	45	0,15	150	56	105	4	
14	16	102	65	0,15	150	76	101	4	
16	16	102	65	0,15	150	77	102	4	
18	18	102	65	0,15	150	77	102	4	
18	20	100	65	0,15	150	77	99	4	
20	20	100	65	0,15	150	79	100	4	

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