



## List 4570: Stub Length, Corner Radius, High Feed

### Standard Milling

Hardness	<40 HRC		40-45 HRC		45-55 HRC		55-60 HRC		60-65 HRC																													
Work Material	Mild Steels Carbon Steels Cast Iron		Tool Steels Hardened Steels Pre-hardened Steels		Hardened Steels																																	
Depth of Cut	<table border="1"> <tr><th>CR</th><th>aa</th><th>ar</th></tr> <tr><td>CR≤2</td><td>0.2CR</td><td>0.5D</td></tr> <tr><td>2&lt;CR</td><td>0.02"</td><td>0.5D</td></tr> </table>		CR	aa	ar	CR≤2	0.2CR	0.5D	2<CR	0.02"	0.5D		<table border="1"> <tr><th>CR</th><th>aa</th><th>ar</th></tr> <tr><td>CR≤2</td><td>0.2CR</td><td>0.5D</td></tr> <tr><td>2&lt;CR</td><td>0.016"</td><td>0.5D</td></tr> </table>		CR	aa	ar	CR≤2	0.2CR	0.5D	2<CR	0.016"	0.5D	<table border="1"> <tr><th>CR</th><th>aa</th><th>ar</th></tr> <tr><td>CR≤2</td><td>0.1CR</td><td>0.5D</td></tr> <tr><td>2&lt;CR</td><td>0.008"</td><td>0.5D</td></tr> </table>						CR	aa	ar	CR≤2	0.1CR	0.5D	2<CR	0.008"	0.5D
	CR	aa	ar																																			
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Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min																												
2	19,406	252	13,341	158	9,703	103	5,822	41	4,851	34																												
3	12,937	336	8,894	210	6,469	138	3,881	55	3,234	46																												
4	9,703	336	6,671	210	4,851	138	2,911	55	2,426	46																												
5	7,762	336	5,337	210	3,881	138	2,329	55	1,941	46																												
6	6,469	336	4,447	210	3,234	138	1,941	55	1,617	46																												
7	5,544	336	3,812	210	2,772	138	1,663	55	1,386	46																												
8	4,851	336	3,335	210	2,426	138	1,455	55	1,213	46																												
9	4,312	336	2,965	210	2,156	138	1,294	55	1,078	46																												
10	3,881	336	2,668	210	1,941	138	1,164	55	970	46																												
11	3,528	336	2,426	210	1,764	138	1,058	55	882	46																												
12	3,234	336	2,224	210	1,617	138	970	55	809	46																												
13	2,985	336	2,053	210	1,493	138	896	55	746	46																												

1. Use a rigid and precise machine and holder.
2. When chattering occurs, reduce the speed and feed simultaneously.
3. Use a suitable cutting fluid with high smoke retardant.

### High Feed Milling

Hardness	<40 HRC		40-45 HRC		45-55 HRC		55-60 HRC		60-65 HRC																				
Work Material	Mild Steels Carbon Steels Cast Iron		Tool Steels Hardened Steels Pre-hardened Steels		Hardened Steels																								
Depth of Cut	$aa=0.1CR$ $ar=0.3D$ CR=Corner Radius			<table border="1"> <tr><th>CR</th><th>aa</th><th>ar</th></tr> <tr><td>CR≤2</td><td>0.1CR</td><td>0.3D</td></tr> <tr><td>2&lt;CR</td><td>0.008"</td><td>0.3D</td></tr> </table>		CR	aa	ar	CR≤2	0.1CR	0.3D	2<CR	0.008"	0.3D	<table border="1"> <tr><th>CR</th><th>aa</th><th>ar</th></tr> <tr><td>CR≤2</td><td>0.05CR</td><td>0.3D</td></tr> <tr><td>2&lt;CR</td><td>0.004"</td><td>0.3D</td></tr> </table>						CR	aa	ar	CR≤2	0.05CR	0.3D	2<CR	0.004"	0.3D
	CR	aa		ar																									
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Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min																			
2	25,000	325	25,000	295	25,000	266	18,920	134	14,554	103																			
3	25,000	650	19,082	451	17,788	378	12,614	179	9,703	138																			
4	19,042	660	14,312	451	13,341	378	9,460	179	7,277	138																			
5	15,233	660	11,449	451	10,673	378	7,568	179	5,822	138																			
6	12,694	660	9,541	451	8,894	378	6,307	179	4,851	138																			
7	10,881	660	8,178	451	7,624	378	5,406	179	4,158	138																			
8	9,521	660	7,156	451	6,671	378	4,730	179	3,639	138																			
9	8,463	660	6,361	451	5,929	378	4,205	179	3,234	138																			
10	7,617	660	5,725	451	5,337	378	3,784	179	2,911	138																			
11	6,924	660	5,204	451	4,851	378	3,440	179	2,646	138																			
12	6,347	660	4,771	451	4,447	378	3,153	179	2,426	138																			
13	5,859	660	4,404	451	4,105	378	2,911	179	2,239	138																			

1. The indicated speeds and feeds are for high speed light milling for use with high speed/high precision machining centers.
2. Do not use flammable fluids because tools with considerable wear can cause sparks.
3. We recommend using air blow. When using cutting fluids, use a high quality fluid with high smoke retardant.

