





List 8441, 8541: Multi-Flute, Stub Length, Reduced Neck, Square End

Side Milling

Hardness		Up to 45 HRC		45-55 HRC		55-62 HRC		62-66 HRC		66-70 HRC	
Work Material		Tool Steels Hardened Steels Alloy Steels		Hardened Steels							
Cutting Speed (SFM)		360 - 425		260 - 330		195 - 260		165 - 230		130 - 200	
Depth of Cut		$a_a \leq 1.5D$ $a_r \leq 0.1D$ $a_r \text{ Max} = 1\text{mm}$ 		$a_a \leq 1.5D$ $a_r \leq 0.05D$ $a_r \text{ Max} = 0.5\text{mm}$				$a_a \leq 1.5D$ $a_r \leq 0.03D$ $a_r \text{ Max} = 0.3\text{mm}$			
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
Inch	mm										
1/16	-	24,061	48.1	18,076	35.3	14,046	21.0	12,031	15.8	10,015	9.9
5/64	-	19,249	48.1	14,461	35.3	11,237	21.0	9,624	15.8	8,012	9.9
3/32	-	16,041	48.1	12,051	35.3	9,364	21.0	8,020	15.8	6,677	9.9
7/64	-	13,749	48.1	10,329	35.3	8,026	21.0	6,875	15.8	5,723	9.9
-	3	12,740	48.0	9,550	34.6	7,430	20.9	6,370	15.7	5,310	9.8
1/8	-	12,031	48.1	9,038	35.3	7,023	21.0	6,015	15.8	5,008	9.9
5/32	-	9,624	48.1	7,231	35.3	5,618	21.0	4,812	15.8	4,006	9.9
-	4	9,550	48.0	7,170	35.0	5,570	20.9	4,780	15.7	3,980	9.8
3/16	-	8,020	48.1	6,025	35.3	4,682	21.0	4,010	15.8	3,338	9.9
-	5	7,640	48.0	5,730	36.2	4,460	21.3	3,820	15.7	3,180	9.8
7/32	-	6,875	48.1	5,165	35.3	4,013	21.0	3,437	15.8	2,862	9.9
-	6	6,370	72.0	4,780	53.1	3,720	31.5	3,180	23.6	2,650	15.0
1/4	-	6,015	72.1	4,519	52.9	3,511	31.5	3,008	23.6	2,504	14.9
9/32	-	5,347	72.1	4,017	52.9	3,121	31.5	2,673	23.6	2,226	14.9
5/16	-	4,812	72.1	3,615	52.9	2,809	31.5	2,406	23.6	2,003	14.9
-	8	4,780	72.4	3,580	53.1	2,790	31.5	2,390	23.6	1,990	15.0
3/8	-	4,010	72.1	3,013	52.9	2,341	31.5	2,005	23.6	1,669	14.9
-	10	3,820	72.0	2,870	52.8	2,230	31.5	1,910	23.6	1,590	15.0
7/16	-	3,437	72.1	2,582	52.9	2,007	31.5	1,719	23.6	1,431	14.9
-	12	3,180	72.0	2,390	52.4	1,860	31.5	1,590	23.6	1,330	15.0
1/2	-	3,008	72.1	2,260	52.9	1,756	31.5	1,504	23.6	1,252	14.9

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

High Speed Milling

Hardness		Up to 45 HRC		45-55 HRC		55-62 HRC		62-66 HRC		66-70 HRC	
Work Material		Tool Steels Hardened Steels Alloy Steels		Hardened Steels							
Cutting Speed (SFM)		950 - 1,020		785 - 850		490 - 560		425 - 490		295 - 360	
Depth of Cut		$a_a \leq 1.5D$ $a_r \leq 0.02D$ $a_r \text{ Max} = 0.2\text{mm}$ 				$a_a \leq 1.5D$ $a_r \leq 0.01D$ $a_r \text{ Max} = 0.1\text{mm}$					
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
Inch	mm										
1/16	-	50,000	112.5	50,000	112.5	32,122	60.2	28,092	49.2	20,031	28.0
5/64	-	48,171	135.5	40,110	112.8	25,698	60.2	22,473	49.2	16,024	28.0
3/32	-	40,142	135.5	33,425	112.8	21,415	60.2	18,728	49.2	13,354	28.0
7/64	-	34,408	135.5	28,650	112.8	18,356	60.2	16,052	49.2	11,446	28.0
-	3	31,850	135.4	26,540	113.0	16,990	60.2	14,860	46.9	10,620	28.3
1/8	-	30,107	135.5	25,069	112.8	16,061	60.2	14,046	49.2	10,015	28.0
5/32	-	24,085	135.5	20,055	112.8	12,849	60.2	11,237	49.2	8,012	28.0
-	4	23,890	135.4	19,900	113.0	12,740	60.2	11,150	46.9	7,960	28.3
3/16	-	20,071	135.5	16,712	112.8	10,707	60.2	9,364	49.2	6,677	28.0
-	5	19,110	135.4	15,920	113.0	10,190	60.2	8,920	46.9	6,370	28.3
7/32	-	17,204	135.5	14,325	112.8	9,178	60.2	8,026	49.2	5,723	28.0
-	6	15,920	203.1	13,270	169.3	8,490	90.2	7,430	70.1	5,310	42.5
1/4	-	15,053	203.2	12,534	169.2	8,031	90.3	7,023	73.7	5,008	42.1
9/32	-	13,381	203.2	11,142	169.2	7,138	90.3	6,243	73.7	4,451	42.1
5/16	-	12,043	203.2	10,027	169.2	6,424	90.3	5,618	73.7	4,006	42.1
-	8	11,940	203.1	9,950	169.3	6,370	90.2	5,570	69.7	3,980	42.5
3/8	-	10,036	203.2	8,356	169.2	5,354	90.3	4,682	46.0	3,338	42.1
-	10	9,550	203.1	7,960	169.3	5,100	90.2	4,460	46.1	3,180	42.5
7/16	-	8,602	203.2	7,162	169.2	4,589	90.3	4,013	46.0	2,862	42.1
-	12	7,960	203.1	6,630	169.3	4,250	90.2	3,720	46.1	2,650	42.5
1/2	-	7,527	203.2	6,267	169.2	4,015	90.3	3,511	46.0	2,504	42.1

1. Tools can cause sparks. Do not use flammable fluids.
2. Use an air blow or a suitable cutting fluid with high smoke retardant properties.

