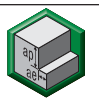
Solid End Milling

Series 4V05 • Lists 4V05 4V45



A

B

Material Group		A ap	A ae	B ap	TIALN Cutting Speed – vc SFM min		TIALN Cutting Speed – vc SFM max	ALTIN Cutting Speed – vc SFM min		ALTIN Cutting Speed – vc SFM max	Recommended feed per tooth (IPT=inch/th) for side milling (A). For slotting (B), reduce IPT by 20%. frac.	D1 — Diameter 1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1	1-1/4
											dec.	.1250	.1880	.2500	.3130	.3750	.4380	.5000	.6250	.7500	1.000	1.250
P	1	1.25 x D	0.5 x D	1 x D	490	–	660	490	–	660	IPT	.0009	.0014	.0018	.0023	.0027	.0031	.0035	.0039	.0043	.0050	.0062
	2	1.25 x D	0.5 x D	1 x D	460	–	620	460	–	620	IPT	.0009	.0014	.0018	.0023	.0027	.0031	.0035	.0039	.0043	.0050	.0062
	3	1.25 x D	0.5 x D	1 x D	390	–	520	390	–	520	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	4	1.25 x D	0.5 x D	0.75 x D	300	–	490	300	–	490	IPT	.0007	.0010	.0014	.0018	.0020	.0023	.0026	.0030	.0033	.0039	.0049
	5	1.25 x D	0.5 x D	1 x D	200	–	330	200	–	330	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
	6	1.25 x D	0.5 x D	0.75 x D	160	–	250	160	–	250	IPT	.0005	.0008	.0010	.0013	.0015	.0017	.0019	.0022	.0024	.0028	.0036
M	1	1.25 x D	0.5 x D	1 x D	260	–	330	260	–	330	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	2	1.25 x D	0.5 x D	1 x D	200	–	260	200	–	260	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
	3	1.25 x D	0.5 x D	1 x D	200	–	260	200	–	260	IPT	.0005	.0008	.0010	.0013	.0015	.0017	.0019	.0022	.0024	.0028	.0036
K	1	1.25 x D	0.5 x D	1 x D	390	–	520	390	–	520	IPT	.0009	.0014	.0018	.0023	.0027	.0031	.0035	.0039	.0043	.0050	.0062
	2	1.25 x D	0.5 x D	1 x D	360	–	460	360	–	460	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	3	1.25 x D	0.5 x D	1 x D	330	–	430	330	–	430	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
S	1	1.0 x D	0.3 x D	0.3 x D	160	–	300	160	–	300	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	2	1.0 x D	0.3 x D	0.3 x D	70	–	130	70	–	130	IPT	.0004	.0006	.0008	.0010	.0012	.0014	.0016	.0018	.0020	.0025	.0031
	3	1.25 x D	0.5 x D	1 x D	160	–	260	160	–	260	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
	4	1.25 x D	0.5 x D	1 x D	150	–	210	150	–	210	IPT	.0005	.0008	.0011	.0014	.0017	.0019	.0022	.0025	.0028	.0033	.0042
H	1	1.25 x D	0.5 x D	0.75 x D	260	–	460	260	–	460	IPT	.0007	.0010	.0014	.0018	.0020	.0023	.0026	.0030	.0033	.0039	.0049

NOTE: Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

Series 4V05 • Lists 4V15 4V65

A

B

Material Group		A ap	A ae	B ap	TIALN Cutting Speed — vc SFM min		TIALN Cutting Speed — vc SFM max	ALTIN Cutting Speed — vc SFM min		ALTIN Cutting Speed — vc SFM max	Recommended feed per tooth (IPT=inch/th) for side milling (A). For slotting (B), reduce IPT by 20%. frac.	D1 — Diameter 1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1	1-1/4
											dec.	.1250	.1880	.2500	.3130	.3750	.4380	.5000	.6250	.7500	1.000	1.250
P	1	2 x D	0.25 x D	0.5 x D	490	–	660	490	–	660	IPT	.0009	.0014	.0018	.0023	.0027	.0031	.0035	.0039	.0043	.0050	.0062
	2	2 x D	0.25 x D	0.5 x D	460	–	620	460	–	620	IPT	.0009	.0014	.0018	.0023	.0027	.0031	.0035	.0039	.0043	.0050	.0062
	3	2 x D	0.25 x D	0.5 x D	390	–	520	390	–	520	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	4	2 x D	0.25 x D	0.4 x D	300	–	490	300	–	490	IPT	.0007	.0010	.0014	.0018	.0020	.0023	.0026	.0030	.0033	.0039	.0049
	5	2 x D	0.25 x D	0.5 x D	200	–	330	200	–	330	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
	6	2 x D	0.25 x D	0.4 x D	160	–	250	160	–	250	IPT	.0005	.0008	.0010	.0013	.0015	.0017	.0019	.0022	.0024	.0028	.0036
M	1	2 x D	0.25 x D	0.5 x D	260	–	330	260	–	330	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	2	2 x D	0.25 x D	0.5 x D	200	–	260	200	–	260	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
	3	2 x D	0.25 x D	0.5 x D	200	–	260	200	–	260	IPT	.0005	.0008	.0010	.0013	.0015	.0017	.0019	.0022	.0024	.0028	.0036
K	1	2 x D	0.25 x D	0.5 x D	390	–	520	390	–	520	IPT	.0009	.0014	.0018	.0023	.0027	.0031	.0035	.0039	.0043	.0050	.0062
	2	2 x D	0.25 x D	0.5 x D	360	–	460	360	–	460	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	3	2 x D	0.25 x D	0.5 x D	330	–	430	330	–	430	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
S	1	2 x D	0.15 x D	0.2 x D	160	–	300	160	–	300	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	2	2 x D	0.15 x D	0.2 x D	70	–	130	70	–	130	IPT	.0004	.0006	.0008	.0010	.0012	.0014	.0016	.0018	.0020	.0025	.0031
	3	2 x D	0.25 x D	0.5 x D	160	–	260	160	–	260	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
	4	2 x D	0.25 x D	0.5 x D	150	–	210	150	–	210	IPT	.0005	.0008	.0011	.0014	.0017	.0019	.0022	.0025	.0028	.0033	.0042
H	1	2 x D	0.25 x D	0.4 x D	260	–	460	260	–	460	IPT	.0007	.0010	.0014	.0018	.0020	.0023	.0026	.0030	.0033	.0039	.0049

NOTE: Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

Series 4V05 • Lists 4V25 4V65

A

Material Group		ap	ae	TIALN Cutting Speed — vc SFM min		TIALN Cutting Speed — vc SFM max	ALTIN Cutting Speed — vc SFM min		ALTIN Cutting Speed — vc SFM max	Recommended feed per tooth (IPT=inch/th) for side milling (A). D1 — Diameter frac.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1	1-1/4
										dec.	.1250	.1880	.2500	.3130	.3750	.4380	.5000	.6250	.7500	1.000	1.250
P	1	2.5 x D	0.1 x D	490	–	660	490	–	660	IPT	.0009	.0014	.0018	.0023	.0027	.0031	.0035	.0039	.0043	.0050	.0062
	2	2.5 x D	0.1 x D	460	–	620	460	–	620	IPT	.0009	.0014	.0018	.0023	.0027	.0031	.0035	.0039	.0043	.0050	.0062
	3	2.5 x D	0.1 x D	390	–	520	390	–	520	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	4	2.5 x D	0.1 x D	300	–	490	300	–	490	IPT	.0007	.0010	.0014	.0018	.0020	.0023	.0026	.0030	.0033	.0039	.0049
	5	2.5 x D	0.1 x D	200	–	330	200	–	330	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
	6	2.5 x D	0.1 x D	160	–	250	160	–	250	IPT	.0005	.0008	.0010	.0013	.0015	.0017	.0019	.0022	.0024	.0028	.0036
M	1	2.5 x D	0.1 x D	260	–	330	260	–	330	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	2	2.5 x D	0.1 x D	200	–	260	200	–	260	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
	3	2.5 x D	0.1 x D	200	–	260	200	–	260	IPT	.0005	.0008	.0010	.0013	.0015	.0017	.0019	.0022	.0024	.0028	.0036
K	1	2.5 x D	0.1 x D	390	–	520	390	–	520	IPT	.0009	.0014	.0018	.0023	.0027	.0031	.0035	.0039	.0043	.0050	.0062
	2	2.5 x D	0.1 x D	360	–	460	360	–	460	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	3	2.5 x D	0.1 x D	330	–	430	330	–	430	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
S	1	2.5 x D	0.06 x D	160	–	300	160	–	300	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	2	2.5 x D	0.06 x D	70	–	130	70	–	130	IPT	.0004	.0006	.0008	.0010	.0012	.0014	.0016	.0018	.0020	.0025	.0031
	3	2.5 x D	0.1 x D	160	–	260	160	–	260	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
	4	2.5 x D	0.1 x D	150	–	210	150	–	210	IPT	.0005	.0008	.0011	.0014	.0017	.0019	.0022	.0025	.0028	.0033	.0042
H	1	2.5 x D	0.1 x D	260	–	460	260	–	460	IPT	.0007	.0010	.0014	.0018	.0020	.0023	.0026	.0030	.0033	.0039	.0049

NOTE: Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

Series 4V0T

A

B

Material Group		A ap	A ae	B ap	ALTIN Cutting Speed — vc SFM min		ALTIN Cutting Speed — vc SFM max	Recommended feed per tooth (IPT=inch/th) for side milling (A). For slotting (B), reduce IPT by 20%. D1 — Diameter frac.	1/2	5/8	3/4	1	1-1/4
								dec.	.5000	.6250	.7500	1.000	1.250
P	1	1.25 x D	0.5 x D	1 x D	490	–	660	IPT	.0035	.0039	.0043	.0050	.0062
	2	1.25 x D	0.5 x D	1 x D	460	–	620	IPT	.0035	.0039	.0043	.0050	.0062
	3	1.25 x D	0.5 x D	1 x D	390	–	520	IPT	.0029	.0034	.0038	.0046	.0057
	4	1.25 x D	0.5 x D	0.75 x D	300	–	490	IPT	.0026	.0030	.0033	.0039	.0049
	5	1.25 x D	0.5 x D	1 x D	200	–	330	IPT	.0023	.0027	.0030	.0036	.0046
	6	1.25 x D	0.5 x D	0.75 x D	160	–	250	IPT	.0019	.0022	.0024	.0028	.0036
M	1	1.25 x D	0.5 x D	1 x D	260	–	330	IPT	.0029	.0034	.0038	.0046	.0057
	2	1.25 x D	0.5 x D	1 x D	200	–	260	IPT	.0023	.0027	.0030	.0036	.0046
	3	1.25 x D	0.5 x D	1 x D	200	–	260	IPT	.0019	.0022	.0024	.0028	.0036
K	1	1.25 x D	0.5 x D	1 x D	390	–	520	IPT	.0035	.0039	.0043	.0050	.0062
	2	1.25 x D	0.5 x D	1 x D	360	–	460	IPT	.0029	.0034	.0038	.0046	.0057
	3	1.25 x D	0.5 x D	1 x D	330	–	430	IPT	.0023	.0027	.0030	.0036	.0046
S	1	1.0 x D	0.3 x D	0.3 x D	160	–	300	IPT	.0029	.0034	.0038	.0046	.0057
	2	1.0 x D	0.3 x D	0.3 x D	70	–	130	IPT	.0016	.0018	.0020	.0025	.0031
	3	1.25 x D	0.5 x D	1 x D	160	–	260	IPT	.0023	.0027	.0030	.0036	.0046
	4	1.25 x D	0.5 x D	1 x D	150	–	210	IPT	.0022	.0025	.0028	.0033	.0042
H	1	1.25 x D	0.5 x D	0.75 x D	260	–	460	IPT	.0026	.0030	.0033	.0039	.0049

NOTE: Side milling applications — for longest reach (L3) tools, reduce ae by 30%.
Slot milling applications — for longest reach (L3) tools, reduce ap by 30%.
Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

Series 4VP5 • Lists 4V15 4V65

Material Group		A ap	A ae	B ap	TIALN Cutting Speed — vc SFM min		TIALN Cutting Speed — vc SFM max	Recommended feed per tooth (IPT=inch/th) for side milling (A). For slotting (B), reduce IPT by 20%. D1 — Diameter dec.	frac. .2500	1/4 .3750	3/8 .5000	1/2 .6250	5/8 .7500	3/4 1.000
P	1	0.75 x D	0.5 x D	0.75 x D	500	–	650	IPT	.0018	.0027	.0035	.0039	.0043	.0050
	2	0.75 x D	0.5 x D	0.75 x D	450	–	625	IPT	.0018	.0027	.0035	.0039	.0043	.0050
	3	0.75 x D	0.5 x D	0.75 x D	400	–	525	IPT	.0015	.0023	.0029	.0034	.0038	.0046
	4	0.75 x D	0.5 x D	0.5 x D	300	–	475	IPT	.0014	.0020	.0026	.0030	.0033	.0039
	5	0.75 x D	0.5 x D	0.75 x D	200	–	325	IPT	.0012	.0018	.0023	.0027	.0030	.0036
	6	0.75 x D	0.5 x D	0.5 x D	150	–	225	IPT	.0010	.0015	.0019	.0022	.0024	.0028
M	1	0.75 x D	0.5 x D	0.75 x D	260	–	330	IPT	.0015	.0023	.0029	.0034	.0038	.0046
	2	0.75 x D	0.5 x D	0.75 x D	200	–	260	IPT	.0012	.0018	.0023	.0027	.0030	.0036
	3	0.75 x D	0.5 x D	0.75 x D	200	–	260	IPT	.0010	.0015	.0019	.0022	.0024	.0028
K	1	0.75 x D	0.5 x D	0.75 x D	390	–	520	IPT	.0018	.0027	.0035	.0039	.0043	.0050
	2	0.75 x D	0.5 x D	0.75 x D	360	–	460	IPT	.0015	.0023	.0029	.0034	.0038	.0046
	3	0.75 x D	0.5 x D	0.75 x D	330	–	430	IPT	.0012	.0018	.0023	.0027	.0030	.0036
S	1	0.75 x D	0.3 x D	0.3 x D	150	–	275	IPT	.0015	.0023	.0029	.0034	.0038	.0046
	2	0.75 x D	0.3 x D	0.3 x D	70	–	130	IPT	.0008	.0012	.0016	.0018	.0020	.0025
	3	0.75 x D	0.5 x D	0.75 x D	160	–	260	IPT	.0012	.0018	.0023	.0027	.0030	.0036
	4	0.75 x D	0.5 x D	0.75 x D	150	–	210	IPT	.0011	.0017	.0022	.0025	.0028	.0033
H	1	0.75 x D	0.5 x D	0.5 x D	260	–	450	IPT	.0014	.0020	.0026	.0030	.0033	.0039

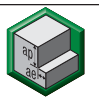
NOTE: Side milling applications — for longest reach (L3) tools, reduce ae by 30%.
Slot milling applications — for longest reach (L3) tools, reduce ap by 30%.
Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

Series 4VPT

Material Group		A ap	A ae	B ap	ALTIN Cutting Speed — vc SFM min		ALTIN Cutting Speed — vc SFM max	Recommended feed per tooth (IPT=inch/th) for side milling (A). For slotting (B), reduce IPT by 20%. D1 — Diameter dec.	frac. .5000	1/2 .6250	5/8 .7500	3/4 1.000	1
P	1	0.75 x D	0.5 x D	0.75 x D	500	–	650	IPT	.0035	.0039	.0043	.0050	
	2	0.75 x D	0.5 x D	0.75 x D	450	–	625	IPT	.0035	.0039	.0043	.0050	
	3	0.75 x D	0.5 x D	0.75 x D	400	–	525	IPT	.0029	.0034	.0038	.0046	
	4	0.75 x D	0.5 x D	0.5 x D	300	–	475	IPT	.0026	.0030	.0033	.0039	
	5	0.75 x D	0.5 x D	0.75 x D	200	–	325	IPT	.0023	.0027	.0030	.0036	
	6	0.75 x D	0.5 x D	0.5 x D	150	–	225	IPT	.0019	.0022	.0024	.0028	
M	1	0.75 x D	0.5 x D	0.75 x D	260	–	330	IPT	.0029	.0034	.0038	.0046	
	2	0.75 x D	0.5 x D	0.75 x D	200	–	260	IPT	.0023	.0027	.0030	.0036	
	3	0.75 x D	0.5 x D	0.75 x D	200	–	260	IPT	.0019	.0022	.0024	.0028	
K	1	0.75 x D	0.5 x D	0.75 x D	390	–	520	IPT	.0035	.0039	.0043	.0050	
	2	0.75 x D	0.5 x D	0.75 x D	360	–	460	IPT	.0029	.0034	.0038	.0046	
	3	0.75 x D	0.5 x D	0.75 x D	330	–	430	IPT	.0023	.0027	.0030	.0036	
S	1	0.75 x D	0.3 x D	0.3 x D	150	–	275	IPT	.0029	.0034	.0038	.0046	
	2	0.75 x D	0.3 x D	0.3 x D	70	–	130	IPT	.0016	.0018	.0020	.0025	
	3	0.75 x D	0.5 x D	0.75 x D	160	–	260	IPT	.0023	.0027	.0030	.0036	
	4	0.75 x D	0.5 x D	0.75 x D	150	–	210	IPT	.0022	.0025	.0028	.0033	
H	1	0.75 x D	0.5 x D	0.5 x D	260	–	450	IPT	.0026	.0030	.0033	.0039	

NOTE: Side milling applications — for longest reach (L3) tools, reduce ae by 30%.
Slot milling applications — for longest reach (L3) tools, reduce ap by 30%.
Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

Series 4VN5 • Lists 4V15 4V65



A

B

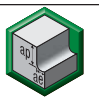
TIALN

Recommended feed per tooth (IPT=inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.

Material Group		A ap	A ae	B ap	Cutting Speed — vc SFM min		Cutting Speed — vc SFM max	D1 — Diameter frac.	1/4 dec. .2500	3/8 .3750	1/2 .5000	5/8 .6250	3/4 .7500	1 1.000
P	1	0.75 x D	0.5 x D	0.75 x D	500	–	650	IPT	.0018	.0027	.0035	.0039	.0043	.0050
	2	0.75 x D	0.5 x D	0.75 x D	450	–	625	IPT	.0018	.0027	.0035	.0039	.0043	.0050
	3	0.75 x D	0.5 x D	0.75 x D	400	–	525	IPT	.0015	.0023	.0029	.0034	.0038	.0046
	4	0.75 x D	0.5 x D	0.5 x D	300	–	475	IPT	.0014	.0020	.0026	.0030	.0033	.0039
	5	0.75 x D	0.5 x D	0.75 x D	200	–	325	IPT	.0012	.0018	.0023	.0027	.0030	.0036
	6	0.75 x D	0.5 x D	0.5 x D	150	–	225	IPT	.0010	.0015	.0019	.0022	.0024	.0028
M	1	0.75 x D	0.5 x D	0.75 x D	260	–	330	IPT	.0015	.0023	.0029	.0034	.0038	.0046
	2	0.75 x D	0.5 x D	0.75 x D	200	–	260	IPT	.0012	.0018	.0023	.0027	.0030	.0036
	3	0.75 x D	0.5 x D	0.75 x D	200	–	260	IPT	.0010	.0015	.0019	.0022	.0024	.0028
K	1	0.75 x D	0.5 x D	0.75 x D	390	–	520	IPT	.0018	.0027	.0035	.0039	.0043	.0050
	2	0.75 x D	0.5 x D	0.75 x D	360	–	460	IPT	.0015	.0023	.0029	.0034	.0038	.0046
	3	0.75 x D	0.5 x D	0.75 x D	330	–	430	IPT	.0012	.0018	.0023	.0027	.0030	.0036
S	1	0.75 x D	0.3 x D	0.3 x D	150	–	275	IPT	.0015	.0023	.0029	.0034	.0038	.0046
	2	0.75 x D	0.3 x D	0.3 x D	70	–	130	IPT	.0008	.0012	.0016	.0018	.0020	.0025
	3	0.75 x D	0.5 x D	0.75 x D	160	–	260	IPT	.0012	.0018	.0023	.0027	.0030	.0036
	4	0.75 x D	0.5 x D	0.75 x D	150	–	210	IPT	.0011	.0017	.0022	.0025	.0028	.0033
H	1	0.75 x D	0.5 x D	0.5 x D	260	–	450	IPT	.0014	.0020	.0026	.0030	.0033	.0039

NOTE: Side milling applications — for longest reach (L3) tools, reduce ae by 30%.
Slot milling applications — for longest reach (L3) tools, reduce ap by 30%.
Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

Series 4VP0



A

B

TIALN

Recommended feed per tooth (IPT=inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.

Material Group		A ap	A ae	B ap	Cutting Speed — vc SFM min		Cutting Speed — vc SFM max	D1 — Diameter frac.	1/4 dec. .2500	3/8 .3750	1/2 .5000	5/8 .6250	3/4 .7500	1 1.000
P	1	0.75 x D	0.5 x D	0.75 x D	490	–	660	IPT	.0018	.0027	.0035	.0039	.0043	.0050
	2	0.75 x D	0.5 x D	0.75 x D	460	–	620	IPT	.0018	.0027	.0035	.0039	.0043	.0050
	3	0.75 x D	0.5 x D	0.75 x D	390	–	520	IPT	.0015	.0023	.0029	.0034	.0038	.0046
	4	0.75 x D	0.5 x D	0.5 x D	300	–	490	IPT	.0014	.0020	.0026	.0030	.0033	.0039
	5	0.75 x D	0.5 x D	0.75 x D	200	–	330	IPT	.0012	.0018	.0023	.0027	.0030	.0036
	6	0.75 x D	0.5 x D	0.5 x D	160	–	250	IPT	.0010	.0015	.0019	.0022	.0024	.0028
M	1	0.75 x D	0.5 x D	0.75 x D	260	–	330	IPT	.0015	.0023	.0029	.0034	.0038	.0046
	2	0.75 x D	0.5 x D	0.75 x D	200	–	260	IPT	.0012	.0018	.0023	.0027	.0030	.0036
	3	0.75 x D	0.5 x D	0.75 x D	200	–	260	IPT	.0010	.0015	.0019	.0022	.0024	.0028
K	1	0.75 x D	0.5 x D	0.75 x D	390	–	520	IPT	.0018	.0027	.0035	.0039	.0043	.0050
	2	0.75 x D	0.5 x D	0.75 x D	360	–	460	IPT	.0015	.0023	.0029	.0034	.0038	.0046
	3	0.75 x D	0.5 x D	0.75 x D	330	–	430	IPT	.0012	.0018	.0023	.0027	.0030	.0036
S	1	0.75 x D	0.3 x D	0.3 x D	160	–	300	IPT	.0015	.0023	.0029	.0034	.0038	.0046
	2	0.75 x D	0.3 x D	0.3 x D	70	–	130	IPT	.0008	.0012	.0016	.0018	.0020	.0025
	3	0.75 x D	0.5 x D	0.75 x D	160	–	260	IPT	.0012	.0018	.0023	.0027	.0030	.0036
	4	0.75 x D	0.5 x D	0.75 x D	150	–	210	IPT	.0011	.0017	.0022	.0025	.0028	.0033
H	1	0.75 x D	0.5 x D	0.5 x D	260	–	460	IPT	.0014	.0020	.0026	.0030	.0033	.0039

NOTE: Side milling applications — for longest reach (L3) tools, reduce ae by 30%.
Slot milling applications — for longest reach (L3) tools, reduce ap by 30%.
Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

Series 4V00

Material Group		A ap	A ae	B ap	TIALN Cutting Speed — vc SFM min		max	Recommended feed per tooth (IPT=inch/th) for side milling (A). For slotting (B), reduce IPT by 20%. D1 — Diameter frac.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1	1-1/4
								dec.	.1250	.1880	.2500	.3130	.3750	.4380	.5000	.6250	.7500	1.000	1.250
P	1	1.25 x D	0.5 x D	1 x D	490	–	660	IPT	.0009	.0014	.0018	.0023	.0027	.0031	.0035	.0039	.0043	.0050	.0062
	2	1.25 x D	0.5 x D	1 x D	460	–	620	IPT	.0009	.0014	.0018	.0023	.0027	.0031	.0035	.0039	.0043	.0050	.0062
	3	1.25 x D	0.5 x D	1 x D	390	–	520	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	4	1.25 x D	0.5 x D	0.75 x D	300	–	490	IPT	.0007	.0010	.0014	.0018	.0020	.0023	.0026	.0030	.0033	.0039	.0049
	5	1.25 x D	0.5 x D	1 x D	200	–	330	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
	6	1.25 x D	0.5 x D	0.75 x D	160	–	250	IPT	.0005	.0008	.0010	.0013	.0015	.0017	.0019	.0022	.0024	.0028	.0036
M	1	1.25 x D	0.5 x D	1 x D	260	–	330	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	2	1.25 x D	0.5 x D	1 x D	200	–	260	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
	3	1.25 x D	0.5 x D	1 x D	200	–	260	IPT	.0005	.0008	.0010	.0013	.0015	.0017	.0019	.0022	.0024	.0028	.0036
K	1	1.25 x D	0.5 x D	1 x D	390	–	520	IPT	.0009	.0014	.0018	.0023	.0027	.0031	.0035	.0039	.0043	.0050	.0062
	2	1.25 x D	0.5 x D	1 x D	360	–	460	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	3	1.25 x D	0.5 x D	1 x D	330	–	430	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
S	1	1.0 x D	0.3 x D	0.3 x D	160	–	300	IPT	.0007	.0011	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057
	2	1.0 x D	0.3 x D	0.3 x D	70	–	130	IPT	.0004	.0006	.0008	.0010	.0012	.0014	.0016	.0018	.0020	.0025	.0031
	3	1.25 x D	0.5 x D	1 x D	160	–	260	IPT	.0006	.0009	.0012	.0016	.0018	.0021	.0023	.0027	.0030	.0036	.0046
	4	1.25 x D	0.5 x D	1 x D	150	–	210	IPT	.0005	.0008	.0011	.0014	.0017	.0019	.0022	.0025	.0028	.0033	.0042
H	1	1.25 x D	0.5 x D	0.75 x D	260	–	460	IPT	.0007	.0010	.0014	.0018	.0020	.0023	.0026	.0030	.0033	.0039	.0049

NOTE: Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group. Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group. Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.