Series SAP, SAP-NB, SAPB, SAPB-NB, SAPBR & SAPBR-NB

Cutting Parameters

Suggested Starting Speeds & Feed Rates

Material Group	ISO Code	Material Examples	Finishing Cuts .1D Radial x 2D Axial		Medium Cuts .25D Radial x 1.5D Axial		Heavy Cuts .5D Radial x 1.5D Axial		Slotting .5D Axial		Facing .75D Radial x .25D Axial		Ramping Max. Ramp Angle - 7°	
			SFM	IPM	SFM	IPM	SFM	IPM	SFM	IPM	SFM	IPM	SFM	IPM
Steel	P	1018 thru 1095, 12L14, A-36, Hot Rolled	500	50.00	500	45.00	500	40.00	500	35.00	500	45.00	500	40.00
Steel Alloys	P	4140 thru 8820	400	40.00	400	40.00	400	35.00	400	30.00	400	40.00	400	35.00
		Steel Alloys <45 HRC, Cobalt Chrome	200	30.00	200	25.00	200	20.00	200	15.00	200	25.00	200	15.00
Tool & Mold Steels	P	H-13, O-1, A-2, D-2, S7, P20	250	30.00	250	25.00	250	20.00	250	15.00	250	25.00	250	20.00
	H*	AR-450, Steels >45 HRC	100	6.00	100	5.00	100	4.00	80	3.00	100	5.00	100	4.00
Stainless Steel	M	303,304, 316	400	35.00	400	30.00	400	25.00	400	20.00	400	30.00	400	25.00
		410, 420, 440, 13-8, 15-5, 17-4 Ph	300	30.00	300	25.00	300	20.00	300	15.00	300	25.00	300	20.00
High Temp - Titanium	S	6Al4V, 5553, 99	200	10.00	200	8.00	200	7.00	200	6.00	200	8.00	200	7.00
High Temp - Nickel Based Alloys	S	Inconel 100, 718, Hastelloy-B, Rene 77, Jethete M252, Haynes 75	80	8.00	80	7.00	80	6.00	80	4.00	80	5.00	80	4.00
		Inconel 625, Waspalloy	120	10.00	120	9.00	120	8.00	120	6.00	120	7.00	120	6.00
		Monel 400	250	20.00	250	18.00	250	16.00	250	12.00	250	14.00	250	12.00
High Temp - Iron Based Alloys	S	Aeromet 100, A286, Jethete M152	100	8.00	100	7.00	100	6.00	100	5.00	100	7.00	100	6.00
High Temp - Cobalt Based Alloys	S	Kovar, L-405, L-605, Stellite SF12	70	7.00	70	6.00	70	5.00	70	4.00	70	6.00	70	5.00
Cast Iron	K	Gray Cast, Malleable and Ductile Iron	500	50.00	500	45.00	500	40.00	500	35.00	500	45.00	500	40.00
Non-Ferrous	N	Aluminum	600	50.00	600	40.00	600	30.00	600	25.00	600	40	600	30.00
		Copper, Brass, Bronze, Plastics, Fibreglass	300	25.00	300	20.00	300	20.00	300	15.00	300	20	300	20.00

**When machining Hardened Materials > 45 HRC, use the Series with "NB."*
Having an AlTiN coating will result in much longer tool life

SUPERMILL When Performance Matters

56 Willow Brook Drive • Berlin, CT 06037
Phone: (860) 828-9703 • Fax: (860) 828-9573
Email: info@supermill.com • www.supermill.com

Series SAP, SAP-NB, SAPB, SAPB-NB, SAPBR & SAPBR-NB

Cutting Parameters

Recommended Chip Loads

Material Group	ISO Code	Material Examples	Cutting Diameter							
			1/8	3/16	1/4	3/8	1/2	5/8	3/4	1
Steel	P	1018 thru 1095, 12L14, A-36, Hot Rolled	0.0006	0.0008	0.0015	0.0025	0.0033	0.0040	0.0050	0.0060
Steel Alloys	P	4140 thru 8820	0.0004	0.0006	0.0010	0.0016	0.0025	0.0033	0.0040	0.0050
	P	Cobalt Chrome	0.0006	0.0008	0.0016	0.0025	0.0040	0.0060	0.0070	0.0080
	P	Steel Alloys <45 HRC	0.0002	0.0003	0.0004	0.0006	0.0008	0.0012	0.0020	0.0030
Tool & Mold Steels	P	H-13, O-1, A-2, D-2, S7, P20	0.0040	0.0006	0.0010	0.0016	0.0025	0.0033	0.0040	0.0050
	H*	AR-450, Steels >45 HRC	0.0002	0.0003	0.0004	0.0006	0.0008	0.0012	0.0020	0.0030
Stainless Steel	M	303,304, 316, 410, 420, 440, 13-8, 15-5, 17-4 Ph	0.0006	0.0008	0.0012	0.0016	0.0025	0.0035	0.0040	0.0050
High Temp - Titanium	S	6Al4V, 5553, 99	0.0004	0.0006	0.0008	0.0010	0.0012	0.0020	0.0030	0.0040
High Temp - Nickel Based Alloys	S	Inconel 100, 718, Hastelloy-B, Rene 77, Jethete M252, Haynes 75	0.0004	0.0006	0.0008	0.0012	0.0016	0.0025	0.0030	0.0030
	S	Inconel 625, Waspalloy	0.0004	0.0006	0.0008	0.0012	0.0016	0.0025	0.0030	0.0030
	S	Monel 400	0.0004	0.0006	0.0008	0.0012	0.0016	0.0025	0.0030	0.0030
High Temp - Iron Based Alloys	S	Aeromet 100, A286, Jethete M152	0.0004	0.0006	0.0008	0.0012	0.0016	0.0025	0.0030	0.0030
High Temp - Cobalt Based Alloys	S	Kovar, L-405, L-605, Stellite, SF12	0.0004	0.0006	0.0008	0.0012	0.0016	0.0025	0.0030	0.0030
Cast Iron	K	Gray Cast, Malleable and Ductile Iron	0.0004	0.0006	0.0008	0.0012	0.0016	0.0025	0.0035	0.0045
Non-Ferrous Materials	N	Alumnium	0.0010	0.0020	0.0030	0.0040	0.0050	0.0060	0.0070	0.0080
	N	Copper, Brass, Bronze, Plastics, Fibreglass	0.0008	0.0010	0.0020	0.0030	0.0040	0.0050	0.0060	0.0070

**When machining Hardened Materials > 45 HRC, use the Series with "NB."*
Having an AlTiN coating will result in much longer tool life

SUPERMILL
When Performance Matters

56 Willow Brook Drive • Berlin, CT 06037
Phone: (860) 828-9703 • Fax: (860) 828-9573
Email: info@supermill.com • www.supermill.com