

Application Guidelines

Material	Grade	(SX) SFM	IPR	Plunge SFM	(PC) IPR	Contour SFM	IPR	Plunge SFM	(PT) IPR	Turn SFM	IPR
Carbon Steels Low Carbon Less than .30% C AISI 1000,1100 and 1200 Series	M40	100-350	.003-.008	100-350	.003-.005	150-350	.007-.020	100-350	.003-.008	100-350	.004-.012
	M43	250-700	.003-.008	250-700	.003-.005	250-700	.007-.020	250-700	.003-.008	250-700	.007-.012
	M45	125-400	.003-.008	125-400	.003-.005	125-400	.007-.020	125-400	.003-.008	125-400	.004-.012
	M93	400-900	.003-.008	400-900	.003-.005	400-900	.007-.020	400-900	.003-.008	400-900	.004-.012
Carbon Steels High Carbon Greater than .30% C AISI 1000,1100 and 1200 Series	M40	100-350	.003-.008	100-350	.003-.005	100-350	.007-.020	100-350	.003-.010	100-350	.004-.012
	M43	250-700	.003-.008	250-700	.003-.005	250-700	.007-.020	250-700	.003-.010	250-700	.004-.012
	M45	125-400	.003-.008	125-400	.003-.005	125-400	.007-.020	125-400	.003-.010	125-400	.004-.012
	M93	400-900	.003-.008	400-900	.003-.005	400-900	.007-.020	400-900	.003-.010	400-900	.004-.012
Alloy Steels Low Carbon Less than .30% C AISI 1300, 4000, 5000, 6000, 8000 and 9000 Series	M40	100-350	.003-.008	100-350	.003-.005	100-350	.007-.020	100-350	.003-.009	100-350	.004-.012
	M43	250-700	.003-.008	250-700	.003-.005	250-700	.007-.020	250-700	.003-.010	250-700	.004-.012
	M45	125-400	.003-.008	125-400	.003-.005	125-400	.007-.020	125-400	.003-.009	125-400	.004-.012
	M93	400-900	.003-.008	400-900	.003-.005	400-900	.007-.020	400-900	.003-.009	400-900	.004-.012
Alloy Steels High Carbon Greater than .30% C AISI 1300, 4000, 5000, 6000, 8000 and 9000 Series	M40	100-350	.003-.008	100-350	.003-.005	100-350	.007-.020	100-350	.003-.010	100-350	.004-.012
	M43	250-700	.003-.008	250-700	.003-.005	250-700	.007-.020	250-700	.003-.010	250-700	.004-.012
	M45	125-400	.003-.008	125-400	.003-.005	125-400	.007-.020	125-400	.003-.010	125-400	.004-.012
	M93	400-900	.003-.008	400-900	.003-.005	400-900	.007-.020	400-900	.003-.010	400-900	.004-.012
Tool Steels Examples A-2, D-2, M-2 H-2, O-2	M40	100-250	.003-.005	100-200	.003-.005	100-200	.007-.015	100-200	.003-.007	100-200	.004-.010
	M43	150-300	.003-.006	150-350	.003-.005	150-700	.007-.015	150-300	.003-.007	150-300	.004-.010
	M45	125-250	.003-.005	125-250	.003-.005	125-250	.007-.015	125-250	.003-.007	125-250	.004-.010
	M433B	150-300	.003-.006	-	-	-	-	-	-	-	-
Martensitic Stainless Steel 400 Series	M40	100-300	.003-.005	100-300	.003-.005	100-300	.007-.020	100-300	.003-.006	100-300	.004-.012
	M43	250-450	.003-.007	250-450	.003-.005	250-450	.007-.020	250-450	.003-.007	250-450	.004-.012
	M45	125-350	.003-.005	125-350	.003-.005	125-350	.007-.020	125-350	.003-.009	125-350	.004-.012
	M433B	250-450	.003-.006	-	-	-	-	-	-	-	-
Austenitic Stainless Steel 300 Series	M40	100-200	.003-.006	100-200	.003-.005	100-200	.007-.015	100-200	.003-.006	100-200	.003-.009
	M43	150-300	.003-.006	150-300	.003-.005	150-300	.007-.015	150-300	.003-.006	150-300	.004-.009
	M45	125-250	.003-.006	125-350	.003-.005	125-350	.007-.015	125-350	.003-.006	125-350	.003-.009
	M433B	150-300	.003-.006	-	-	-	-	-	-	-	-
Low Machinability Alloys Iron, Nickel and Cobalt based Example: Inconel, Hastelloy, A286	M40	50-125	.002-.005	50-125	.002-.004	50-125	.005-.012	50-125	.003-.006	50-125	.003-.007
	M43	70-200	.002-.005	70-200	.002-.004	70-200	.005-.012	70-200	.003-.006	70-200	.003-.007
	M45	70-150	.002-.005	70-125	.002-.004	70-125	.005-.012	70-125	.003-.006	70-125	.003-.007
	M433B	70-200	.002-.004	-	-	-	-	-	-	-	-
Non Ferrous Free Machining Materials Aluminum, Copper and Zinc based	M40	400+	.002-.010	400+	.003-.006	400+	.007-.020	400+	.003-.012	400+	.003-.015
	M43	450+	.002-.010	450+	.003-.007	450+	.007-.020	450+	.003-.012	450+	.003-.015
	M45	400+	.002-.010	400+	.003-.006	400+	.007-.020	400+	.003-.012	400+	.003-.015
	M93	500+	.002-.010	-	-	-	-	-	-	-	-
Titanium	M40	75-125	.002-.005	100-150	.002-.003	100-149	.005-.012	100-149	.003-.005	100-149	.003-.008
	M43	125-225	.002-.005	150-225	.002-.004	150-225	.005-.012	150-225	.003-.006	150-225	.003-.008
	M45	100-175	.002-.005	125-175	.002-.004	125-175	.005-.012	125-175	.003-.006	125-175	.003-.008
	M433B	125-225	.002-.005	-	-	-	-	-	-	-	-
Cast Irons Gray, Soft (20-30 Rc)	M40	400-500	.002-.010	400-600	.003-.008	400-600	.007-.020	400-600	.003-.010	400-600	.003-.010
	M43	400-600	.002-.010	-	-	-	-	-	-	-	-
	M45	400-500	.002-.010	450-700	.003-.008	450-700	.007-.020	450-700	.003-.010	450-700	.003-.010
	M93	800-900	.002-.008	-	-	-	-	-	-	-	-

