Melin Tool Speed & Feed Information

Series: Z4TVW NACO

Carbide | 4 | Center Cutting

4 Flute, Variable FL for general machining applications
Series: Z4TVW NACO

MATERIAL	CONDITION	STARTING SFM	CUTTING DIAMETER 1/8"	3/16"	1/4"	3/8"	1/2"	5/8"	3/4"	1"
STAINLESS STEELS ISO-M			**CHIP PER TOOTH**							
Precipitation	Slotting @ ≤ .5 x D	250	0.0004	0.0006	0.0008	0.0011	0.0015	0.0019	0.0023	0.0030
13-8, 15-5, 17-4PH	Profiling @ 2 x D Axial / ≤ .3 D Radial	325	0.0005	0.0008	0.0011	0.0015	0.0020	0.0026	0.0031	0.0041
Austenitic	Slotting @ ≤ .5 x D	275	0.0005	0.0007	0.0009	0.0014	0.0018	0.0023	0.0027	0.0036
302, 303, 304L, 316L	Profiling @ 2 x D Axial / ≤ .3 D Radial	350	0.0006	0.0009	0.0012	0.0019	0.0025	0.0031	0.0037	0.0049
Martensitic	Slotting @ ≤ .5 x D	300	0.0005	0.0008	0.0010	0.0014	0.0020	0.0024	0.0029	0.0038
403, 410, 416	Profiling @ 2 x D Axial / ≤ .3 D Radial	375	0.0007	0.0011	0.0013	0.0020	0.0026	0.0033	0.0039	0.0053
HIGH TEMP ALLOYS ISO-S										
Cobalt Base	Slotting @ .5 x D	110	0.0002	0.0003	0.0004	0.0006	0.0008	0.0011	0.0012	0.0017
Stellite, Haynes 25, 188, X-40, L-605	Profiling @ 2 x D Axial / ≤ .3 D Radial	150	0.0002	0.0003	0.0005	0.0005	0.0010	0.0012	0.0015	0.0020
Nickel Base										
Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel	Slotting @ .5 x D	75	0.0003	0.0002	0.0005	0.0008	0.0013	0.0012	0.0020	0.0020
400, 405, K-Monel, PermaNickel 300, Inconel 600	Profiling @ 2 x D Axial / ≤ .3 D Radial	115	0.0003	0.0003	0.0005	0.0008	0.0014	0.0014	0.0017	0.0017
Incoloy 800-802, Multimet N-155,	Slotting @ ≤ .5 x D	95	0.0003	0.0004	0.0007	0.0011	0.0014	0.0017	0.0021	0.0028
Timken 16-26-6	Profiling @ 2 x D Axial / ≤ .3 D Radial	130	0.0003	0.0004	0.0008	0.0012	0.0016	0.0020	0.0023	0.0032
STEELS ISO-P										
High Strength Steels	Slotting @ ≤ .5 x D	300	0.0005	0.0007	0.0010	0.0014	0.0020	0.0024	0.0029	0.0038
4140, 4340, 52100	Profiling @ 2 x D Axial / ≤ .3 D Radial	375	0.0007	0.0010	0.0013	0.0020	0.0026	0.0033	0.0039	0.0053
High Alloy Steels - Mold & Die	Slotting @ ≤ .5 x D	275	0.0004	0.0006	0.0008	0.0012	0.0017	0.0020	0.0024	0.0032
A-2, P20, 01, 02, D2, H-13	Profiling @ 2 x D Axial / ≤ .3 D Radial	350	0.0005	0.0008	0.0011	0.0017	0.0022	0.0028	0.0033	0.0044
Medium Alloy Steels	Slotting @ ≤ .5 x D	325	0.0004	0.0004	0.0009	0.0015	0.0019	0.0026	0.0030	0.0038
200, 250, 300	Profiling @ 2 x D Axial / ≤ .3 D Radial	400	0.0004	0.0004	0.0011	0.0018	0.0023	0.0030	0.0038	0.0045
Low Alloy Steels-Maraging	Slotting @ ≤ .5 x D	325	0.0005	0.0008	0.0011	0.0016	0.0021	0.0026	0.0032	0.0042
10XX, 11XX, 13XX	Profiling @ 2 x D Axial / ≤ .3 D Radial	400	0.0008	0.0011	0.0014	0.0022	0.0029	0.0036	0.0043	0.0057
CAST IRONS ISO-K										
Ductile Iron	Slotting @ ≤ .5 x D	400	0.0004	0.0006	0.0008	0.0011	0.0015	0.0019	0.0023	0.0030
Ductile Cast Iron	Profiling @ 2 x D Axial / ≤ .3 D Radial	550	0.0005	0.0008	0.0011	0.0015	0.0020	0.0026	0.0031	0.0041
Cast Iron	Slotting @ ≤ .5 x D	450	0.0005	0.0008	0.0009	0.0014	0.0018	0.0023	0.0027	0.0036
Grey Cast Iron	Profiling @ 2 x D Axial / ≤ .3 D Radial	600	0.0006	0.0009	0.0012	0.0019	0.0025	0.0031	0.0037	0.0049
TITANIUM ISO-S										
Titanium Alloys										
6AL-4V, ASTM 1, 2, 3, 6AL-2S	Slotting @ ≤ .5 x D	175	0.0004	0.0005	0.0007	0.0011	0.0014	0.0017	0.0021	0.0028
For 5553, decrease SFM and IPM by 25%	Profiling @ 2 x D Axial / ≤ .3 D Radial	275	0.0005	0.0008	0.0010	0.0014	0.0019	0.0023	0.0029	0.0038

MATERIAL	CONDITION	STARTING M/MIN	CUTTING DIAMETER - METRIC 4mm	6mm	8mm	10mm	12mm	16mm	20mm	25mm
STAINLESS STEELS ISO-M			**CHIP PER TOOTH**							
Precipitation	Slotting @ ≤ .5 x D	75	0.0102	0.0191	0.0229	0.0286	0.0381	0.0476	0.0572	0.0762
13-8, 15-5, 17-4PH	Profiling @ 2 x D Axial / ≤ .3 D Radial	99	0.0127	0.0267	0.0330	0.0381	0.0514	0.0648	0.0781	0.1048
Austenitic	Slotting @ ≤ .5 x D	84	0.0114	0.0229	0.0279	0.0343	0.0457	0.0572	0.0686	0.0914
302, 303, 304L, 316L	Profiling @ 2 x D Axial / ≤ .3 D Radial	107	0.0152	0.0305	0.0381	0.0476	0.0629	0.0781	0.0933	0.1238
Martensitic	Slotting @ ≤ .5 x D	91	0.0114	0.0248	0.0305	0.0362	0.0495	0.0610	0.0724	0.0972
403, 410, 416	Profiling @ 2 x D Axial / ≤ .3 D Radial	114	0.0171	0.0324	0.0406	0.0495	0.0667	0.0838	0.0991	0.1334
HIGH TEMP ALLOYS ISO-S										
Cobalt Base	Slotting @ .5 x D	34	0.0057	0.0095	0.0102	0.0152	0.0210	0.0267	0.0305	0.0419
Stellite, Haynes 25, 188, X-40, L-605	Profiling @ 2 x D Axial / ≤ .3 D Radial	46	0.0057	0.0133	0.0127	0.0133	0.0248	0.0305	0.0381	0.0495
Nickel Base										
Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel	Slotting @ .5 x D	23	0.0076	0.0133	0.0152	0.0191	0.0324	0.0305	0.0495	0.0495
400, 405, K-Monel, PermaNickel 300, Inconel 600	Profiling @ 2 x D Axial / ≤ .3 D Radial	35	0.0076	0.0133	0.0178	0.0210	0.0343	0.0343	0.0419	0.0419
Iron Base	Slotting @ ≤ .5 x D	29	0.0076	0.0171	0.0229	0.0267	0.0362	0.0438	0.0533	0.0705
Incoloy 800-802, Multimet N-155, Timken 16-26-6	Profiling @ 2 x D Axial / ≤ .3 D Radial	40	0.0076	0.0191	0.0254	0.0305	0.0400	0.0495	0.0591	0.0800
STEELS ISO-P										
High Strength Steels	Slotting @ ≤ .5 x D	91	0.0114	0.0248	0.0305	0.0362	0.0495	0.0610	0.0724	0.0972
4140, 4340, 52100	Profiling @ 2 x D Axial / ≤ .3 D Radial	114	0.0171	0.0324	0.0406	0.0495	0.0667	0.0838	0.0991	0.1334
High Alloy Steels - Mold & Die	Slotting @ ≤ .5 x D	84	0.0095	0.0210	0.0254	0.0305	0.0419	0.0514	0.0610	0.0819
A-2, P20, 01, 02, D2, H-13	Profiling @ 2 x D Axial / ≤ .3 D Radial	107	0.0133	0.0286	0.0356	0.0419	0.0552	0.0705	0.0838	0.1124
Medium Alloy Steels	Slotting @ ≤ .5 x D	99	0.0095	0.0229	0.0330	0.0381	0.0476	0.0667	0.0762	0.0953
200, 250, 300	Profiling @ 2 x D Axial / ≤ .3 D Radial	122	0.0095	0.0286	0.0381	0.0457	0.0572	0.0762	0.0953	0.1143
Low Alloy Steels-Maraging	Slotting @ ≤ .5 x D	99	0.0133	0.0267	0.0330	0.0400	0.0533	0.0667	0.0800	0.1067
10XX, 11XX, 13XX	Profiling @ 2 x D Axial / ≤ .3 D Radial	122	0.0191	0.0362	0.0432	0.0552	0.0724	0.0914	0.1086	0.1448
CAST IRONS ISO-K										
Ductile Iron	Slotting @ ≤ .5 x D	122	0.0095	0.0191	0.0229	0.0286	0.0381	0.0476	0.0572	0.0762
Ductile Cast Iron	Profiling @ 2 x D Axial / ≤ .3 D Radial	168	0.0133	0.0267	0.0330	0.0381	0.0514	0.0648	0.0781	0.1048
Cast Iron	Slotting @ ≤ .5 x D	140	0.0114	0.0229	0.0279	0.0343	0.0457	0.0572	0.0686	0.0914
Grey Cast Iron	Profiling @ 2 x D Axial / ≤ .3 D Radial	183	0.0152	0.0305	0.0406	0.0476	0.0629	0.0781	0.0933	0.1238
TITANIUM ISO-S										
Titanium Alloys										
6AL-4V, ASTM 1, 2, 3, 6AL-2S	Slotting @ ≤ .5 x D	53	0.0095	0.0171	0.0229	0.0267	0.0343	0.0438	0.0533	0.0705
For 5553, decrease SFM and IPM by 25%	Profiling @ 2 x D Axial / ≤ .3 D Radial	84	0.0114	0.0248	0.0305	0.0362	0.0476	0.0591	0.0724	0.0953