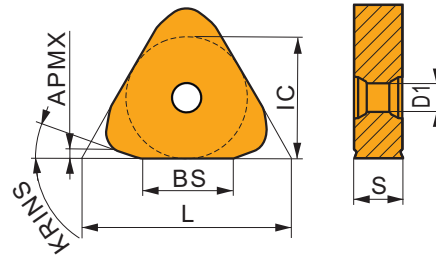
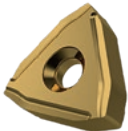
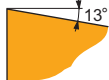
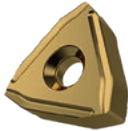
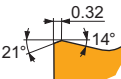
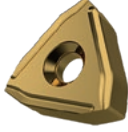
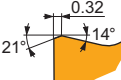
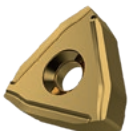
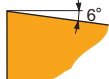


# TNGJ

	L	S	APMX	KRINS	IC	D1	BS
	(mm)	(mm)	(mm)	(°)	(mm)	(mm)	(mm)
2207	38.00	7.94	2.00	20.0	21.96	7.00	12.00
2810	49.50	10.00	2.50	20.0	28.60	7.00	18.00



Product	RE	P	M	K	N	S	H	ap min	ap max	fz min	fn max
	(mm)							(mm)	(mm)	(mm/tooth)	(mm/rev)
											
<b>TNGJ 220720-PF-S01</b>	<b>T9315</b>	–						0.50	2.00	0.90	9.00
<b>TNGJ 220720-PF-S02</b>	<b>T7325</b>	–						0.50	2.00	0.90	9.00
											
<b>TNGJ 220720-PM-S01</b>	<b>T9315</b>	–						0.50	2.00	0.90	9.00
											
<b>TNGJ 220720-PM-S02</b>	<b>T7325</b>	–						0.50	2.00	0.90	9.00
	<b>T9226</b>	–						0.50	2.00	0.90	9.00
	<b>T9315</b>	–						0.50	2.00	0.90	9.00
											
<b>TNGJ 281025-PF-S01</b>	<b>6630</b>	–						0.60	2.50	1.00	14.00
	<b>T9226</b>	–						0.60	2.50	1.00	14.00
	<b>T9315</b>	–						0.60	2.50	1.00	14.00

## CUTTING CONDITIONS

Designation	Appl. area	Appl. area	Appl. area	Appl. area	Appl. area	Appl. area	Appl. area	Appl. area	Appl. area	Appl. area	f <sub>rev</sub> min	f <sub>rev</sub> max	a <sub>p</sub> min	a <sub>p</sub> max	f <sub>min</sub> <sup>2</sup>	f <sub>min</sub>	f <sub>max</sub> <sup>2</sup>	f <sub>max</sub>	a <sub>p</sub> min	a <sub>p</sub> max	f <sub>min</sub>	f <sub>max</sub>	Vc min	Vc max	Vc min	Vc max		
LNGF 300715-MM-S01:T6310	■	■	■	■	■	■	■	■	■	■	0.90	10.00	0.5	1.5	0.99	0.99	9.00	9.00	0.5	1.5	0.99	7.00	45	90	35	65	10	30
LNGF 300715-MM-S01:T7325	■	■	■	■	■	■	■	■	■	■	0.90	10.00	0.5	1.5	0.99	0.99	9.00	9.00	0.5	1.5	0.99	7.00	70	135	55	105	15	50
LNGF 300715-MM-S01:T9315	■	■	■	■	■	■	■	■	■	■	0.90	10.00	0.5	1.5	0.99	0.99	9.00	9.00	0.5	1.5	0.99	7.00	55	145	40	115	20	70
LNGF 300715-MM-S02:T7325	■	■	■	■	■	■	■	■	■	■	0.90	10.00	0.5	1.5	0.99	0.99	9.00	9.00	0.5	1.5	0.99	7.00	70	135	55	105	15	50
LNGF 300715-MM-S03:T7325	■	■	■	■	■	■	■	■	■	■	0.90	10.00	0.5	1.5	0.99	0.99	9.00	9.00	0.5	1.5	0.99	7.00	70	135	55	105	15	50
LNGF 300715-PM:6630	■	■	■	■	■	■	■	■	■	■	0.90	10.00	0.5	1.5	0.99	0.99	9.00	9.00	0.5	1.5	0.99	7.00	40	115	20	70	10	35
LNGF 300715-PM:T6310	■	■	■	■	■	■	■	■	■	■	0.90	10.00	0.5	1.5	0.99	0.99	9.00	9.00	0.5	1.5	0.99	7.00	45	90	35	65	10	30
LNGF 300715-PM:T7325	■	■	■	■	■	■	■	■	■	■	0.90	10.00	0.5	1.5	0.99	0.99	9.00	9.00	0.5	1.5	0.99	7.00	70	135	55	105	15	50
LNGF 300715-PM:T9226	■	■	■	■	■	■	■	■	■	■	0.90	10.00	0.5	1.5	0.99	0.99	9.00	9.00	0.5	1.5	0.99	7.00	40	115	20	70	10	35
LNGF 300715-PM:T9315	■	■	■	■	■	■	■	■	■	■	0.90	10.00	0.5	1.5	0.99	0.99	9.00	9.00	0.5	1.5	0.99	7.00	55	145	40	115	20	70
LNGF 300715-PM-S02:T7325	■	■	■	■	■	■	■	■	■	■	0.90	10.00	0.5	1.5	0.99	0.99	9.00	9.00	0.5	1.5	0.99	7.00	70	135	55	105	15	50
LNGF 300715-PM-S03:T7325	■	■	■	■	■	■	■	■	■	■	0.90	10.00	0.5	1.5	0.99	0.99	9.00	9.00	0.5	1.5	0.99	7.00	70	135	55	105	15	50
LNGF 361220-MM-S01:T6310	■	■	■	■	■	■	■	■	■	■	1.15	12.00	0.6	2.0	1.27	1.27	10.80	10.80	0.6	2.0	1.27	8.40	50	100	35	70	10	35
LNGF 361220-MM-S01:T7325	■	■	■	■	■	■	■	■	■	■	1.15	12.00	0.6	2.0	1.27	1.27	10.80	10.80	0.6	2.0	1.27	8.40	60	140	45	110	15	55
LNGF 361220-MM-S01:T9315	■	■	■	■	■	■	■	■	■	■	1.15	12.00	0.6	2.0	1.27	1.27	10.80	10.80	0.6	2.0	1.27	8.40	50	150	40	140	10	40
LNGF 361220-MM-S02:T7325	■	■	■	■	■	■	■	■	■	■	1.15	12.00	0.6	2.0	1.27	1.27	10.80	10.80	0.6	2.0	1.27	8.40	60	140	45	110	15	55
LNGF 361220-MM-S02:T9315	■	■	■	■	■	■	■	■	■	■	1.15	12.00	0.6	2.0	1.27	1.27	10.80	10.80	0.6	2.0	1.27	8.40	50	150	40	140	10	40
LNGF 361220-MM-S03:T7325	■	■	■	■	■	■	■	■	■	■	1.15	12.00	0.6	2.0	1.27	1.27	10.80	10.80	0.6	2.0	1.27	8.40	60	140	45	110	15	55
LNGF 361220-MM-S03:T9315	■	■	■	■	■	■	■	■	■	■	1.15	12.00	0.6	2.0	1.27	1.27	10.80	10.80	0.6	2.0	1.27	8.40	50	150	40	140	10	40
LNGF 361220-MM-S04:H07	■	■	■	■	■	■	■	■	■	■	1.27	10.80	0.6	2.0	1.15	1.15	12.00	12.00	0.6	2.0	1.15	12.00	40	120	25	70	5	25
LNGF 361220-PM:6630	■	■	■	■	■	■	■	■	■	■	1.15	12.00	0.6	2.0	1.27	1.27	10.80	10.80	0.6	2.0	1.27	8.40	40	120	25	70	5	25
LNGF 361220-PM-S01:T7325	■	■	■	■	■	■	■	■	■	■	1.15	12.00	0.6	2.0	1.27	1.27	10.80	10.80	0.6	2.0	1.27	8.40	60	140	45	110	15	55
LNGF 361220-PM-S01:T9315	■	■	■	■	■	■	■	■	■	■	1.15	12.00	0.6	2.0	1.27	1.27	10.80	10.80	0.6	2.0	1.27	8.40	50	150	40	140	10	40
LNGF 361220-PM-S02:T7325	■	■	■	■	■	■	■	■	■	■	1.15	12.00	0.6	2.0	1.27	1.27	10.80	10.80	0.6	2.0	1.27	8.40	60	140	45	110	15	55
LNGF 361220-PM-S03:T7325	■	■	■	■	■	■	■	■	■	■	1.15	12.00	0.6	2.0	1.27	1.27	10.80	10.80	0.6	2.0	1.27	8.40	60	140	45	110	15	55
LNGF 401035-MM-S01:T6310	■	■	■	■	■	■	■	■	■	■	1.20	16.00	0.7	3.5	1.32	1.32	14.40	14.40	0.7	3.5	1.32	11.20	50	105	35	75	10	35
LNGF 401035-MM-S01:T7325	■	■	■	■	■	■	■	■	■	■	1.20	16.00	0.7	3.5	1.32	1.32	14.40	14.40	0.7	3.5	1.32	11.20	65	150	50	115	15	55
LNGF 401035-MM-S01:T9315	■	■	■	■	■	■	■	■	■	■	1.20	16.00	0.7	3.5	1.32	1.32	14.40	14.40	0.7	3.5	1.32	11.20	50	150	40	120	70	25
LNGF 401035-MM-S02:T7325	■	■	■	■	■	■	■	■	■	■	1.20	16.00	0.7	3.5	1.32	1.32	14.40	14.40	0.7	3.5	1.32	11.20	65	150	50	115	15	55
LNGF 401035-MM-S03:T7325	■	■	■	■	■	■	■	■	■	■	1.20	16.00	0.7	3.5	1.32	1.32	14.40	14.40	0.7	3.5	1.32	11.20	65	150	50	115	15	55
LNGF 401035-PM-S01:6630	■	■	■	■	■	■	■	■	■	■	1.20	16.00	0.7	3.5	1.32	1.32	14.40	14.40	0.7	3.5	1.32	11.20	40	120	20	70	10	35
LNGF 401035-PM-S01:T7325	■	■	■	■	■	■	■	■	■	■	1.20	16.00	0.7	3.5	1.32	1.32	14.40	14.40	0.7	3.5	1.32	11.20	65	150	50	115	15	55
LNGF 401035-PM-S01:T9226	■	■	■	■	■	■	■	■	■	■	1.20	16.00	0.7	3.5	1.32	1.32	14.40	14.40	0.7	3.5	1.32	11.20	30	130	15	75	10	35
LNGF 401035-PM-S01:T9315	■	■	■	■	■	■	■	■	■	■	1.20	16.00	0.7	3.5	1.32	1.32	14.40	14.40	0.7	3.5	1.32	11.20	50	150	40	120	70	25
LNGF 401035-PM-S02:T7325	■	■	■	■	■	■	■	■	■	■	1.20	16.00	0.7	3.5	1.32	1.32	14.40	14.40	0.7	3.5	1.32	11.20	65	150	50	115	15	55
LNGF 401035-PM-S03:T7325	■	■	■	■	■	■	■	■	■	■	1.20	16.00	0.7	3.5	1.32	1.32	14.40	14.40	0.7	3.5	1.32	11.20	65	150	50	115	15	55
LNXR 381240-PM:T9315	■	■	■	■	■	■	■	■	■	■	1.00	16.00	0.7	4.0	1.32	1.32	14.40	14.40	0.7	4.0	1.32	11.20	50	190	40	135	10	40
LNXR 381240-PR:6630	■	■	■	■	■	■	■	■	■	■	1.20	16.00	0.7	4.0	1.32	1.32	14.40	14.40	0.7	4.0	1.32	11.20	30	135	15	75	10	35

ap min may be lower than those given in this table, but then the cutting forces will be greater. For indexable inserts with a CVD coating, it should never be lower than 0.15 mm



## SPECIFIC CUTTING FORCE TABLE

TABLE

				Ultimate tensile strength Mpa (N/mm <sup>2</sup> )	Specific Cutting force kc1 N/mm <sup>2</sup>	Increase Value mc
<b>P</b>	<b>P1</b>	P1.1	Free machining sulfurized carbon steel with a hardness of < 240 HB	≤ 830	1500	0.24
		P1.2	Free machining sulfurized and phosphorized carbon steel with a hardness of < 180 HB	≤ 620	1250	0.24
		P1.3	Free machining sulfurized/phosphorized and leaded carbon steel with a hardness of <180 HB	≤ 620	1250	0.24
	<b>P2</b>	P2.1	Plain low carbon steel containing < 0.25 %C with a hardness of < 180 HB	≤ 620	1250	0.24
		P2.2	Plain medium carbon steel containing < 0.55%C with a hardness of < 240 HB	≤ 830	1500	0.24
		P2.3	Plain high carbon steel containing > 0.55%C, with a hardness of < 300HB	≤ 1030	1650	0.24
	<b>P3</b>	P3.1	Alloy steel with a hardness of < 190 HB	≤ 620	1550	0.24
		P3.2	Alloy steel with a hardness of 180–260 HB	> 620 ≤ 900	1650	0.24
		P3.3	Alloy steel with a hardness of 260–360 HB	> 900 ≤ 1240	1750	0.24
	<b>P4</b>	P4.1	Tool steel with a hardness of < 26 HRC	≤ 900	1800	0.24
		P4.2	Tool steel with a hardness of 26-39 RC	> 900 ≤ 1240	2000	0.24
		P4.3	Tool steel with a hardness of 39-45 HRC	> 1250 ≤ 1450	2300	0.24
<b>M</b>	<b>M1</b>	M1.1	Stainless steel, ferritic with a hardness of < 160 HB	≤ 520	1750	0.20
		M1.2	Stainless steel, ferritic with a hardness of 160–220 HB	> 520 ≤ 700	1950	0.20
	<b>M2</b>	M2.1	Stainless steel, martensitic with a hardness of < 200 HB	> 670	2100	0.20
		M2.2	Stainless steel, martensitic with a hardness of 200–280 HB	> 670 ≤ 950	2200	0.20
		M2.3	Stainless steel, martensitic with a hardness of 280–380 HB	> 950 ≤ 1300	2450	0.20
	<b>M3</b>	M3.1	Stainless steel, austenitic with a hardness of < 200 HB	≤ 730	1900	0.20
		M3.2	Stainless steel, austenitic with a hardness of 200–260 HB	> 750 ≤ 870	2100	0.20
		M3.3	Stainless steel, austenitic with a hardness of 260-300 HB	> 870 ≤ 1040	2200	0.20
	<b>M4</b>	M4.1	Stainless steel, austenitic-ferritic or super-austenitic with a hardness of < 300 HB	≤ 990	2350	0.20
		M4.2	Stainless steel, precipitation hardening austenitic with a hardness of 300–380 HB	≤ 1320	2500	0.20
<b>S</b>	<b>S1</b>	S1.1	Titanium or titanium alloys, with a hardness of < 200 HB	≤ 660	1400	0.22
		S1.2	Titanium alloys, with a hardness of 200–280 HB	> 660 ≤ 950	1500	0.22
		S1.3	Titanium alloys, a hardness of 280–360 HB	> 950 ≤ 1200	1600	0.22
	<b>S2</b>	S2.1	High-temperature Fe-based alloys with a hardness of < 200 HB	≤ 690	2450	0.24
		S2.2	High-temperature Fe-based alloys with a hardness of 200–280 HB	> 690 ≤ 970	2550	0.24
	<b>S3</b>	S3.1	High-temperature Ni-based alloys with a hardness of < 260 HB	≤ 940	2850	0.24
		S3.2	High-temperature Ni-based alloys with a hardness of 280–360 HB	> 940 ≤ 1200	3100	0.24
	<b>S4</b>	S4.1	High-temperature Co-based alloys with a hardness of < 240HB	≤ 800	2880	0.24
S4.2		High-temperature Co-based alloys with a hardness of 240–320 HB	>800 ≤ 1070	3100	0.24	