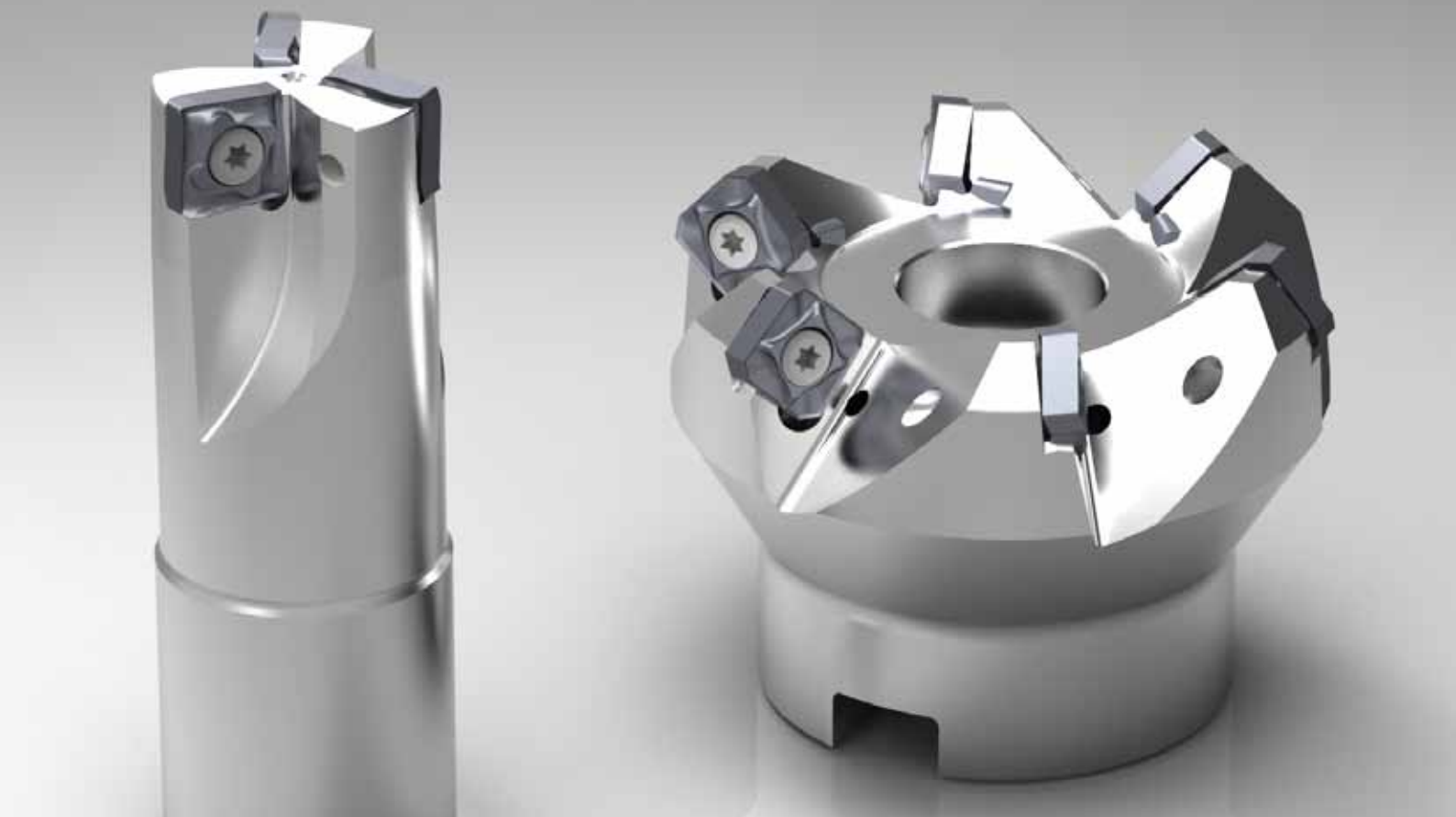
NEW

OCTO-QUAD

LAMINA TECHNOLOGIES

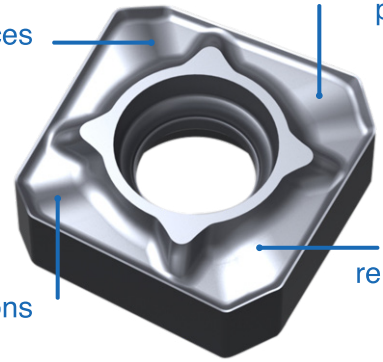


Productivity is everything...

Innovation is beyond

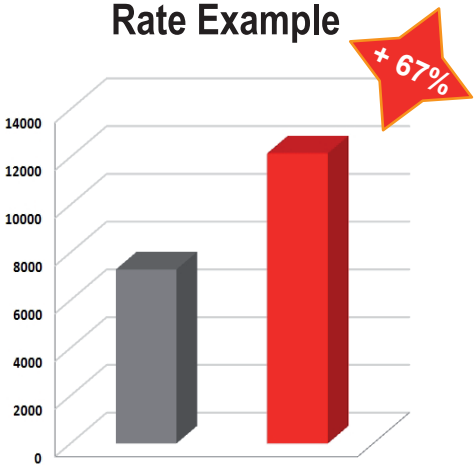
SNKX 09T3-45°

Exclusive 45° Face Milling With 8 Cutting Edges



** Patent Pending*

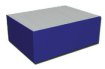
Material Removal Rate Example



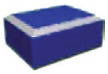
Conventional SNKX 09T3-45°

Tool	40mm Shell Mill
Material	42CrMo4
Vc	240m/min
D.O.C.	1.5mm
Feed	0.45mm/tooth
W.O.C	30mm
Linear Feed	2700mm/min / 4500mm/min
Removal	7290cm³/h / 12150cm³/h

Application Guide



FACING



CHAMFERING

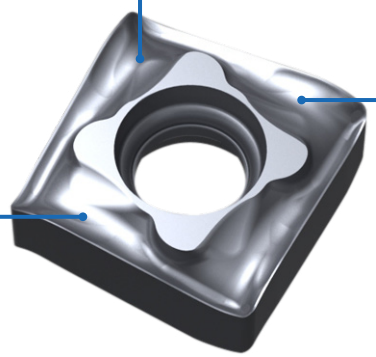
Cutting Conditions

Material Group	Group No	Material Examples*	Brinell hardness	d.o.c [mm] min	d.o.c [mm] max	feed [mm/tooth] min	feed [mm/tooth] max	V_c [m/min] min	V_c [m/min] max
Low Carbon Steel	1	Ck15, Ck45 1020, 1045	150	0.5	3.0	0.14	0.48	180	300
			180		3.0		0.48		260
			210		3.0		0.48		220
Alloy Steel	2	42 CrMo4 St 50-2 Ck60 1060 4140	180	0.5	3.0	0.10	0.45	130	200
			230		3.0		0.45		180
			280	0.5	3.0	0.10	0.42	100	160
			320		3.0		0.42		140
High Alloy Steel	3	X40 CrMoV5 1 H 13 40 NiCrMo6 4340 S 2-10-1-8 HSS M42	220	0.5	3.0	0.10	0.40	90	130
			280		3.0		0.40		110
			320	0.5	3.0	0.10	0.38	60	100
			350		3.0		0.38		90
			400	0.5	2.0	0.14	0.35	40	80
			480		1.5		0.32		70
			550		1.0		0.28		60
Austenitic Stainless Steel	4	X5 CrNi18 9 304	210 to 250	0.5	3.0	0.14	0.35	190	250
	5	X2 CrNiMo 17 2 2 316	230 to 270	0.5	3.0	0.14	0.32	160	210
	6	X6 CrNiMoTi 17 12 2 316 Ti / Duplex	----	0.5	3.0	0.10	0.28	70	120
Ferritic Stainless Steel	7	X8 Cr 7 430	Annealed	0.5	3.0	0.10	0.35	150	230
Martensitic Stainless Steel	8	X15 Cr 13 410	Annealed	0.5	3.0	0.10	0.35	130	210
			Treated	0.5	3.0	0.10	0.28	90	150
Grey Cast Iron	9	GG 20	140 to 230	0.5	3.0	0.14	0.48	150	240
		GG 25							220
		GG 30							190
Nodular Cast Iron	10	GGG 40	210	0.5	3.0	0.14	0.42	100	200
		GGG 50	260						160
		GGG 70	310						130
		G-X260NiCr42	450	0.5	3.0	0.14	0.32	30	60
Nickel Based Alloys	11	Inconel 625	----	0.5	3.0	0.10	0.28	25	35
		Inconel 718						28	38
		Hastelloy						40	65
Titanium Based Alloys	12	TiAl6 V4	----	0.5	3.0	0.10	0.32	35	60
		T40					0.28	28	40

SNKX 09T3-90°

Exclusive 90° Face Milling With 8 Cutting Edges

Up to 75% economy in cost-per-edge compared to other 90° inserts



Improved fixation and pocket seat for better tool life

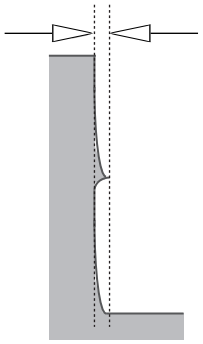
Mostly recommended for Steel and Cast Iron

*See cutting conditions on the last page

** Patent Pending*

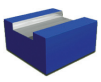
90° Accuracy

0.05mm



Tool	LT 990 W-D25/3
Material	42CrMo4
Vc	250m/min
D.O.C.	8mm
Feed	0.10mm/tooth
W.O.C.	1.5mm

Application Guide



SLOTTING

SIDE MILLING

POCKET MILLING

3D COPY

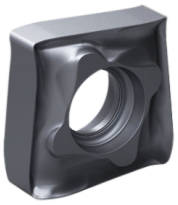
Cutting Conditions

Material Group	Group No	Material Examples*	Brinell hardness	d.o.c [mm]		feed [mm/tooth]		V_c [m/min]	
				min	max	min	max	min	max
Low Carbon Steel	1	Ck15, Ck45 1020, 1045	150	0.5	1.5	0.10	0.25	180	300
			180		1.5		0.25		260
			210		1.5		0.25		220
Alloy Steel	2	42 CrMo4 St 50-2 Ck60 1060 4140	180	0.5	1.5	0.08	0.22	130	200
			230		3.0		0.22		180
			280	0.5	3.0	0.08	0.18	100	160
			320		3.0		0.18		140
High Alloy Steel	3	X40 CrMoV5 1 H 13 40 NiCrMo6 4340 S 2-10-1-8 HSS M42	220	0.5	3.0	0.08	0.18	90	130
			280		3.0		0.18		110
			320	0.5	3.0	0.08	0.16	60	100
			350		3.0		0.16		90
			400	0.5	2.0	0.10	0.16	40	80
			480		1.5		0.15		70
			550		1.0		0.14		60
Austenitic Stainless Steel	4	X5 CrNi 18 9 304	210 to 250	0.5	1.5	0.10	0.22	190	250
	5	X2 CrNiMo 17 2 2 316	230 to 270	0.5	1.5	0.10	0.20	160	210
	6	X6 CrNiMoTi 17 12 2 316 Ti / Duplex	-----	0.5	1.5	0.08	0.18	70	120
Ferritic Stainless Steel	7	X8 Cr 7 430	Annealed	0.5	1.5	0.08	0.22	150	230
Martensitic Stainless Steel	8	X15 Cr 13 410	Annealed	0.5	1.5	0.08	0.18	130	210
			Treated	0.5	1.5	0.08	0.18	90	150
Grey Cast Iron	9	GG 20	140 to 230	0.5	3.0	0.10	0.28	150	240
		GG 25							220
		GG 30							190
Nodular Cast Iron	10	GGG 40	210	0.5	3.0	0.10	0.25	100	200
		GGG 50	260						160
		GGG 70	310						130
		G-X260NiCr42	450	0.5	3.0	0.10	0.14	30	60
Nickel Based Alloys	11	Inconel 625	-----	0.5	1.5	0.08	0.15	25	35
		Inconel 718						28	38
		Hastelloy						40	65
Titanium Based Alloys	12	TiAl 6 V4	-----	0.5	1.5	0.08	0.18	35	60
		T40					0.15	28	40

Ordering Information

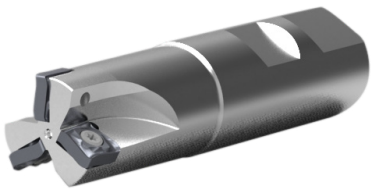
SNKX 90°

Catalog Nr.	Insert Desig.	Grade	L	S	R	Direction
M0001986	SNKX 09T3-90°	LT30	9.53mm	3.71mm	0.40mm	Right
*M0002208	SNKX 1204-90°	LT30	12.06mm	4.73mm	0.90mm	Right



Cutter Range for SNKX 09T3-90°

	Catalog Nr.	Description	Diameter	Length	Teeth
End Mills	M2001987	LT 990 W-D25/3	25mm	100mm	3
	M2002070	LT 990 W-D32/4	32mm	110mm	4
Shell Mills	M2002072	LT 990 M-W-D40/5	40mm	40mm	5
	M2002073	LT 990 M-W-D50/6	50mm	40mm	6
	M2002074	LT 990 M-W-D63/8	63mm	40mm	8

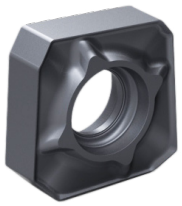


*Cutter Range for SNKX 1204-90°

	Catalog Nr.	Description	Diameter	Length	Teeth
End Mills	M2002191	LT991 W-W-D32/2	32mm	110mm	2
	M2002192	LT991 W-WL-D32/2	32mm	170mm	2
	M2002193	LT991 W-W-D40/3	40mm	110mm	3
	M2002194	LT991 W-WL-D40/3	40mm	170mm	3
Shell Mills	M2002195	LT991 M-W-D50/4	50mm	40mm	4
	M2002196	LT991 M-W-D63/5	63mm	40mm	5
	M2002197	LT991 M-W-D80/6	80mm	50mm	6
	M2002198	LT991 M-W-D100/7	100mm	50mm	7
	M2002199	LT991 M-W-D125/8	125mm	63mm	8

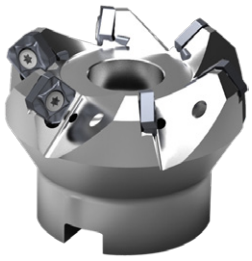
SNKX 45°

Catalog Nr.	Insert Desig.	Grade	L	S	A	Direction
M0001984	SNKX 09T3-45°	LT30	9.53mm	3.71mm	45°	Right
*M0002205	SNKX 1607-45°	LT30	16.70mm	6.84mm	45°	Neutral



Cutter Range for SNKX 09T3-45°

	Catalog Nr.	Description	Diameter	Length	Teeth
End Mills	M2002075	LT 945 W-D25/3	25mm	100mm	3
	M2002076	LT 945 W-D32/4	32mm	110mm	4
Shell Mills	M2001988	LT 945 M-W-D40/5	40mm	40mm	5
	M2002077	LT 945 M-W-D50/6	50mm	40mm	6
	M2002078	LT 945 M-W-D63/8	63mm	40mm	8



*Cutter Range for SNKX 1607-45°

	Catalog Nr	Description	Diameter	Length	Teeth
Shell Mills	M2002200	LT947 M-W-D50/4	50mm	40mm	4
	M2002201	LT947 M-W-D63/5	63mm	40mm	5
	M2002202	LT947 M-W-D80/6	80mm	50mm	6
	M2002203	LT947 M-W-D100/7	100mm	63mm	7
	M2002204	LT947 M-W-D125/8	125mm	63mm	8

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