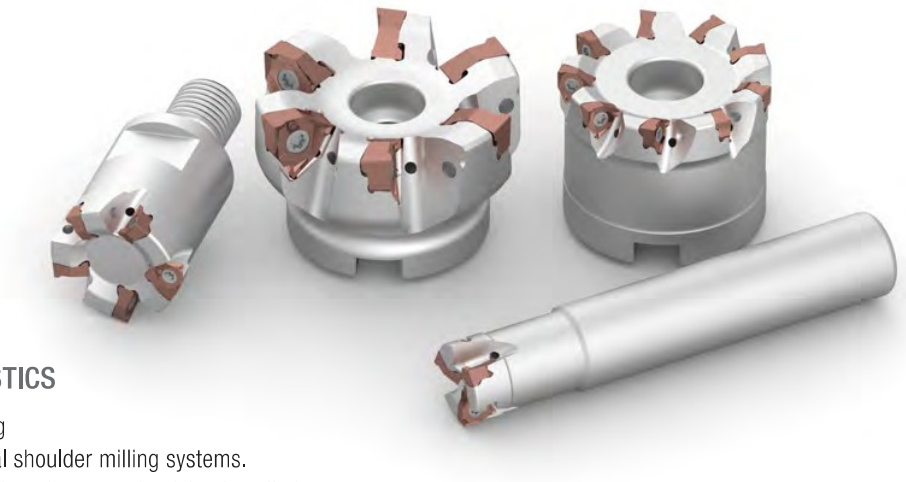
DOUBLE3GON High economical trigonal shoulder milling system for universal processes

APPLICATION

· Shoulder milling
· Shoulders with repeated passes
· Long overhang shoulder milling



ISO APPLICATION FIELDS

P M K N S

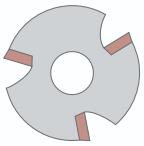
ADVANTAGES AND CHARACTERISTICS

· High precision in making 90° side milling
· Reduced cost per edge than conventional shoulder milling systems.
· Very robust system because of the negative trigonal and reliable installation.
· Full range of carbide geometries, radii and grades.
· «Ultra-precise» cutter bodies with special surface treatment to ensure longer life.

Cutter bodies

· Arbor type
· Cylindrical type
· Screw-in type
· Extension sleeves (steel/carbide 10xD)
· From D20 to D160


Extension arbors


Coarse pitch


Fine pitch

Inserts

· 6 cutting edges
· Edge length 04 and 08
· Cemented carbide grades with CVD and PVD coatings
· Geometries: SC, GP, TE, AL

SC P M S


SIZE 08

GP P M K


SIZE 04 08

TE P K


SIZE 08

AL N

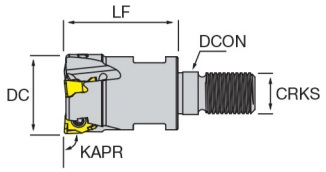

SIZE 08

NT-WX

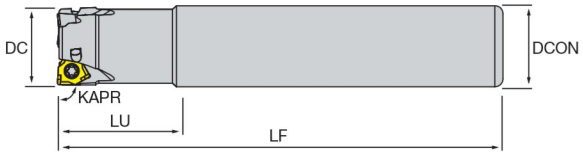
Double3Gon

- Double sided trigonal type shoulder milling system, with coolant through
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2
- Steel and carbide arbors available for screw-in type holders
- High-Quality Swiss screws guarantee more reliability in your machining

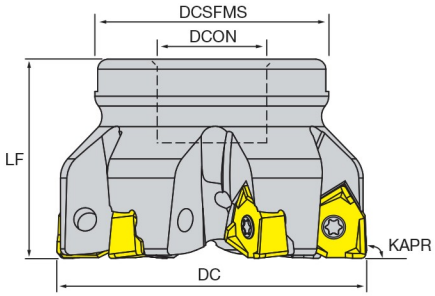
Screw-in



Cylindrical



Arbor



Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	KAPR	WT	MIID
SCREW-IN											
NT-WX04H D020-M10-Z03	●	20	3	10.5	28	-	-	M10	90°	0.05 Kg	WNEX0403
NT-WX04H D025-M12-Z03	○	25	3	12.5	30	-	-	M12	90°	-	WNEX0403
NT-WX04H D025-M12-Z04	●	25	4	12.5	30	-	-	M12	90°	0.09 Kg	WNEX0403
NT-WX04H D032-M16-Z04	○	32	4	17	40	-	-	M16	90°	-	WNEX0403
NT-WX04H D032-M16-Z05	●	32	5	17	40	-	-	M16	90°	0.20 Kg	WNEX0403
CYLINDRICAL											
NT-WX04H D020-S16-Z03	●	20	3	16	110	20	-	-	90°	0.16 Kg	WNEX0403
NT-WX04H D020-S20-Z03	●	20	3	20	110	28	-	-	90°	0.23 Kg	WNEX0403
NT-WX04H D025-S20-Z04	●	25	4	20	120	22	-	-	90°	0.27 Kg	WNEX0403
NT-WX04H D025-S25-Z04	●	25	4	25	120	30	-	-	90°	0.40 Kg	WNEX0403
NT-WX04H D032-S25-Z05	●	32	5	25	130	25	-	-	90°	0.47 Kg	WNEX0403
NT-WX04H D032-S32-Z05	●	32	5	32	130	40	-	-	90°	0.72 Kg	WNEX0403
ARBOR											
NT-WX04H D040-F16-Z05	○	40	5	16	40	-	35	-	90°	-	WNEX0403
NT-WX04H D040-F16-Z07	●	40	7	16	40	-	35	-	90°	0.22 Kg	WNEX0403
NT-WX04H D050-F22-Z06	○	50	6	22	40	-	47	-	90°	-	WNEX0403
NT-WX04H D050-F22-Z09	●	50	9	22	40	-	47	-	90°	0.38 Kg	WNEX0403
NT-WX04H D063-F22-Z08	○	63	8	22	40	-	47	-	90°	-	WNEX0403
NT-WX04H D063-F22-Z10	○	63	10	22	40	-	47	-	90°	-	WNEX0403
NT-WX08H D050-F22-Z04	●	50	4	22	40	-	47	-	90°	0.31 Kg	WNEX0806
NT-WX08H D050-F22-Z05	●	50	5	22	40	-	47	-	90°	0.33 Kg	WNEX0806
NT-WX08H D063-F22-Z06	●	63	6	22	40	-	47	-	90°	0.43 Kg	WNEX0806
NT-WX08H D063-F22-Z07	●	63	7	22	40	-	47	-	90°	0.42 Kg	WNEX0806
NT-WX08H D063-F27-Z06	●	63	6	27	40	-	47	-	90°	0.63 Kg	WNEX0806
NT-WX08H D080-F27-Z07	●	80	7	27	50	-	62.1	-	90°	0.99 Kg	WNEX0806

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	KAPR	WT	MIID
NT-WX08H D080-F27-Z09	●	80	9	27	50	-	62.1	-	90°	0.96 Kg	WNEX0806
NT-WX08H D100-F32-Z08	●	100	8	32	50	-	77.1	-	90°	-	WNEX0806
NT-WX08H D100-F32-Z11	●	100	11	32	50	-	77.1	-	90°	1.45 Kg	WNEX0806
NT-WX08H D125-F40-Z11	●	125	11	40	63	-	80	-	90°	2.38 Kg	WNEX0806
NT-WX08H D160-F40-Z12	●	160	12	40	63	-	85	-	90°	3.86 Kg	WNEX0806

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
		
NT-WX04H Dooo-ooo-Zoo	NT-ST25056T08HQ	NT-FTB08
NT-WX08H Dooo-ooo-Zoo	NT-ST40110T15HQ	NT-FTB15

WNEX

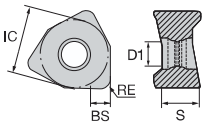
Double3Gon

- Double-sided trigonal inserts offering 6 edges!
- Stable sitting in the pocket guarantees more reliability in machining
- Available in diverse grades covering wide application range

HC: Coated carbide
HF: Micrograin carbide
CVD: Chemical vapour deposition
PVD: Physical vapour deposition

	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF
	JC7515	**JC7530**	**JC8520**	**JC9540**	**JP5530**	**JP5540**	**JP7525**	**JP8525**	**JP8725**	**JP9525**	**JU6520**
Stable machining, light cut (● 1st choice ○ suitable)	●		●					○	○		●
General machining, medium cut	●	●	○	●	●	○	●	●	●	●	●
Unstable machining, heavy cut		●		●	○	●	●				

Dimensions



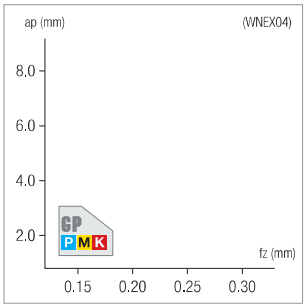
6 edges

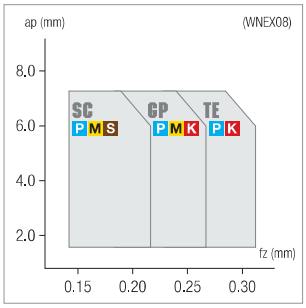
ISO											
Vc(m/min) - suggested cutting speed range (bold: 1st choice)											
P			130 300		100 260	80 220		100 260	100 280		
M				90 210	60 180	60 180				80 200	
K	180 360	160 320	160 320				140 300				
N											300 1100
S				30 70		20 50					
H											

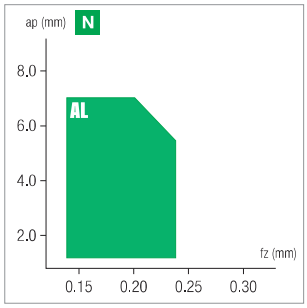
Designation			RE	IC	S	D1	BS	Stock										
GENERAL	GP P M K	WNEX040304R-GP	0.4	6.7	3.3	3.1	0.9						●	●	▽		▽	
		WNEX040308R-GP	0.8	6.7	3.3	3.1	0.9							●				
		WNEX080608R-GP	0.8	12.5	6.5	4.6	1.5	●		●	●	●	●	●		●		
LOW FORCE	SC P M S	WNEX080604R-SC	0.4	12.5	6.5	4.6	1.8						●		▽			
		WNEX080608R-SC	0.8	12.5	6.5	4.6	1.5						●					
REINFORCED	TE P K	WNEX080608R-TE	0.8	12.5	6.5	4.6	1.5	●	▽			●	●	●		●	▽	
		WNEX080612R-TE	1.2	12.5	6.5	4.6	1.1						●		▽			
ALUMINIUM	AL N	WNEX080608R-AL	0.8	12.5	6.5	4.6	1.4											●

polished surface
periphery ground

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion







ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC8520 min	JC8520 start	JC8520 max	JP5530 min	JP5530 start	JP5530 max	JP5540 min	JP5540 start	JP5540 max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	130	**180**	230	100	**140**	180	80	**120**	160
			30%	200	**240**	280	160	**200**	240	120	**160**	200
			10%	260	**280**	300	220	**240**	260	180	**200**	220
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	100	**140**	180	80	**120**	160	60	**100**	140
			30%	160	**200**	240	120	**160**	200	100	**140**	180
			10%	220	**240**	260	180	**200**	220	160	**180**	200
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	70	**100**	130	60	**90**	120			
			30%	120	**160**	200	100	**130**	160			
			10%	200	**220**	240	140	**170**	200			

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP5530 min	JP5530 start	JP5530 max	JP5540 min	JP5540 start	JP5540 max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	90	**130**	170	60	**100**	140	60	**100**	140
			30%	110	**160**	210	80	**130**	180	80	**130**	180
			10%	130	**190**	250	100	**160**	220	100	**160**	220
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%	70	**100**	130				50	**80**	110
			30%	80	**110**	140				60	**90**	120
			10%	90	**120**	150				70	**100**	130
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	90	**120**	150	60	**90**	120	60	**90**	120
			30%	110	**150**	190	80	**120**	160	80	**120**	160
			10%	130	**170**	210	100	**140**	180	100	**140**	180
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%	80	**110**	140				60	**90**	120
			30%	90	**120**	150				70	**100**	130
				100	**130**	160				80	**110**	140

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC7515 min	JC7515 start	JC7515 max	JC8520 min	JC8520 start	JC8520 max	JP7525 min	JP7525 start	JP7525 max
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	180	**230**	280	160	**200**	240	140	**180**	220
			30%	200	**260**	320	180	**230**	280	160	**210**	260
			10%	220	**290**	360	200	**260**	320	180	**240**	300
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	**180**	240	120	**160**	200	100	**140**	180
			30%	160	**220**	280	140	**190**	240	120	**170**	220
			10%	200	**260**	320	160	**220**	280	140	**200**	260
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ ADI1000)	250 ÷ 500	100%	100	**140**	180	100	**130**	160	90	**120**	150
			30%	140	**180**	220	120	**160**	200	120	**150**	180
			10%	180	**220**	260	140	**190**	240	150	**180**	210

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520 min	JU6520 start	JU6520 max
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		100%	300	**400**	500
			30%	400	**600**	800
			10%	500	**800**	1100
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	**250**	300
			30%	300	**350**	400
			10%	400	**450**	500

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540 min	JC9540 start	JC9540 max	JP5540 min	JP5540 start	JP5540 max
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	30	**40**	50	20	**25**	30
			30%	40	**50**	60	30	**35**	40
			10%	50	**60**	70	40	**45**	50
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%				30	**40**	50
			30%				40	**50**	60
			10%				50	**60**	70

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. H1.

JP8725						
min	start	max				
100	**150**	200				
160	**210**	260				
220	**250**	280				
90	**130**	170				
130	**170**	210				
190	**210**	230				
80	**110**	140				
120	**150**	180				
160	**190**	220				

Complete workpiece materials p. **H**1.

DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
WNEX0403ooR-GP	100%	0.60	**1.00**	1.40	0.05	**0.10**	0.15
	30%	0.60	**1.80**	3.00	0.06	**0.12**	0.18
	10%	0.60	**1.80**	3.00	0.07	**0.14**	0.20
WNEX0806ooR-GP	100%	1.00	**2.50**	4.00	0.11	**0.18**	0.21
	30%	1.00	**4.00**	7.00	0.14	**0.20**	0.26
	10%	1.00	**4.00**	7.00	0.16	**0.23**	0.30
WNEX0806ooR-SC	100%	1.00	**2.50**	4.00	0.08	**0.13**	0.18
	30%	1.00	**4.00**	7.00	0.10	**0.16**	0.22
	10%	1.00	**4.00**	7.00	0.12	**0.20**	0.26
WNEX0806ooR-TE	100%	1.00	**2.50**	4.00	0.13	**0.19**	0.25
	30%	1.00	**4.00**	7.00	0.16	**0.23**	0.30
	10%	1.00	**4.00**	7.00	0.20	**0.27**	0.34
WNEX080608R-AL	100%	1.00	**2.50**	4.00	0.08	**0.14**	0.20
	30%	1.00	**4.00**	7.00	0.10	**0.17**	0.24
	10%	1.00	**4.00**	7.00	0.12	**0.20**	0.28