


ALU-XP








Designed for general
machining of
Aluminium











SINGLE FLUTE ROUTER

Code	Item	Description	Page No.
135303		Long Length 2.0mm - 12.0mm	P.3

2 FLUTE

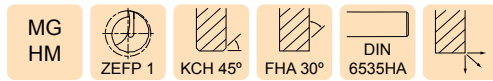
152303		Short Length 45° Helix ø3.0mm - 20.0mm	P.4
151303		Long Length 45° Helix ø1.0mm - 20.0mm	P.5
154303		Long Series 45° Helix ø1.0mm - 20.0mm	P.6
155303		Extended Neck 30° Helix Corner Radius ø4.0mm - 20.0mm	P.7
112303		Extended Neck 50° Helix Ball Nose ø6.0mm - 20.0mm	P.8

3 FLUTE

143303		Long Length 45° Helix ø1.0mm - 20.0mm	P.9
142303		Long Length 45° Helix Corner Radius ø3.0mm - 20.0mm	P.11-12
144303		Long Series 45° Helix ø1.0mm - 20.0mm	P.13-14
153303		Extended Neck 45° Helix ø1.0mm - 20.0mm	P.15-16
156303		Extended Neck 45° Helix Corner radius ø6.0mm - 20.0mm	P.17-18
116303		Extended Neck 40° Helix Ball Nose ø2.0mm - 16.0mm	P.10
125103 125303		Long Length 3 Flute 30° Helix ø6.0mm - 20.0mm	P.19
126103 126303		Extended Neck 3 Flute 30° Helix ø6.0mm - 20.0mm	P.20
		Cutting Data	P.21-25



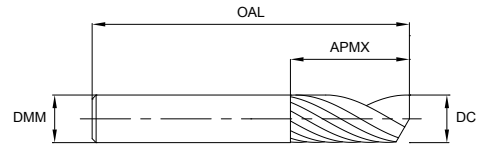
SINGLE FLUTE ROUTER



Series No. 135303

►cutting conditions: p.22

Designed for aluminium and non-ferrous materials such as acrylic.
1 flute allows for excellent chip evacuation.



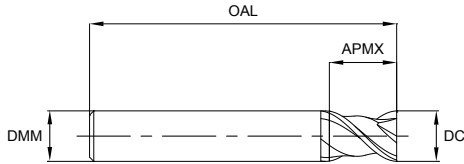
EUROPA CODE ORDCODE	DIAMETER DC	SHANK DIAMETER DMM	LENGTH OF CUT APMX	OVERALL LENGTH OAL	CHAMFER WIDTH CHW
1353030200	2.0	3	8.0	50	0.04
1353030300	3.0	3	12.0	50	0.05
1353030400	4.0	4	15.0	60	0.07
1353030500	5.0	5	17.0	60	0.09
1353030600	6.0	6	20.0	65	0.10
1353030800	8.0	8	22.0	65	0.14
1353031000	10.0	10	25.0	75	0.14
1353031200	12.0	12	30.0	80	0.14

Mill Dia. Tolerance TCDC(mm)	Shank Dia. Tolerance TCDMM
0.00 / -0.03	h6

ISO	P			M		K		N				S		H		
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary ○ Secondary								●		●						



SHORT LENGTH



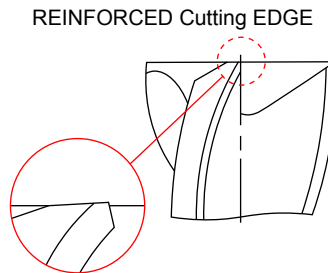
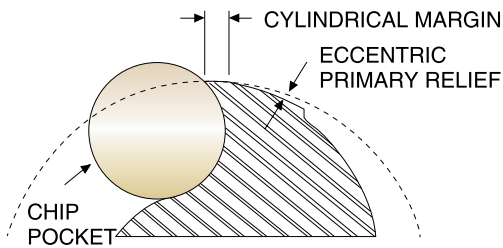
Series No. 152303

►cutting conditions: p.24

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Corner protected.
Mirror polished flutes.

EUROPA CODE ORDCODE	DIAMETER DC	SHANK DIAMETER DMM	LENGTH OF CUT APMX	OVERALL LENGTH OAL
1523030300	3.0	6	5.0	50
1523030400	4.0	6	8.0	54
1523030500	5.0	6	9.0	54
1523030600	6.0	6	10.0	54
1523030800	8.0	8	12.0	58
1523031000	10.0	10	14.0	66
1523031200	12.0	12	16.0	73
1523031400	14.0	14	18.0	75
1523031600	16.0	16	22.0	82
1523031800	18.0	18	24.0	84
1523032000	20.0	20	26.0	92

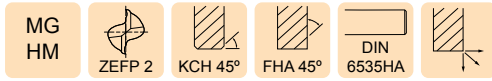
Mill Dia. Tolerance TDCD(mm)	Shank Dia. Tolerance TCDMM
0.00 / -0.015	h6



ISO	P			M		K		N				S		H		
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary ○ Secondary								●								



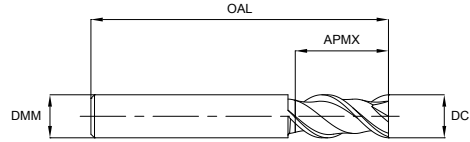
STANDARD LENGTH



Series No. 151303

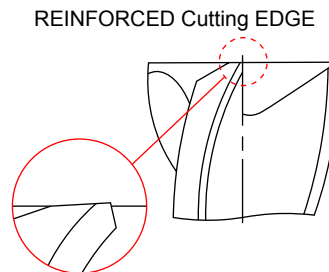
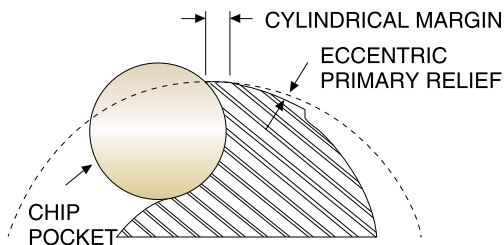
►cutting conditions: p.24

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Corner protected.
Mirror polished flutes.



EUROPA CODE ORDCODE	DIAMETER DC	SHANK DIAMETER DMM	LENGTH OF CUT APMX	OVERALL LENGTH OAL	CHAMFER WIDTH CHW
1513030100	1.0	6	3.0	50	0.04
1513030150	1.5	6	5.0	50	0.04
1513030200	2.0	6	6.0	50	0.04
1513030250	2.5	6	8.0	55	0.04
1513030300	3.0	6	8.0	57	0.05
1513030400	4.0	6	11.0	57	0.05
1513030500	5.0	6	13.0	57	0.05
1513030600	6.0	6	13.0	57	0.05
1513030800	8.0	8	19.0	63	0.05
1513031000	10.0	10	22.0	72	0.10
1513031200	12.0	12	26.0	83	0.10
1513031400	14.0	14	26.0	83	0.10
1513031600	16.0	16	32.0	92	0.10
1513031800	18.0	18	32.0	92	0.10
1513032000	20.0	20	38.0	104	0.10

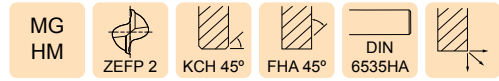
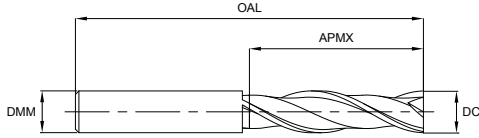
Mill Dia. Tolerance TDCD(mm)	Shank Dia. Tolerance TCDMM
0.00 / -0.015	h6



ISO	P		M		K		N				S		H			
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary								●								
○ Secondary																



LONG SERIES



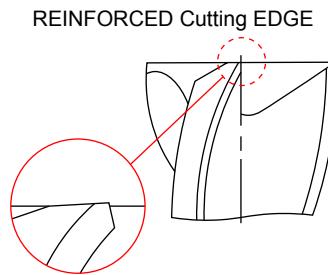
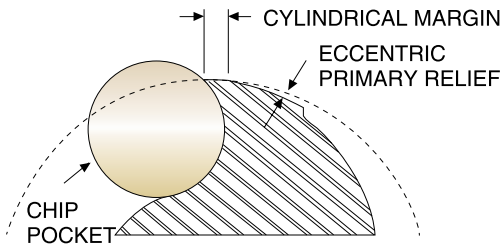
Series No. 154303

►cutting conditions: p.24

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Long series. Corner protected.
Mirror polished flutes.

EUROPA CODE ORDCODE	DIAMETER DC	SHANK DIAMETER DMM	LENGTH OF CUT APMX	OVERALL LENGTH OAL	CHAMFER WIDTH CHW
1543030100	1.0	6	6.0	60	0.04
1543030150	1.5	6	8.0	60	0.04
1543030200	2.0	6	10.0	60	0.04
1543030300	3.0	6	15.0	75	0.05
1543030400	4.0	6	20.0	75	0.05
1543030500	5.0	6	25.0	75	0.05
1543030600	6.0	6	25.0	75	0.05
1543030800	8.0	8	30.0	80	0.05
1543031000	10.0	10	40.0	100	0.10
1543031200	12.0	12	50.0	100	0.10
1543031400	14.0	14	50.0	100	0.10
1543031600	16.0	16	70.0	125	0.10
1543031800	18.0	18	70.0	125	0.10
1543032000	20.0	20	75.0	150	0.10

Mill Dia. Tolerance TDCD(mm)	Shank Dia. Tolerance TCDMM
0.00 / -0.015	h6



ISO	P			M		K		N				S		H		
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary ○ Secondary								●								



EXTENDED NECK



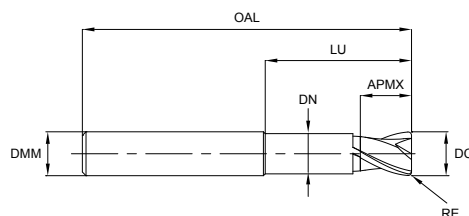
Series No. 155303

►cutting conditions: p.25

Suitable for machining of aluminium and other non-ferrous materials.

Excellent surface finishes, superior chip removal.

Corner radius. Neck relief.



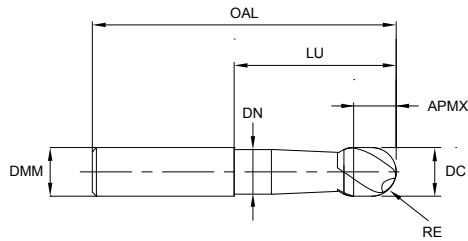
EUROPA CODE ORCODE	DIAMETER DC	CORNER RADIUS RE	SHANK DIAMETER DMM	LENGTH OF CUT APMX	EFFECTIVE LENGTH LU	OVERALL LENGTH OAL	NECK DIAMETER DN
1553030400	4.0	0.3	6	5.0	10.0	50	3.6
1553030600	6.0	0.5	6	8.0	20.0	64	5.4
1553030800	8.0	0.6	8	10.0	30.0	64	7.2
1553031000	10.0	0.8	10	12.0	36.0	70	9.0
1553031200	12.0	1.0	12	14.0	40.0	76	11.0
1553031600	16.0	1.3	16	18.0	45.0	90	14.5
1553032000	20.0	1.6	20	24.0	45.0	100	18.0

Mill Dia. Tolerance TCDC(mm)	Radius Tolerance (mm)		Shank Dia. Tolerance TCDMM
	RETOLL	RETOLU	
0.00 / -0.03	-0.03	+0.03	h6

ISO	P			M		K		N					S		H	
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary ○ Secondary								●								



EXTENDED NECK BALL NOSE



MG
HM



Series No. 112303

►cutting conditions: p.22

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Neck relief.

EUROPA CODE ORCODE	DIAMETER DC	RADIUS RE	SHANK DIAMETER DMM	LENGTH OF CUT APMX	EFFECTIVE LENGTH LU	OVERALL LENGTH OAL	NECK DIAMETER DN
1123030600	6.0	3.0	6	5.5	25.0	55	5.4
1123030800	8.0	4.0	8	7.0	30.0	65	7.2
1123031000	10.0	5.0	10	8.5	35.0	75	9.0
1123031200	12.0	6.0	12	10.5	40.0	75	11.0
1123031600	16.0	8.0	16	14.0	50.0	90	14.5
1123032000	20.0	10.0	20	17.0	50.0	100	18.0

Mill Dia. Tolerance TCDC(mm)	Radius Tolerance (mm)		Shank Dia. Tolerance TCDMM
	RETOLL	RETOLU	
±0.02	-0.01	+0.01	h6

ISO	P			M		K		N				S		H		
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary ○ Secondary								●	○							



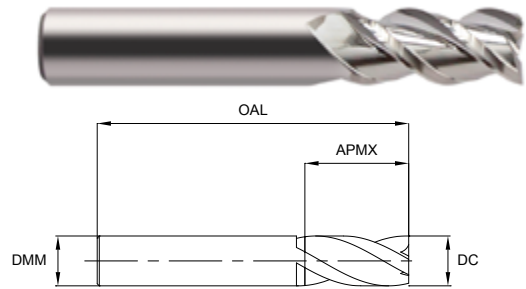
STANDARD LENGTH



Series No. 143303

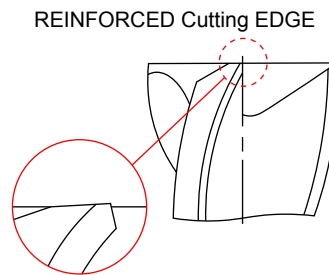
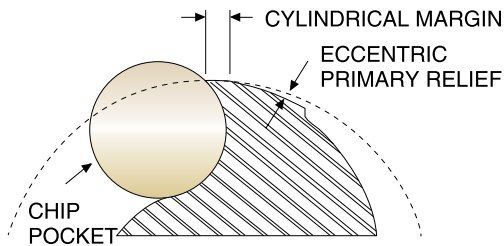
►cutting conditions: p.23

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Corner protected.
Mirror polished flutes.



EUROPA CODE ORDCODE	DIAMETER DC	SHANK DIAMETER DMM	LENGTH OF CUT APMX	OVERALL LENGTH OAL
1433030100	1.0	3	6.0	50
1433030150	1.5	6	3.0	40
1433030200	2.0	6	6.0	50
1433030250	2.5	6	8.0	40
1433030300	3.0	6	12.0	57
1433030400	4.0	6	15.0	57
1433030500	5.0	6	20.0	57
1433030600	6.0	6	20.0	65
1433030800	8.0	8	22.0	65
1433031000	10.0	10	25.0	70
1433031200	12.0	12	25.0	75
1433031600	16.0	16	35.0	90
1433032000	20.0	20	40.0	100

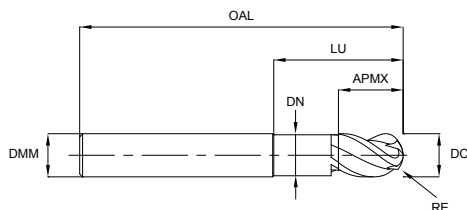
Mill Dia. Tolerance TCDC(mm)	Shank Dia. Tolerance TCDMM
0.00 / -0.015	h6



ISO	P			M		K		N				S		H		
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary ○ Secondary								●								



EXTENDED NECK BALL NOSE



MG
HM



Series No. 116303

►cutting conditions: p.25

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Neck relief.

EUROPA CODE ORDCODE	DIAMETER DC	RADIUS RE	SHANK DIAMETER DMM	LENGTH OF CUT APMX	EFFECTIVE LENGTH LU	OVERALL LENGTH OAL	NECK DIAMETER DN
1163030200	2.0	1.0	6	3.0	5.0	60	1.9
1163030250	2.5	1.25	6	4.0	6.0	60	2.4
1163030300	3.0	1.5	6	4.5	6.5	60	2.8
1163030350	3.5	1.75	6	5.0	7.0	65	3.2
1163030400	4.0	2.0	6	6.0	8.0	65	3.7
1163030500	5.0	2.5	6	7.5	10.0	65	4.6
1163030600	6.0	3.0	6	9.0	12.0	75	5.6
1163030800	8.0	4.0	8	12.0	25.0	75	7.4
1163031000	10.0	5.0	10	15.0	30.0	80	9.4
1163031200	12.0	6.0	12	18.0	36.0	90	11.4
1163031600	16.0	8.0	16	24.0	40.0	100	15.4

Mill Dia. Tolerance TCDC(mm)	Radius Tolerance (mm)		Shank Dia. Tolerance TCDDMM
	RETOLL	RETOLU	
0.00 / -0.03	-0.01	+0.01	h6

ISO	P			M		K		N				S		H		
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary	○	○	○	○	○	○	○	●	○	○	○	○	○	○	○	○
○ Secondary	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



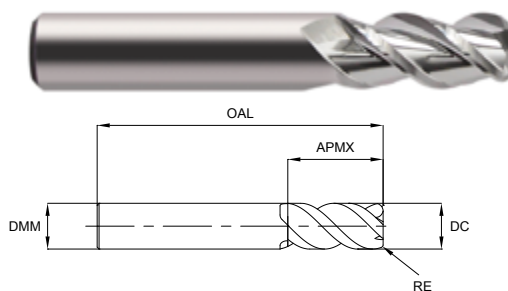
STANDARD LENGTH CORNER RADIUS



Series No. 142303

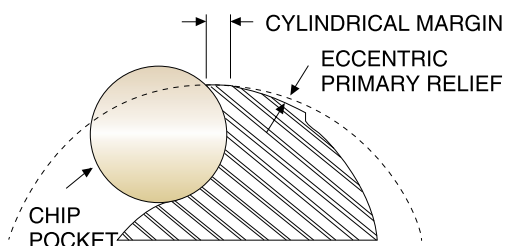
►cutting conditions: p.23

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Corner protected.
Mirror polished flutes.



EUROPA CODE ORDCODE	DIAMETER DC	CORNER RADIUS RE	SHANK DIAMETER DMM	LENGTH OF CUT APMX	OVERALL LENGTH OAL
1423030300	3.0	0.5	6	12.0	57
1423030901		1.0	6	12.0	57
1423030400	4.0	0.5	6	15.0	57
1423030902		1.0	6	15.0	57
1423030500	5.0	0.5	6	20.0	57
1423030903		1.0	6	20.0	57
1423030600	6.0	0.5	6	20.0	65
1423030904		1.0	6	20.0	65
1423030800	8.0	0.5	8	22.0	65
1423030905		1.0	8	22.0	65
1423030914		2.0	8	22.0	65
1423030915		3.0	8	22.0	65
1423031000	10.0	0.5	10	25.0	70
1423030906		1.0	10	25.0	70
1423030907		2.0	10	25.0	70
1423030916		3.0	10	25.0	70
1423031200	12.0	0.5	12	25.0	75
1423030908		1.0	12	25.0	75
1423030909		2.0	12	25.0	75
1423030917		3.0	12	25.0	75
1423030918		4.0	12	12	25.0

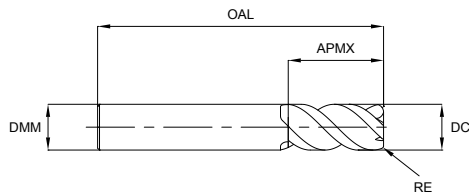
Mill Dia. Tolerance TCDC(mm)	Radius Tolerance (mm)		Shank Dia. Tolerance TCDMM
	RETOLL	RETOLU	
0.00 / -0.015	-0.03	+0.03	h6



ISO	P		M	K		N			S		H					
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary	○ Secondary							●								



STANDARD LENGTH CORNER RADIUS



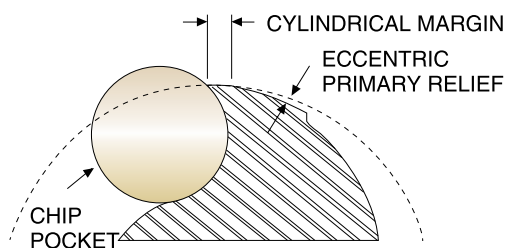
Series No. 142303

►cutting conditions: p.23

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Corner protected.
Mirror polished flutes.

EUROPA CODE ORDCODE	DIAMETER DC	CORNER RADIUS RE	SHANK DIAMETER DMM	LENGTH OF CUT APMX	OVERALL LENGTH OAL
1423031600	16.0	0.5	16	35.0	90
1423030910		1.0	16	35.0	90
1423030911		2.0	16	35.0	90
1423030919		3.0	16	35.0	90
1423030920		4.0	16	35.0	90
1423030921		5.0	16	35.0	90
1423032000		20.0	0.5	20	40.0
1423030912	1.0		20	40.0	100
1423030913	2.0		20	40.0	100
1423030922	3.0		20	40.0	100
1423030923	4.0		20	40.0	100
1423030924	5.0		20	40.0	100

Mill Dia. Tolerance TDCD(mm)	Radius Tolerance (mm)		Shank Dia. Tolerance TCDMM
	RETOLL	RETOLU	
0.00 / -0.015	-0.03	+0.03	h6



ISO	P		M	K		N			S	H						
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary ○ Secondary								●								



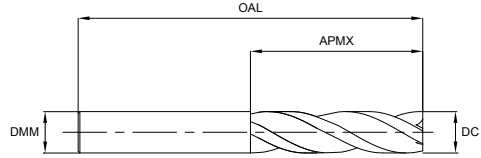
LONG SERIES



Series No. 144303

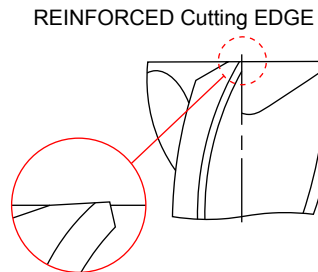
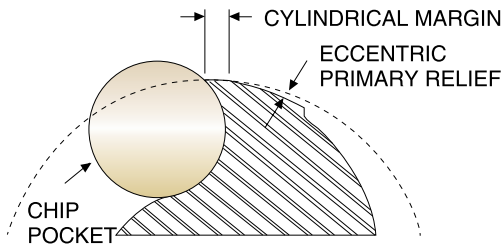
►cutting conditions: p.23

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Long series. Corner protected.
Mirror polished flutes.



EUROPA CODE ORDCODE	DIAMETER DC	SHANK DIAMETER DMM	LENGTH OF CUT APMX	OVERALL LENGTH OAL
1443030300	3.0	6	15.0	75
1443030301		6	30.0	80
1443030400	4.0	6	20.0	75
1443030401		6	30.0	80
1443030500	5.0	6	25.0	75
1443030501		6	45.0	90
1443030600	6.0	6	25.0	75
1443030601		6	50.0	100
1443030800	8.0	8	30.0	80
1443030801		8	45.0	95
1443030802		8	65.0	110
1443031000	10.0	10	40.0	100
1443031001		10	55.0	110
1443031002		10	65.0	120

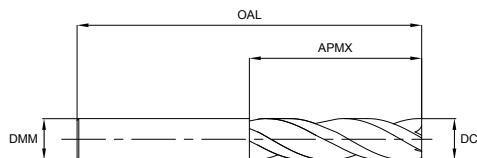
Mill Dia. Tolerance TDCD(mm)	Shank Dia. Tolerance TCDMM
0.00 / -0.015	h6



ISO	P			M		K		N				S		H		
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary								●								
○ Secondary																



LONG SERIES



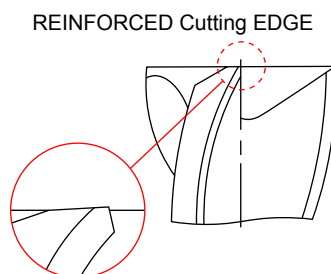
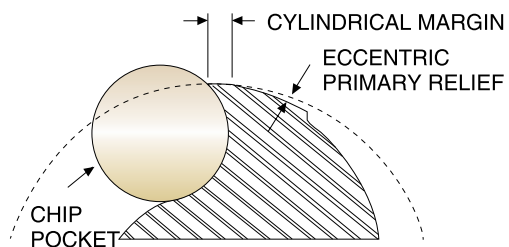
Series No. 144303

►cutting conditions: p.23

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Long series. Corner protected.
Mirror polished flutes.

EUROPA CODE ORDCODE	DIAMETER DC	SHANK DIAMETER DMM	LENGTH OF CUT APMX	OVERALL LENGTH OAL
1443031200	12.0	12	50.0	100
1443031201		12	65.0	125
1443031202		12	75.0	135
1443031600	16.0	16	70.0	125
1443031601		16	75.0	150
1443031602		16	95.0	180
1443031603		16	115.0	200
1443032000	20.0	20	75.0	150
1443032001		20	95.0	180
1443032002		20	115.0	200
1443032003		20	125.0	220

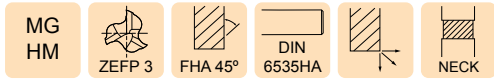
Mill Dia. Tolerance TCDC(mm)	Shank Dia. Tolerance TCDMM
0.00 / -0.015	h6



ISO	P		M		K		N				S		H			
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary								●								
○ Secondary																



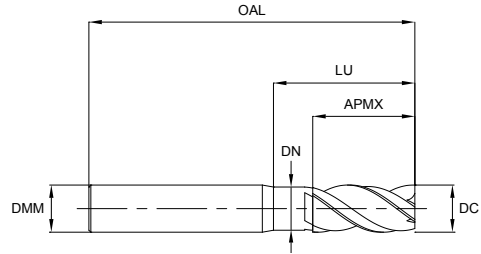
EXTENDED NECK



Series No. 153303

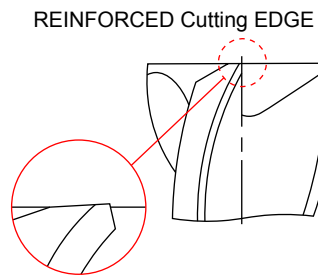
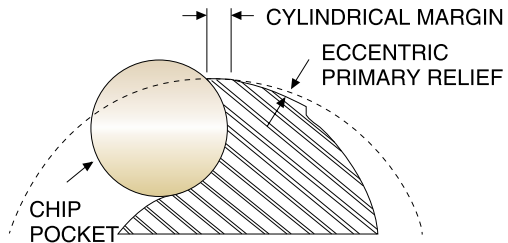
►cutting conditions: p.23

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Long series. Corner protected.
Mirror polished flutes.



EUROPA CODE ORDCODE	DIAMETER DC	SHANK DIAMETER DMM	LENGTH OF CUT APMX	EFFECTIVE LENGTH LU	OVERALL LENGTH OAL	NECK DIAMETER DN
1533030100	1.0	4	2.0	8.0	50	0.85
1533030200	2.0	4	4.0	10.0	50	1.85
1533030300	3.0	6	8.0	12.0	57	2.7
1533030303		6	6.0	20.0	60	2.7
1533030301		6	8.0	20.0	60	2.7
1533030302		6	8.0	30.0	80	2.7
1533030400	4.0	6	11.0	18.0	57	3.7
1533030403		6	8.0	20.0	60	3.7
1533030401		6	10.0	26.0	70	3.7
1533030402		6	10.0	30.0	80	3.7
1533030500	5.0	6	13.0	18.0	57	4.7
1533030600	6.0	6	13.0	18.0	57	5.7
1533030601		6	15.0	35.0	90	5.7
1533030602		6	15.0	45.0	90	5.7
1533030800	8.0	8	21.0	25.0	63	7.4
1533030801		8	20.0	40.0	100	7.4
1533030802		8	20.0	50.0	100	7.4

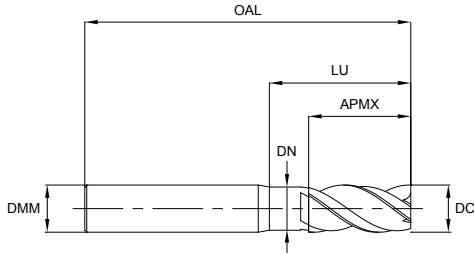
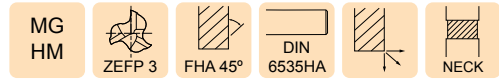
Mill Dia. Tolerance TDCD(mm)	Shank Dia. Tolerance TCDMM
0.00 / -0.015	h6



ISO	P		M		K		N				S		H			
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary ○ Secondary								●								



EXTENDED NECK



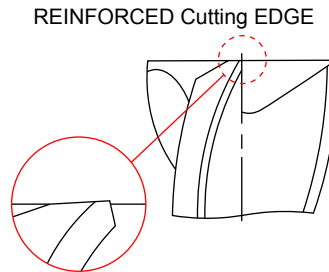
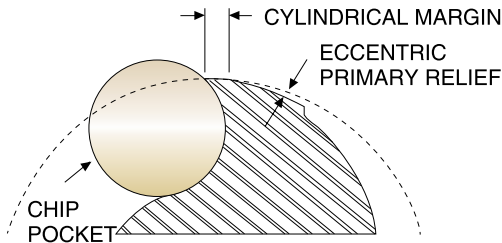
Series No. 153303

►cutting conditions: p.23

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Long series. Corner protected.
Mirror polished flutes.

EUROPA CODE ORDCODE	DIAMETER DC	SHANK DIAMETER DMM	LENGTH OF CUT APMX	EFFECTIVE LENGTH LU	OVERALL LENGTH OAL	NECK DIAMETER DN
1533031000	10.0	10	22.0	30.0	72	9.2
1533031001		10	25.0	45.0	100	9.2
1533031002		10	25.0	55.0	100	9.0
1533031200	12.0	12	26.0	36.0	83	11.0
1533031201		12	30.0	50.0	110	11.0
1533031202		12	30.0	60.0	110	11.0
1533031600	16.0	16	36.0	42.0	92	15.0
1533031601		16	25.0	50.0	130	15.0
1533032000	20.0	20	41.0	52.0	104	19.0
1533032001		20	30.0	60.0	150	19.0

Mill Dia. Tolerance TDCD(mm)	Shank Dia. Tolerance TCDMM
0.00 / -0.015	h6



ISO	P			M		K		N				S		H		
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary ○ Secondary								●								



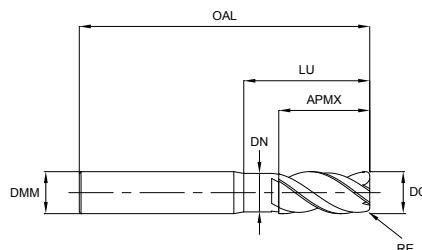
EXTENDED NECK CORNER RADIUS



Series No. 156303

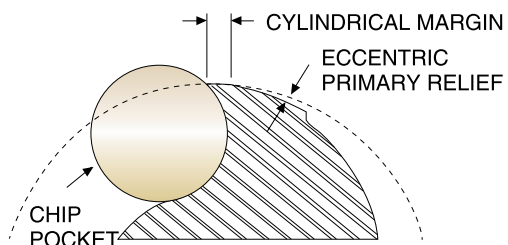
►cutting conditions: p.23

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Corner radius. Neck relief.
Mirror polished flutes.



EUROPA CODE ORDCODE	DIAMETER DC	CORNER RADIUS RE	SHANK DIAMETER DMM	LENGTH OF CUT APMX	EFFECTIVE LENGTH LU	OVERALL LENGTH OAL	NECK DIAMETER DN
1563030600	6.0	0.5	6	10.0	20.0	70	5.7
1563030601		1.0	6	10.0	20.0	70	5.7
1563030800	8.0	0.5	8	12.0	25.0	80	7.4
1563030801		1.0	8	12.0	25.0	80	7.4
1563030802		2.0	8	12.0	25.0	80	7.4
1563030803		3.0	8	12.0	25.0	80	7.4
1563031000	10.0	0.5	10	15.0	30.0	100	9.2
1563031001		1.0	10	15.0	30.0	100	9.2
1563031002		2.0	10	15.0	30.0	100	9.2
1563031003		3.0	10	15.0	30.0	100	9.2
1563031200	12.0	0.5	12	20.0	35.0	110	11.0
1563031201		1.0	12	20.0	35.0	110	11.0
1563031202		2.0	12	20.0	35.0	110	11.0
1563031203		3.0	12	20.0	35.0	110	11.0
1563031204		4.0	12	20.0	35.0	110	11.0

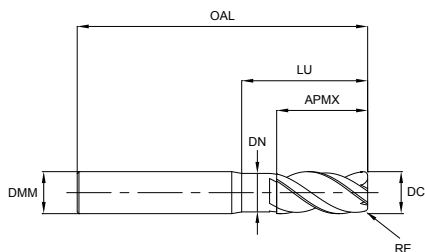
Mill Dia. Tolerance TCD(mm)	Radius Tolerance (mm)		Shank Dia. Tolerance TCDMM
	RETOLL	RETOLU	
0.00 / -0.015	-0.03	+0.03	h6



ISO	P		M		K		N				S		H			
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary ○ Secondary								●								



EXTENDED NECK CORNER RADIUS



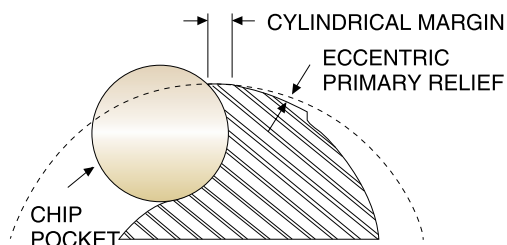
Series No. 156303

►cutting conditions: p.23

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Corner radius. Neck relief.
Mirror polished flutes.

EUROPA CODE ORDCODE	DIAMETER DC	CORNER RADIUS RE	SHANK DIAMETER DMM	LENGTH OF CUT APMX	EFFECTIVE LENGTH LU	OVERALL LENGTH OAL	NECK DIAMETER DN
1563031600	16.0	1.0	16	25.0	50.0	130	15.0
1563031601		2.0	16	25.0	50.0	130	15.0
1563031602		3.0	16	25.0	50.0	130	15.0
1563031603		4.0	16	25.0	50.0	130	15.0
1563031604		5.0	16	25.0	50.0	130	15.0
1563032000	20.0	1.0	20	30.0	60.0	150	19.0
1563032001		2.0	20	30.0	60.0	150	19.0
1563032002		3.0	20	30.0	60.0	150	19.0
1563032003		4.0	20	30.0	60.0	150	19.0
1563032004		5.0	20	30.0	60.0	150	19.0

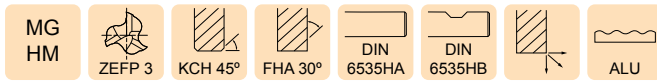
Mill Dia. Tolerance TCDC(mm)	Radius Tolerance (mm)		Shank Dia. Tolerance TCDMM
	RETOLL	RETOLU	
0.00 / -0.015	-0.03	+0.03	h6



ISO	P			M		K		N				S		H		
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary ○ Secondary								●								



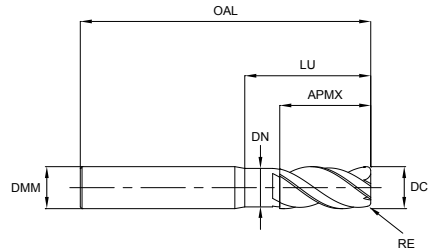
STANDARD LENGTH ROUGHING



Series No. 125103, 125303

►cutting conditions: p.24

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Corner protected.



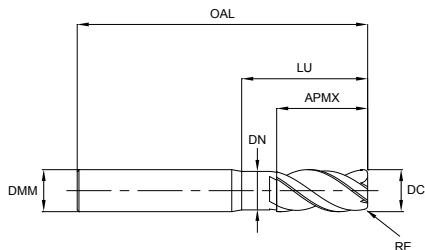
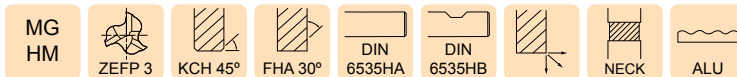
DIN 6535HB ORDCODE	DIN 6535HA ORDCODE	DIAMETER DC	SHANK DIAMETER DMM	LENGTH OF CUT APMX	OVERALL LENGTH OAL	CHAMFER WIDTH CHW
1251030600	1253030600	6.0	6	16.0	57	0.60
1251030800	1253030800	8.0	8	16.0	63	0.60
1251031000	1253031000	10.0	10	22.0	72	0.60
1251031200	1253031200	12.0	12	26.0	83	0.60
1251031400	1253031400	14.0	14	26.0	83	0.91
1251031600	1253031600	16.0	16	32.0	92	0.91
1251032000	1253032000	20.0	20	38.0	104	0.91

Mill Dia. DC	Mill Dia. Tolerance TCDC(mm)	Shank Dia. Tolerance TCDMM
6.0, 8.0, 10.0	0.00 / -0.058	h6
12.0, 14.0, 16.0	0.00 / -0.070	
20.0	0.00 / -0.084	

ISO	P		M		K		N					S		H		
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary								●								
○ Secondary																



EXTENDED NECK ROUGHING



Series No.126103, 126303

►cutting conditions: p.24

Suitable for machining of aluminium and other non-ferrous materials.
Excellent surface finishes, superior chip removal.
Corner protected. Neck relief.

DIN 6535HB ORDCODE	DIN 6535HA ORDCODE	DIAMETER DC	SHANK DIAMETER DMM	LENGTH OF CUT APMX	EFFECTIVE LENGTH LU	OVERALL LENGTH OAL	NECK DIAMETER DN	CHAMFER WIDTH CHW
1261030600	1263030600	6.0	6	16.0	20.0	57	5.0	0.60
1261030800	1263030800	8.0	8	16.0	25.0	63	7.0	0.60
1261031000	1263031000	10.0	10	22.0	30.0	72	9.0	0.60
1261031200	1263031200	12.0	12	26.0	36.0	83	10.5	0.60
1261031600	1263031600	16.0	16	32.0	42.0	92	14.5	0.91
1261032000	1263032000	20.0	20	38.0	52.0	104	18.5	0.91

Mill Dia. DC	Mill Dia. Tolerance TCDC(mm)	Shank Dia. Tolerance TCDMM
6.0, 8.0, 10.0	0.00 / -0.058	h6
12.0, 16.0	0.00 / -0.070	
20.0	0.00 / -0.084	

ISO	P			M		K		N				S		H		
VDI GROUP	1-5	6-9	10-11	12, 13	14	15-16	17-20	21-25	26-28	29.1	29.2	30	31-35	36-37	38-39	40-41
● Primary								●								
○ Secondary																



ALU-XP

CUTTING DATA



CUTTING DATA

135303 (1 Flute Router)

VDI MATERIAL GROUP		Type of cut		Size (mm)								
				2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	
N	21-25	SLOTTING	Aluminium/ Aluminium Alloys	v_c (m/min)	145	170	190	190	190	195	190	190
				n	23000	18000	15000	12000	10000	8000	6000	5000
				f_z	0.065	0.094	0.12	0.15	0.18	0.244	0.333	0.44
				f (mm/min)	1500	1700	1800	1800	1800	1900	2000	2200
	29.1		Plastics/ Acrylics	v_c (m/min)	200	235	250	235	255	250	250	255
				n	32000	25000	20000	15000	13500	10000	8000	6700
				f_z	0.069	0.096	0.12	0.147	0.17	0.24	0.3	0.343
				f (mm/min)	2200	2400	2400	2200	2300	2400	2400	2300

112303 (2 Flute 50° Helix, Ball Nose)

VDI MATERIAL GROUP		Type of cut		Size (mm)						
				6.0	8.0	10.0	12.0	16.0	20.0	
N	21-25	SLOTTING	Aluminium/ Aluminium Alloys	v_c (m/min)	270	280	350	420	440	350
				n	14400	11200	11200	11200	8800	5600
				f_z	0.049	0.071	0.084	0.07	0.123	0.157
				f (mm/min)	1400	1600	1880	2400	2160	1760
	26-28		Copper/ Copper Alloys	v_c (m/min)	85	85	105	125	135	105
				n	4400	3360	3360	3360	2640	1680
				f_z	0.04	0.06	0.069	0.089	0.101	0.131
				f (mm/min)	350	400	465	600	535	440

Recommended cutting depths are **maximum** depths, and **speeds and feeds are a starting point** based on these depths.
 All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up.
For long series and long necked tools it may be necessary to reduce feed rate by up to 50%.

v_c - cutting speed (m/min)
 n - RPM (rev/min)
 f_z - feed per tooth (mm)
 f - feed rate (mm/min)
 a_p - axial depth of cut
 a_e - radial depth of cut



CUTTING DATA

143303, 144303, 153303 (3 Flute 45° Helix, Long, Necked & Long Series)

VDI MATERIAL GROUP	Type of cut		Size (mm)									
			3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0	
N 21-25	SLOTTING	v_c (m/min)	65	90	110	130	140	175	210	210	175	
		n	7000	7000	7000	7000	5600	5600	5600	4200	2800	
		f_z	0.035	0.045	0.05	0.06	0.088	0.106	0.131	0.158	0.2	
		f (mm/min)	730	940	1050	1250	1470	1780	2200	1990	1680	
	SIDE CUTTING	v_c (m/min)	65	90	110	130	140	175	210	210	175	
		n	7000	7000	7000	7000	5600	5600	5600	4200	2800	
		f_z	0.045	0.055	0.065	0.075	0.113	0.131	0.163	0.2	0.238	
		f (mm/min)	940	1150	1360	1580	1900	2200	2740	2520	2000	

SLOTTING

SIDE CUTTING

142303, 156303 (3 Flute 45° Helix, Corner Radius & Necked Corner Radius)

VDI MATERIAL GROUP	Type of cut		Size (mm)									
			3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0	
N 21-25	SLOTTING	v_c (m/min)	95	125	155	190	200	250	300	300	250	
		n	10000	10000	10000	10000	8000	8000	8000	6000	4000	
		f_z	0.039	0.05	0.055	0.066	0.096	0.117	0.145	0.174	0.22	
		f (mm/min)	1160	1490	1650	1980	2310	2810	3470	3140	2640	
	SIDE CUTTING	v_c (m/min)	95	125	155	190	200	250	300	300	250	
		n	10000	10000	10000	10000	8000	8000	8000	6000	4000	
		f_z	0.05	0.061	0.072	0.083	0.125	0.145	0.179	0.22	0.262	
		f (mm/min)	1490	1820	2150	2480	3000	3470	4290	3960	3140	

SLOTTING

SIDE CUTTING

Recommended cutting depths are **maximum** depths, and **speeds and feeds are a starting point** based on these depths.
 All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up.
For long series and long necked tools it may be necessary to reduce feed rate by up to 50%.

v_c - cutting speed (m/min)
 n - RPM (rev/min)
 f_z - feed per tooth (mm)
 f - feed rate (mm/min)
 a_p - axial depth of cut
 a_e - radial depth of cut



CUTTING DATA

125103, 125303, 126103, 126303 (3 Flute Roughing)

VDI MATERIAL GROUP	Type of cut	Size (mm)							
		6.0	8.0	10.0	12.0	16.0	20.0		
N 21-25 Aluminium/ Aluminium Alloys	SLOTTING	v_c (m/min)	200	200	205	320	322	320	
		n	13500	10500	8500	8500	6400	5100	
		f_z	0.168	0.168	0.169	0.165	0.167	0.163	
		f (mm/min)	6800	5300	4300	4200	3200	2500	
	SIDE CUTTING	v_c (m/min)	200	200	205	320	322	320	
		n	13500	10500	8500	8500	6400	5100	
		f_z	0.168	0.167	0.169	0.167	0.167	0.165	
		f (mm/min)	5300	4000	3500	3200	2400	1900	

SLOTTING

SIDE CUTTING

151303, 152303, 154303 (2 Flute 45° Helix, Short, Long & Long Series)

VDI MATERIAL GROUP	Type of cut	Size (mm)									
		3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0	
N 21-25 Aluminium/ Aluminium Alloys	SLOTTING	v_c (m/min)	95	125	155	190	200	250	300	300	250
		n	10000	10000	10000	10000	8000	8000	8000	6000	4000
		f_z	0.035	0.045	0.05	0.06	0.088	0.106	0.131	0.158	0.2
		f (mm/min)	700	900	1000	1200	1400	1700	2100	1900	1600
	SIDE CUTTING	v_c (m/min)	95	125	155	190	200	250	300	300	250
		n	10000	10000	10000	10000	8000	8000	8000	6000	4000
		f_z	0.035	0.045	0.05	0.06	0.088	0.106	0.131	0.158	0.2
		f (mm/min)	700	900	1000	1200	1400	1700	2100	1900	1600

SLOTTING

SIDE CUTTING

$a_e : \varnothing 3.0\text{mm} - \varnothing 10.0\text{mm} = 0.25 \times DC$
 $a_e : \varnothing 12.0\text{mm} - \varnothing 20.0\text{mm} = 0.15 \times DC$

Recommended cutting depths are **maximum** depths, and **speeds and feeds are a starting point** based on these depths.
 All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up.
For long series and long necked tools it may be necessary to reduce feed rate by up to 50%.

v_c - cutting speed (m/min)
 n - RPM (rev/min)
 f_z - feed per tooth (mm)
 f - feed rate (mm/min)
 a_p - axial depth of cut
 a_e - radial depth of cut



CUTTING DATA

155303 (2 Flute Corner Radius)											
VDI MATERIAL GROUP		Type of cut		Size (mm)							
				4.0	6.0	8.0	10.0	12.0	16.0	20.0	
N	21-25	Aluminium/ Aluminium Alloys	SLOTTING	v_c (m/min)	130	195	200	250	300	320	250
				n	10400	10400	8000	8000	8000	6400	4000
				f_z	0.046	0.058	0.09	0.110	0.135	0.156	0.2
				f (mm/min)	960	1200	1440	1760	2160	2000	1600
			SIDE CUTTING	v_c (m/min)	130	195	200	250	300	320	250
				n	10400	10400	8000	8000	8000	6400	4000
				f_z	0.054	0.077	0.115	0.135	0.17	0.194	0.25
				f (mm/min)	1120	1600	1840	2160	2720	2480	2000

SLOTTING

SIDE CUTTING

116303 (3 Flute 40° Helix, Ball Nose)													
VDI MATERIAL GROUP		Type of cut		Size (mm)									
				2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	
N	21-25	Aluminium/ Aluminium Alloys	SLOTTING	v_c (m/min)	135	135	180	225	270	280	350	420	440
				n	21600	14400	14400	14400	14400	11200	11200	11200	8800
				f_z	0.018	0.026	0.035	0.038	0.049	0.071	0.084	0.107	0.123
				f (mm/min)	760	760	1000	1080	1400	1600	1880	2400	2160
	26-28		Copper/ Copper Alloys	v_c (m/min)	40	40	55	70	85	85	105	125	135
				n	6400	4400	4400	4400	4400	3360	3360	3360	2640
				f_z	0.015	0.022	0.028	0.031	0.04	0.06	0.069	0.089	0.101
				f (mm/min)	190	190	250	270	350	400	465	600	535

Recommended cutting depths are **maximum** depths, and **speeds and feeds are a starting point** based on these depths.
 All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up.
For long series and long necked tools it may be necessary to reduce feed rate by up to 50%.

v_c - cutting speed (m/min)
 n - RPM (rev/min)
 f_z - feed per tooth (mm)
 f - feed rate (mm/min)
 a_p - axial depth of cut
 a_e - radial depth of cut