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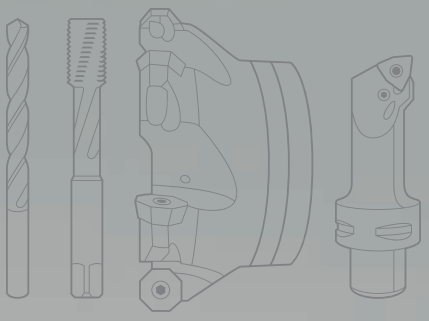

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_HIGHLIGHTS

ConeFit™ for maximum flexibility.

TURNING VISIONS INTO REALITY.

Engineering what you envision takes tools. Tools for turning, milling, drilling and threading. But it also takes heart and soul. From the initial inspiration to the final application.

We're driven to find out what our customers want and committed to make it happen. We concentrate on the applications and what you need them to do.
We help you engineer the engineering.

To us, perfection is practical. It's the most productive and efficient way to achieve results, and the only way to turn vision into reality.

Expect more. Engineer what you envision.
Experience the new Walter.

WALTER

WALTER VALENITE

WALTER TITEX

WALTER PROTOTYP

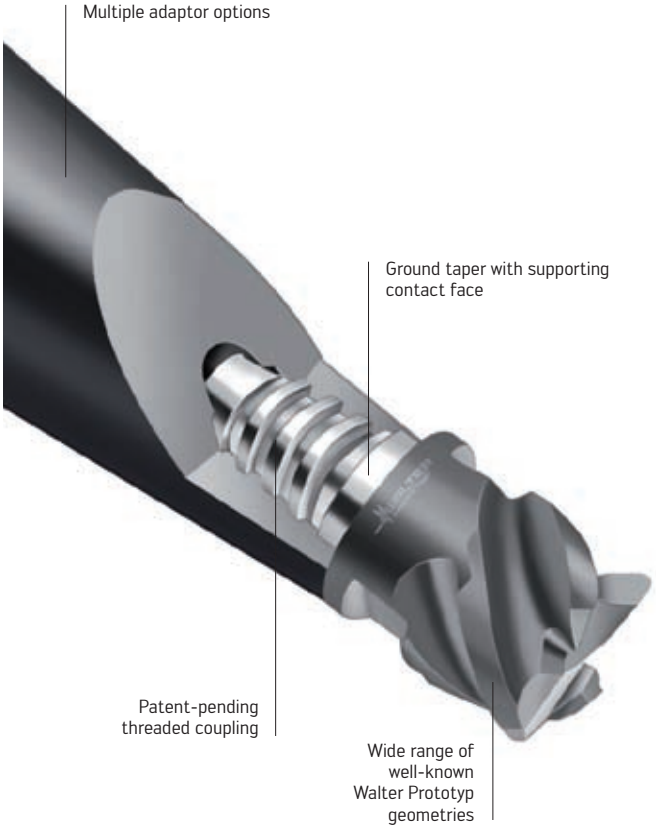
Walter Prototyp ConeFit™ – Modular milling system.

THE TOOL SYSTEM

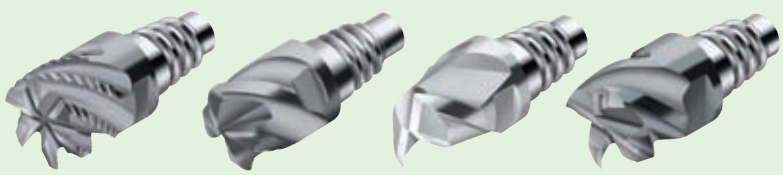
- Modular milling system with solid carbide heads and a patented self-centering thread
- High degree of concentricity thanks to conical contact
- Axial contact face delivers high degree of rigidity
- Inch diameter range from 3/8 - 3/4 inch
  Metric diameter range from 10 - 25 mm
- Wide range of changeable heads
- Walter Prototyp TAX (TiAlN) coating
- Multiple adaptor option in steel and carbide for added versatility

THE APPLICATION

- ISO material groups P, M, K, N, S
- Roughing and finishing of diverse contours and profiles
- Suitable for use in industries like aerospace, automotive, energy, mold & die, as well as general machining



ROUGHING



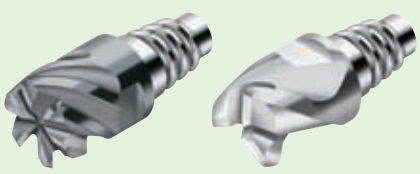
Qmax HR
Chip breaking profile

Flash
High-feed mill

AL 45
Aluminum machining

Tough Guys
High performance universal mill

FINISHING



N50
Multi-flute mill

AL 45
Aluminum machining

ConeFit™

Type A
Reinforced shank

Type A

Type B
89° Taper

Type C
85° Taper

YOUR ADVANTAGES

- ConeFit™ is flexible and can be used for any type of machining
- Modular design with different adaptor options
- Wide-range of proven geometries
- Taper and contact face offer a high degree of stability and precision with a patent-pending self-centering thread
- Reduce tooling and storage cost with a compact and flexible tooling system
- Highly productive output with Walter Prototyp geometries and coatings

Tough Guys
High performance universal mill

CONTOURING

N40 Ball Nose
Universal copy mill

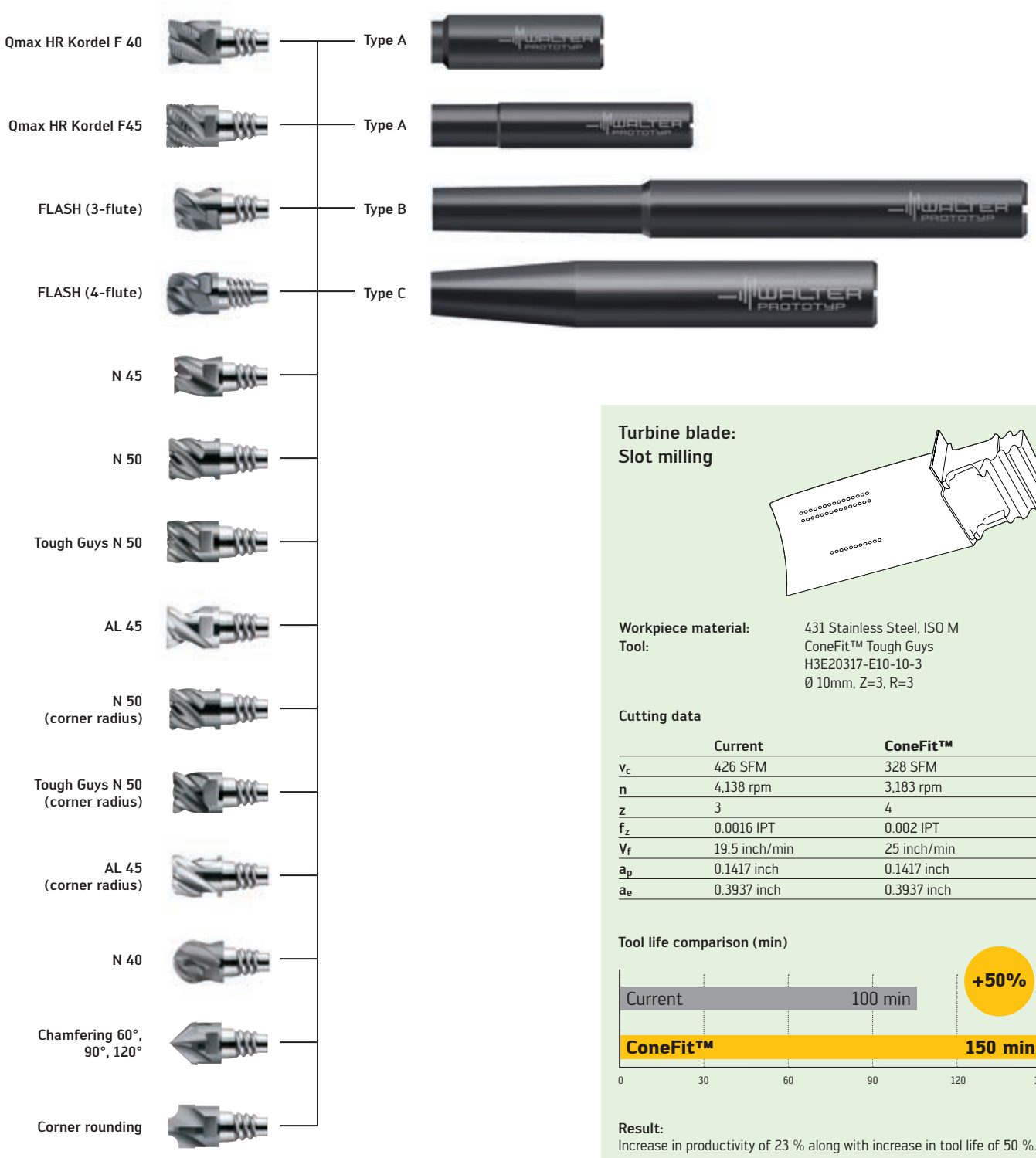
Flash
High-feed mill

PROFILING

Chamfering
60° / 90° / 120°

Corner Rounding

Synopsis of program – diverse applications – successful performance.



Turbine blade: Slot milling

Workpiece material: 431 Stainless Steel, ISO M
Tool: ConeFit™ Tough Guys
H3E20317-E10-10-3
Ø 10mm, Z=3, R=3

Cutting data

	Current	ConeFit™
v_c	426 SFM	328 SFM
n	4,138 rpm	3,183 rpm
z	3	4
f_z	0.0016 IPT	0.002 IPT
V_f	19.5 inch/min	25 inch/min
a_p	0.1417 inch	0.1417 inch
a_e	0.3937 inch	0.3937 inch

Tool life comparison (min)

Result:
Increase in productivity of 23 % along with increase in tool life of 50 %.

Assembly instructions.

ConeFit™

ASSEMBLY INSTRUCTIONS

- Clean the interface and support face on the milling head and adaptor
- Place the ConeFit™ milling head in its adaptor
- Rotate the ConeFit™ milling head by **hand** into the ConeFit™ adaptor (fig. 1)
- Using a **torque wrench** and the specified torque (see table), tighten the ConeFit™ milling head to ensure a form-fit connection
- Verify that the gap is closed and that there is contact with the support face (fig. 2)

Fig. 1

Fig. 2

ConeFit™ assembly torque

E	SW	Nm
10	8	12
12	10	15
16	12	30
20	16	50

Safety information:
Please wear safety gloves when handling ConeFit™ milling heads.

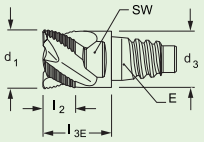
ConeFit™ is now available in TEC-CCS.

With our wide range of tools you have many choices. Which is why we have created TEC-CCS, the electronic catalog and tool recommendation system. An easy to use, intuitive program to aid in tool selection. With only a few clicks, either through the catalog pages or technology section, you will have a solution with all necessary information including technical data, cutting values, tool life and economic efficiency.

TEC+CCS is available free of charge on CD-ROM.

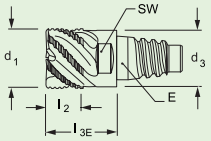
Roughers

Qmax HR Kordel F 40 - ConeFit™ - inch



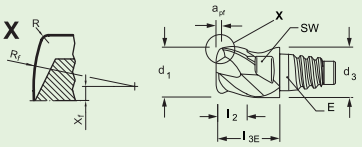
d_1 h12 inch	l_2 inch	l_{3E} inch	d_3 inch	z	SW mm	E	Code AH3E82378 TAX
3/8	0.209	0.488	0.364	4	8	10	-E10-3/8
1/2	0.276	0.575	0.484	4	10	12	-E12-1/2
5/8	0.315	0.736	0.610	4	12	16	-E16-5/8

Qmax HR Kordel F 45 - ConeFit™ - inch



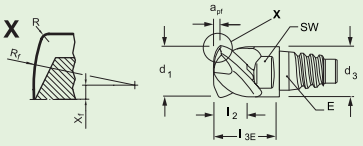
d_1 h12 inch	l_2 inch	l_{3E} inch	d_3 inch	z	SW mm	E	Code AH3E85378 TAX
3/8	0.209	0.488	0.364	6	8	10	-E10-3/8
1/2	0.276	0.575	0.484	6	10	12	-E12-1/2
5/8	0.335	0.736	0.610	6	12	16	-E16-5/8
3/4	0.413	0.839	0.728	6	16	20	-E20-3/4

Flash 3 - Flute - ConeFit™ - inch



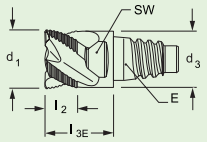
d_1 h12 inch	a_{pf} inch	x_f inch	R_f inch	R_{ers} inch	R inch	l_2 inch	l_{3E} inch	d_3 inch	z	SW mm	E	Code AH3E93718 TAX
3/8	0.024	0.070	0.181	0.076	0.060	0.209	0.488	0.364	3	8	10	-E10-3/8
1/2	0.033	0.098	0.236	0.086	0.060	0.276	0.575	0.484	3	10	12	-E12-1/2
5/8	0.039	0.118	0.315	0.110	0.080	0.335	0.736	0.610	3	12	16	-E16-5/8
3/4	0.047	0.157	0.354	0.117	0.080	0.413	0.839	0.728	3	16	20	-E20-3/4

Flash 4 - Flute - ConeFit™ - inch



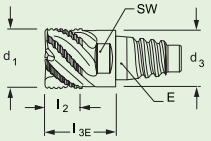
d_1 h12 inch	a_{pf} inch	x_f inch	R_f inch	R_{ers} inch	R inch	l_2 inch	l_{3E} inch	d_3 inch	z	SW mm	E	Code AH3E94718 TAX
3/8	0.024	0.070	0.181	0.076	0.060	0.209	0.488	0.364	4	8	10	-E10-3/8
1/2	0.033	0.098	0.236	0.086	0.060	0.276	0.575	0.484	4	10	12	-E12-1/2
5/8	0.039	0.118	0.315	0.110	0.080	0.335	0.736	0.610	4	12	16	-E16-5/8
3/4	0.047	0.157	0.354	0.117	0.080	0.413	0.839	0.728	4	16	20	-E20-3/4

Qmax HR Kordel F 40 - ConeFit™ - metric



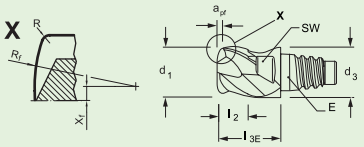
d_1 h12 mm	l_2 mm	l_{3E} mm	d_3 mm	z	SW mm	E	Code H3E82378 TAX
10	5.5	12.4	9.7	4	8	10	-E10-10
12	6.5	14.5	11.7	4	10	12	-E12-12
16	8.5	18.7	15.5	4	12	16	-E16-16

Qmax HR Kordel F 45 - ConeFit™ - metric



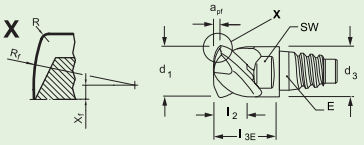
d_1 h12 mm	l_2 mm	l_{3E} mm	d_3 mm	z	SW mm	E	Code H3E85378 TAX
12	6.5	14.5	11.7	5	10	12	-E12-12
16	8.5	18.7	15.5	6	12	16	-E16-16
20	11	21.3	19.3	6	16	20	-E20-20
25	13	25.6	24.2	8	20	25	-E25-25

Flash 3 - Flute - ConeFit™ - metric



d_1 h12 mm	a_{pf} mm	x_f mm	R_f mm	R_{ers} mm	R mm	l_2 mm	l_{3E} mm	d_3 mm	z	SW mm	E	Code H3E93718 TAX
10	0.3	1.70	5	1.99	1.5	5.5	12.4	9.7	3	8	10	-E10-10
12	0.8	2.25	6	2.1	1.5	6.5	14.5	11.7	3	10	12	-E12-12
16	1.0	3.10	8	2.747	2	8.5	18.7	15.5	3	12	16	-E16-16
20	1.3	4.00	10	3.072	2	11	21.3	19.3	3	16	20	-E20-20

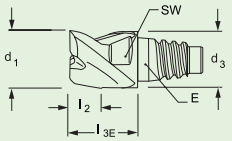
Flash 4 - Flute - ConeFit™ - metric



d_1 h12 mm	a_{pf} mm	x_f mm	R_f mm	R_{ers} mm	R mm	l_2 mm	l_{3E} mm	d_3 mm	z	SW mm	E	Code H3E94718 TAX
10	0.3	1.70	5	1.99	1.5	5.5	12.4	9.7	4	8	10	-E10-10
12	0.8	2.25	6	2.1	1.5	6.5	14.5	11.7	4	10	12	-E12-12
16	1.0	3.10	8	2.747	2	8.5	18.7	15.5	4	12	16	-E16-16
20	1.3	4.00	10	3.072	2	11	21.3	19.3	4	16	20	-E20-20
25	1.6	5.00	12	4.206	3	13	25.6	24.2	4	20	25	-E25-25

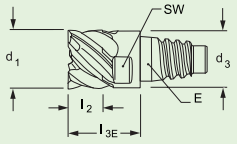
Square End

N 45 - ConeFit™ - inch



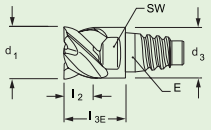
d_1 h10 inch	l_2 inch	l_{3E} inch	d_3 inch	z	SW mm	E	Code AH3E29148 TAX
3/8	0.209	0.488	0.364	3	8	10	-E10-3/8
1/2	0.276	0.575	0.484	3	10	12	-E12-1/2
5/8	0.335	0.736	0.610	3	12	16	-E16-5/8
3/4	0.413	0.839	0.728	3	16	20	-E20-3/4

N 50 - ConeFit™ - inch



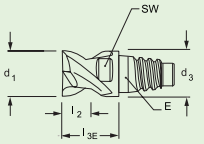
d_1 h10 inch	l_2 inch	l_{3E} inch	d_3 inch	z	SW mm	E	Code AH3E21138 TAX
3/8	0.209	0.488	0.364	6	8	10	-E10-3/8
1/2	0.276	0.575	0.484	6	10	12	-E12-1/2
5/8	0.335	0.736	0.610	6	12	16	-E16-5/8
3/4	0.413	0.839	0.728	8	16	20	-E20-3/4

Tough Guys N 50 - ConeFit™ - inch



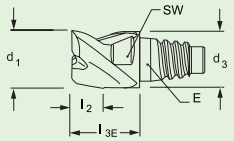
d_1 h10 inch	l_2 inch	l_{3E} inch	d_3 inch	z	SW mm	E	Code AH3E21317 TAX
3/8	0.209	0.488	0.364	4	8	10	-E10-3/8
1/2	0.276	0.575	0.484	4	10	12	-E12-1/2
5/8	0.335	0.736	0.610	4	12	16	-E16-5/8
3/4	0.413	0.839	0.728	4	16	20	-E20-3/4

AL 45 - ConeFit™ - inch



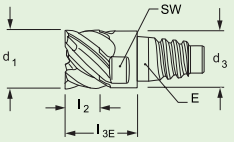
d_1 h9 inch	l_2 inch	l_{3E} inch	d_3 inch	z	SW inch	E	Code AH6E2511
3/8	0.209	0.488	0.364	2	8	10	-E10-3/8
1/2	0.276	0.575	0.484	2	10	12	-E12-1/2
5/8	0.335	0.736	0.610	2	12	16	-E16-5/8
3/4	0.413	0.839	0.728	2	16	20	-E20-3/4

N 45 - ConeFit™ - metric



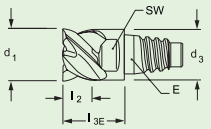
d_1 h10 mm	l_2 mm	l_{3E} mm	d_3 mm	z	SW mm	E	Code H3E29148 TAX
10	5.5	12.4	9.7	3	8	10	-E10-10
12	6.5	14.5	11.7	3	10	12	-E12-12
16	8.5	18.7	15.5	3	12	16	-E16-16
20	11	21.3	19.3	3	16	20	-E20-20
25	13	25.6	24.2	3	20	25	-E25-25

N 50 - ConeFit™ - metric



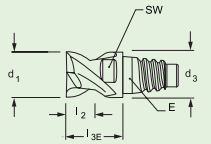
d_1 h10 mm	l_2 mm	l_{3E} mm	d_3 mm	z	SW mm	E	Code H3E21138 TAX
10	5.5	12.4	9.7	6	8	10	-E10-10
12	6.5	14.5	11.7	6	10	12	-E12-12
16	8.5	18.7	15.5	6	12	16	-E16-16
20	11	21.3	19.3	8	16	20	-E20-20
25	13	25.6	24.2	8	20	25	-E25-25

Tough Guys N 50 - ConeFit™ - metric



d_1 h10 mm	l_2 mm	l_{3E} mm	d_3 mm	z	SW mm	E	Code H3E21317 TAX
10	5.5	12.4	9.7	4	8	10	-E10-10
12	6.5	14.5	11.7	4	10	12	-E12-12
16	8.5	18.7	15.5	4	12	16	-E16-16
20	11	21.3	19.3	4	16	20	-E20-20
25	13	25.6	24.2	5	20	25	-E25-25

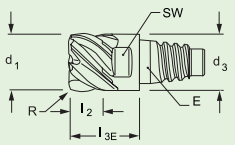
AL 45 - ConeFit™ - metric



d_1 h9 mm	l_2 mm	l_{3E} mm	d_3 mm	z	SW mm	E	Code H6E2511
10	5.5	12.4	9.7	2	8	10	-E10-10
12	6.5	14.5	11.7	2	10	12	-E12-12
16	8.5	18.7	15.5	2	12	16	-E16-16
20	11	21.3	19.3	2	16	20	-E20-20
25	13	25.6	24.2	2	20	25	-E25-25

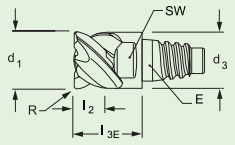
Corner Radius

N 50 - ConeFit™ - inch



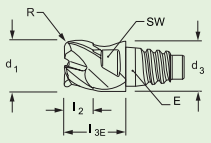
d_1 h9 inch	l_2 inch	R inch	l_{3E} inch	d_3 inch	z	SW mm	E	Code AH3E23138 TAX
3/8	0.209	0.020	0.488	0.364	6	8	10	-E10-3/8-0.020
3/8	0.209	0.040	0.488	0.364	6	8	10	-E10-3/8-0.040
1/2	0.276	0.020	0.575	0.484	6	10	12	-E12-1/2-0.020
1/2	0.276	0.040	0.575	0.484	6	10	12	-E12-1/2-0.040
1/2	0.276	0.060	0.575	0.484	6	10	12	-E12-1/2-0.060
5/8	0.335	0.020	0.736	0.610	6	12	16	-E16-5/8-0.020
5/8	0.335	0.040	0.736	0.610	6	12	16	-E16-5/8-0.040
5/8	0.335	0.080	0.736	0.610	6	12	16	-E16-5/8-0.080
3/4	0.413	0.040	0.839	0.728	8	16	20	-E20-3/4-0.040
3/4	0.413	0.080	0.839	0.728	8	16	20	-E20-3/4-0.080
3/4	0.413	0.160	0.839	0.728	8	16	20	-E20-3/4-0.160

Tough Guys N 50 - ConeFit™ - inch



d_1 h9 inch	l_2 inch	R inch	l_{3E} inch	d_3 inch	z	SW mm	E	Code AH3E20317 TAX
3/8	0.209	0.040	0.488	0.364	4	8	10	-E10-3/8-0.040
3/8	0.209	0.060	0.488	0.364	4	8	10	-E10-3/8-0.060
1/2	0.276	0.040	0.575	0.484	4	10	12	-E12-1/2-0.040
1/2	0.276	0.060	0.575	0.484	4	10	12	-E12-1/2-0.060
1/2	0.276	0.080	0.575	0.484	4	10	12	-E12-1/2-0.080
5/8	0.335	0.040	0.736	0.610	4	12	16	-E16-5/8-0.040
5/8	0.335	0.080	0.736	0.610	4	12	16	-E16-5/8-0.080
5/8	0.335	0.160	0.736	0.610	4	12	16	-E16-5/8-0.160
3/4	0.413	0.040	0.839	0.728	4	16	20	-E20-3/4-0.040
3/4	0.413	0.080	0.839	0.728	4	16	20	-E20-3/4-0.080
3/4	0.413	0.160	0.839	0.728	4	16	20	-E20-3/4-0.160

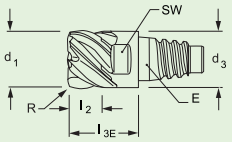
AL 45 - ConeFit™



d_1 h9 inch	l_2 inch	R inch	l_{3E} inch	d_3 inch	z	SW mm	E	Code AH6E2311
3/8	0.209	0.060	0.488	0.364	3	8	10	-E10-3/8-0.060
3/8	0.209	0.100	0.488	0.364	3	8	10	-E10-3/8-0.100
1/2	0.276	0.060	0.575	0.484	3	10	12	-E12-1/2-0.060
1/2	0.276	0.100	0.575	0.484	3	10	12	-E12-1/2-0.100
5/8	0.335	0.100	0.736	0.610	3	12	16	-E16-5/8-0.100
5/8	0.335	0.160	0.736	0.610	3	12	16	-E16-5/8-0.160
3/4	0.413	0.100	0.839	0.728	3	16	20	-E20-3/4-0.100
3/4	0.413	0.160	0.839	0.728	3	16	20	-E20-3/4-0.160

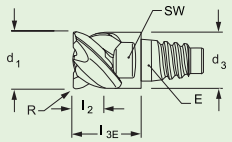
Corner Radius

N 50 - ConeFit™ - metric



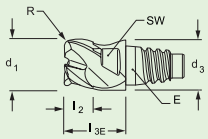
d_1 h9 mm	l_2 mm	R mm	l_{3E} mm	d_3 mm	z	SW mm	E	Code H3E23138 TAX
10	5.5	0.5	12.4	9.7	6	8	10	-E10-10-0.5
10	5.5	1.0	12.4	9.7	6	8	10	-E10-10-1
12	6.5	0.5	14.5	11.7	6	10	12	-E12-12-0.5
12	6.5	1.0	14.5	11.7	6	10	12	-E12-12-1
12	6.5	1.5	14.5	11.7	6	10	12	-E12-12-1.5
16	8.5	0.5	18.7	15.5	6	12	16	-E16-16-0.5
16	8.5	1.0	18.7	15.5	6	12	16	-E16-16-1
16	8.5	2.0	18.7	15.5	6	12	16	-E16-16-2
20	11	1.0	21.3	19.3	8	16	20	-E20-20-1
20	11	2.0	21.3	19.3	8	16	20	-E20-20-2
20	11	4.0	21.3	19.3	8	16	20	-E20-20-4
25	13	1.0	25.6	24.2	8	20	25	-E25-25-1
25	13	2.0	25.6	24.2	8	20	25	-E25-25-2
25	13	4.0	25.6	24.2	8	20	25	-E25-25-4

Tough Guys N 50 - ConeFit™ - metric



d_1 h9 mm	l_2 mm	R mm	l_{3E} mm	d_3 mm	z	SW mm	E	Code H3E20317 TAX
10	5.5	0.5	12.4	9.7	4	8	10	-E10-10-0.5
10	5.5	1.0	12.4	9.7	4	8	10	-E10-10-1
10	5.5	1.5	12.4	9.7	4	8	10	-E10-10-1.5
10	5.5	2.0	12.4	9.7	4	8	10	-E10-10-2
12	6.5	1.0	14.5	11.7	4	10	12	-E12-12-0.5
12	6.5	1.5	14.5	11.7	4	10	12	-E12-12-1.5
12	6.5	2.0	14.5	11.7	4	10	12	-E12-12-2
12	6.5	3.0	14.5	11.7	4	10	12	-E12-12-3
16	8.5	1.0	18.7	15.5	4	12	16	-E16-16-1
16	8.5	2.0	18.7	15.5	4	12	16	-E16-16-2
16	8.5	3.0	18.7	15.5	4	12	16	-E16-16-3
16	8.5	4.0	18.7	15.5	4	12	16	-E16-16-4
20	11	1.0	21.3	19.3	4	16	20	-E20-20-1
20	11	2.0	21.3	19.3	4	16	20	-E20-20-2
20	11	3.0	21.3	19.3	4	16	20	-E20-20-3
20	11	4.0	21.3	19.3	4	16	20	-E20-20-4
25	13	1.0	25.6	24.2	5	20	25	-E25-25-1
25	13	2.0	25.6	24.2	5	20	25	-E25-25-2
25	13	3.0	25.6	24.2	5	20	25	-E25-25-3
25	13	4.0	25.6	24.2	5	20	25	-E25-25-4

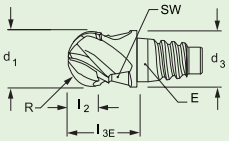
AL 45 - ConeFit™ - metric



d_1 h9 mm	l_2 mm	R mm	l_{3E} mm	d_3 mm	z	SW mm	E	Code H6E2311
10	5.5	1.0	12.4	9.7	3	8	10	-E10-10-1
10	5.5	2.5	12.4	9.7	3	8	10	-E10-10-2.5
12	6.5	1.0	14.5	11.7	3	10	12	-E12-12-1
12	6.5	2.5	14.5	11.7	3	10	12	-E12-12-2.5
16	8.5	2.5	18.7	15.5	3	12	16	-E16-16-2.5
16	8.5	4.0	18.7	15.5	3	12	16	-E16-16-4
20	11	2.5	21.3	19.3	3	16	20	-E20-20-2.5
20	11	4.0	21.3	19.3	3	16	20	-E20-20-4
25	13	4.0	25,6	24,2	3	20	25	-E25-25-4

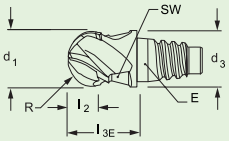
Ball Nose

N 40 - ConeFit™ - inch



d_1 h10 inch	l_2 inch	R inch	l_{3E} inch	d_3 inch	z	SW mm	E	Code AH8E11118 TAX
3/8	0.209	0.188	0.488	0.364	4	8	10	-E10-3/8
1/2	0.276	0.250	0.575	0.484	4	10	12	-E12-1/2
5/8	0.335	0.313	0.736	0.610	4	12	16	-E16-5/8
3/4	0.413	0.375	0.839	0.728	4	16	20	-E20-3/4

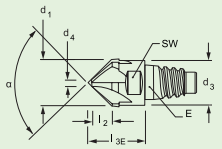
N 40 - ConeFit™ - metric



d_1 h10 mm	l_2 mm	R mm	l_{3E} mm	d_3 mm	z	SW mm	E	Code H8E11118 TAX
10	5.5	5	12.4	9.7	4	8	10	-E10-10
12	6.5	6	14.5	11.7	4	10	12	-E12-12
16	8.5	8	18.7	15.5	4	12	16	-E16-16
20	11	10	21.3	19.3	4	16	20	-E20-20
25	13	12.5	25.6	24.2	4	20	25	-E25-25

Profile

Chamfering 60° - ConeFit™ - inch



α	d_1 h10 inch	l_2 inch	l_{3E} inch	d_3 inch	d_4 inch	z	SW mm	E	Code AH3E58518 TAX
60°	1/2	0.280	0.575	0.484	0.177	6	10	12	-E12-1/2

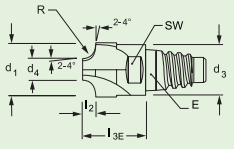
Chamfering 90° - ConeFit™ - inch

α	d_1 h10 inch	l_2 inch	l_{3E} inch	d_3 inch	d_4 inch	z	SW mm	E	Code AH3E58318 TAX
90°	1/2	0.191	0.575	0.484	0.118	6	8	12	-E12-1/2
90°	5/8	0.256	0.736	0.610	0.118	8	10	16	-E16-5/8

Chamfering 120° - ConeFit™ - inch

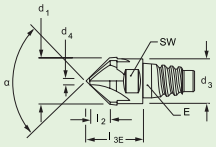
α	d_1 h10 inch	l_2 inch	l_{3E} inch	d_3 inch	d_4 inch	z	SW mm	E	Code AH3E58118 TAX
120°	1/2	0.110	0.575	0.484	0.118	6	10	12	-E12-1/2

Corner Rounding - ConeFit™ - inch



R inch	d_1 h10 inch	l_2 inch	l_{3E} inch	d_3 inch	d_4 inch	z	SW mm	E	Code AH3E68118 TAX
0.125	1/2	0.125	0.571	0.484	0.197	4	10	12	-E12-1/2-0.125
0.188	5/8	0.188	0.736	0.610	0.237	4	12	16	-E16-5/8-0.188
0.250	3/4	0.250	0.736	0.728	0.237	4	16	20	-E20-3/4-0.250

Chamfering 60° - ConeFit™ - metric



α	d_1 h10 mm	l_2 mm	l_{3E} mm	d_3 mm	d_4 mm	z	SW mm	E	Code H3E58518 TAX
60°	12	6.5	14.5	11.7	1.5	6	10	12	-E12-12

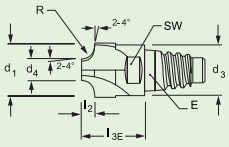
Chamfering 90° - ConeFit™ - metric

α	d_1 h10 mm	l_2 mm	l_{3E} mm	d_3 mm	d_4 mm	z	SW mm	E	Code H3E58318 TAX
90°	12	4.5	14.5	11.7	3	6	10	12	-E12-12
90°	16	6.5	18.7	15.5	3	8	12	16	-E16-16

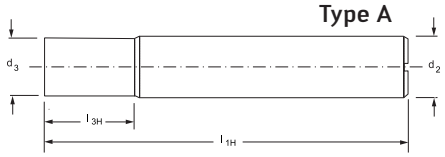
Chamfering 120° - ConeFit™ - metric

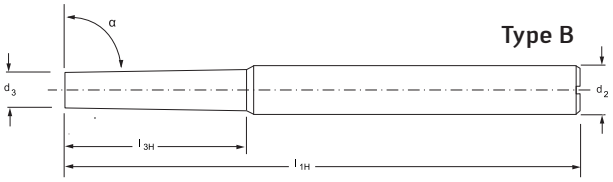
α	d_1 h10 mm	l_2 mm	l_{3E} mm	d_3 mm	d_4 mm	z	SW mm	E	Code H3E58118 TAX
120°	12	2.6	14.5	11.7	4.5	6	10	12	-E12-12

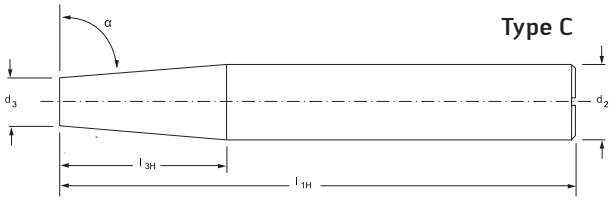
Corner Rounding - ConeFit™ - metric



R mm	d_1 h10 mm	l_2 mm	l_{3E} mm	d_3 mm	d_4 mm	z	SW mm	E	Code H3E68118 TAX
3	12	3	14.5	11.7	5	4	10	12	-E12-12-3
4	16	4	18.7	15.5	6	4	12	16	-E16-16-4
5	16	5	18.7	15.5	6	4	12	16	-E16-16-5
6	20	6	21.3	19.3	8	4	16	20	-E20-20-6







Adaptors - Steel

E10 - ConeFit™ - inch

E	l_{3H} inch	d_3 inch	α	l_{1H} inch	d_2 inch	Type	Maximum speed min^{-1}	Code
10	0.236	0.360	---	2.500	0.500	A	40,000	AK610.UZ13.E10.006
10	0.984	0.360	---	3.000	0.500	A	30,000	AK610.UZ13.E10.025
10	2.008	0.360	89°	6.500	0.625	B	12,000	AK610.UZ15.E10.051
10	1.496	0.360	85°	5.500	0.625	C	15,000	AK610.UZ15.E10.038

E12 - ConeFit™ - inch

E	l_{3H} inch	d_3 inch	α	l_{1H} inch	d_2 inch	Type	Maximum speed min^{-1}	Code
12	0.236	0.480	---	3.000	0.500	A	40,000	AK610.UZ13.E12.006
12	0.984	0.480	---	4.500	0.500	A	30,000	AK610.UZ13.E12.025
12	2.402	0.480	89°	7.500	0.625	B	10,000	AK610.UZ15.E12.061
12	0.827	0.480	85°	6.500	0.625	C	15,000	AK610.UZ15.E12.021

E16 - ConeFit™ - inch

E	l_{3H} inch	d_3 inch	α	l_{1H} inch	d_2 inch	Type	Maximum speed min^{-1}	Code
16	0.236	0.606	---	3.000	0.625	A	40,000	AK610.UZ15.E16.006
16	0.984	0.606	---	4.500	0.625	A	30,000	AK610.UZ15.E16.025
16	2.992	0.606	89°	7.500	0.750	B	10,000	AK610.UZ19.E16.076
16	0.827	0.606	85°	6.500	0.750	C	15,000	AK610.UZ19.E16.021

E20 - ConeFit™ - inch

E	l_{3H} inch	d_3 inch	α	l_{1H} inch	d_2 inch	Type	Maximum speed min^{-1}	Code
20	0.236	0.724	---	3.000	0.750	A	20,000	AK610.UZ19.E20.006
20	0.984	0.724	---	4.500	0.750	A	30,000	AK610.UZ19.E20.025
20	1.575	0.724	85°	6.500	1.000	C	20,000	AK610.UZ26.E20.040

E25 - ConeFit™ - inch

E	l_{3H} inch	d_3 inch	α	l_{1H} inch	d_2 inch	Type	Maximum speed min^{-1}	Code
25	0.236	0.961	---	3.500	1.000	A	30,000	AK610.UZ26.E25.006
25	2.480	0.961	---	6.500	1.250	A	20,000	AK610.UZ31.E25.063
25	0.236	0.961	85°	7.500	1.250	C	15,000	AK610.UZ31.E25.042

E10 - ConeFit™ - metric

E	l_{3H} mm	d_3 mm	α	l_{1H} mm	d_2 mm	Type	Maximum speed min^{-1}	Code
10	5	9.6	---	65	16	A	40.000	AK610.Z16.E10.005
10	20	9.6	---	75	10	A	30,000	AK610.Z10.E10.020
10	50	9.6	89°	160	16	B	12,000	AK610.Z16.E10.050
10	36.5	9.6	85°	140	16	C	15,000	AK610.Z16.E10.036

E12 - ConeFit™ - metric

E	l_{3H} mm	d_3 mm	α	l_{1H} mm	d_2 mm	Type	Maximum speed min^{-1}	Code
12	5	11.6	---	65	16	A	40,000	AK610.Z16.E12.005
12	22	11.6	---	100	12	A	30,000	AK610.Z12.E12.022
12	60	11.6	89°	170	16	B	10,000	AK610.Z16.E12.060
12	25.1	11.6	85°	140	16	C	15,000	AK610.Z16.E12.025

E16 - ConeFit™ - metric

E	l_{3H} mm	d_3 mm	α	l_{1H} mm	d_2 mm	Type	Maximum speed min^{-1}	Code
16	5	15.4	---	70	20	A	40,000	AK610.Z20.E16.005
16	25	15.4	---	110	20	A	30,000	AK610.Z20.E16.025
16	75	15.4	89°	190	20	B	10,000	AK610.Z20.E16.075
16	54.8	15.4	85°	170	25	C	15,000	AK610.Z25.E16.054

E20 - ConeFit™ - metric

E	l_{3H} mm	d_3 mm	α	l_{1H} mm	d_2 mm	Type	Maximum speed min^{-1}	Code
20	30	19.2	---	120	20	A	20,000	AK610.Z20.E20.030
20	5	19.2	---	80	25	A	30,000	AK610.Z25.E20.005
20	73.1	19.2	85°	180	32	C	20,000	AK610.Z32.E20.073

E25 - ConeFit™ - metric

E	l_{3H} mm	d_3 mm	α	l_{1H} mm	d_2 mm	Type	Maximum speed min^{-1}	Code
25	5	24.1	---	80	32	A	30,000	AK610.Z32.E25.005
25	40	24.1	---	140	25	A	15,000	AK610.Z25.E25.040
25	45	24.1	85°	200	32	C	20,000	AK610.Z32.E25.045

Adaptors - Solid Carbide

E10 - ConeFit™ - inch

E	l_{3H} inch	d_3 inch	α	l_{1H} inch	d_2 inch	Type	Maximum speed min^{-1}	Code
10	2,008	0.360	---	4.000	0.500	A	25,000	AK610.UZ13.E10.051C
10	2,008	0.360	89°	6.500	0.625	B	20,000	AK610.UZ15.E10.051C

E12 - ConeFit™ - inch

E	l_{3H} inch	d_3 inch	α	l_{1H} inch	d_2 inch	Type	Maximum speed min^{-1}	Code
12	1.260	0.480	---	4.000	0.500	A	30,000	AK610.UZ13.E12.032C
12	2,402	0.480	89°	7.500	0.625	B	15,000	AK610.UZ15.E12.061C

E16 - ConeFit™ - inch

E	l_{3H} inch	d_3 inch	α	l_{1H} inch	d_2 inch	Type	Maximum speed min^{-1}	Code
16	2,008	0.606	---	5.500	0.750	A	30,000	AK610.UZ19.E16.051C
16	2,992	0.606	89°	7.500	0.750	B	10,000	AK610.UZ19.E16.076C

E20 - ConeFit™ - inch

E	l_{3H} inch	d_3 inch	α	l_{1H} inch	d_2 inch	Type	Maximum speed min^{-1}	Code
20	1,732	0.724	---	4.500	0.750	A	30,000	AK610.UZ19.E20.044C

E25 - ConeFit™ - inch

E	l_{3H} inch	d_3 inch	α	l_{1H} inch	d_2 inch	Type	Maximum speed min^{-1}	Code
25	2.480	0.961	---	6.500	1.250	A	20,000	AK610.UZ31.E25.063C

E10 - ConeFit™ - metric

E	l_{3H} mm	d_3 mm	α	l_{1H} mm	d_2 mm	Type	Maximum speed min^{-1}	Code
10	50	9.6	---	100	10	A	20,000	AK610.Z10.E10.050C
10	100	9.6	89°	155	16	B	15,000	AK610.Z16.E10.100C

E12 - ConeFit™ - metric

E	l_{3H} mm	d_3 mm	α	l_{1H} mm	d_2 mm	Type	Maximum speed min^{-1}	Code
12	48	11.6	---	100	12	A	30,000	AK610.Z12.E12.048C
12	90	11.6	89°	150	16	B	15,000	AK610.Z16.E12.090C

E16 - ConeFit™ - metric

E	l_{3H} mm	d_3 mm	α	l_{1H} mm	d_2 mm	Type	Maximum speed min^{-1}	Code
16	80	15.4	---	135	16	A	30,000	AK610.Z16.E16.080C
16	118	15.4	89°	175	20	B	10,000	AK610.Z20.E16.118C

E20 - ConeFit™ - metric

E	l_{3H} mm	d_3 mm	α	l_{1H} mm	d_2 mm	Type	Maximum speed min^{-1}	Code
20	38	19.2	---	95	20	A	30,000	AK610.Z20.E20.038C

E25 - ConeFit™ - metric

E	l_{3H} mm	d_3 mm	α	l_{1H} mm	d_2 mm	Type	Maximum speed min^{-1}	Code
25	120	24.1	---	200	25	A	10,000	AK610.Z25.E25.120C

Set

ConeFit™ SET-E12-MULTI - inch

E	Code	Content	Remark
12	CONEFIT-SET-E12-MULTI	AH3E82378-E12-1/2	Qmax - Rougher
		AH8E11118-E12-1/2	N 50 - Square End
		AH3E21317-E12-1/2	Tough guys N50 - Tough guys
		AH3E58318-E12-1/2	Chamfering 90°
		AK610.UZ13.E12.025	Adaptor Type A
		AK610.UZ15.E12.021	Adaptor Type C
		FS2125-E12	Flat wrench

ConeFit™ SET-E12-MULTI - metric

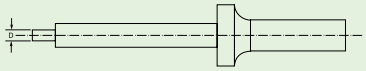
E	Code	Content	Remark
12	A-CONEFIT-SET-E12-MULTI	H3E82378-E12-12	Qmax - Rougher
		H3E21138-E12-12	N 50 - Square End
		H3E21317-E12-12	Tough guys N50 - Tough guys
		H3E58318-E12-12	Chamfering 90°
		AK610.Z12.E12.022	1/2" Adaptor Type A
		K610.Z16.E12.025	5/8" Adaptor Type C
		FS2125-E12	Flat wrench

Wrenches

Flat wrench - ConeFit™

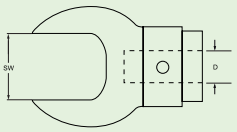
E	SW	Type	Code
10	8	Twin head	FS2124-E10
12	10	Twin head	FS2125-E12
16	12	Twin head	FS2126-E16
20	16	Single head	FS2127-E20
25	20	Single head	FS2128-E25

Torque wrench - ConeFit™



D	Torque range	Code
16	2-25 Nm	FS1384
16	10-100 Nm	FS1385

Key for torque wrench - ConeFit™



E	SW	D	Nm	Code
10	8	16	12	FS2135-E10-R
12	10	16	15	FS2136-E12-R
16	12	16	30	FS2137-E16-R
20	16	16	50	FS2138-E20-R
25	20	16	65	FS2141-E25-R

_ CUTTING DATA v_C

Speed and Feed Chart: The speeds and feeds in this table are intended for initial setup. These values are a guide, depending on machining conditions, these parameters may need to be adjusted up or down until optimum settings are found.

ConeFit™

How to use this chart:
1. Pick your material group
2. Move across to mill series
3. Read SFM and Feed Chart (FC) Letter
4. Go to the Feed Charts on page 27 and convert to feed per tooth
5. Calculate Speed and Feed using formulas on page 26

ISO material group	Walter Prototyp material group	Walter Prototyp Material group description		Roughers							
		Type		Qmax HR Kordel F 40 & F 45				Flash			
		Helix angle		40°		45°		50°		50°	
		No. of teeth		4		5-8		3		4	
		Coating		TAX		TAX		TAX		TAX	
											
			Range	(3/8...5/8)		(3/8...3/4)		(3/8...3/4)		(3/8...3/4)	
		INCH	**Catalog No.**	**AH3E82378**		**AH3E85378**		**AH3E93718**		**AH3E94718**	
			Range	(10...16)		(12...25)		(10...20)		(10...25)	
		METRIC	**Catalog No.**	**H3E82378**		**H3E85378**		**H3E93718**		**H3E94718**	
		Hardness		SFM	FC	SFM	FC	SFM	FC	SFM	FC
P		**Steel**									
	1.1	Magnetic soft steel	61 - 120 HB	690	A	690	A	625	D	625	D
	1.2	Structural steel, case carburizing steel	101 - 200 HB	690	A	690	A	625	D	625	D
	1.3	Plain carbon steel	100 - 250 HB	655	A	655	A	510	D	510	D
	1.4	Alloy steel	150 - 250 HB	575	A	575	A	510	D	510	D
	1.5	Alloy steel, Tempered steel	26 - 38 HRc	410	A	410	A	425	D	425	D
	1.6.1	Alloy steel, Tempered steel	39 - 44 HRc					330	D	330	D
	1.6.2	Alloy steel, Tempered steel	44 - 49 HRc					295	D	295	D
M		**Stainless steel**									
	2.1	Free machining stainless steel	120 - 250 HB	295	B	295	B	330	D	330	D
	2.2	Austinetic	130 - 250 HB	245	B	245	B	260	D	260	D
	2.3	Ferritic, austenitic, martensitic	130 - 320 HB	195	B	195	B	195	D	195	D
	2.4	High tensile chrome-nickel alloys	33 - 44 HRc					165	D	165	D
K		**Cast iron**									
	3.1	Cast Iron	50 - 150 HB	540	A	540	A	575	D	175	D
	3.2	Cast Iron	150 - 300 HB	460	A	460	A	510	D	155	D
	3.3	Ductile Iron	150 - 200 HB	540	A	540	A	575	D	175	D
	3.4	Ductile Iron	14 - 32 HRc	410	A	410	A	460	D	140	D
	3.5	Compacted graphite iron	14 - 32 HRc	360	A	360	A	395	D	120	D
N		**Non-ferrous metals**									
	6.1	Copper, unalloyed	80 - 100 HB	1050	C	1050	C	1610	D		
	6.2	Short chip brass	100 - 200 HB	1050	C	1050	C	1610	D	1610	D
	6.3	Long chip brass	120 - 200 HB	1050	C	1050	C	1610	D	1610	D
	6.4	Cu-Al-Fe alloys	200 - 440 HB	215	C	215	C	230	D	230	D
	6.5	Cu-Al-Ni alloys (short chipping)	120 - 250 HB	360	C	360	C	560	D	560	D
	6.6	Cu-Al-Ni alloys (long chipping)	120 - 250 HB	360	C	360	C	560	D	560	D
	7.1	Al, Mg unalloyed	60 - 100 HB					2495	D		
	7.2	Al, alloyed Si<0.5%	90 - 180 HB					2495	D		
	7.3.1	Al, alloyed Si>=0.5%<4%	90 - 180 HB					2495	D	2495	D
	7.3.2	Al, alloyed Si>=4%<12%	90 - 180 HB	1445	C	1445	C	2200	D	2200	D
	7.4	Al, alloyed Si>=12%	90 - 180 HB	490	C	490	C	1280	D	1280	D
	7.5.1	Magnesium Standard alloy	120 - 300 N/mm²	1675	C	1675	C	2495	D	2495	D
	7.5.2	Magnesium -high tensile strength	70 - 120 HB	1460	C	1460	C	2230	D	2230	D
	7.5.3	Heat resistant magnesium alloys	120 - 300 N/mm²	1245	C	1245	C	1905	D	1905	D
S		**Heat-resistant alloys and titanium alloys**									
	4.1	Titanium, unalloyed	120 - 200 HB					655	D		
	4.2	Titanium, alloyed	14 - 28 HRc	260	A	260	A	260	D		
	4.3	Titanium, alloyed	28 - 44 HRc	195	A	195	A	195	D		
	5.1	Nickel, unalloyed	120 - 150 HB						D		
	5.2	Nickel, alloyed	150 - 270 HB	195	B	195	B	195	D		
	5.3	Nickel, alloyed	28 - 49 HRc	100	B	100	B	115	D		
	9.1	TIC Hard materials	48 - 51 HRc	35	B	35	B	35	D	35	D
	9.2	Tungsten alloys	44 - 52 HRc	230	B	230	B			260	D
	9.3	Alloys on Cobalt base	150 - 350 HB	100	B	100	B			115	D
	9.4	Molybdenum alloyed	150 - 350 HB	215	B	215	B			230	D
H		**Hardened materials**									
	1.7.1	Steel (hardened), short chipping	49 - 55 HRc							260	C
	1.7.2	Steel (hardened), long chipping	49 - 55 HRc							260	C
	1.8.1	Steel (hardened)	55 - 60 HRc								
	1.8.2	Steel (hardened)	60 - 65 HRc								
O		**Synthetic materials / others**									
	8.1	Thermoplastics	<50 N/mm²					1280	D		
	8.2	Thermosetting plastics	<80 N/mm²	590	C	590	C	625	D	625	D
	8.3	Reinforced plastic materials	240 - 440 N/mm²	260	C	260	C	295	D	295	D
	10.1	Standard graphite	<100 N/mm²								
	10.2	Wear resistant graphite	<100 N/mm²								

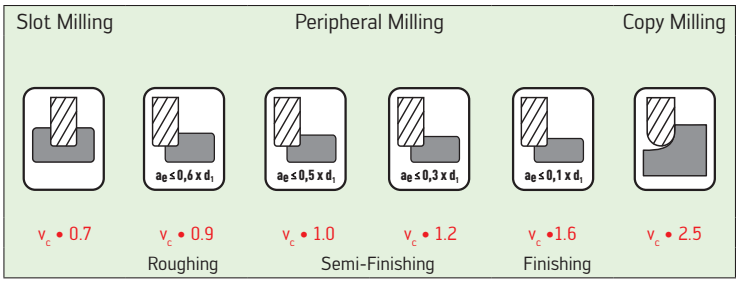
	Square End				Corner Radius				Chamfer / Profile	
	N 45	N 50	Tough Guys N 50	AL 45	N 50	Tough Guys N 50	AL 45	N 40	Chamfer	
	45°	50°	50°	45°	50°	50°	45°	40°	0°	0°
	3	6-8	4	2	6-8	4	3	4	6-8	4
	TAX	TAX	TAX	Bright	TAX	TAX	Bright	TAX	TAX	TAX
										
	(3/8...3/4)	(3/8...3/4)	(3/8...3/4)	(3/8...3/4)	(3/8...3/4)	(3/8...3/4)	(3/8...3/4)	(3/8...3/4)	(1/2...5/8)	(1/2...3/4)
	AH3E29148	**AH3E21138**	**AH3E21317**	**AH3E2511**	**AH3E23138**	**AH3E20317**	**AH3E2311**	**AH3E11118**	**AH3E58518 AH3E58318 AH3E58118**	**AH3E68118**
	(10...25)	(10...25)	(10...25)	(10...25)	(10...25)	(10...25)	(10...25)	(10...25)	(12...16)	(12...20)
	H3E29148	**H3E21138**	**H3E21317**	**H3E2511**	**H3E23138**	**H3E20317**	**H3E2311**	**H3E11118**	**H3E58518 H3E58318 H3E58118**	**H3E68118**
	SFM FC	SFM FC	SFM FC	SFM FC	SFM FC	SFM FC	SFM FC	SFM FC	SFM FC	SFM FC
	820 A	820 A	820 A		920 A	920 A		920 A	920 A	280 A
	820 A	820 A	820 A		920 A	920 A		920 A	920 A	280 A
	820 A	820 A	820 A		920 A	920 A		920 A	920 A	280 A
	655 A	655 A	655 A		720 A	720 A		720 A	720 A	220 A
	495 A	495 A	495 A		560 A	560 A		560 A	560 A	170 A
	395 A	395 A	395 A		445 A	445 A		445 A	445 A	135 A
	330 B	330 B			360 B					
	330 B	330 B	330 B		360 B	360 B		360 B	360 B	360 B
	260 B	260 B	260 B		295 B	295 B		295 B	295 B	295 B
	195 B	195 B	195 B		230 B	230 B		230 B	230 B	230 B
	165 B	165 B	165 B		180 B	180 B		180 B	180 B	180 B
	655 A	655 A	655 A		720 A	720 A		720 A	720 A	720 A
	560 A	560 A	560 A		625 A	625 A		625 A	625 A	625 A
	655 A	655 A	655 A		720 A	720 A		720 A	720 A	720 A
	495 A	495 A	525 A		560 A	560 A		560 A	560 A	560 A
	425 A	425 A	460 A		460 A	460 A		460 A	460 A	460 A
	1835 C	1835 C	1835 C	1835 C	1835 C	1835 C	1835 C	1835 C	1835 C	1835 C
	1835 C	1835 C	1835 C	1835 C	1835 C	1835 C	1835 C	1835 C	1835 C	1835 C
	1835 C	1835 C	1835 C	1835 C	1835 C	1835 C	1835 C	1835 C	1835 C	1835 C
	260 C	260 C	260 C		260 C	260 C		260 C	260 C	260 C
	655 C	625 C			625 C					
	655 C	625 C			625 C					
	5900 C		5900 C	5900 C		5900 C	5900 C	5900 C	5900 C	5900 C
	5900 C		5900 C	5900 C		5900 C	5900 C	5900 C	5900 C	5900 C
	3610 C		3610 C	3610 C		3610 C	3610 C	3610 C	3610 C	3610 C
	2560 C		2560 C	1640 C		2560 C	1640 C	2560 C	2560 C	2560 C
	855 C	855 C	820 C	820 C	855 C	820 C	820 C	820 C	820 C	820 C
	2920 C	2920 C	2950 C	2950 C	2920 C	2950 C	2950 C	2950 C	2950 C	2950 C
	2560 C	2560 C	2625 C	2625 C	2560 C	2625 C	2625 C	2625 C	2625 C	2625 C
	2200 C	2200 C	2290 C	2290 C	2200 C	2290 C	2290 C	2290 C	2290 C	2290 C
	720 A	720 A	755 A	295 A	820 A	820 A	295 A	820 A	820 A	820 A
	295 A	295 A	295 A		330 A	330 A		330 A	330 A	330 A
	230 A	230 A	230 A		260 A	260 A		260 A	260 A	260 A
	1080 A	1080 A	1115 A	490 A	1310 A	1310 A	490 A	1310 A	1310 A	1310 A
	230 B	230 B	230 B		260 B	260 B		260 B	260 B	260 B
	130 B	130 B	130 B		150 B	150 B		150 B	150 B	150 B
	B									
	260 B		280 B			310 B		310 B	310 B	310 B
	130 B		130 B			150 B		150 B	150 B	150 B
	260 B									
	260 B	260 B	260 B		260 B	260 B		260 B	260 B	260 B
	260 B	260 B	260 B		260 B	260 B		260 B	260 B	260 B
	1450 C	C	1450 C	490 C	C	1450 C	490 C	1450 C	1450 C	1450 C
	720 C	C	720 C		C	720 C		720 C	720 C	720 C
	330 C	C	330 C		C	330 C		330 C	330 C	330 C

_ CUTTING DATA v_C

Values

Description	Unit Inch	Unit Metric
Revolutions per minute	min^{-1}	min^{-1}
Cutting Speed	v_c [ft/min]	v_c [m/min]
Feed rate	v_f [inch/min]	v_f [mm/min]
Cutting diameter	d_1 [inch]	d_1 [mm]
Feed per tooth	f_z [inch]	f_z [mm]
Number of teeth	z	z
Axial depth of cut	a_p [inch]	a_p [mm]
Radial width of cut	a_e [inch]	a_e [mm]

Cutting speed factors



Conversions

To m/min from SFM

v_c [m/min] = v_c [ft/min] • 0.3048

To mm from inch

[mm] = [inch] • 25.4

Calculations

RPM with SFM and cutter diameter

min^{-1} = (v_c [ft/min] • 3.82) / d_1 [inch]

RPM with m/min and cutter diameter

min^{-1} = (v_c [m/min] • 1000) / (3.14 • d_1 [mm])

IPM with FPT, number of teeth and RPM

v_f [inch/min] = (f_z [inch] • z • min^{-1})

mm/min with FPT, number of teeth and RPM

v_f [mm/min] = (f_z [mm] • z • min^{-1})

v_c Correction Factors - Adaptors

Coupling	Adaptors - Steel: Type A Reinforced	Adaptors - Steel: Type A	Adaptors - Steel: Type B 89° Taper	Adaptors - Steel: Type C 85° Taper	Adaptors - Solid Carbide: Type A	Adaptors - Solid Carbide: Type B 89° Taper
E10	**v_c x 1**	v_c x 0.9	v_c x 0.6	v_c x 0.7	v_c x 0.8	v_c x 0.7
E12	**v_c x 1**	v_c x 0.9	v_c x 0.6	v_c x 0.7	v_c x 0.9	v_c x 0.7
E16	**v_c x 1**	v_c x 0.9	v_c x 0.6	v_c x 0.7	v_c x 0.9	v_c x 0.6
E20	**v_c x 1**	v_c x 0.8	-	v_c x 0.7	v_c x 1	-
E25	**v_c x 1**	v_c x 0.7	-	v_c x 0.7	v_c x 0.7	-

A

Steel, Titanium, Cast Materials

ae [inch] radial width of cut inch	Feed per tooth in inches fz [inch]				
	Ø 3/8" Ø 10mm	Ø 1/2" Ø 12mm	Ø 5/8" Ø 16mm	Ø 3/4" Ø 20mm	Ø 1" Ø 25mm
0.0005	0.0079				
0.0020	0.0079				
0.0040	0.0079	0.0079	0.0079		
0.0080	0.0071	0.0079	0.0079	0.0098	
1/64"	0.0059	0.0059	0.0059	0.0098	0.0098
1/32"	0.0047	0.0047	0.0047	0.0079	0.0098
1/16"	0.0043	0.0047	0.0047	0.0079	0.0079
1/8"	0.0041	0.0047	0.0047	0.0069	0.0079
3/16"	0.0039	0.0047	0.0047	0.0059	0.0079
1/4"	0.0031	0.0039	0.0047	0.0059	0.0079
5/16"	0.0028	0.0035	0.0047	0.0059	0.0079
3/8"	0.0024	0.0031	0.0047	0.0055	0.0063
1/2"		0.0028	0.0043	0.0055	0.0063
9/16"			0.0039	0.0051	0.0059
5/8"			0.0035	0.0047	0.0059
11/16"				0.0043	0.0051
3/4"				0.0039	0.0047
1"					0.0039

B

Stainless Steel, Nickel, Hardened Materials

ae [inch] radial width of cut inch	Feed per tooth in inches fz [inch]				
	Ø 3/8" Ø 10mm	Ø 1/2" Ø 12mm	Ø 5/8" Ø 16mm	Ø 3/4" Ø 20mm	Ø 1" Ø 25mm
0.0005	0.0063				
0.0020	0.0063				
0.0040	0.0063	0.0063	0.0063		
0.0080	0.0055	0.0063	0.0063	0.0079	
1/64"	0.0047	0.0047	0.0047	0.0079	0.0079
1/32"	0.0039	0.0039	0.0039	0.0063	0.0079
1/16"	0.0035	0.0039	0.0039	0.0063	0.0063
1/8"	0.0033	0.0039	0.0039	0.0055	0.0063
3/16"	0.0031	0.0039	0.0039	0.0047	0.0063
1/4"	0.0028	0.0031	0.0039	0.0047	0.0063
5/16"	0.0024	0.0031	0.0039	0.0047	0.0063
3/8"	0.0020	0.0028	0.0039	0.0047	0.0055
1/2"		0.0024	0.0035	0.0047	0.0055
9/16"			0.0031	0.0047	0.0055
5/8"			0.0028	0.0039	0.0047
11/16"				0.0039	0.0047
3/4"				0.0031	0.0039
1"					0.0039

C

Aluminum, Copper, Graphite, Plastics

ae [inch] radial width of cut inch	Feed per tooth in inches fz [inch]				
	Ø 3/8" Ø 10mm	Ø 1/2" Ø 12mm	Ø 5/8" Ø 16mm	Ø 3/4" Ø 20mm	Ø 1" Ø 25mm
0.0005	0.0098				
0.0020	0.0098				
0.0040	0.0098	0.0098	0.0098		
0.0080	0.0098	0.0098	0.0098	0.0098	
1/64"	0.0098	0.0098	0.0098	0.0098	0.0098
1/32"	0.0087	0.0087	0.0087	0.0098	0.0098
1/16"	0.0087	0.0087	0.0087	0.0098	0.0098
1/8"	0.0087	0.0087	0.0087	0.0098	0.0098
3/16"	0.0087	0.0087	0.0087	0.0098	0.0098
1/4"	0.0055	0.0071	0.0087	0.0098	0.0098
5/16"	0.0047	0.0063	0.0087	0.0098	0.0098
3/8"	0.0039	0.0055	0.0087	0.0098	0.0098
1/2"		0.0047	0.0079	0.0098	0.0098
9/16"			0.0071	0.0098	0.0098
5/8"			0.0063	0.0087	0.0098
11/16"				0.0079	0.0098
3/4"				0.0071	0.0079
1"					0.0079

D

FLASH

ae [inch] radial width of cut inch	Feed per tooth in mm f_z [mm]			
	Ø 3/8" Ø 10mm	Ø 1/2" Ø 12mm	Ø 5/8" Ø 16mm	Ø 3/4" Ø 20mm
1/32"				
1/16"				
1/8"				
3/16"	0.0118	0.0138	0.0000	0.0000
1/4"	0.0118	0.0138	0.0197	0.0000
5/16"	0.0118	0.0138	0.0197	0.0276
3/8"	0.0118	0.0138	0.0197	0.0276
1/2"			0.0197	0.0276
9/16"			0.0197	0.0276
5/8"			0.0197	0.0276
11/16"				0.0276
3/4"				0.0276