

ASSAB 17

GENERAL

ASSAB 17 tool bits are high alloyed cobalt high-steel steel with excellent cutting properties, wear resistance, toughness and heat resistance.

Standard inch sizes



Ends are cut square
FLAT-METRIC

A	B	L	Pcs/box
12	3	90	10
12	3	200	10
10	4	100	10
10	4	120	10
10	4	200	10
16	4	160	10
16	4	200	10
20	4	200	10
12	5	90	10
18	5	200	10
20	5	200	10
8	6	70	10
10	6	200	10
12	6	200	10
14	6	140	10
14	6	200	10
16	6	200	10
18	6	140	10
20	6	200	10
25	6	200	10
12	8	160	10
12	8	200	10
16	8	140	10
16	8	160	10
16	8	200	10
20	8	200	5
32	8	200	5
12	10	200	10
14	10	80	10
14	10	200	10
16	10	80	5
16	10	100	5
16	10	160	5
16	10	200	5
20	10	200	5
25	10	200	5
40	10	200	2
16	12	200	5
20	12	160	5
20	12	200	5
25	12	200	5
30	12	200	3
20	14	80	5
20	14	200	5
25	14	200	5
20	16	80	3
20	16	200	3
25	16	160	3
25	20	200	3



Both ends bevelled
SQUARE-METRIC

A	L	Pcs/box
4	40	10
4	63	10
4	100	10
5	40	10
5	63	10
5	160	10
6	40	10
6	63	10
6	80	10
6	100	10
6	125	10
6	160	10
6	200	10
7	100	10
7	200	10
8	40	10
8	63	10
8	80	10
8	100	10
8	125	10
8	160	10
8	200	10
10	63	10
10	80	10
10	100	10
10	125	10
10	160	10
10	200	10
12	63	10
12	80	10
12	100	10
12	160	10
12	200	10
14	100	5
14	125	5
14	160	5
14	200	5
16	80	5
16	100	5
16	160	5
16	200	5
18	160	3
18	200	3
20	160	3
20	200	3
25	160	2
25	200	2

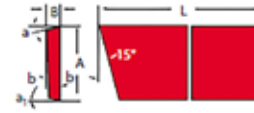


Ends are cut square
ROUND-METRIC

A	L	Pcs/box
3	100	10
4	40	10
4	80	10
4	100	10
5	100	10
5	160	10
6	63	10
6	80	10
6	100	10
6	160	10
8	80	10
8	100	10
8	160	10
8	200	10
10	80	10
10	100	10
10	160	10
10	200	10
12	80	10
12	100	10
12	160	10
12	200	10
14	100	5
14	160	5
14	200	5
15	100	5
16	100	5
16	160	5
16	200	5
18	100	3
18	160	3
18	200	3
20	100	3
20	200	3

x = Semistandard price on request
Other sizes quoted on request

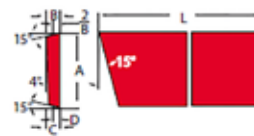
CUT-OFF BITS



One end bevelled

Cut-off Bits – Type A

A	B	L	a	a ₁	b	Pcs/box
12	3	90	15°	15°	2	10
12	3	120	15°	15°	2	10
12	5	120	15°	15°	2	10
12.7	1.5	100	5°	5°	0.57	10
12.7	2	100	5°	5°	0.57	10
16	4	140	15°	15°	2	10
16	6	140	15°	15°	2	10
18	4	140	15°	15°	2	10
20	3	125	10.57°	13.43°	1.43	10
25	4	150	10.83°	13.17°	1.17	10



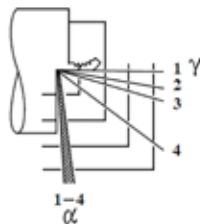
Cut-off Bits – Type C

A	B	L	C	D	Pcs/box
16	3	140	1.9	0.6	10
20	4	140	2.6	0.6	10

TOOL ANGLES

The recommendations below are only intended as a rough guide, and should be adapted to the lathe used, the metal being turned and other decisive factors. High feeds, for example, demand a strong cutting edge, often necessitating a smaller clearance angle α and cutting rake angle γ .

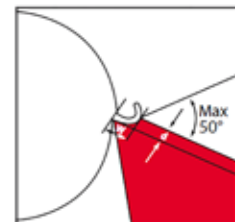
- Y= 3 Steel < 175 HB
- 2 Steel 175–250 HB
- 1 Steel > 250 HB
- 3 Stainless
- 2 Cast iron - 250 HB
- 1 Cast iron > 250 HB
- 2 Brass/Bronze
- 4 Copper/Aluminum
- 4 Wood



On back of the ASSAB 17 tool bits package you will find these useful tool angle recommendations.


CHIPBREAKER

When ASSAB 17 tool bits are used for turning longchipping metals, you should grind a chipbreaker to ensure smooth chip flow. The best shape of the chipbreaker depends on the feed and the cutting speed. The depth (d) and the width (w) of the chipbreaker should be increased for increasing cutting depth and/or feed. Tough metals can also necessitate deeper chipbreakers. However, excessive chipbreaker depth can cause chips to jam.



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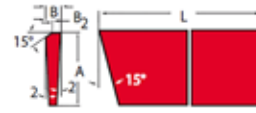
Standard inch sizes



Both ends bevelled SQUARE-INCH			Ends are cut square ROUND-INCH			Ends are cut square FLAT-INCH			
A	L	Pcs/box	A	L	Pcs/box	A	B	L	Pcs/box
3/16	2 1/2	10	3/16	4	10	3/16	3/16	6	10
3/16	4	10	3/16	2 1/2	10	1/2	1/4	4	10
1/4	2 1/2	10	1/4	4	10	1/2	1/4	6	10
1/4	4	10	1/4	2 1/2	10	1/2	3/8	4	10
1/4	6	10	1/4	4	10	5/8	3/8	6	10
1/4	8	10	1/4	6	10	3/4	1/2	3	5
5/16	2 1/2	10	5/16	4	10	3/4	1/2	5	5
5/16	3	10	5/16	8	10	3/4	1/2	6	5
5/16	4	10	5/16	3	10	x			
5/16	6	10	5/16	4	10	x			
5/16	8	10	5/16	6	10	x			
3/8	3	10	3/8	8	10	x			
3/8	4	10	1/2	4	10	x			
3/8	6	10	1/2	6	10	x			
3/8	8	10	1/2	8	10	x			
7/16	3 1/2	10	3/4	4	5	x			
1/2	3	10	3/4	6	5	x			
1/2	4	10	3/4	4	3	x			
1/2	6	10	3/4	6	3	x			
1/2	8	10	3/4	8	3	x			
5/8	4 1/2	5							
5/8	6	5							
5/8	8	5							
3/4	4	3	x						
3/4	5	3	x						
3/4	6	3							
3/4	8	3							
1	5 1/2	2							
1	8	2							

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Other sizes quoted on request

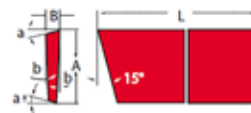
CUT-OFF BITS



One end bevelled

Cut-off Bits – Type S

Part No.	A		B		L	Pcs/box
	inch	mm	inch	mm		
S0	1/2	12.70	0.098	2.5	4 1/4	10
S1	3/8	15.87	1/8	3.17	5	125
S2	1/4	19.05	1/8	3.17	6	150
S3	7/16	22.22	1/16	3.97	7	175
S4	1	25.40	3/16	4.76	8	200
S5	1 1/4	31.75	1/4	6.35	9	225



Cut-off Bits – Type L

A	B	L	a	a ₁	b	c	Pcs/box
12	3	90	15°	15°	2	0.5	10
16	3	110	10°	10°	1.17	0.5	10
20	3.5	125	10.57°	13.43°	1.43	0.5	10
25	4.5	150	10.83°	13.17°	1.17	0.44	10

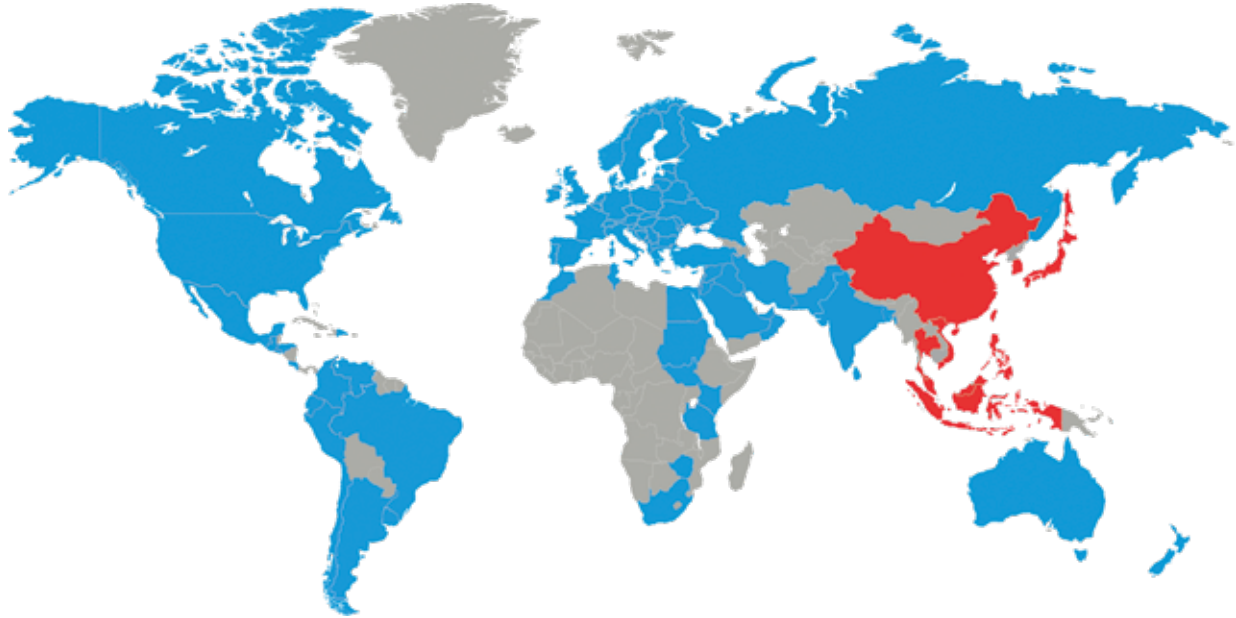
CUTTING SPEEDS

The recommendations in the table below serve as guiding values, and should be adapted according to experience gained of the turning conditions in question. The feed is normally decided by the stability of the lathe and by the required surface finish. In end-turning and cut-off operations the feed should be reduced as the centre is approached and the surface speed decreases.



Cutting depth	Feed	Softer cast iron	Harder cast iron	Hard brass	Soft brass	Aluminium
		< 250 HB	> 250 HB		Bronze	Magnesium
mm	mm/rev.	Cutting speed (m/min) for one hour's tool edge life				
1	0.1	94	40	73	113	145
	0.2	84	36	66	102	132
	0.3	66	31	48	73	95
	0.6	59	25	36	59	73
2	0.1	78	36	65	101	132
	0.2	70	32	59	91	118
	0.3	55	25	36	59	73
	0.6	44	22	29	48	59
4	0.1	65	28	53	80	104
	0.2	59	25	48	73	95
	0.3	48	24	32	52	66
	0.6	32	18	29	44	55
8	0.1	58	24	44	68	90
	0.2	52	22	40	62	80
	0.3	40	17	29	48	59
	0.6	32	14	25	36	48

Cutting depth	Feed	Softer steel	Medium steel			Harder steel				
		<175 Brinell	175–250 Brinell			>250 Brinell				
Tool edge life (hours)										
		1	4	8	1	4	8	1	4	8
mm	mm/rev.	Cutting speed (m/min)								
1	0.1	132	119	103	88	74	68	62	53	50
	0.2	120	107	98	77	66	62	55	48	44
	0.3	88	77	73	55	48	44	41	36	32
	0.6	73	66	62	41	36	32	32	29	25
2	0.1	109	96	90	74	65	61	49	44	40
	0.2	98	88	80	66	59	55	44	40	36
	0.3	73	66	62	41	36	32	32	29	25
	0.6	55	48	44	32	29	25	25	24	22
4	0.1	92	80	77	61	54	50	40	37	31
	0.2	84	73	70	55	48	44	36	34	29
	0.3	62	55	52	36	32	29	29	28	25
	0.6	41	36	32	29	28	25	22	20	18
8	0.1	80	74	67	54	46	46	36	31	28
	0.2	73	66	62	48	41	41	32	29	25
	0.3	55	48	44	32	29	25	22	20	18
	0.6	41	36	32	25	24	22	18	17	14



Choosing the right steel is of vital importance. ASSAB engineers and metallurgists are always ready to assist you in your choice of the optimum steel grade and the best treatment for each application. ASSAB not only supplies steel products with superior quality, we offer state-of-the-art machining, heat treatment and surface treatment services to enhance steel properties to meet your requirement in the shortest lead time. Using a holistic approach as a one-stop solution provider, we are more than just another tool steel supplier.

ASSAB and Uddeholm are present on every continent. This ensures you that high quality tool steel and local support are available wherever you are. Together we secure our position as the world's leading supplier of tooling materials.

For more information, please visit
www.assab.com

