



# 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       |

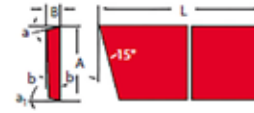


Ends are cut square  
ROUND-METRIC

| 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

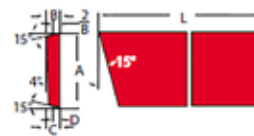
## CUT-OFF BITS



One end bevelled

Cut-off Bits – Type A

| A    | B   | L   | a      | a <sub>1</sub> | 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      |



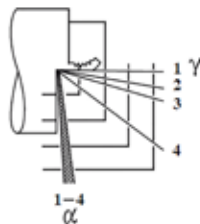
Cut-off Bits – Type C

| 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  $\alpha$  and cutting rake angle  $\gamma$ .

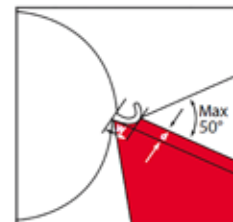
- Y= 3 Steel < 175 HB
- 2 Steel 175–250 HB
- 1 Steel > 250 HB
- 3 Stainless
- 2 Cast iron - 250 HB
- 1 Cast iron > 250 HB
- 2 Brass/Bronze
- 4 Copper/Aluminum
- 4 Wood



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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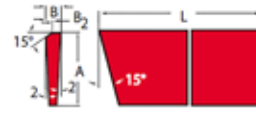
## Standard inch sizes



| Both ends bevelled<br>SQUARE-INCH |       |         | Ends are cut square<br>ROUND-INCH |       |         | Ends are cut square<br>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       | x                                 |       |         |                                  |      |   |         |
| 3/4                               | 8     | 3       | x                                 |       |         |                                  |      |   |         |
| 1                                 | 5 1/2 | 2       |                                   |       |         |                                  |      |   |         |
| 1                                 | 8     | 2       |                                   |       |         |                                  |      |   |         |

x = Semistandard price on request  
Other sizes quoted on request

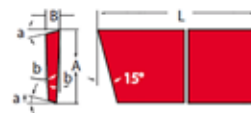
## CUT-OFF BITS



One end bevelled

Cut-off Bits – Type S

| Part No. | A     |       | B     |      | L     |     | Pcs/box |
|----------|-------|-------|-------|------|-------|-----|---------|
|          | inch  | mm    | inch  | mm   | inch  | mm  |         |
| S0       | 1/2   | 12.70 | 0.098 | 2.5  | 4 1/8 | 110 | 10      |
| S1       | 3/8   | 15.87 | 1/8   | 3.17 | 5     | 125 | 10      |
| S2       | 1/4   | 19.05 | 1/8   | 3.17 | 6     | 150 | 10      |
| S3       | 7/16  | 22.22 | 1/16  | 3.97 | 7     | 175 | 10      |
| S4       | 1     | 25.40 | 3/16  | 4.76 | 8     | 200 | 10      |
| S5       | 1 1/4 | 31.75 | 1/4   | 6.35 | 9     | 225 | 5       |



Cut-off Bits – Type L

| A  | B   | L   | a      | a <sub>1</sub> | 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 |
| Cutting speed (m/min) for one hour's tool edge life |         |                  |                  |            |            |           |
| mm  | mm/rev. | 94               | 40               | 73         | 113        | 145       |
| 1   | 0.1     | 84               | 36               | 66         | 102        | 132       |
|   | 0.2     | 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 |     |     |              |    |    |              |    |    |
| Tool edge life (hours) |         |              |     |     |              |    |    |              |    |    |
|                        |         | 1            | 4   | 8   | 1            | 4  | 8  | 1            | 4  | 8  |
| Cutting speed (m/min)  |         |              |     |     |              |    |    |              |    |    |
| mm                     | mm/rev. | 132          | 119 | 103 | 88           | 74 | 68 | 62           | 53 | 50 |
| 1                      | 0.1     | 120          | 107 | 98  | 77           | 66 | 62 | 55           | 48 | 44 |
|                        | 0.2     | 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  
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