

## ALMAC BA 1008HP – THE IDEAL MACHINE FOR DEEP-HOLE DRILLING

The Almac BA 1008HP machine launched at the beginning of 2016 and presented at the Siams exhibition is an awesome means of producing components that require deep holes with small diameters.

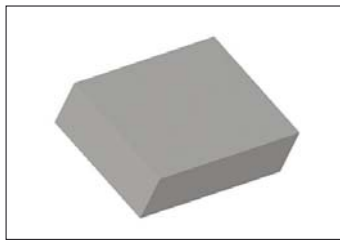


Considering the machine was developed for machining watch bracelet links, it's really no surprise. Components that need deep-hole drilling with depths of 10 to 15 times the tool diameter can be easily processed on this exciting new machine.

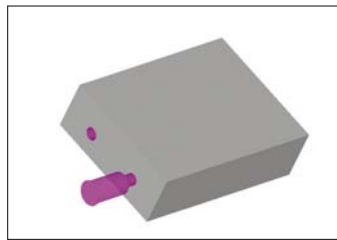
### **BA 1008HP – high pressure included**

In the previous Deco magazine edition, we presented the BA 1008HP and described the main features of the machine. The BA 1008 machine version has a high-pressure coolant system (120 bar) and

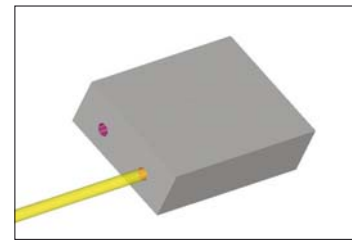
## The present



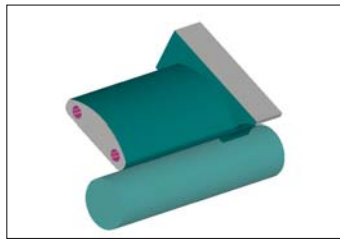
1 - Bar feed (1 sec)



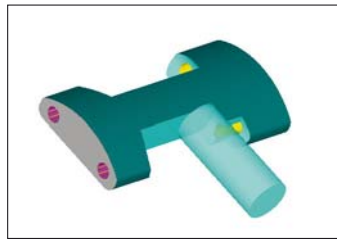
2 - Spot drilling (2 sec)



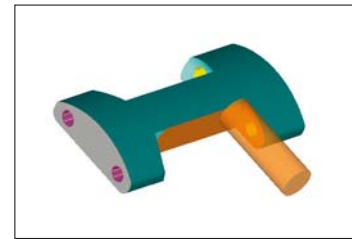
3 - Deep-hole drilling  $\varnothing 1.35 \times 20$  mm, HP coolant supply through the tool (5 sec)



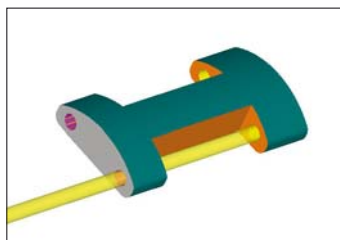
4 - Roughing the external shape (90 sec)



5 - Roughing the lateral shape (40 sec)



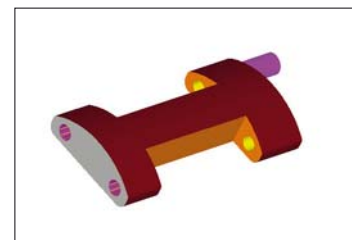
6 - Finishing the lateral shape (35 sec)



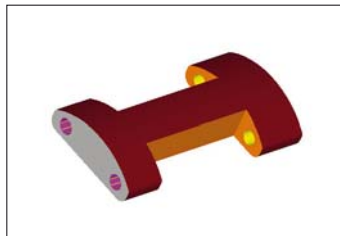
7 - Deburring the holes (5 sec)



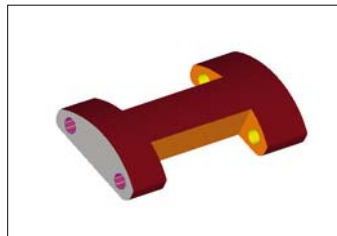
8 - Finishing the external shape (50 sec)



9 - Deburring the rear side (3 sec)



10 - Cutting off (5 sec)



11 - Ejection (1 sec)

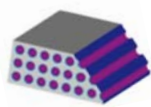
### SPECIFICATIONS OF THE BA 1008HP MACHINE

Travels: X/Y/Z	26/160/60 mm
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Max. bar diameter	16 mm
CNC unit	CNC Fanuc 0imD
Mechanical spindle	12,000 rpm
HF spindle	28,000 or 80,000 rpm
Spindle with through-spindle coolant	28,000rpm
Coolant supply through the spindle	High pressure – 120 bar
Dimensions	998 x 3200 x 1600 mm

allows drilling with through tool coolant supply. This is an undeniable advantage in terms of chip discharge and it delivers a considerable increase of drilling speed and quality.

### Drilling speed

The Almac experts have performed a large number of machining tests since the machine was introduced. The results enable high drilling speeds to be achieved. On a golden link, Ø1.35 mm holes with a depth of 10 mm could be realised at feed rates of 1.2 m/min. With 316L stainless steel, Ø1.35 mm holes could be realised at feed rates of 1 m/min with a depth of 10 mm and at 800 mm/min for a depth of 20 mm.



Deep-hole drilling test performed on a bar made of 316L stainless steel: 24 holes with Ø1.35 x 20 mm.

Spot drilling time: 22 sec (1 sec/hole)

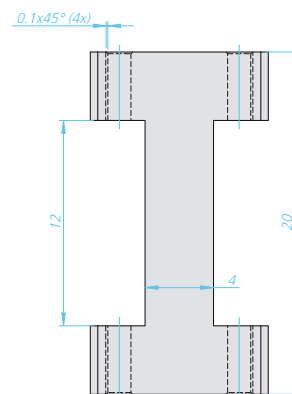
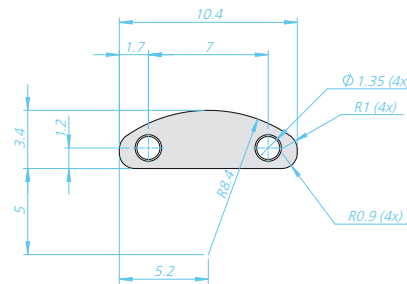
Drilling time with through-the-tool coolant supply: 54 sec (2.25 sec/hole)

### Sample machining

At the PMT/EPHJ 216 exhibition, the capability of the BA 1008HP machine was showcased machining a H-shaped link. Starting with a 15 x 6 mm 316L stainless steel bar, the link could be produced in 240 seconds.

The following overview of the machining processes shows how with high-pressure coolant supply through the tool, the four holes on the front and rear side of the component are directly drilled into the raw material in a single deep-hole drilling process. Besides the time saving obtained through the high drilling speed, the fact that the holes can be drilled in one drilling cycle allows two further advantages. On the one hand, the cycle time is reduced through fewer set-ups and on the other hand, a perfect alignment of the holes is achieved.

Please note that the machining time can be reduced further if a profiled bar is used instead of a rectangular bar. This is because any roughing and finishing processes on the external shape of the workpiece can be omitted. The workpiece can reasonably be machined in less than 100 seconds.



All these benefits make the BA 1008HP the ideal production machine for this kind of workpiece.

Are you looking for a similar machining solution?

The Almac experts will be pleased to help you and to analyze your specific requirements. Do not hesitate to contact them to discuss the possibilities.



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