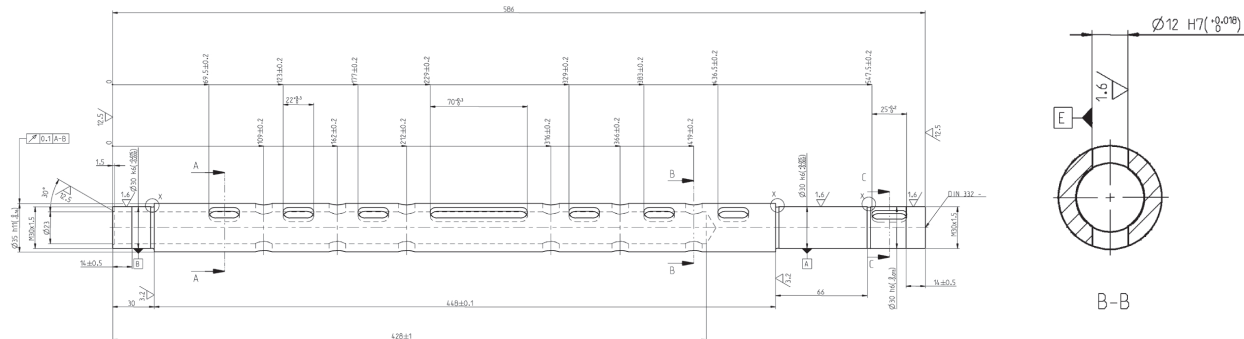


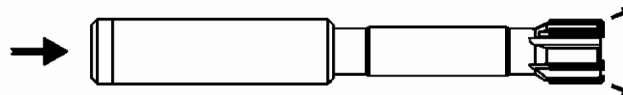
## Suction shaft for mailroom systems machine

Material: Steel ETG 100/45S20/1.0727/AISI 1146  
 Machine: Mori Seki SV500 machining center  
 vertical, tool rotating  
 Bore diameter: 12 H7mm (0.4724" +0/+0.0007")  
 Bore length: 2 x 6mm (2 x 0.24"), interrupted cut



## Diatool solution:

Reaming tool: Type 3451 standard, expandable, short, mono-block reamer with coolant feed for through holes  
 Cutting material: Cermet tipped  
 Bevel lead: Special bevel lead no. 99  
 Tool holder: Hydraulic chuck



## Cutting conditions and results:

Cutting data:  $V = 120$  m/min., 3200rev/min.  
 $f = 0.6$  mm/rev (1920mm/min)  
 Coolant: Emulsion 8%  
 Original reaming method: Single blade turning ( $f=0.08$ mm/rev). Frequent blade damage when entering second hole, significant time loss.  
 New goal for reaming operation: Reduction of machining time, tool life improvement  
 Machining time achieved: 1.1 seconds per bore (before 8.2 seconds)  
 Tool life: 1st batch (900 bores), reamer expanded 2x, reamer still in good condition. Same will be used for next batches.  
 Remarks: The bevel lead no. 99 allows reaming free from vibrations. It stabilizes the reamer when entering the two holes. Time saving 107 min/batch (900 bores) machining time. No additional loss of machining time anymore because of broken inserts.