Combining Tools to Machine a Mounting Bore

**Challenge**
A manufacturer in the automotive industry was producing about 12 million aluminium wheels for passenger vehicles per year. The customer wanted a solution to produce the mounting bore for the wheels cost-effectively in one operation without having to turn the workpiece.

**Application details:**
- Through bore: Ø14.0 mm
- Counterbore forward: Ø36.0 mm
- 60° Sinking forward on the bore: Ø14.0 mm
- Back chamfer: 1.0 mm x 45°
- Material: aluminium

**Solution:**
The solution from HEULE is a VEX-P combined drill and countersink tool which has been specially adapted for the customer. In one pass and without any further tool change the four form elements can be machined.

**Machining parameters:**
**Drill operation:**
- Speed 3500 rev/min, cutting speed vc 155 m/Min,
- working feed 0.3 mm/rev

Sinking forward / chamfering backward:
- Speed 2800 rev/min, cutting speed vc 140 m/min, working feed 0.1 - 0.15 mm/rev

**Results:**
This customer combined four tools into one tool with no required turning of the work piece. Also eliminated was the maintenance effort and downtime for re-adjusting and repairing tools. The customer achieved the desired savings of time and money.