

# Want to improve your productivity?



**ETP HYDRO-GRIP HD (Heavy Duty) hydraulic high precision toolholders are your guarantee of secure clamping for your milling, drilling and reaming tools.**

Their unique strength provides precision and rigid-tool stability to improve machining performance for the largest number of applications. As below machining examples will show you, a high bending stiffness and the dampening properties of the hydraulic pressure media makes ETP HYDRO-GRIP HD the ideal holder for any machining, from heavy rough milling to finishing.



ETP HYDRO-GRIP HD

<b>Machining data - Case 1</b>	
<b>Machine: DMG (HSK63)</b>	
<b>Competitor Power chuck</b>	<b>ETP HYDRO-GRIP HD</b>
Conventional milling by circular interpolation	Three axes helical engagement
Dc = 16 mm (SC EM)	Dc = 16 mm (SC EM)
Vc = 100 m/min	Vc = 150 m/min
N = 1 990 rpm	N = 3 000 rpm
Vf = 1 330 mm/min	Vf = 2 000 mm/min
Fz = 0.167 mm/z	Fz = 0.167 mm/z
Ap = 6 mm	Ap = 16 mm (In trochoidal milling)

## Results:

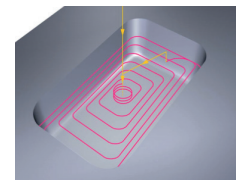
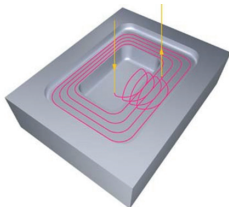
### Productivity improvements by changing toolholder

#### Before using Power chuck:

- Cycle time 60 min
- Vibrations during trochoidal milling and stalled
- Tool pull-out 0.5 mm

#### Now using ETP HYDRO-GRIP HD:

- Cycle time 16 min.
- No vibrations
- Excellent surface finish



Machining of cavity using trochoidal milling with ETP HYDRO-GRIP HD

<b>Machining data - Case 2</b>	
<b>Machine: HMC (BT50)</b>	
<b>Slotting in medium carbon steel on an axle component</b>	
<b>Competitor Hydraulic chuck</b>	<b>ETP HYDRO-GRIP HD</b>
Dc = 20 mm (SC EM)	Dc = 20 mm (SC EM)
Vc = 100 m/min	Vc = 100 m/min
N = 1 600 rpm	N = 1 600 rpm
Vf = 640 mm/min	Vf = 640 mm/min
Fz = 0.1 mm/z	Fz = 0.1mm/z
Ap = 9 mm (max)	Ap = 18 mm (max)
Ae = 20 mm (slotting)	Ae = 20 mm (slotting)

## Results:

### Productivity improvements by changing toolholder

#### Before using Competitor hydraulic chuck:

- Max. machining depth 9 mm
- Vibrations
- Tool pull-out

#### Now using ETP HYDRO-GRIP HD:

- Max. machining depth 18 mm
- No vibrations
- Excellent surface finish