# Want to improve your productivity?

HYDRO-GRIP

***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*

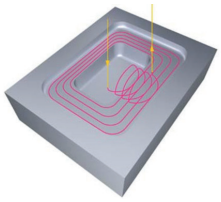
| **Machining data - Case 1<br>Machine: DMG (HSK63)** | |
|---|---|
| **Competitor Power chuck** | **ETP HYDRO-GRIP HD** |
| Conventional milling by circular interpolation | Three axes helical engagement |
| Dc= 16 mm (SC EM) | Dc= 16 mm (SC EM) |
| Vc= 100 m/min | Vc= 150 m/min |
| N= 1 990 rpm | N= 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<br>(In trochoidal milling) |

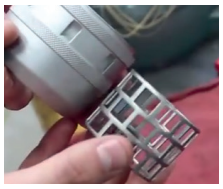
**Results:**

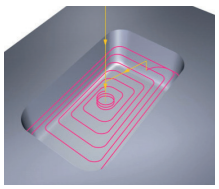
**Productivity improvements by changing toolholder**

**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 throchoidal milling with ETP HYDRO-GRIP HD*

| **Machining data - Case 2<br>Machine: HMC (BT50)** | |
|---|---|
| **Slotting in medium carbon steel on an axle component** | |
| **Competitor Hydraulic chuck** | **ETP HYDRO-GRIP HD** |
| 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) |

**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**
- **Excellent surface finish**
- **No vibrations**

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