GROB

SWITZERLAND

C9

COLD FORMING MACHINE

SCAN ME

ERNST GROB AG

COLD FORMING MACHINES
SPECIAL PURPOSE MACHINES
SLOTTING MACHINES

Rohrgasse 9
Box 830
CH-8708 Männedorf

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Cold-formed forked shaft profile DIN 5480

Controls	Fanuc or Siemens
Spline module	Up to apoprox. 3.5*
Workpiece diameters	
Spline (mm)	Ø 20 – 120*
Clamping location (mm)	Ø 400 max.*
No. of teeth	independently programmable

C9 Cold Forming Machine

Technology

The GROB cold forming process is based on a straightforward and universally applicable principle: the total forming effort needed is broken down into numerous forming increments spread along the entire cylindrical length of the zone being formed. Characteristic for workpieces produced by this process are their superb precision and surface finish, combined with the typical benefits of cold forming: cold work hardening, enhanced material microstructure, material savings, low hardening distortion etc.

The model C9 is an economical investment solution for generating medium-range spline modules, while offering high levels of flexibility and productivity. The C6 operates in continuous pitch mode, thereby achieving extremely short cycle times.

Typical applications

The main field of application for the C9 is generating torque transmission splines on powertrain shafts and axles for passenger cars, commercial vehicles and agricultural machinery.

Other applications are those where low unit costs but high quality are required, for example in machine building and equipment manufacturing.

Benefits

GROB cold forming machines allow the generation of a diversity of spline geometries and specific features such as creating chamfers, including spline crowning.

Highly-dynamic machine axes facilitate simple operation and control-aided correction and compensation of quality relevant factors such as spline alignment, elastic recovery behaviour, but also batch related variations.

Each machine configuration reflects individual customer requirements such as layout, degree of automation or plant specifications.

*These specifications are workpiece dependent and may vary.

GROB
SWITZERLAND

C9 Cold Forming Machine

- **Multifunctional**
- **Extremely short cycle times**
- **High process stability**
- **Universal usage, minimal changeover times**
- **Ease of service and maintenance**

V04-2021

GROB

SWITZERLAND

C9T

COLD FORMING MACHINE

SCAN ME

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Special-purpose splines with parallel flanks

C9T

Controls	Fanuc or Siemens
Spline module	up to approx. 3.5*
Workpiece diameters	
Spline (mm)	
- Cold forming	Ø 20 – 120*
- Intermittent forming	Ø 14 – 90*
Shoulder height max. (mm)	10
- Clamping location (mm) max.	Ø 400*
No. of teeth	independently programmable

C9T Cold Forming Machine

Technology

The GROB cold forming process is based on a straightforward and universally applicable principle: the total forming effort needed is broken down into numerous forming increments spread along the entire cylindrical length of the zone being formed. Characteristic for workpieces produced by this process are their superb precision and surface finish, combined with the typical benefits of cold forming: cold work hardening, enhanced material microstructure, material savings, low hardening distortion etc.

The model C9T is a dedicated torque motor solution for generating medium-range spline modules in both continuous and indexed pitch modes.

Using the indexed pitch mode allows special-purpose profiles, for example, geometries with parallel flanks and very few splines, but also splined shafts up to 10 m in length, to be generated cost-effectively.

Typical applications

The main field of application for the C9T is generating torque transmission splines on powertrain shafts and axles for passenger cars and commercial vehicles and agricultural machinery. A diversity of other applications for the C9T are found in the machinery and equipment sectors, including the manufacture of clutch plate carriers produced from sheet metal.

Benefits

GROB cold forming machines allow the generation of a diversity of spline geometries and specific features such as creating chamfers, including spline crowning. Highly-dynamic machine axes facilitate simple operation and control-aided correction and compensation of quality relevant factors such as spline alignment, elastic recovery behaviour, but also batch related variations. Each machine configuration reflects individual customer requirements such as layout, degree of automation or plant specifications.

*These specifications are workpiece dependent and may vary.

GROB
SWITZERLAND

C9T Cold Forming Machine

- **Special-purpose profiles**
- **Extremely short cycle times**
- **High process stability**
- **Universal usage, minimal changeover times**
- **Ease of service and maintenance**

V04-2021