

## Modernisation of forging machine with CNC SX-13 GFM Austria

*(Year of manufacture – 1976) Serial number 1276*

### 1. SCOPE OF DELIVERY

Pos. 1.1 Engineering work in order to mantle a new control system, including mechanic and hydraulic adaption as well as documentation.

Pos. 1.2 Control system Siemens SIMATIC S7.  
This control system is specially developed and optimized for such kind of a machine tool. Program input is done interactively via LCD-screen monitor on the control panel. All forging programs and settings are stored on the integrated memory.  
The interface of the program should be in English  
The program input is done directly on the control panel through a keyboard or a memory stick.

This Siemens control replaces the existing control as well as the control panel with following advantages:

- quick and easy program change to the intended blank type
- graphical user interface
- simple input of basic dimensions
- measuring resolution of 0,01 mm (for forging diameter)
- diagnostic system with clear text display
- acceleration and deceleration control
- integrated PLC control system (Profibus) and free programmable control
- control panel based on LCD-screen system to maintain machine settings
- display of alarms and messages

The Siemens control consists of:  
System unit with an integrated power supply including system software pre-tested and pre-mounted.

Pos. 1.3 Set of parts in order to exchange the existing servo valves, pressure sensors, proportional valves, mounting plates and installation material.

Pos. 1.4 Set of mechanical parts for position feedback consisting of:  
- measuring system for measuring chuck head position

- adaption parts for the measuring system of hammer adjustment

Pos. 1.5 Complete control cabinet including motor control based on electric diagram SX-13 consisting of:

- transformer
- battery back up
- cables, plugs and wiring material
- contactors
- soft start
- main switch, etc.

### **MECHANICAL modernization**

The mechanical overhaul consists of the following:

- Group 01 Gear box
- Exchange of all bearings and sealing including the main motor
  - Exchange rubber coupling of the main motor
- Group 02 Forging box
- Checking and exchange (when out of norm) of the pressure plates as well as bearings, bushings, sealings and sliding bands
- Group 04 Adjustment Hammer
- Exchange of all bearings and sealing (when out of norm)
- Group 06 Piping
- Checking and repair of all necessary pipes
  - Exchange all rubber piping
- Group 08 Chuck head
- Checking of all bearings / bushings / sealings and exchange of the pieces out of norm
  - Exchange the sliding plate
  - Exchange brake disc
  - Exchange damper
- Group 09 Chuck head bed
- Exchange strip
  - Checking the rails guide
  - New cover protection guide

Group 12+16 Work piece guide

- Checking of all bearings / bushings / sealings and exchange of the pieces out of norm

Group 24+30 Loading and unloading system

- Checking and repair

Group 5+33 Hydraulic and Lubrication

- Exchange of hydraulic and lubrication pump coupling
- Retrofit Pumps and servo valves
- Exchange of all sealing's for all hydraulic cylinders
- Exchange of heat exchanger for hydraulic and lubrication
- Checking and retrofit hydraulic motor

Group 39 Block support

- Exchange bolt and rollers