

OVERHAUL

Overhaul with New CNC of forging machine GFM SX-16
(year of manufacture – 1974)

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 New control system Siemens SIMATIC S7-Technology V4.2.
This control system is specially developed and optimized for such kind of a machine tool.

The CNC Bosch Rexrot XM21 is used for hydraulic system.

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 program input is done directly on the control panel with a touch-pad based on TIA (totally integrated automation).

This new 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
- CNC Bosch Rexrot XM21 used for Hydraulic system

The Siemens and Bosch Rexrot control consists of:

System unit with an integrated power supply including system software pre-tested and pre-mounted.

Pos. 1.3 Set of spare parts in order to exchange the existing servo valves, pressure sensors, proportional valves, mounting plates and installation material for axis A,B,R and L.

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 new control cabinet including motor control based on electric diagram SX-16 consisting of:
- transformer
 - battery back up
 - cables, plugs and wiring material
 - contactors
 - soft start SIEMENS
 - main switch, etc.

MECHANICAL OVERHAUL

The mechanical overhaul consists of the following:

- Group 01** Gear box
- Exchange of all bearings and sealing including the main pinion motor
- Group 02** Forging box
- Exchange of bushings, sliding bands and several sealings
- Group 04** Hammer adjustment
- Exchange of several bearings and seals
- Group 06** Piping
- Checking and repair of all necessary pipes
 - Exchange all rubber piping
- Group 08** Chuckhead
- Exchange of all sealings with some mechanical part damaged
 - Exchange of grease pump
- Group 09** Chuck head bed 
- Exchange strip
 - Checking the rails guide
 - New cover protection guide
- Group 12+16** Centering guides
- Repairing of mechanical part damaged
 - Retrofitting of cylinders
- Group 22** Cooling water
- Exchange of heat exchanger for hydraulic and lubrication

Group 24+30 Loading and unloading system
- Checking and repair

Group 5+33 Lubrication and hydraulic
- Exchange of hydraulic and lubrication pump coupling
- Exchange of all sealing's for all hydraulic cylinders
- Retrofit pumps and new proportional valves with manifolds

Group 39 Block support^[1]_{SEP}
- Exchange bolt and rollers

**Machine is completely painted as new condition.
Old painting will be removed.**