



Reference title: **Repair and modernization of the FRAMAG saw**
Supplier: ELVAC a.s.
Customer: BONATRANS GROUP a.s.
Market Segment: Metallurgy and engineering
Year of implementation: 2023

Opening text:

In BONATRANS GROUP a.s. we carried out the overhaul and modernization of the FRAMAG KKS 1600 saw.

The machine is used to automatically cut steel billets of prescribed length and weight from contislites. The individual parts are then used in the production of wheels and wheels for rolling stock.

Work performed:

We carried out a general repair of electrical equipment, which meant carrying out the following works:

- installation of new switchboards,
- replacement of the original PLC S5 with S7,
- installation of new frequency converters,
- installation of new engines,
- stretching of new cabling,
- installation of a new labeling device,
- modification of vibrodiagnostics with a new interface,
- installation of new safety features,
- deploying a new user-friendly visualization with extended SW functions (we developed it according to the latest trends in cooperation with the supplier's technologists),
- installation of a new, fully equipped tank of containers including hydraulic equipment.

We have done everything to meet the current legislative requirements in terms of safety of machinery according to the requirements of NV No. 176/2008 Coll. and Government Decree No. 378/2001 Coll. This means we have supplied documentation, fencing, optical barriers and declarations of conformity.

The device is controlled by the Simatic S7-1515F-2 PN system. Drives for manipulator feed, saw feed and log distributor are equipped with SIMOTICS S 1FT7 series synchronous motors with absolute position sensors. The drive of the cutting wheel is asynchronous, series 1PH8 with an incremental sensor. The drives are controlled by a Sinamics S120 frequency converter with a CU320-2 PN control unit. The set of converters is equipped with SLM and SMM in the Chassis version and 3x SSM in the booksize version. Conveyor drives of the contislites are implemented using Sinamics G120C converters. Communication between the PLC and drives takes place over the Profinet network using Profisafe.

The WinccAdvanced Runtime visualization runs on a Siemens Simatic IPC227E industrial PC (Nanobox PC) including MS SQL. In order to maintain the original functionality, the manual mode is controlled from the OP – KP700.



Benefits for the customer:

The benefit for the customer is increased safety, more convenient control, clearer diagnosis of the cutting process, increased service life of saw blades, increased availability, and therefore also the strengthening of production capacity.

Photo:

