



GEARLESS MODERNIZATION KIT

MaGO Machine + Frequency Inverter
3VFMAC 6P DSP S



Modernization
of existing lifts

PROGRESSING, GROWING, GOING UP...

GEARLESS MODERNIZATION KIT

Adapt yourself to modern times

Lift quality is our priority.

We know that new technology can improve quality of life. Our goal is to ensure that our lift products reflect that commitment with **ECONOMICAL** and **EASY INSTALLATION COMPONENTS** which enhance lift functionality and comfort while meeting the latest standards of energy efficiency and environmental control. This partial substitution solution is now available.

With this philosophy in mind, we developed the **GEARLESS MODERNIZATION KIT** composed of **MaGO**, our permanent magnet synchronous machine and our frequency inverter **3VFMAC 6P DSP S**. This set comprises a total solution with a design that is completely optimised and tested to meet the building's highest comfort and environmental standards, as well as to work with the unit's configuration and maintenance.



MAXIMUM COMFORT & CONVENIENCE

Personalized service for everyone

Gearless technology and the frequency inverter system were two major milestones in the lift sector. In the GEARLESS MODERNIZATION KIT, we combine the benefits from these advances resulting in a unit that offers greater COMFORT to all people:

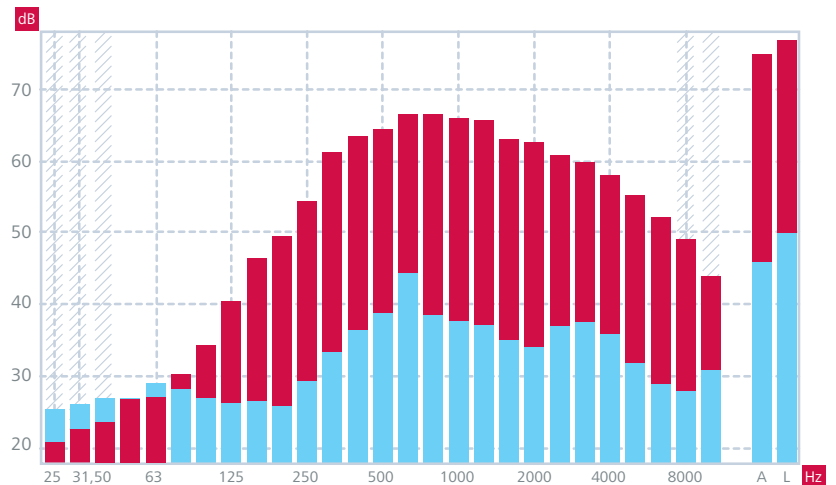
- Passengers.
- Installers.
- Maintenance staff.

USER SATISFACTION

Lower noise and less vibration

Older synchronous geared machines are a source of both noise (large rotational speeds around 1500 rpm, forced ventilation, track shoe action when braking, etc.) and vibration due to the different components that make them up (flywheel, geared motor, etc.).

The GEARLESS MODERNIZATION KIT significantly reduces noise levels from the motor working at switching frequencies of up to 15kHz (allowing it to be installed in machine room less lifts), as well as eliminating the sources of vibration listed above.



NOISE INDEXES AT DIFFERENT SWITCHING FREQUENCIES

- WITHOUT GEARLESS MODERNIZATION KIT
- GEARLESS MODERNIZATION KIT

- **Position control when starting and when stopped**, eliminating rollback and delivering high stopping precision. Travel quality provided by automatic adjustment of minimum jerk, which suppresses the unpleasant sensation caused by acceleration when starting or stopping.

- **Description of short ramps with two parameters**: Instruction increase and prolongation time. With these two parameters, the variable frequency drive automatically finds the most comfortable curve and reduces the part of the travel at a slow speed.

- **Direct access using absolute positioning**, which enables us to eliminate the approach phase, eliminating unnecessary waiting times for passengers.

- **Progressive start-up**. In lifts with a backpack-type chassis, there is a jerk upon start due to the position of the guides with respect to the centre of the car. This function allows us to define a time interval during which constant acceleration is applied, thus eliminating the jerk that occurs in the frame-car unit.

- **Adds specific functions in the lift**, and in particular, measures comfort (5 S-curves) and levelling.



COMFORT FOR THE INSTALLER

- **Total solution.** Light and compact MaGO machine (180kg compared with 300kg for older models), directly connected to the controller.
- **Pre-set kit parameters** (static auto tuning and machine modelling by means of direct configuration of the motor's electric constants through vector control) which reduces start-up time.
- **Possibility to configure drive direction.**
- **Casted motor frame** facilitates the design of the bedframe that will hold it up.



SIMPLIFIED MAINTENANCE

- Including a third support for the bedframe, or the presence of track brake shoes, means that the operator must make more periodic inspections in order to guarantee functionality and wear and tear respectively. **With MaGO machine, these elements are eliminated**, and with them, the time spent on these tasks.
- **The bearings are permanently greased**, and as gearless machine, oil changes are not necessary.
- **Rescue operations when electricity is out by means of batteries**, detecting the best drive direction moving the lift in low speed using five 12V batteries connected in DC bus.
- **The available Communication interfaces available** RS-485, ENDAT, SSI, Serial TTL and CAN-BUS **for remote monitoring and control**.

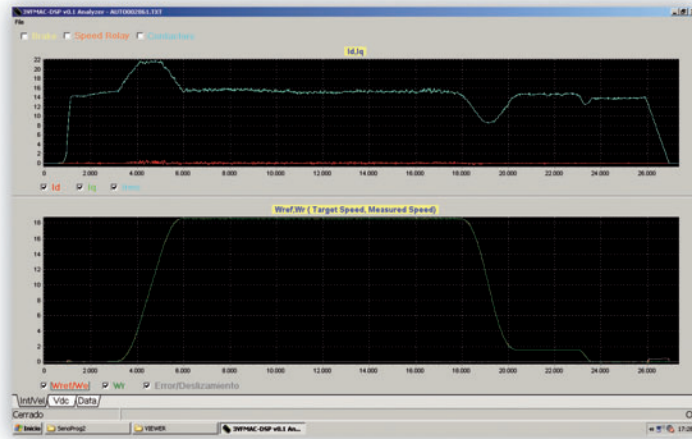




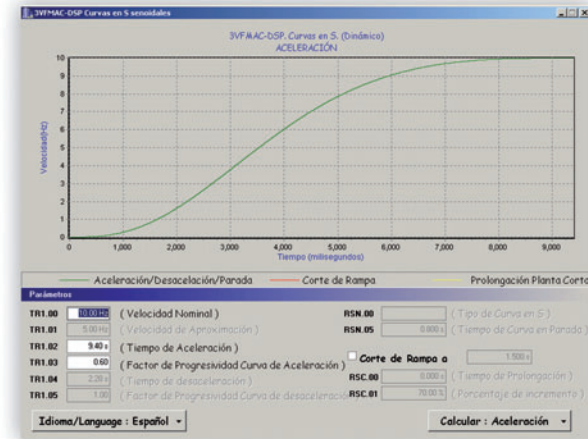
APPLICATION SOFTWARE

- **User-friendly modular programming interface** that uses a laptop or on-board keypad. The machine is equipped with two access levels designed to simplify handling by both the user and the advanced technical staff.
- **MPConfig.** Allows for adjustment, copying and storage of parameters.
- **DSP Monitoring.** Allows for a graphical representation of speed current, intensity (RMS, Iq and Id) and bus voltage over time. It also identifies different trip phases with physical events (contactors, brake, energy supply).

▼ DSP Monitoring.



▼ 3VFMAC-DSP. Sine S-curves.



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GEARLESS
MODERNIZATION KIT

- DSP serial flasher for loading and updating special software in the unit.
- DSP Generator of sine S-curves. Helps configuration. Uses a PC to graphically show starting and stopping curves based on parameter values, allowing technicians to make quick and intuitive adjustments.

▼ MPCONFIG.
Parameterisation software.





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