

TOSHIBA ELEVATOR MODERNIZATION ELFRESH-F CONTROL SYSTEM MODERNIZATION



Safety Cautions

- Observance of relevant laws / regulations are required.
- Read the entire "Instruction Manual" carefully before use, for important information about safety, handling and operation.

TOSHIBA

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• The data given in this catalog are subject to change without notice.

CONTROL SYSTEM MODERNIZATION

("ELFRESH-F" PACKAGE : retaining the existing induction motor)

Toshiba has developed the new modernization package "ELFRESH-F" to its lineup which replaces only the aging electrical control system while retaining the existing robust and enduring mechanical system. It's distinctive feature is to retain the existing induction motor (originally driven by non-inverter) newly driven by the new VVVF inverter drives. This is made possible with our customized inverter surge filter technology, reducing the high voltage stress to the existing motor, prolonging the motor operating lifespan.

What is control system modernization?

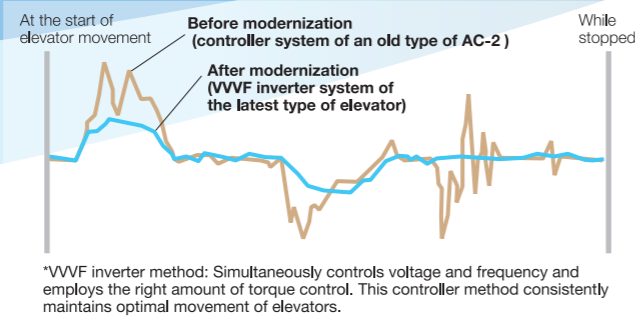
Control system modernization is basically to replace the existing old control panel, cage control unit and to implement some minor modifications of the existing cabling system to enhance lift performance.

With the new control system in place, the newer and more powerful microprocessors specially developed for power electronics enhance the motor efficiency, reducing the power consumption and achieve better energy saving. Safety features of the lifts are also enhanced by the better software. Reliability and riding comfort also improves significantly, thanks to the extensive usage of electronics control over conventional mechanical control systems.

"ELFRESH-F" installation work can be executed within a shorter period as compared to other modernization package.

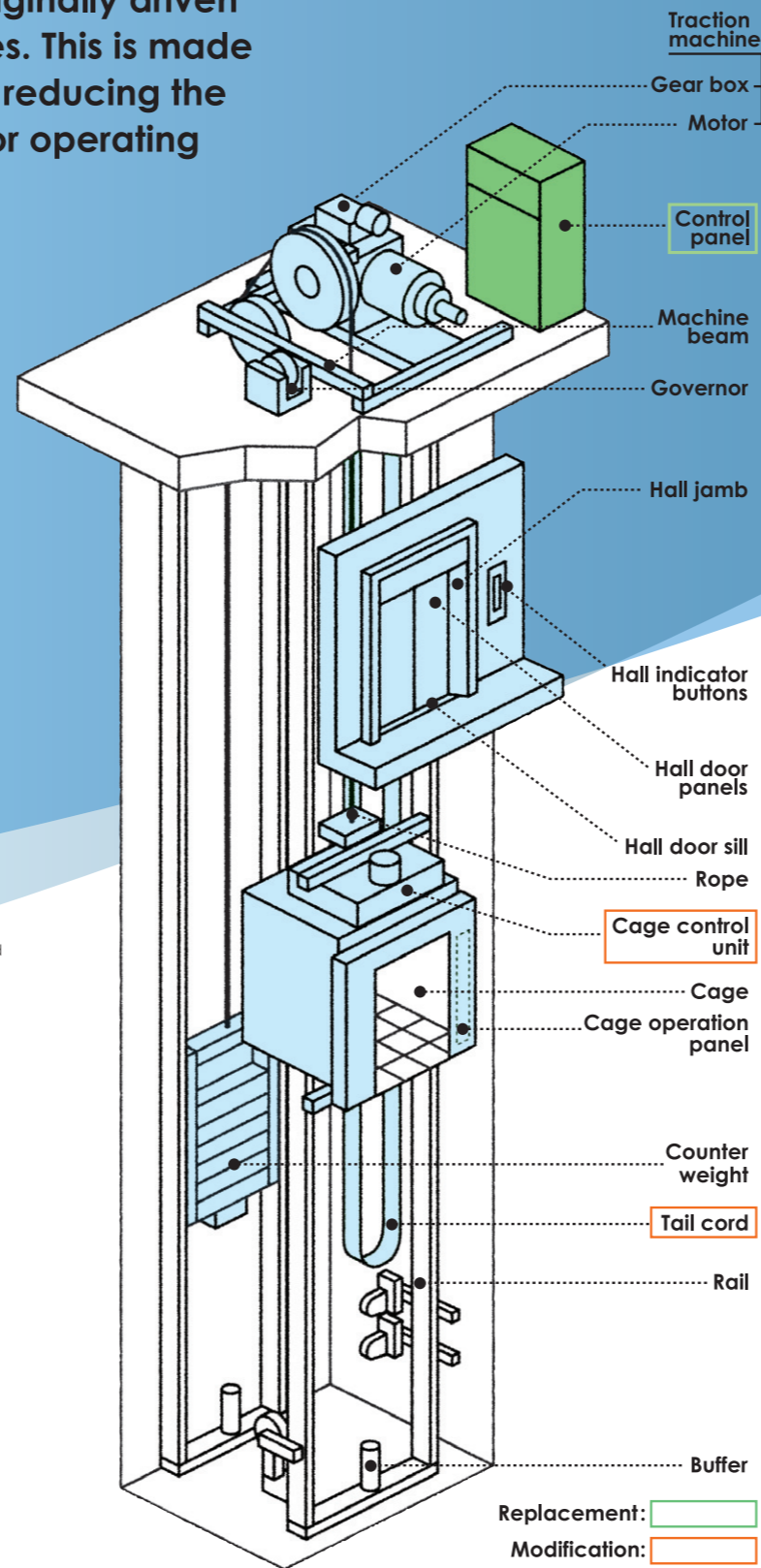
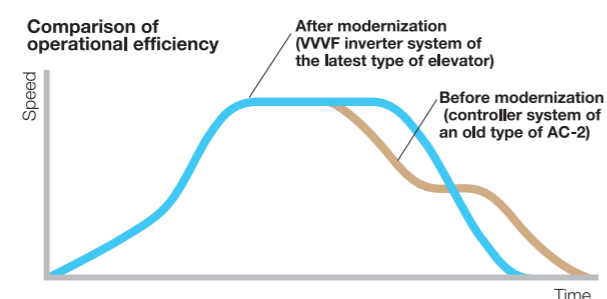
A better ride with the latest control system

The latest Variable Voltage Variable Frequency (VVVF) motor drives can achieve excellent riding comfort and precise levelling at all landings consistently.

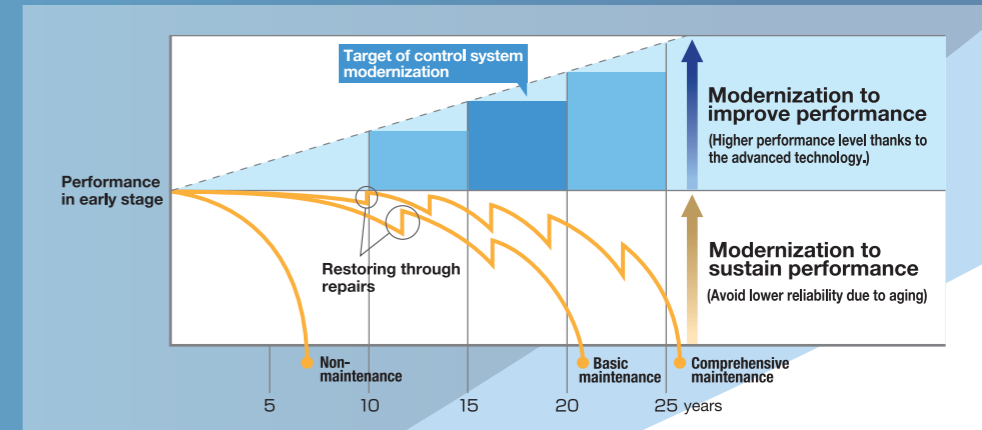


High efficiency control system

VVVF control system achieves higher power efficiency as compared to older technologies such as AC Variable Voltage (ACVV) and AC-2 speed control system. Travel time is also reduced as a result of the improved speed control system achieving better traffic efficiency.



Performance and expectation of the lifts system over its entire lifespan



Even when regular maintenance is carried out, lifts performance is limited by its original design factor and deteriorated due to aging. While demand and higher expectation from customers is increased the performance and expectation gap becomes wider over time. "ELFRESH-F" can rejuvenate the aging lifts system and enhance the performance and keep up with the customer's expectation.

Recommended timeline for lift modernization

- Installation**
- 10 years** Up-Grading of Car operation panel and other components
- 15 years** Upgrading of control system
- 20 years** Replacement of motor and traction machine

ADVANTAGE ①

- The latest safety features can be equipped optionally in accordance with the customers needs.
- *Additional equipment may be necessary for situation not involving "ELFRESH-F" package

ADVANTAGE ②

- Rationalizing of repair cost of upkeeping older equipments for customer with standard contract terms.
- New spare parts easily available and with reasonable pricing.
- Improve energy efficiency and more friendly to environment.
- Improve travelling time and provide better riding comfort.

ADVANTAGE ③

- "ELFRESH-F" installation work can be executed within a shorter period as compared to other modernization package.
- Minimal disruption to the building operations by reducing down time and minimum parts replacement..

* Note :

- 1) "ELFRESH-F" package replace only the lift control system, Parts that are not replaced such as the motors, traction machine, cage and doors etc may be replaced under current maintenance contract terms (when necessary)
- 2) "ELFRESH-F" requires site survey in advance to measure lift vibration, motor insulation and other performance factors. In some cases, the result of site survey indicates the needs to replace the motor and/or gear box in order to achieve the desired performance improvement.