

Space Saver (Machine-room-less Elevators)

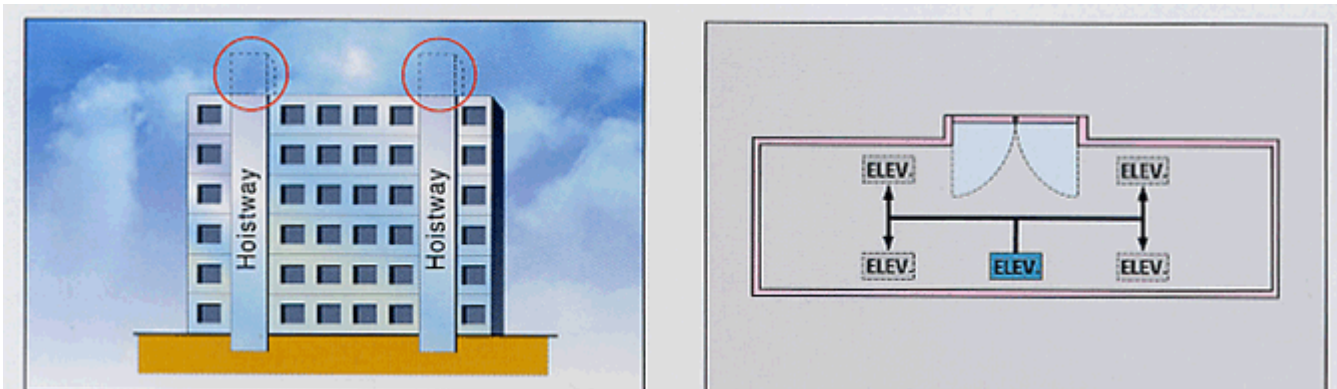
SPACE SAVER, an innovative new elevator which does not require a separate machine room. Penthouse structures which are architecturally expensive can be eliminated because of the *SPACE SAVER*'s unique system which removes the machine room by locating the traction machine in the hoistway, and the controller on the any floor.

The *SPACE SAVER*'s modern design meets the specific needs for buildings with up to 32 floors(96 m). The *SPACE SAVER* is architecturally more flexible than any traction elevator and it will enhance the value of your property while providing more rental space and less power consumption.

ADVANTAGES

More Flexible Architectural Design

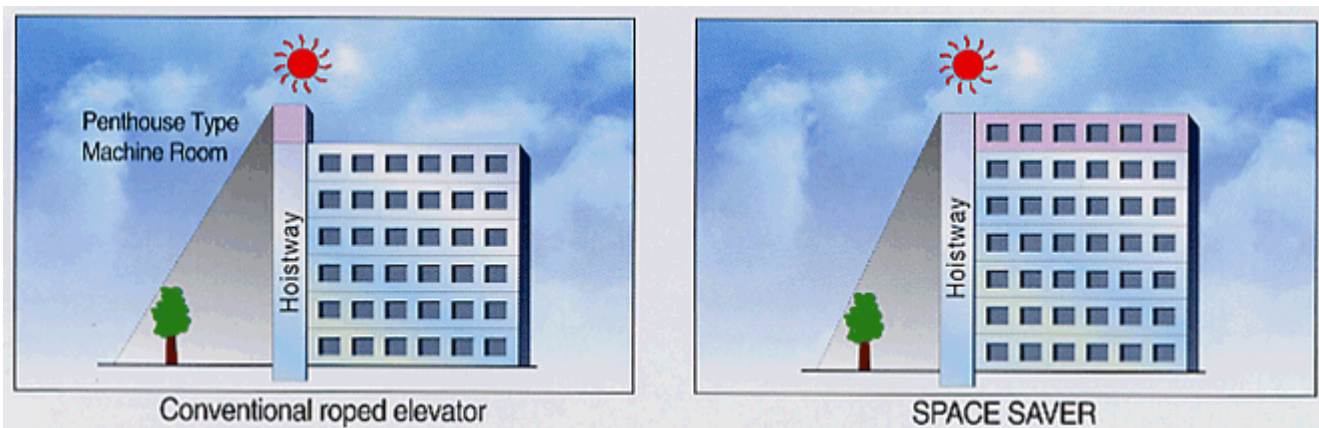
The building appearance can be enhanced due to the elimination of the conventional penthouse type machine room. Hydraulic elevators restrict the locational relationship between the elevator hoistway and machine room. *SPACE SAVER* enables a free layout of hoistway position as the machine room is not necessary.



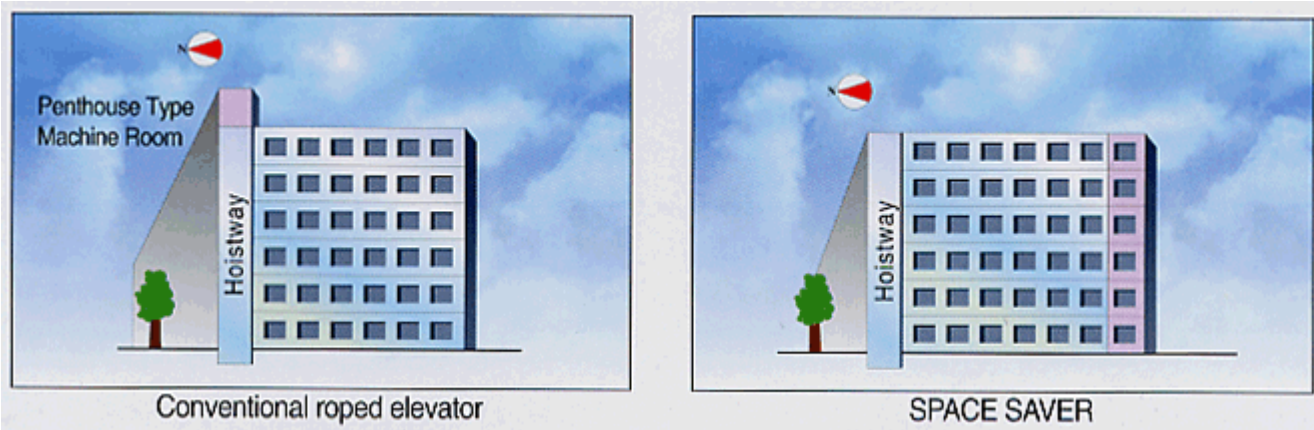
- i. Space Saver enhances the roof line by eliminating the penthouse type of machine room.
- ii. The hoistway is designed to meet architectural needs.

Benefit in North Side Slanting Line Limitation and Sunshine Rights Regulation

- i. Sun shadow regulation-Building with one floor higher can be designed.

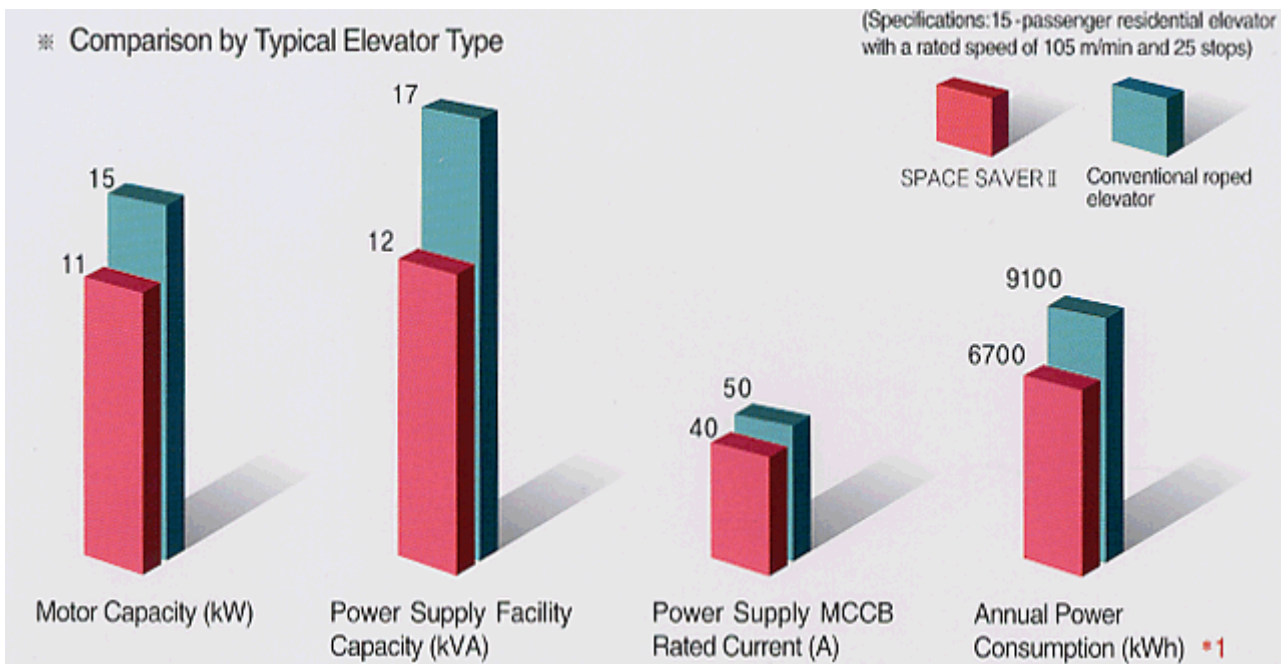


// North side slanting line limitation-South end side location can be utilized.



■ **Minimized Power Equipment and Power Consumption**

Synchronous permanent magnet type gearless machine drastically reduces power supply equipment capacity and power consumption. The SPACE SAVER can save annual power expenses by about 30% when compared with our conventional roped elevators since it consumes less power (Comparison is based on 25 stops for residential use).



Note:

Annual Power Consumption was calculated on the assumption that elevators operate for 10 hours a day and 300 hours a month with 160 starts per hour, including power consumed while they are at rest.

- **Reduction of Building Costs**

Expenses for the construction of machine room and penthouse with relevant equipment and facilities, which are required for conventional roped elevators and hydraulic elevators, become unnecessary. This reduces the construction cost as well as the completion time of the building work.

Work Description	SPACE SAVER	Conventional Roped Elevator
1. Building machine room and providing entrance to the room (Including sound insulation work)	Not Required	○
2. Providing necessary openings in the machine room floor		○
3. Providing and finishing cinder concrete on machine room after completion of piping for machine room floor		○
4. Providing receptacles for maintenance in the machine room		○
5. Providing smoke sensors on the machine room ceiling		○

- **Smoother and Superior Riding Comfort**

It provides smoother and superior riding comfort by adopting control system which manages optimal motor speed by variable voltage variable frequency and employing synchronous permanent magnet type gearless traction machine.

- **Environment-friendly Products**

This unit does not require gear oil which needs in our conventional roped elevators and hydraulic elevators.