DIAMOND TRAC®

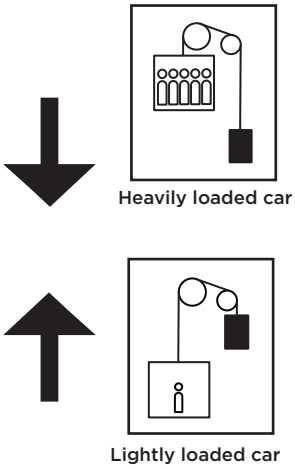
MITSUBISHI ELECTRIC
ELEVATORS & ESCALATORS

REGENERATIVE DRIVE

Repurpose power generated during MRL elevator operation to reduce CO_2 emissions and improve efficiency by up to 35%.

HOW STANDARD MRL ELEVATORS WORK

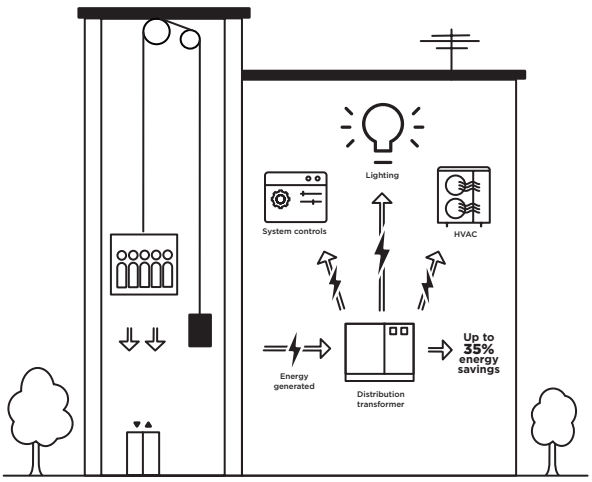
Machine-room-less (MRL) elevators operate using a gearless traction machine consisting of a variable-speed electric motor connected to the elevator sheave and a counterweight that is heavier than the cab. The motor consumes electricity when it turns the sheave to move heavy loads up or light loads down because it is moving the car against gravity. With conventional systems, the power generated during normal operation dissipates as heat.



HOW REGENERATIVE DRIVE WORKS

With Mitsubishi Electric's Regenerative Drive, when the elevator moves heavy loads down or light loads up, the electric motor generates power as the heavier load works with gravity to turn the sheave. This effect is similar to how hybrid and electric vehicle motors generate energy while braking. Regenerative Drive captures energy generated during normal operation and transmits it to the distribution transformer and the building's electrical network. The energy is then used it to power lights, heating and cooling and other building systems, supplementing building electricity that would generally be used from other sources.

REGENERATIVE DRIVE
ADVANCED ENERGY-SAVING TECHNOLOGY



SAVE ENERGY AND IMPROVE SUSTAINABILITY

Mitsubishi Electric's Diamond Trac® machines include robust PM gearless machines installed in the hoistway with a space saving arrangement. Starting with quality engineering and highly efficient variable speed motors, additional energy savings can be gained by utilizing regenerative drive technology, leading to even greater environmental and cost-saving benefits.

Up to 35% energy savings: Lower monthly operating costs through greater efficiency.

Lower CO_2 emissions: As local laws and sustainability initiatives incentivize building owners to slash carbon footprints, Regenerative Drive helps reduce the need for electricity produced with fossil fuels.

Maximum regenerative power (Diamond Trac)

Capacity / Rate speed	2000lbs	2500lbs	3000lbs	3500lbs	4000lbs	4500lbs	5000lbs
200fpm	13HP (9kW)	16HP (12kW)	18HP (13kW)	19HP (15kW)	26HP (19kW)	26HP (20kW)	29HP (21kW)
350fpm	23HP (17kW)	28HP (21kW)	32HP (24kW)	35HP (26kW)	45HP (34kW)	47HP (35kW)	51HP (38kW)
400fpm	N/A	37HP (28kW)	39HP (29kW)	42HP (31kW)	52HP (39kW)	56HP (42kW)	N/A
500fpm	N/A	46HP (35kW)	49HP (37kW)	49HP (39kW)	63HP (49kW)	N/A	N/A

NOTE:
- The max. value at deceleration in 115% load
- Calculation condition is based on TR=80m, Car dead weight=3600kg, Main ropes=ϕ12x5, Compen chain=ϕ12x1

Consult with your local Mitsubishi Electric representative to learn more about how Regenerative Drive technology can change your facility for the better.