

The Motion Tech News

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NEWS FOR TODAY

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When only the best will do

Radical new inclined lift that is practical



Inclined lift is battery powered

John and his wife approached Motion Technologies after seeing a previous installed inclined lift that we had manufactured. After taking a ride in this same lift our customer was impressed with the quality of construction and instigated us to design a unit for his property. The criteria was stainless steel due to the salt waterfront environment. Also a load rating of 400kg was agreed upon to allow garden waste and scuba gear to be transported, along with people. The roof was to be detachable so awkward loads could also be transported like a goods elevator. The run was 35 metres in length with a tight curve at the bottom so the inclined elevator did not encroach into the pool area. Three stop positions being top, bottom of house and pool

level. A dual rail system was requested for the stability of the ride. Motion Technologies did not use two rails which is normal though utilised a fabricated stainless steel trough. The advantage of this is that tree branches slide off where convention two rails tend to get stuck. The moving of the car was by means of a omega drive system. Actually two were supplied, one of them for the driven motion and another independent for a decated fail safe electromechanical brake. As the covering title states, this inclined lift was battery powered. The main reasons for this is that 15kw of motor power would have required a 3 phase power going up and down with the car so after agreeing with the customer batteries were used. Lead acid batteries were used as they

are quite tolerant to over current draw. Additionally making it affordable to replace in years to come in comparison to Lithium battery derivatives. The inclined elevator was fitted with a 48vdc pack.

The motors used were DC servo with high amperage servo drives. Two motors fitted, one for the hoist motion "travel along the rail" and the other for keeping the gondola level when going around corner. The operator control is via a station mounted inside the gondola and a remote control to call the gondola to station 1, 2 or 3. The control system comprises of a PLC and an absolute encoder was fitted to allow controlled acceleration and deceleration when nearing station stop positions. Station 2 has an automated charging position where actuators for + and - power make contact with bus bars from the 25 amp charger to replenish the batteries. The rails were supplied in a natural grey finish, whereas the gondola had a brush finish applied and red wood slats on the seat to give a warm feel.

The electrical cabinet was actually incorporated into the Monocote chassis of the gondola and is part of the seat.

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