

3 Home Lift Types: Hydraulic, Traction and Vacuum Compared

By [DirectHome Team](#) Updated 16 September 2026 7 min read [Explore our home lifts service ↗](#)

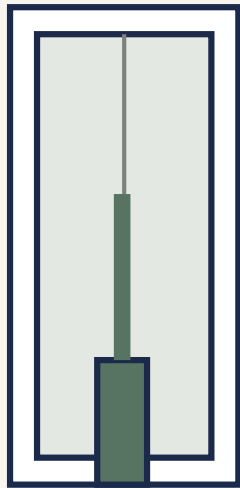
Hydraulic, traction and vacuum lifts move in different ways, which affects their equipment layout and the building work they need. The useful comparison is how a specific model fits your house and supports everyday access. This guide explains the three types, then compares space and ownership considerations without assuming every model in one category is identical.

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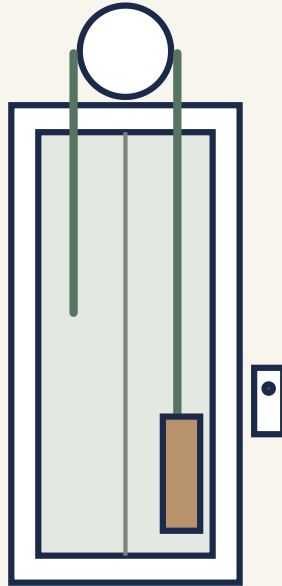
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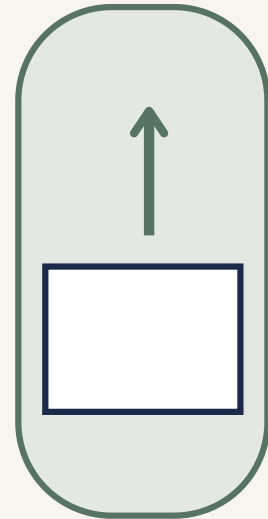
What moves the cabin?



Piston



Traction

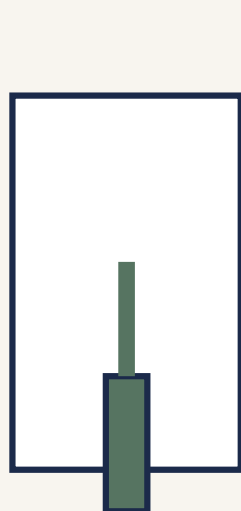


Air pressure

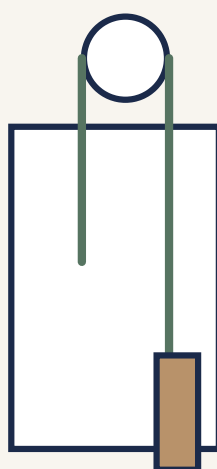
Schematic • not to scale

A hydraulic piston, counterweighted traction arrangement and air-pressure cabin use different lifting mechanisms. These simplified sections do not specify any particular model.

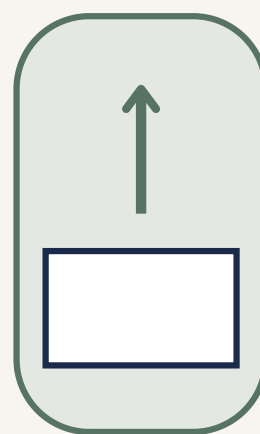
Different Drive Mechanisms and Model-Specific Layouts



Piston



Traction



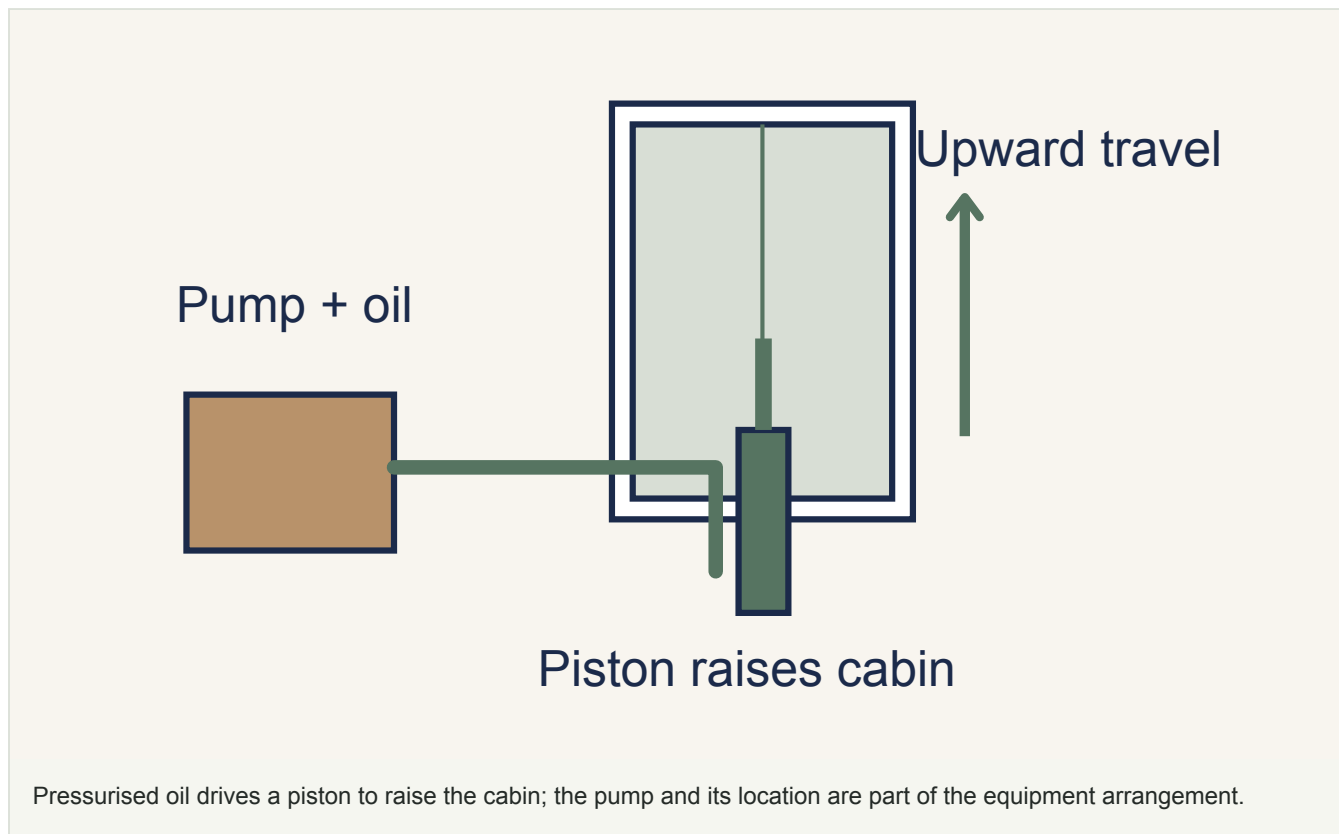
Air pressure

The three mechanisms move a carrier differently; the home and intended use determine which models deserve comparison.

Hydraulic, traction and pneumatic lifts use different ways to move the cabin; other home-lift mechanisms, including screw drives, also exist. The right comparison begins with the floors, usable access and site constraints the household needs to resolve.

Compare the proposed model's drawings and operating requirements before ranking the drive types. A small external footprint, a smooth demonstration and an attractive price address different parts of the decision. None alone establishes the best complete installation.

Hydraulic Lifts: Cylinder and Pump Arrangement



A hydraulic lift uses pressurised fluid and a cylinder to move the cabin. The arrangement of the cylinder, pump and controls varies by model. Confirm where the equipment sits and how it will be reached for maintenance.

A hydraulic design does not always require a separate walk-in machine room. Ask for the actual cabinet or machinery-space layout, pit and overhead requirements. Those drawings determine whether the equipment can fit the available area.

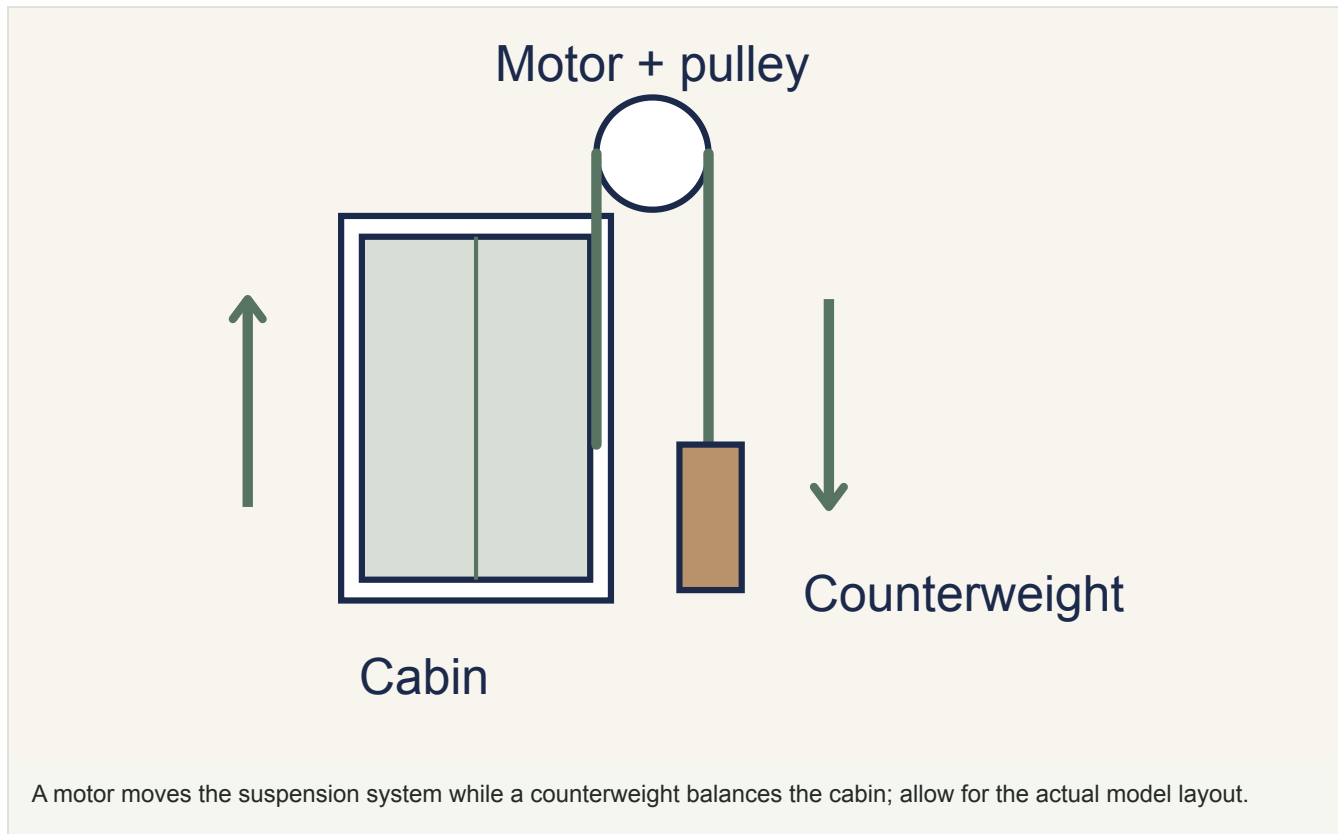
Compare rated load, speed, noise information and power requirements from the selected model. Maintenance instructions also vary; a universal oil-change interval or a drive-type lifespan is not an adequate ownership budget.

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Traction Lifts: Drive and Suspension Arrangement

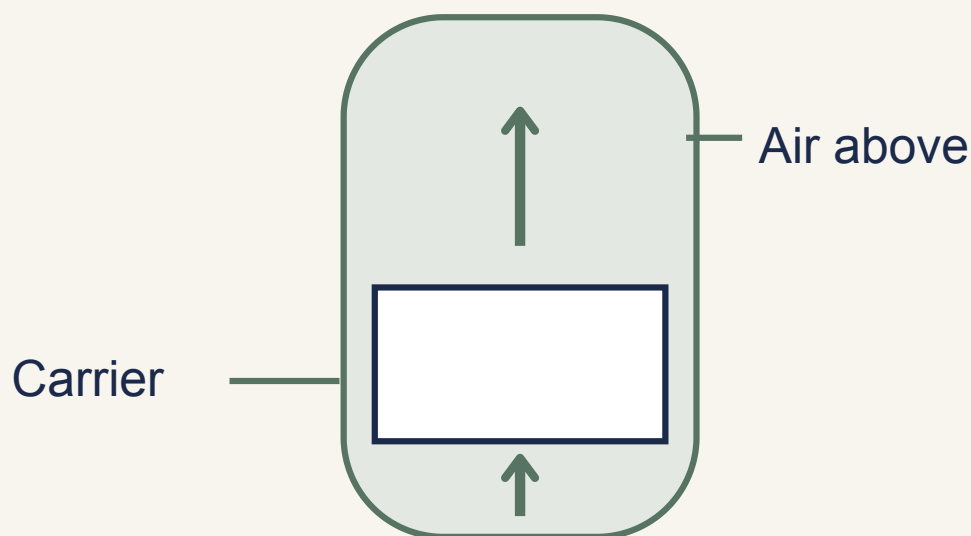


Traction equipment moves a cabin using ropes, belts or chains and a drive arrangement, commonly with a counterweight. The quoted layout should identify the machinery, supports and access needed. Some models are designed without a separate machine room.

Performance depends on the actual model and installation, including its controls and structure. Do not assume every traction home lift is faster, quieter or more efficient than every hydraulic alternative. Compare equivalent usable cabins and the household's expected operation.

Pit, overhead and maintenance requirements must come from the proposed model and project design. Suspension components need the prescribed inspections and replacement criteria, not a universal calendar interval. Ask what work and parts are excluded from the service agreement.

Pneumatic Lifts: Air Pressure and Self-Supporting Enclosures



Pressure difference moves the cabin

Air pressure above and below the carrier creates lift inside the tube; confirm the chosen model's fit and use limits.

Pneumatic lifts move the cabin using an air-pressure difference. A self-supporting enclosure can reduce the need for a conventional shaft, but the model still needs appropriate supports, openings, top clearance and site approval.

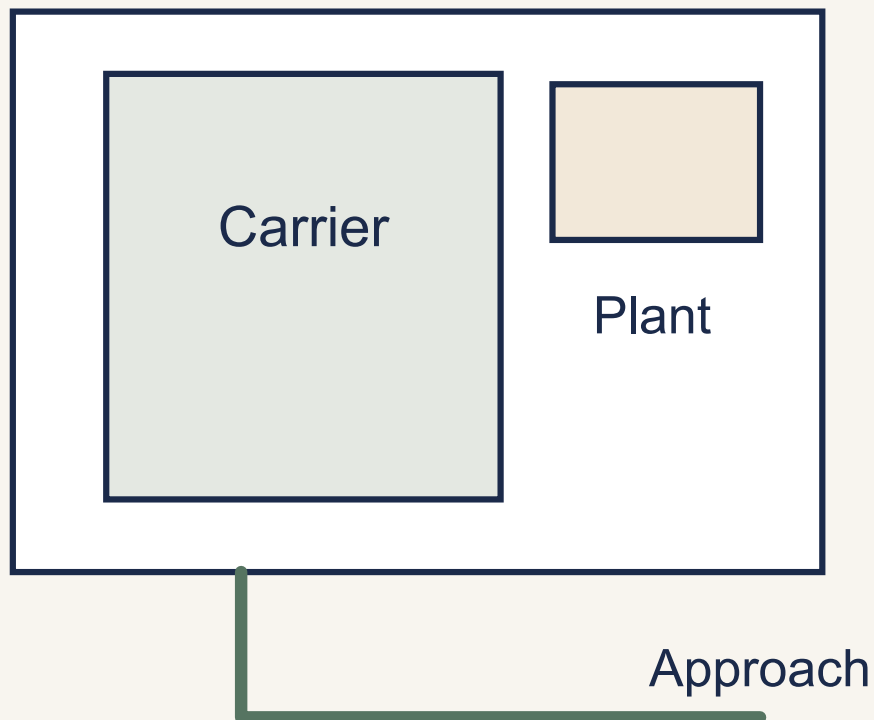
The manufacturer's no-pit or no-machine-room arrangement describes the equipment, not every associated building task. Include openings, electrical work, access and required testing in the installation programme. A quick equipment assembly time is not the whole project duration.

Capacity and stops are model-specific. The [PVE52](#) is an example marketed as wheelchair accessible and available for up to five stops. Confirm the actual wheelchair, user, cabin and landing fit, together with the applicable Singapore requirements, before selecting that configuration.

Space Requirements Compared

The cabin is only one space to compare

Complete layout



Schematic • not to scale

The space for people, the equipment around them and the landing approach have different boundaries. Compare complete layouts rather than a single footprint.

Measure the complete installation envelope: enclosure, doors, landings, equipment, pit where needed and overhead. Hydraulic and traction designs do not share one universal shaft dimension. The responsible professionals must check the model against the existing structure.

For wheelchair use, compare the actual chair and user with the clear doorway, cabin and landing manoeuvre space. An external tube or shaft dimension is not the usable cabin. Confirm any attendant requirement and rated load in the proposed configuration.

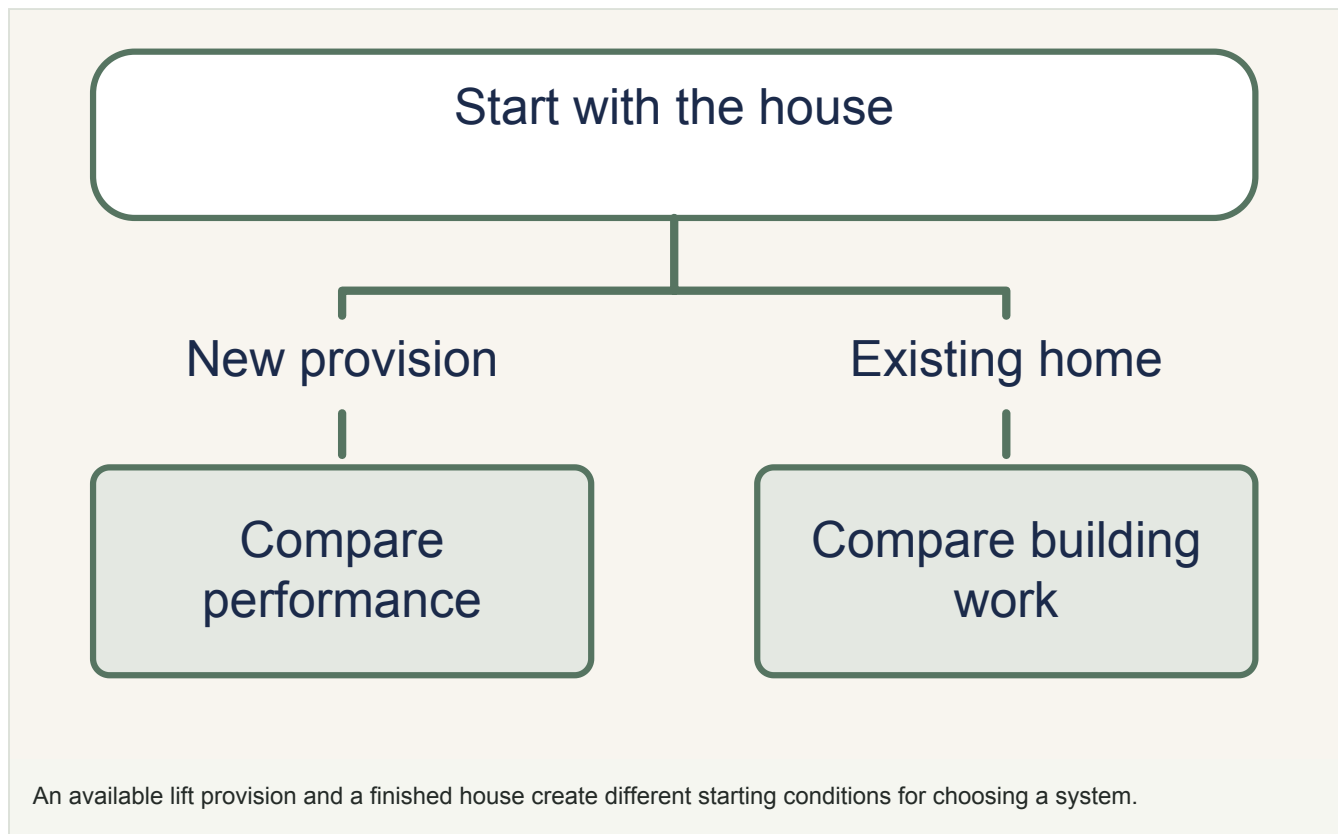
Specific overseas product configurations, not universal drive-type dimensions or Singapore approvals.

Example model	Usable cabin and rated load	Building allowance
Infinity hydraulic, standard cabin	914 × 1219 mm; select the 431 kg version	203 mm pit; 2337 mm overhead; separate pump/controller provision
Eclipse geared chain traction, standard cabin	914 × 1219 mm; select the 431 kg version	203 mm recommended pit; 2438 mm overhead; drive in shaft, remote controller
PVE52 pneumatic	44 in circular cabin (about 1118 mm); 525 lb (about 238 kg)	No pit; 54 11/16 in floor opening (about 1389 mm); 107 in standard or 97 in split-unit overhead

For a hypothetical two-stop journey carrying a 200 kg combined load, all three ratings clear the load requirement. They do not provide the same usable space. The [Infinity](#) and [Eclipse](#) examples have rectangular cabins; the [PVE52](#) has a circular cabin and a 32-inch entrance. Test the occupied chair and attendant arrangement before treating any of them as equivalent access.

The PVE52 floor-opening dimension includes more than its outside cylinder, and still excludes landing space. The two shaft lifts need enclosure walls and rail support as well as their cabin. For example, the [Infinity Type 1 layout](#) places a 914 × 1219 mm cabin inside a 1292 × 1429 mm finished runway; walls sit outside that. Small cabin area and small building footprint are different advantages.

Which Should You Choose?



For a new build, integrate the proposed equipment and structural design early. For a retrofit, identify the feasible locations and associated alterations before selecting the drive. Compare like-for-like quotations for usable access and ownership obligations.

Where footprint is constrained, a model with reduced pit or machinery-space requirements may help. Check its capacity, stops and landing access rather than assuming one entire drive family is the only retrofit option.

Ask for model-specific maintenance, local parts arrangements and warranty terms. A low initial equipment price can omit building work or ongoing obligations; keep those costs visible in the decision.

Ownership also involves different components. Infinity adds hydraulic fluid, hoses and cylinder seals to the service scope; Eclipse uses a chain drive and counterweight; PVE52 depends on its pressure system and seals. The [Singapore maintenance and annual examination/testing duties](#) still apply to regulated installations. Fewer hydraulic components do not mean no servicing, and an overseas warranty does not price local labour or call-outs.

Send [DirectHome](#) the plans, required floors and access needs to discuss the scope. Confirm the assessment arrangements and responsible professionals before committing.

Frequently asked questions

Decision	Key distinction
Space	Compare the cabin, shaft, machinery, pit and overhead
Purchase cost	Match usable access and include house work
Energy and noise	No three-way winner without comparable tests

Which home lift type is the cheapest?

No drive type is automatically cheapest. The compared models have no like-for-like Singapore installed-price schedule: equipment, building work and local support must be priced together. To see why, imagine an S\$8,000 lower equipment quote that needs S\$12,000 more building work: it ends S\$4,000 higher. These are invented comparison amounts, not market prices. Retain the models that meet the access need, then compare their complete totals.

Which home lift is best for retrofitting an existing home?

The best retrofit option depends on measured space, structure and usable access. Reduced-pit or self-supporting designs may help, but associated works and approvals still need checking. Capacity and stops vary by model.

Which home lift type is the quietest and most energy-efficient?

There is no comparable noise-and-energy test covering these three configurations. The practical distinction is machinery placement: Eclipse has its drive in the shaft, Infinity separates the hydraulic power unit, and PVE52 can move its turbine unit away from the upper landing. PVE turbines run on ascent; hydraulic descent also uses controlled fluid release. Neither fact alone establishes a lower annual electricity bill. Compare measured energy for the same journeys and listen from the rooms beside the proposed equipment.

How much shaft space does each lift type need?

For the example configurations, Infinity needs a 203 mm pit and 2337 mm overhead; Eclipse uses a recommended 203 mm pit and 2438 mm overhead. PVE52 has no pit but needs a 54 11/16-inch floor penetration and 107-inch standard or 97-inch split-unit overhead. These are model-specific planning figures; cabin, doors, surrounding walls and landing approaches still need their own space.

Can a vacuum lift fit a wheelchair?

Some can. The PVE52 is a manufacturer example offered as wheelchair accessible, with up to five stops. Confirm the actual chair, user, door, cabin and landing fit and the applicable Singapore requirements for the proposed installation.

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