APPLICATION NOTE

Sensata Technologies

SELF-PROPELLED SCISSOR LIFTS

Background

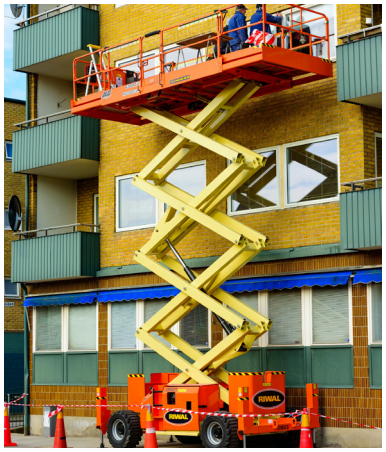
Self-propelled scissor lifts, the most common type of Mobile Elevating Work Platforms (MEWPs) move vertically through folding supports in a 'X' pattern, known as scissor mechanism. They are classified in 2 main categories based on how these are powered and where they are used. Battery powered (or electric) scissor lifts are used mainly indoors on slab surfaces, while the engine powered ones are used outdoors where the surfaces are frequently uneven (for this reason they are commonly referred to be for 'rough terrain'). Regardless of how they are powered, they have many sensors and controls to manage movement, safety, and mainly stability (operators on the platform are subject to fall hazards, therefore safety is a priority).

Solution

For decades, Sensata through its DeltaTech Controls branded products, has been a market leading supplier of complete platform control systems for scissor lifts, either battery or engine powered. The platform control unit and the electronic control unit (or ground control unit for the engine powered) can connect and control a variety of digital and analog machine interface as joysticks, sensors, limit switches, motor controllers, pushbuttons, alarms and control them through a dedicated CAN-bus system. Sensata can also supply a complete set of main sensors: the high-pressure sensor (PP series) that controls the hydraulic pressure of the main cylinder, the angle sensor (9360 Series) used to determine the height of the platform; and the inclinometer (T series or other) to control the chassis inclination for safety reasons. The pressure sensor and the angle sensors used in combination are also aimed to control the platform overload condition, another important condition to be controlled to comply with ANSI92 and EN280 safety standards.

"All functions and movements are controlled using Sensata's platform control systems and sensors to guarantee compliance with international safety standards"

Slab (battery-powered) scissor lift



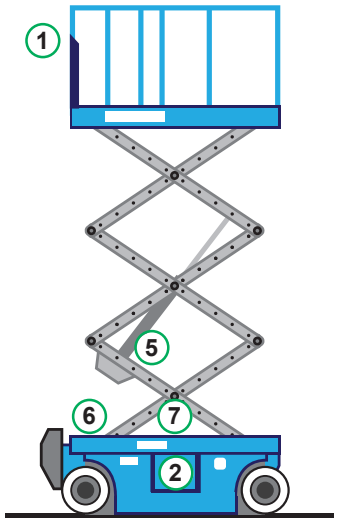
Rough Terrain (engine-powered) scissor lift

RELATED PRODUCTS

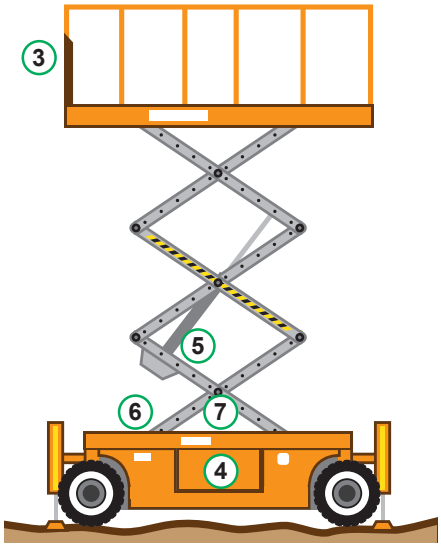
Reference on Diagram	Product		Features	Function	Brand
1		PCU500	• Switches integrated in joystick • IP65	Platform Control Unit	DeltaTech Controls
2		ECU500	• CAN, USB, GPS • 40 input/output	Electronic Control Unit	DeltaTech Controls
3		PCU100	• Extensive integrated controls • IP65	Platform Control Unit	DeltaTech Controls
4		GCU100	• CAN, MCU • 58 input/output	Groung Control Unit	DeltaTech Controls
5		PP Series	• High pressure • MSG (Microfused Strain Gauge)	Pressure sensor	Sensata
6		9360 Series	• Hall effect sensor • IP67	Angle Sensor	BEI Sensors
7		T Series	• High resolution 0.01° • High accuracy 0.1°	Inclinometer	BEI Sensors

GENERAL DIAGRAM

Slab (battery-powered) scissor Lift



Rough Terrain (engine-powered) scissor lift



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Rev:05/03/18