

We're dedicated to becoming a high-quality supplier of cable climber using

Scaffoldless Installation Technology

and their related products developments and manufacturing.



Tools For Scaffoldless Elevator Car Installation Technology



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About Rigid Machinery

Wuxi Rigid Machinery Co., Ltd. is located in the Huishan High-Tech Zone, Wuxi City, Jiangsu Province, China and possesses a 25,000m² intelligent manufacturing base. It is a specialized national and international high-tech enterprise focusing on R&D, design, manufacturing, sales and service of cable climbing equipment. We are a national SRDI little giant enterprise, a leading enterprise in the industry and now a high-quality supplier and system provider of climbing equipment for the working at heights industry.

The Company has been deeply involved in the high-altitude machinery industry for many years, and has led and participated in preparing GB40160-2021 and GB19155-2017 national standards, as well as multiple industry standards. It has mastered and owns multiple core intellectual property rights. Innovative development of various cable climbing device has been widely applied in the fields of elevator installation, wind power maintenance, thermal power and chemical engineering, and construction, etc.

Elevator installation dedicated cable climber, overspeed fall arrester, False car platforms and related accessories are main products that have been certified by TUV or SGS. Their technical performances have already reached world-class standards of like-kind products. These products have been widely replaced by imported ones by major elevator companies in China and have been sold to countries such as the United States, Germany, Spain, Brazil, and other countries around the world with a good market reputation.

The Company adheres to customer demand for elevator scaffoldless installation tools, consistently fulfills the professional and customized tool product requirements of customers, fosters acceleration and upgrades in the elevator installation industry, delves deeply into the industry's development, dedicates itself to specializing and refining its product portfolio within key areas to meet high-quality standards.



Elevator scaffoldless Installation Technology



False Car Process

2:1

Composite Steel-Aluminum Platform



False Car Process

1:1

Aluminum Composite Platform



Car Process

1:1

Direction Measurement Installation



Car Process

2:1



Car Process

2:1

Centered Installation

Scaffoldless Elevator Installation Technology

False Car Installation Method

False Car is a temporary elevator installation work platform driven by cable lifting device (such as climbers) to be removed before installing the permanent elevator car.

Rigid False car is one of the safest, most convenient, and effective ways to install elevator tracks and other elevator systems in shafts, and is the most versatile scaffolding free installation tool for elevators. The Rigid false car has two main types of materials: steel and aluminum, applicable for construction using 2:1 and 1:1 process respectively.

Product features

- ✦ Double-regulated expandable platform size adjustment, meeting rapid installation requirements for different guide rail distances
- ✦ 2:1 scale-down loading method with high load capacity (up to 1000 kg)
- ✦ Lightweight design with all-aluminum platform self-weight under 200 kg using standard manufacturing process
- ✦ Modular installation, easy to install and transport
- ✦ Dual safety measures with fall arrester and safety tong protection for safety

Technical parameters

Model*	Rated load (kg)	Rated lifting speed m/min	DBG spacing mm	Extension distance mm	Platform self-weight ※ (kg)	Lifting device	Safety devices	Applicable guide rail
FC1000-S21	1000	9	1500—2100	1440—2040	390	LTD100-10P18	OSL512	(K=10)T75~T78
FC1000-S27			2100—2700	2040—2640	460			(K=16)T89~T127

*Based on the performance parameters of the 2:1 process, the main material of the FC series Type S platform is made of steel.

※ Note: The self-weight excl. lifting device, the self-weight of steel wire ropes and power cables.

Technical parameters

Model*	Rated load (kg)	Rated lifting speed m/min	DBG spacing mm	Extension distance mm	Platform self-weight ※ (kg)	Lifting device	Safety devices	Applicable guide rail
FC400-A20	400	9	1200—2000	1500—2000	150kg	LTD100-10P9	OSL510	(K=16)T89~T127
FC400-A26			1500—2600		170kg			
FC400-A30			1700—3000		200kg			

*Based on the performance parameters of the 1:1 process, the main material of the FC series Type A platform is made of aluminum.

※ Note: The self-weight excl. lifting device, the self-weight of steel wire ropes and power cables.

Engineering Cases



Process 2:1 False car

- 1 Diverter Pulley**
2:1. Process standard configuration; Configured with telescopic rods for easy suspension outside the shaft.
- 2 Canopy**
Effectively preventing high-altitude falling objects, high-strength steel telescopic roof.
- 3 High Speed Climber**
LTD100-10P18 Integrated control system Climber, at a speed of 18m/min; connected to the false car platform mounting bracket through a dedicated adapter.
- 4 Overspeed Fall Arrester**
OSL512 overspeed fall arrester with a rated load of 1,600kg; The platform will automatically lock when it descends more than 30m/min; Apply Φ 11.5 high strength steel wire rope.
- 5 Wire Rope And Rope Winding Device**
Climbers Φ 10.2 steel wire rope and its winding device; The length of the steel wire rope should be configured to at least twice of the shaft height.
- 6 Work Platform**

DBG spacing (mm)	Extension distance (mm)
1500—2100	1440—2040
2100—2700	2040—2640

 - Within the specified rail spacing range, according to requirements, bidirectional adjustment is carried out.
 - Must install guardrails around the platform perimeter.
 - The base plate is wooden with a thickness not less than 18 mm.
 - Steel frame supports and the platform can bear a load of 1000 kg.
- 7 Anti-derailment Protection System**
The climber control box is equipped with an anti-derailment switch socket. The anti-derailment switch component should be connected to the climber and installed on the platform to support the guide rail laterally;
- 8 Safety Tong Assembly**
Safety tong is an automatic locking cable tension absent mechanism locks the platform when the cable is not under tension, providing secondary protection
- 9 Heavy Hammer**
Maintaining the safety lock wire rope vertically suspended.
- 10 Steel Wire Rope Balance Weight**
Maintaining the safety lock of the climber and hanging the steel wire rope vertically; Maintaining the steel wire rope not be entangled under 2:1 process mode.

Process 1:1 False car

- 1 Heavy Lifting Hook**
Configuration for 1:1 Process
The end of the steel wire rope should be connected by aluminum riveting or standard wedge sleeve;
Configuring telescopic rods for easy suspension outside the shaft
- 2 Canopy**
Effectively prevent falling objects from high altitude, assemble with wooden boards according to actual site dimensions
- 3 Climber**
LTD100-10P9 with integrated control system Climber , at a speed of 9m/min; Connecting through the climber adapter platform;
Applying Φ 10.2 High-strength steel wire rope.
- 4 Overspeed Fall Arrester**
OSL510 Overspeed lock with a rated load of 1,000kg; The platform will automatically lock when it descends more than 30m/min; Applying Φ 10.2 High-strength steel wire rope.
- 5 Fall Arrester Adapter**
The OSL510 fall arrester is integrated with the climber through an adapter.
- 6 All aluminum work platform**

DBG spacing (mm)	Extension distance (mm)
1200—2000	1500—2000
1500—2600	
1700—3000	

 - Within the specified rail spacing range, according to requirements, bidirectional adjustment is carried out.
 - Must install guardrails around the platform perimeter.
 - The base plate is wooden with a thickness not less than 18 mm.
- 7 Anti-derailment Protection System**
The climber control box is equipped with an anti-derailment switch socket. The anti-derailment switch component should be connected to the climber and installed on the platform to support the guide rail laterally.
- 8 Safety Tong Assembly**
Safety tong is an automatic locking cable tension absent mechanism locks the platform when the cable is not under tension, providing secondary protection
- 9 Heavy Hammer**
Two heavy hammers are used to maintain the safety lock and the steel wire rope of the climber is suspended vertically.

Scaffoldless Elevator Installation Technology

Elevator Car Installation method

“Elevator Car Installation Technology” refers to the use of new or existing cars as work platforms, usually using the car ceiling as a platform. However, the platform is driven by a climber rather than a traction machine. This type of technology requires using two independent means for fall protection while installing platforms. It is a fast installation process, and the elevator car can be directly used as a formal elevator car without the need for disassembly and assembly after being used as a platform.

Product features

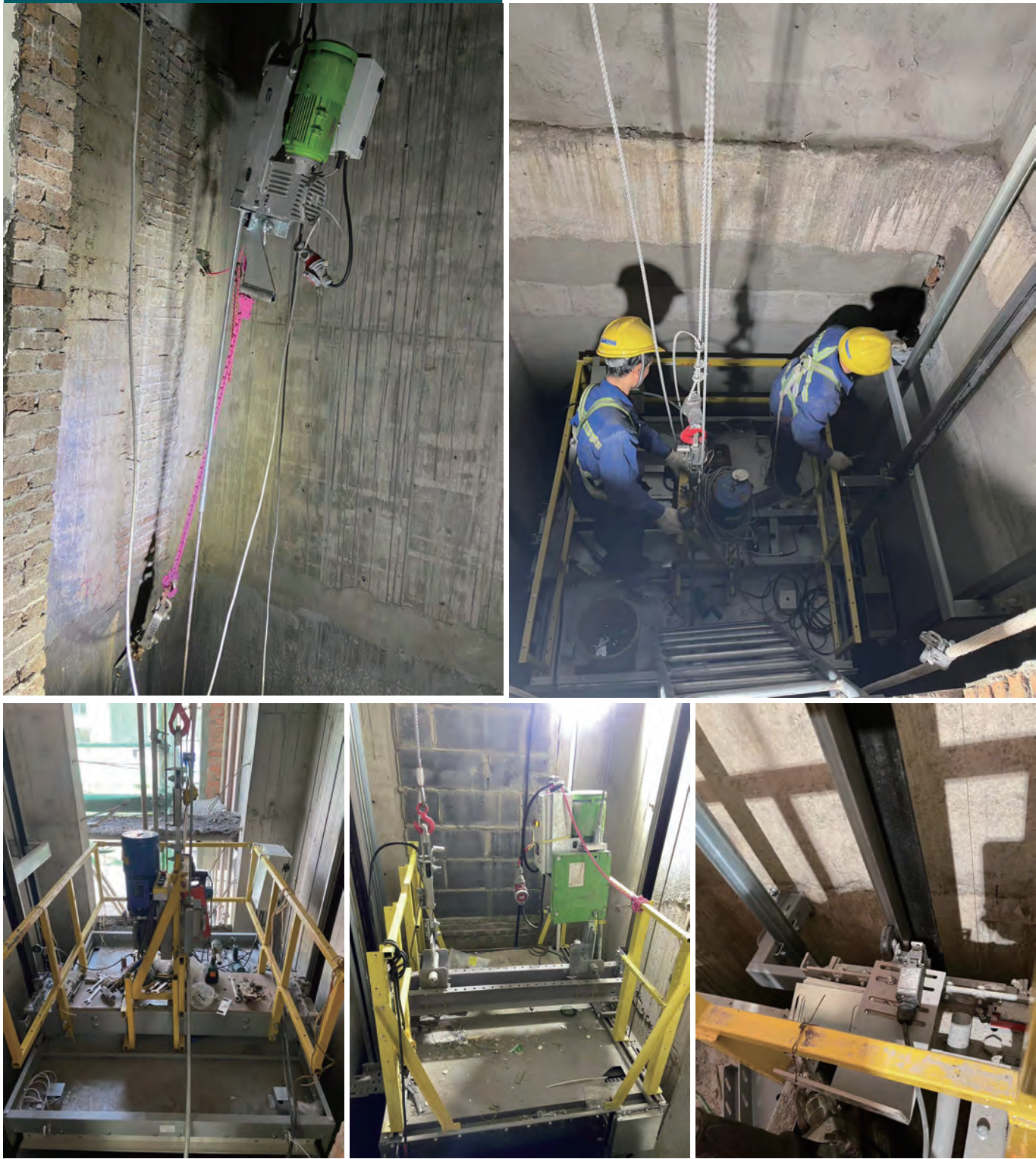
- ✦ The elevator car is designed to perfectly match the track spacing at its installation location, ensuring precise alignment. The installation of a top safety guarding device further enhances the system's operational safety and reliability.
- ✦ With high installation efficiency, it utilizes a new elevator car without the need for repeated installation and removal of platforms.
- ✦ The elevator car structure has high strength, meeting the requirements of heavy load operation.
- ✦ By using climbers and force gauges, the top hook can be quickly detected, improving safety.
- ✦ Climbers can be used for serving as guide rail lifting tools, ensuring fast and stable lifting.
- ✦ Using speed limiters and safety gear as one of the protective measures is more reliable.

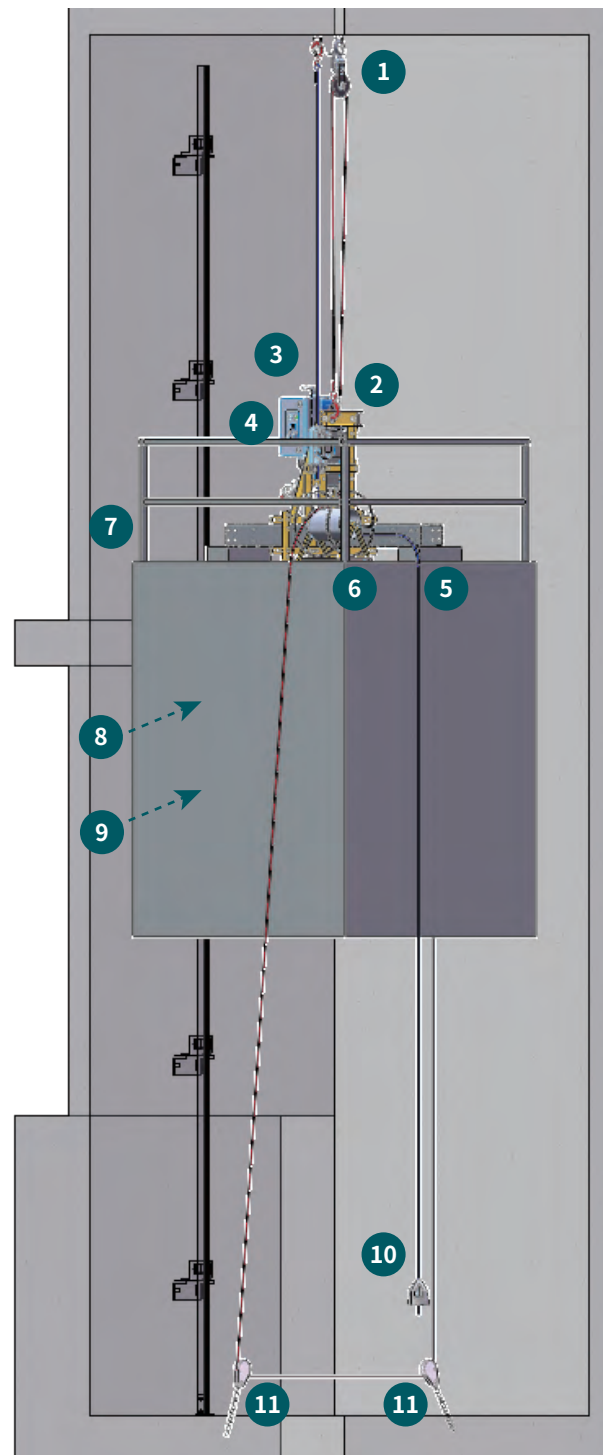
Technical parameters

Suspension technology	Lifting device	Lifting capacity (kg)	Platform lifting speed
2:1	LTD100-10P18	2000	9m/min
2:1	LTD200-14P12	4000	6m/min
1:1	LTD100-10P9	1000	9m/min
1:1	LTD200-14P6	2000	6m/min

Note: The actual operating load should deduct the corresponding lifting force from the weight of the elevator car and process device.

Engineering Cases

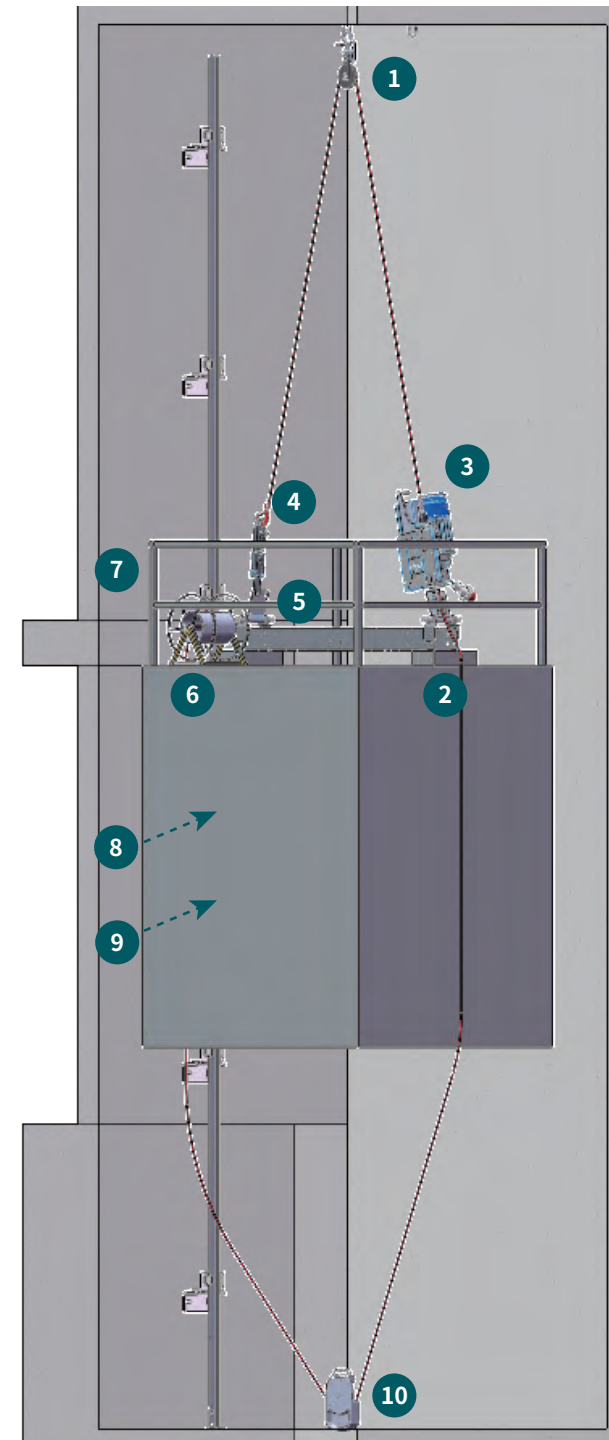




*The rated load capacity of this process is 1,600kg,
excl. the weight of the elevator car and device;
*This process is also applicable for the LTD200-14P12 climber.

2:1 Elevator Car Process Climber Centered

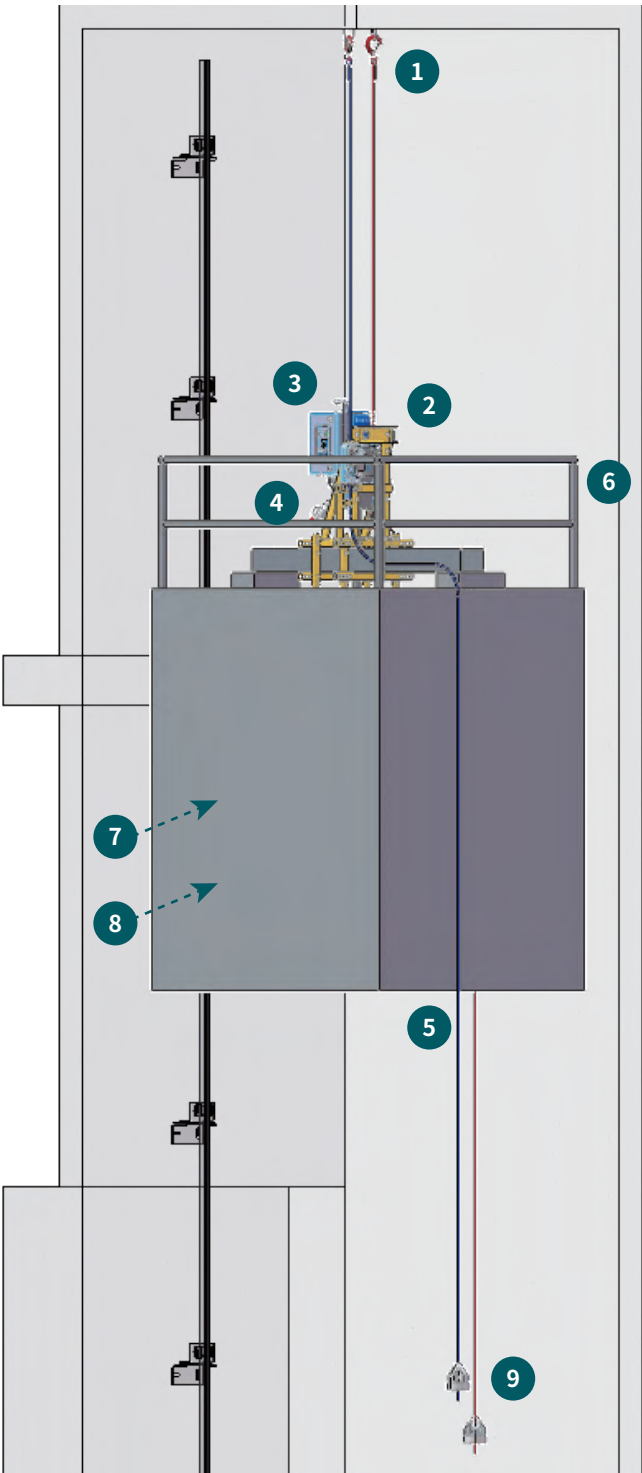
- 1 Diverter Pulley**
2:1 Process standard configuration;
Equipped with telescopic rods for easy suspension outside the shaft;
- 2 Climber Installation Bracket**
The bracket is fastened to the middle of the car ceiling beam and can be equipped with climbers and safety locks
- 3 High Speed Climber**
LTD100-10P18 Integrated control system Climber, at a speed of 18m/min
- 4 Overspeed Fall Arrester**
OSL512 Overspeed fall arrester with a rated load of 1,600kg;
The platform will automatically lock when it descends more than 30m/min;
Applying $\Phi 11.5$ high-strength steel wire rope.
- 5 Steel Wire Rope Guide**
Installed on the bracket and guiding the steel wire rope towards the side of the elevator car.
- 6 Steel Wire Rope And Rope Winding Reeler**
For climbers $\Phi 10.2$ steel wire rope and its winding device;
The length of the steel wire rope should be configured to at least twice of the shaft height.
- 7 Elevator Car Top Platform**
Aluminum protective railings should be installed around the platform.
- 8 Anti-derailment Protection System**
The climber control box is equipped with an anti-derailment switch socket. The anti-derailment switch component should be connected to the climber and installed on the platform to support the guide rail laterally.
- 9 Safety Tong Assembly**
The second descent protection of the platform is achieved by manually triggering the Safety tong trigger or automatically triggering the speed limiter.
- 10 Heavy Hammer**
Maintaining the safety lock wire rope vertically suspended.
- 11 Guiding Pulley**
Installed on both sides of the pit, maintaining the safety lock of the climber and the vertical suspension of the steel wire rope;
Maintain 2:1 process mode, the steel wire rope should not be entangled.



*The rated load capacity of this process is 2000kg,
excl. the weight of the elevator car and device;
*This process is also be applicable for LTD200-14P12 climber

Elevator Car Technology's 2:1 Climber Lateral

- 1 Diverter Pulley**
2:1 Process standard configuration;
Equipped with telescopic rods for easy suspension outside the shaft;
- 2 Climber Adapter**
A dedicated adapter (exclusive to each manufacturer) can connect the climber and fasten it to the side of the car ceiling beam.
- 3 High Speed Climber**
LTD100-10P18 Integrated control system Climber, at a speed of 18m/min
- 4 Safety Tong Trigger**
The Safety tong can be manually triggered to lock the platform.
After using the secondary protective chain, the guide rail can be lifted using a climber.
- 5 Trigger Adapter**
A dedicated adapter (exclusive to each manufacturer) can be connected to the safety gear trigger and fastened to the side of the car ceiling beam.
- 6 Steel Wire Rope And Rope Winding Reeler**
For climbers $\Phi 10.2$ steel wire rope and its winding device;
The length of the steel wire rope should be configured to at least twice of the shaft height.
- 7 Elevator Car Top Platform**
Aluminum protective railings should be installed around the platform.
- 8 Anti-derailment Protection System**
The climber control box is equipped with an anti-derailment switch socket. The anti-derailment switch component should be connected to the climber and installed on the platform to support the guide rail laterally.
- 9 Safety Tong Assembly**
The second descent protection of the platform is achieved by manually triggering the Safety tong trigger or automatically triggering the speed limiter.
- 10 Steel Wire Rope Balance Weight**
Keep the steel wire rope of the climber tightened and suspended, and maintain a 2:1 process mode without entangling the steel wire rope.



1:1 elevator car technology

- 1 Heavy Lifting Hook**
1:1process configuration;
The end of the steel wire rope should be connected by aluminum riveting or standard wedge sleeve;
Telescopic rods should be configured for easy suspension outside the shaft.
- 2 Climber Installation Bracket**
The bracket is fastened to the middle of the car ceiling beam and can be equipped with climbers and safety locks
- 3 Climber**
LTD100-10P9 with integrated control system Climber , at a speed of 9m/min;
Connecting through the climber adapter platform;
Applying Φ 10.2 High-strength steel wire rope.
- 4 Overspeed Fall Arrester**
OSL510 Overspeed safety lock with a rated load of 1000kg;
The platform will automatically lock when it descends more than 30m/min;
 Φ 10.2 High strength steel wire rope should be used.
- 5 Steel Wire Rope**
For Φ 10.2 steel wire rope used for climbers, the length should be configured not less than the shaft height.
- 6 Elevator Car Top Platformt**
Aluminum protective railings should be installed around the platform.
- 7 Anti-derailment Protection System**
The climber control box is equipped with an anti-derailment switch socket. The anti-derailment switch component should be connected to the climber and installed on the platform to support the guide rail laterally.
- 8 Safety Tong Assembly**
The second descent protection of the platform is achieved by manually triggering the Safety tong trigger or automatically triggering the speed limiter.
- 9 Heavy Hammer**
Maintaining the safety lock wire rope vertically suspended.

**The rated load capacity of this process is 1000kg,
excl. the weight of the elevator car and device;
This process is also be applicable for LTD200-14P6 climber

**Overspeed
Anti-falling Device**



Technical parameters

Model	Working load limit (kg)	Diameter of the Steel Wire Rope (mm)	Rope Triggering speed (m/min)	Locking distance (mm)	Self-weight (kg)
OSL308	630	8.3	30/42	≤200	4.5
OSL309	800	9.1			4.5
OSL510	1000	10.2			7.5
OSL512	1600	11.5			7.5
OSL714	2000	14.0			12

CE Series Climber



- ✦ The Rigid series climbers all use Type “α” winding rope system;
- ✦ Equipped with built-in mechanical load limiting protection system;
- ✦ Adopting high-precision, high-efficiency, and high load transmission systems;
- ✦ Configured with rope protection function and upper limit switch;
- ✦ Configured with unpowered sliding devices and manual lifting devices;
- ✦ The motor is equipped with a built-in TW thermal protection system, with a protection level of IP55;
- ✦ Equipped with phase sequence protection and timing function for use;
- ✦ Equipped with external power supply and anti-derailment switch interface;
- ✦ External handle switch with emergency-stop protection function;
- ✦ Equipped with wire ropeless protection function (optional);
- ✦ Equipped with an integrated electronic control system (optional independent type);

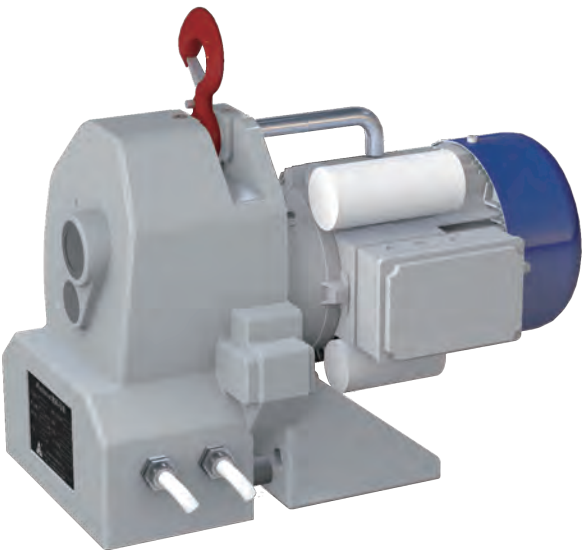
Technical parameterst

Model	Working Load Limit (Kg)	Lifting speed (m/min)	Diameter of the Steel Wire Rope (mm)	Voltage /Frequency (V / Hz)	Rated power (kW)	Rated current (A)	Self-weight (kg)
LTD100-10P9	1000	9	10.2	400 / 50	2.2	4.5	68
LTD100-10P18	1000	18	10.2	400 / 50	4	8.5	72
LTD100-10P9/18	1000	9/18	10.2	400 / 50	2 / 4	4.5 / 8.5	72
LTD200-14P6	2000	6	14.0	400 / 50	4	8.3	106
LTD200-14P12	2000	12	14.0	400 / 50	5.5	10.7	113

* 1) Using German brand motors, the voltage and frequency can be customized according to requirements.
2) The self-weight is all charged control boxes.

MH series MiniHoist
Rail lifting hoist

MH series MiniHosit is a device for quickly and conveniently lifting elevator tracks in a shaft, suspended by steel wire ropes. The MiniHoist can be operated through wireless remote control, and and can be used for hook hanging operations in the shafts without machine rooms or for installation operations in shafts with machine room. It is the most adaptable special device for shaft hoisting, with wire rope anti-detachment protection function, extremely high safety, and can choose single-phase power supply for temporary power connection. It is currently the preferred MiniHoist in the field of scaffoldless elevator installation.



- ✦ Single-phase brake motor drive, convenient and reliable electricity consumption;
- ✦ Compact structure, convenient for stable hanging and hoisting;
- ✦ Lightweight, easy to install and use;
- ✦ With multiple electrical protections, safe and reliable



Technical parameters

Model	Working load limit (kg)	Lifting speed (m/min)	Diameter of wire rope (mm)	Voltage frequency (V / Hz / P)	Power (kW)	Rated current (A)	Weight (kg)
MH501	500	8	6.5	230 / 50 /1~	1.1	8.0	33
				400 / 50 /3~		3.4	35
				230/ 50 /3~		5.9	35

* Working environment temperature: -20℃~+55℃
*In case of any special demands, please consult Wuxi Rigid Machinery Co., Ltd.

Other Accessories



Diverter Pulley

- 2T or 4T
- Steel casing protects user safety
- Anti-rotation hook
- Complying with European EN1808 standard



Steel wire rope balance weight

- According to 1T or 2T climbers
- Configured with different models of steel wire rope balance weight



Steel Wire Rope And Rope Winding Reeler

- Standard or anti-rotating



Transport Box

- Made of Steel , easy to handle
- Convenient tool management, improving service life.



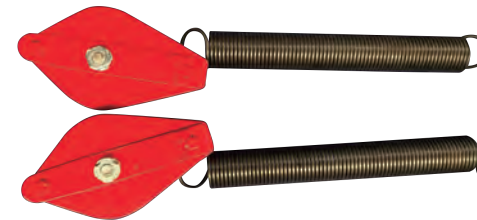
Chain

During the pull-out test, it can be used as a connector, and can also be used in conjunction with the process for safety protection during hovering, making it convenient to use.



Elevator Cabin Template Bracket

- Sample line installation and positioning,
- Adapt to different shafts,
- Easy to lay out.



Tensioning Pulley

Using 2:1. process, installed in the pit, effectively preventing the winding of the working steel wire rope.



Safety Tong Trigger

- It has two functions: manual and automatic,
- Used in conjunction with safety gear, it can also serve as secondary protection.



Pulley Brace Rod

- Suspending the top reversing pulley and hook for easy installation and secure connection.
- The longest stretching distance can reach 6m.



Adapter

Used to connect the climber to the elevator platform or shaft hook, can be specially customized.



Expansion Beam

- Replacing the top layer pre-embedded, infinitely extendable, with a wide range of expansion and can be reused.
- Stretching distance: 1.5 m~3.0 m



Pulling Attachments

Used in conjunction with the top embedded pull-out test, with automatic display and flexible installation