

Established in 1995

KITSEN[®]

CLIMBING SYSTEM



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KITSEN[®]

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Safety | High Efficiency | Economy | Environment Friendly

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▶ **KITSEN 1st Factory** (80,000m² Area)



▶ **KITSEN 2nd Factory** (100,000m² Area)



▶ **KITSEN 3rd Factory** (100,000m² Area)



SELF-CLIMBING PLATFORM

Self-climbing platform is suitable for high-rise buildings and super high-rise shear wall structures. The system applied in facade protection and operation can effectively prevent workers and objects from falling at heights; With automatic lifting mechanism, self climbing platform reduces reliance on tower crane and scaffold erectors.



FEATURES & ADVANTAGES

Safe & Intelligent

- ✓ Easy installation and self-lifting mechanism integrated with safety monitoring system maximizes the jobsite safety and construction stability.
- ✓ Scientific and reasonable structure design make the whole system more stable and safe at height which also has good wind resistance.
- ✓ Fully sealed working environment highly minimizes the risk of falling objects accidents.
- ✓ Nonflammable all-steel materials reduce the risk of fire accidents.
- ✓ Attached device intergrating anti-drop devices and anti-tilt wheel into one which are good for falling and tilting prevention performance.
- ✓ Intelligent control system with load and overload automatic alarm and brake function.
- ✓ Intelligent control system, standardized operation process make it easy on management.

High efficiency

- ✓ One-time installation helps to improve the efficiency.
- ✓ The whole system with platform on each layer provides stage for Synchronous construction.

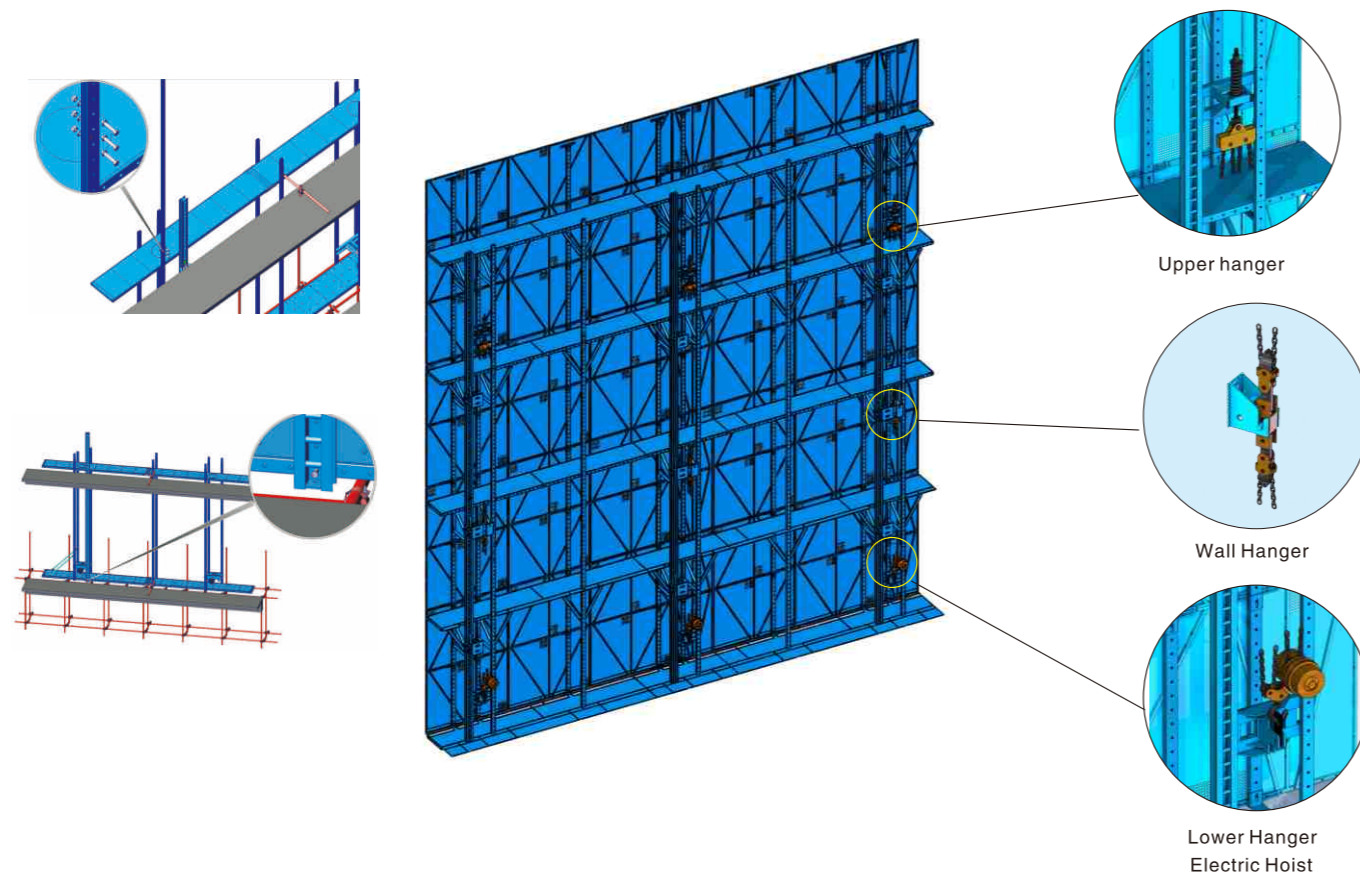
Long-term economic benefit

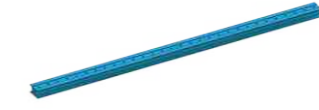
- ✓ Most component and material come with standard sizes, make system reusable for future different projects. 80% standard components can be reused for next project.
- ✓ Elevation mechanism with one-time installation ensures jobsite efficiency and safety.
- ✓ Step threshold with trapdoor platform is designed for convenience and safety features.

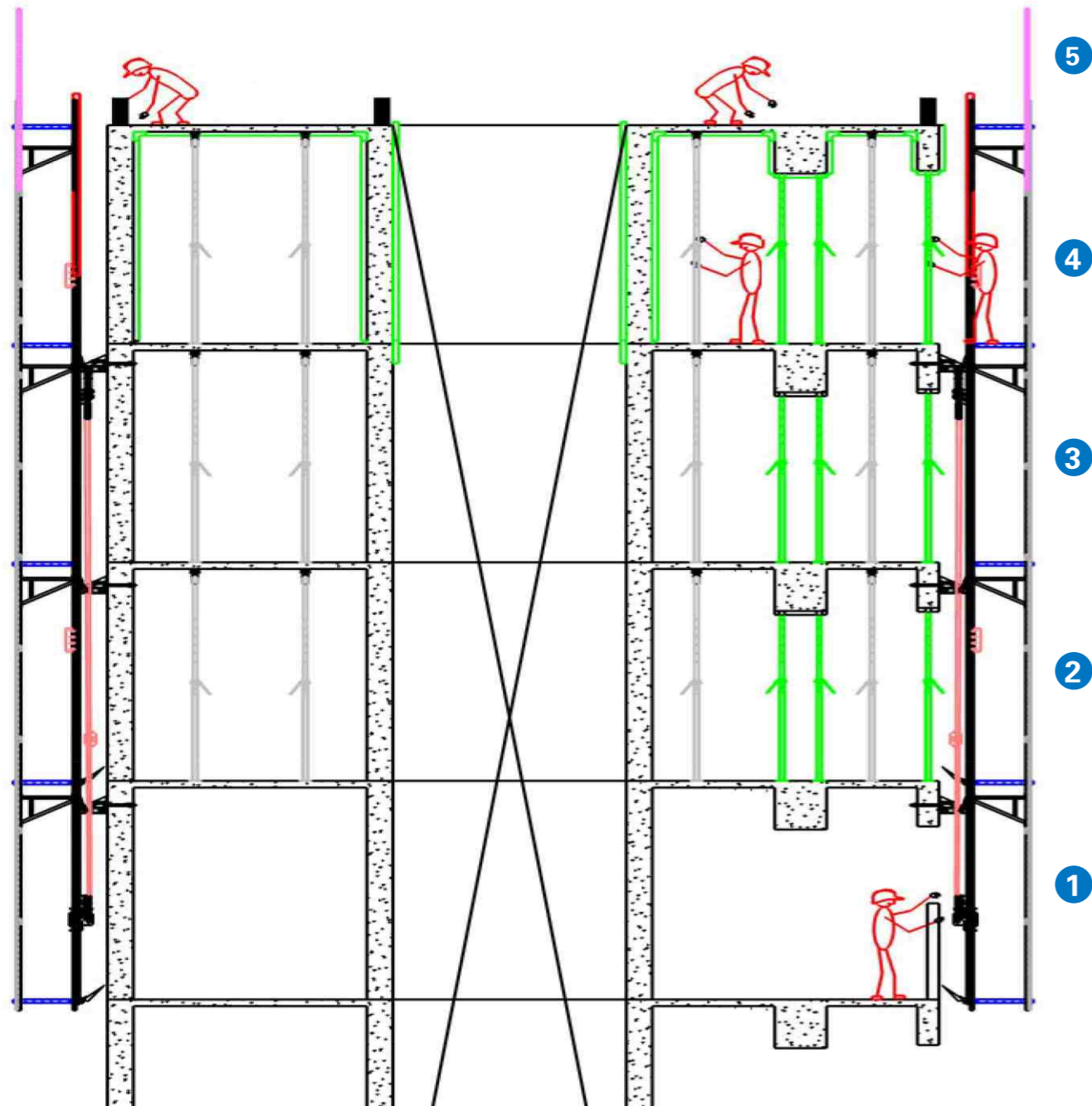
No.	Technical Requirement	Unit	Main Parameters
1	Frame Width	m	0.6
2	Frame Height	m	≤5 floors
3	Guide Rail Span	m	≤7.0 (broken line & curve ≤5.4)
4	Span*Height	m ²	≤110
5	Frame Width	ton	2.0-2.8
6	Distance from Hinged Plank to the Wall	mm	≤200
7	Allowable Loading Capacity	KN/m ²	3KN/m ² /2 floors; 2KN/m ² /3 floors;
8	Lifting Speed	mm/minute	120
9	Electric Hoist Rated Tonnage	ton	7.5
10	Fireproof Requirement	/	Fireproof
11	Wall Bracket Quantities	set	≥3
12	Hoist Turnover	/	NO
13	Maximum Wall Bracket Weight	kg	25
14	Movement at Every Elevation	floor	1
15	Anti-drop Distance	mm	≤80
16	Anti-drop Device	pcs	3

Self-climbing Platform VS Conventional Platform

No.	Conventional Platform	Self-climbing Platform
1	Manual operation, labour consuming	Efficient and safe: with automatic lifting mechanism, one-floor climbing can be achieved in half an hour.
2	Operation at heights leads to high risk of jobsite accidents	Closed working environment highly minimizes the risk of falling objects accidents.
3	Complicated and unsafe installation process	Easy installation, intelligent control system on lifting operation and monitoring which ensure jobsite safety.
4	Long construction period	No usage of tower crane expedites the whole jobsite efficiency and speed up work progress.
5	Messy and disorder jobsite	Standardized management, safe and presentable jobsite.
6	High risk of fire accidents	Nonflammable all-steel materials reduce the risk of fire accidents.
7	High consumption of materials	Economic, environmental friendly materials save construction cost
8	Complicated structure leads to unsafe operation and high risk of jobsite accidents	Standard structure with closed working environment and free maintenance brings reliable operation
9	Difficult on-site management	Intelligent control system, standardized operation process make it easy on management



		[kg]		[kg]
Upper Hanger		103	Wall Hanger	170 × 260 × 298mm 13.00
Lower Hanger			Tie Rod	L=500mm 3.365
Vertical Post		L=4500mm 23.02	Anti-drop Device	270 × 162 × 255mm 11.48
Guide Rail		L=6000mm 128.00	Wall Bracket	290 × 270 × 400mm 27.00
Plain Platform		2500 × 600 × 62mm 33.36	Elevation Mechanism	Dimension: 8.8 m Power: 500W Load capacity: 7.5 T 105.00
Tower Crane Safety Screen		495 × 1500mm 12.00	Protection Screen	1500 × 2000mm 20.87
				



Note:

- ① Layer 1: External Wall Plastering
- ② Layer 2: Windows Installation
- ③ Layer 3: Formwork Dismantling
- ④ Layer 4: Formwork Installation
- ⑤ Layer 4.5: Edge Protection

► Project in Mexico



► Project in Cambodia



► Project in Cambodia



► Project in Ethiopia



► Project in Malaysia



► Project in Malaysia



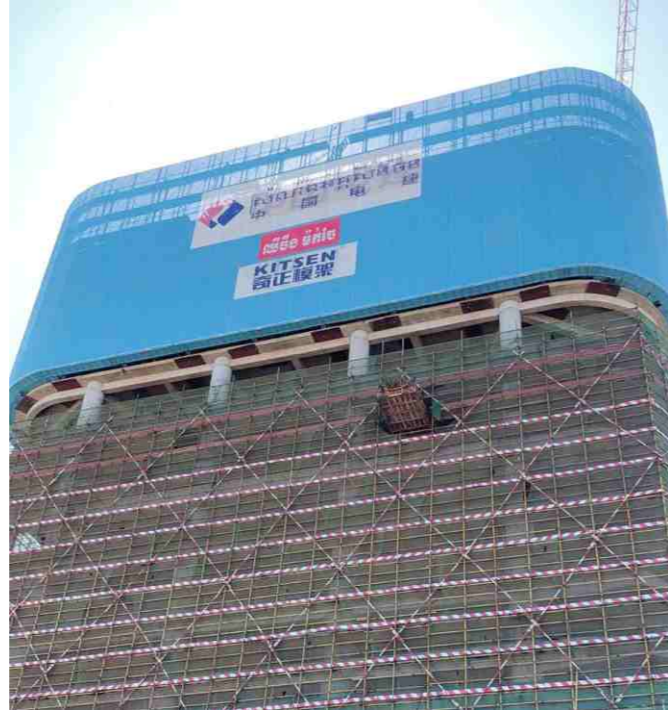
► Project in Malaysia



► Project in Thailand



► Project in Cambodia



► Project in Cambodia



► Project in Vietnam



► Project in Cambodia



► Project in China



► Project in China

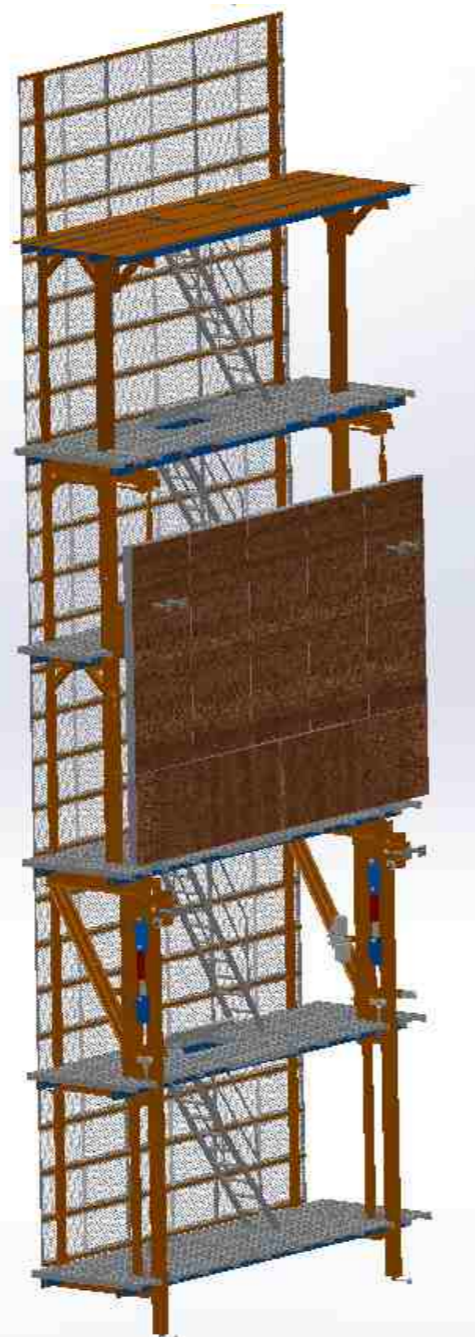


► Project in China



► Project in China



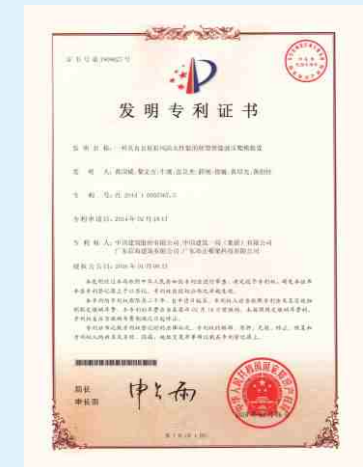


SELF-CLIMBING FORMWORK

Self-climbing formwork is attached or supported on the concrete structure by the carrier, while the concrete structure is completed and demoulded, the formwork climbs to the next layer by using hydraulic cylinder as the power and guide rail as the climbing track.

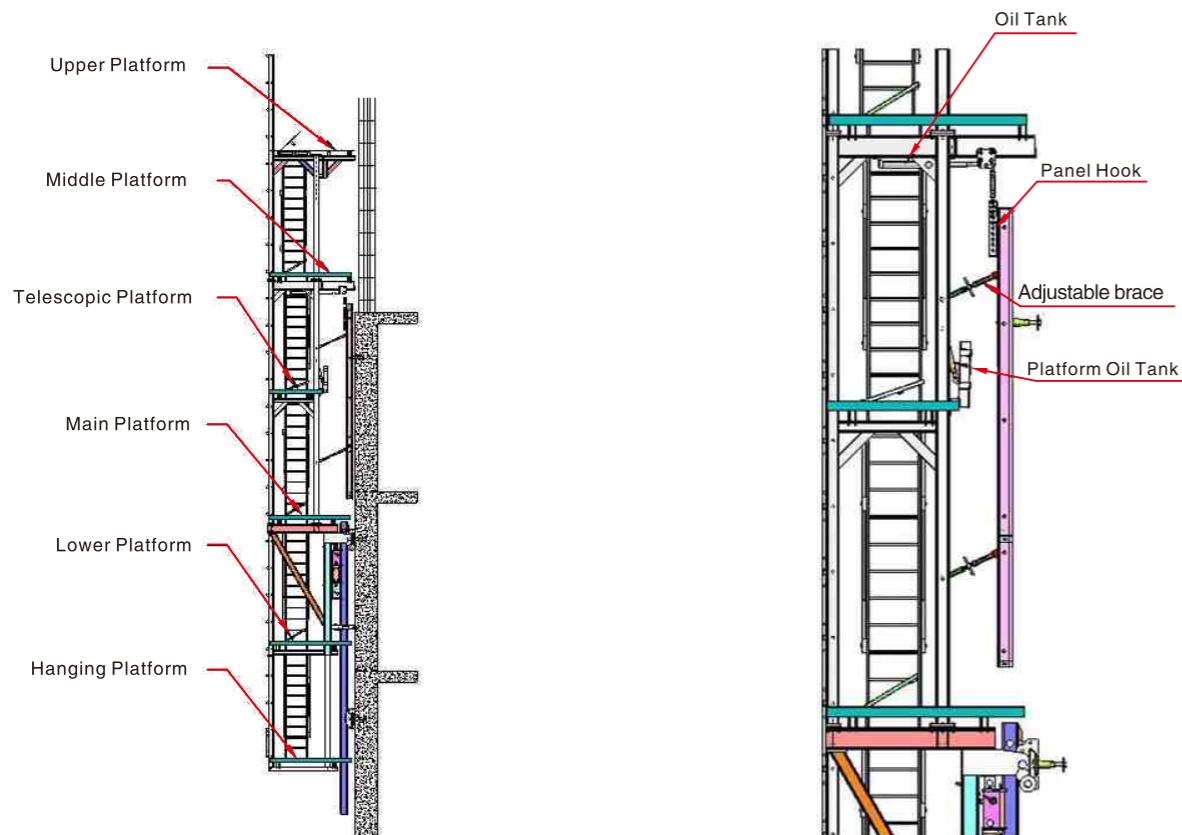
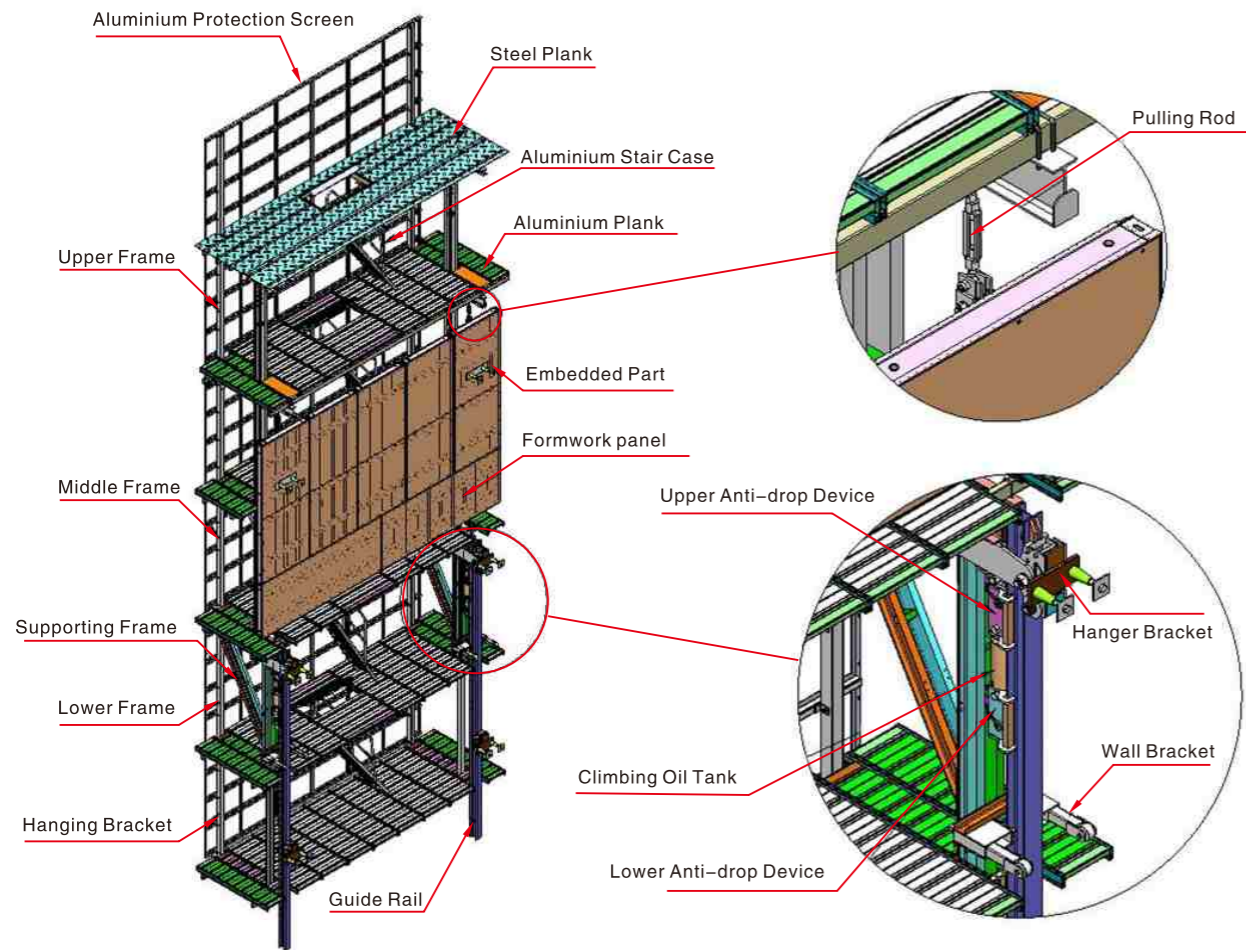
FEATURES & ADVANTAGES

- ✓ Self climbing formwork can be lifted overall or partly with safety, stability and sychornization features.
- ✓ Easy and safe operation highly reduces time and material consuming.
- ✓ Formwork after one-time installation can be lifted up to the top floor which leads to clean and tidy jobsite and reduces the risk of collision damage of the formwork(especially the panels).
- ✓ Full range of operation platform reduces the labor cost and material on building the platform.
- ✓ Fast lifting highly increases the construction speed(average 3-5 days/floor).
- ✓ Panels, guardrail and safe screen are made of aluminum materials with lightweight and nonflammability features.
- ✓ Standardized and modular design, production and installation meet the needs of energy conservation and safe and civilized construction.

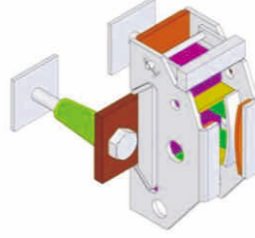
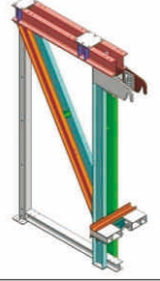
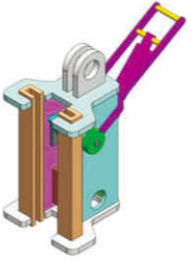
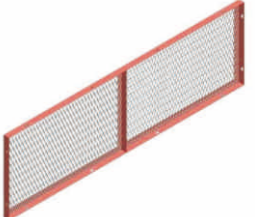



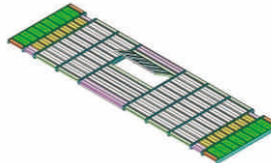
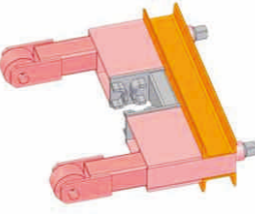
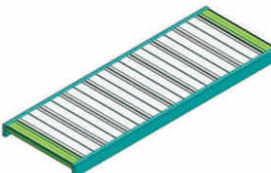
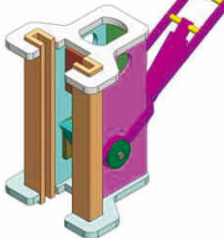



No.	Technical Requirement	Unit	Main Parameters
1	Guide Rail Span	m	≤5 (Horizontal distance between adjacent build-in point)
2	Height	m	16
3	Width	m	1.80
4	Operation Platform	LEVEL	6
5	Maximum allowable loading capacity of the upper platform		4kN/m2 (climbing at 1.0kN/m2)
6	Maximum allowable loading capacity of the middle and flexible platform	kN/m ²	1.0
7	Maximum allowable loading capacity of the main platform	kN/m ²	1.0
8	Maximum allowable loading capacity of the lower platform	kN/m ²	1.0
9	Maximum allowable loading capacity of the hanger platform	kN/m ²	1.0
10	Rated working pressure	Mpa	16
11	Oil tank stroke	mm	220
12	Hydraulic station flow	L/min	2.2
13	Extended speed	mm/min	200
14	Oil tank rated thrust	KN	200
15	Unsynchronized difference in dual oil tank	mm	≤20
16	Electric handle operation		Achieve single oil tank, double oil tank, and multi oil tank operation

SELF-CLIMBING FORMWORK



SELF-CLIMBING FORMWORK BASIC COMPONENTS

	[kg]		[kg]
Hanger Bracket 	71.24	Lower Bracket 2920 × 1380mm 	445.00
Upper Anti-drop Device 	34.81	All Aluminium Protection Screen 	
Guide Rail 		Stair Case 	
Climbing Oil Tank 	16MPa	Aluminium Platform Set 	
Wall Attached Support 		Aluminium Platform 	
Lower Anti-drop Device 		Aluminium Formwork Panel 	

Installation & Climbing Flow

1



Tie the steel rebar of the second floor

2



Assemble formwork panel and embedded part, pour concrete;

3



Remove formwork panel after demoulded;

4



Assemble wall attached bracket;

5



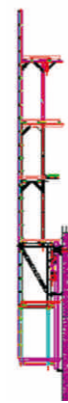
Install frame, cantilever beam, plank and safe screen of the bottom layers;

6



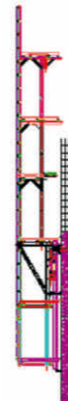
Install guard rail and hydraulic cylinder;

7



Install frame, cantilever beam, plank and safe screen of the top layers;

8



Install the steel rebar of the next floor;

9



Assemble concrete formwork and embedded part, pour concrete;

10



Install the steel rebar of the next floor;

11



Remove formwork panel; Assemble attached component of next floor;

12



Lift up the guide rail

13



Climb to the next layer

► Project in Guangzhou



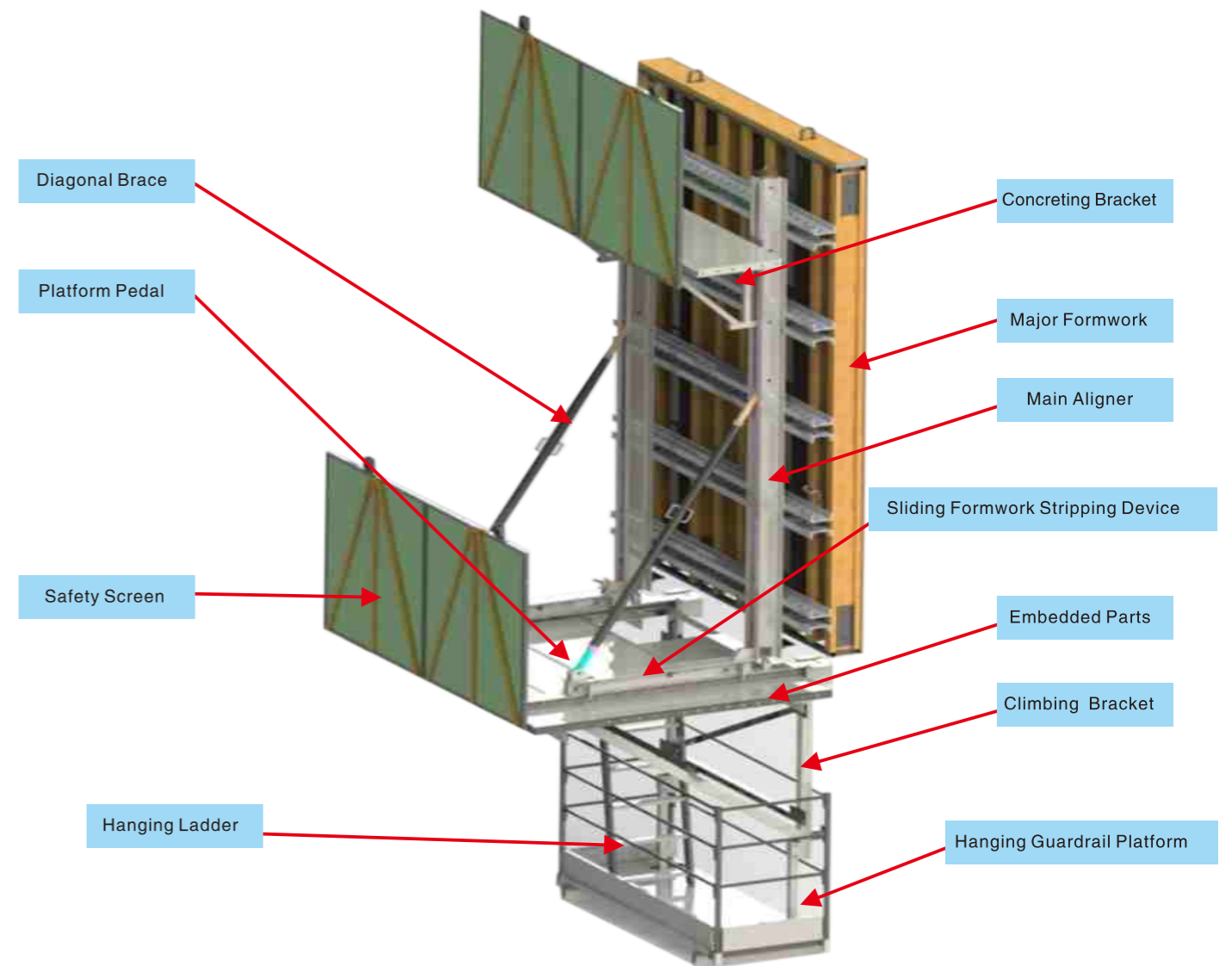


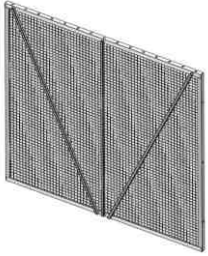
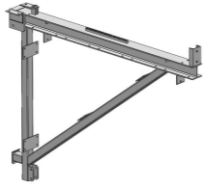



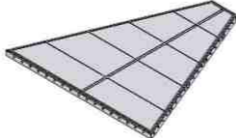
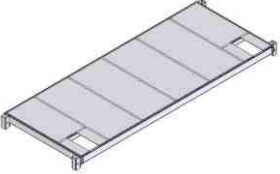
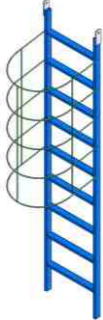





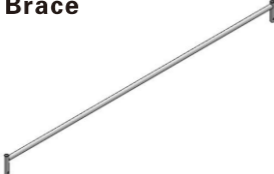

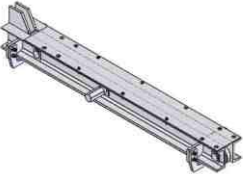
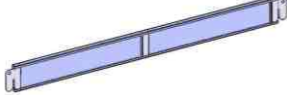

CLIMBING FORMWORK

Climbing formwork, also called cantilever template, is mainly used for bilateral formwork construction of bridge piers, concrete walls and other structures. Concrete construction is simple, rapid, and very economic, the concrete surface is smooth, it's an ideal wall formwork system. This kind of formwork is mainly composed of the following parts: formwork panel, upper platform, main back truss, diagonal brace, backward device, stress tripod, main platform, hanging platform, embedded parts system. The two legs act as a single unit block.

FEATURES & ADVANTAGES

- ✓ Large formwork design with integrity feature highly reduces the time and labor consuming on formwork assembly and dismantling.
- ✓ Operation platform allows flexible adjustment and position.
- ✓ All components welded by robots automatically are in high quality with stability and safety.

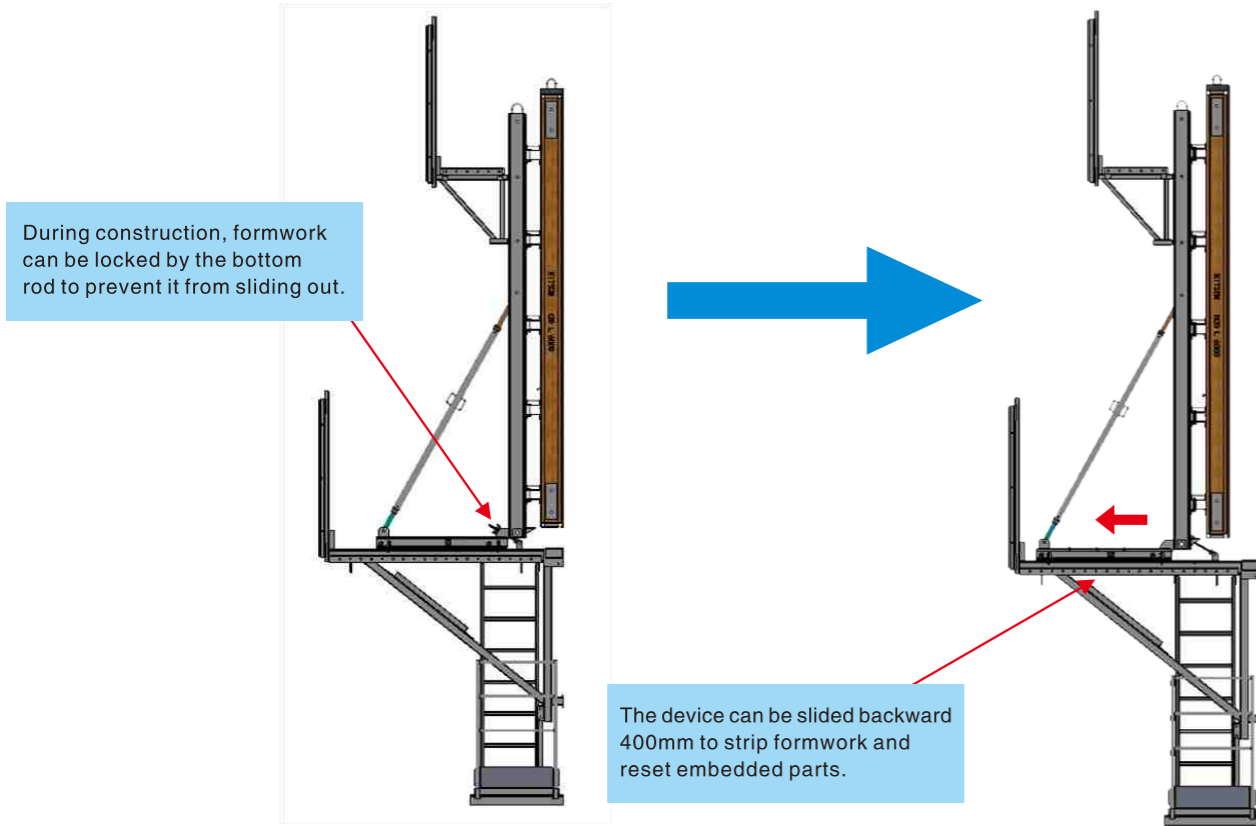


Safety Screen	[kg] 23.63	Climbing Bracket	[kg] 114.42	Guard Rail Post	[kg] 3.75
					
Plain Platform	21.16	Concreting Bracket	63.01	Pecial Plank	48.19
					
Hanging Platform	45.77	Access Ladder	46.76	Pre-embedded Part	6.81
					
Trapdoor Platform	90.61	Guardrail	7.05	Platform Cantilever Beam	17.51
					
Adjustable Brace	21.41	Brace	2.26	Vertical Post	8.18
					
Formwork Carriage	38.64	Toe Board	6.37	Pull Rod	5.11
					

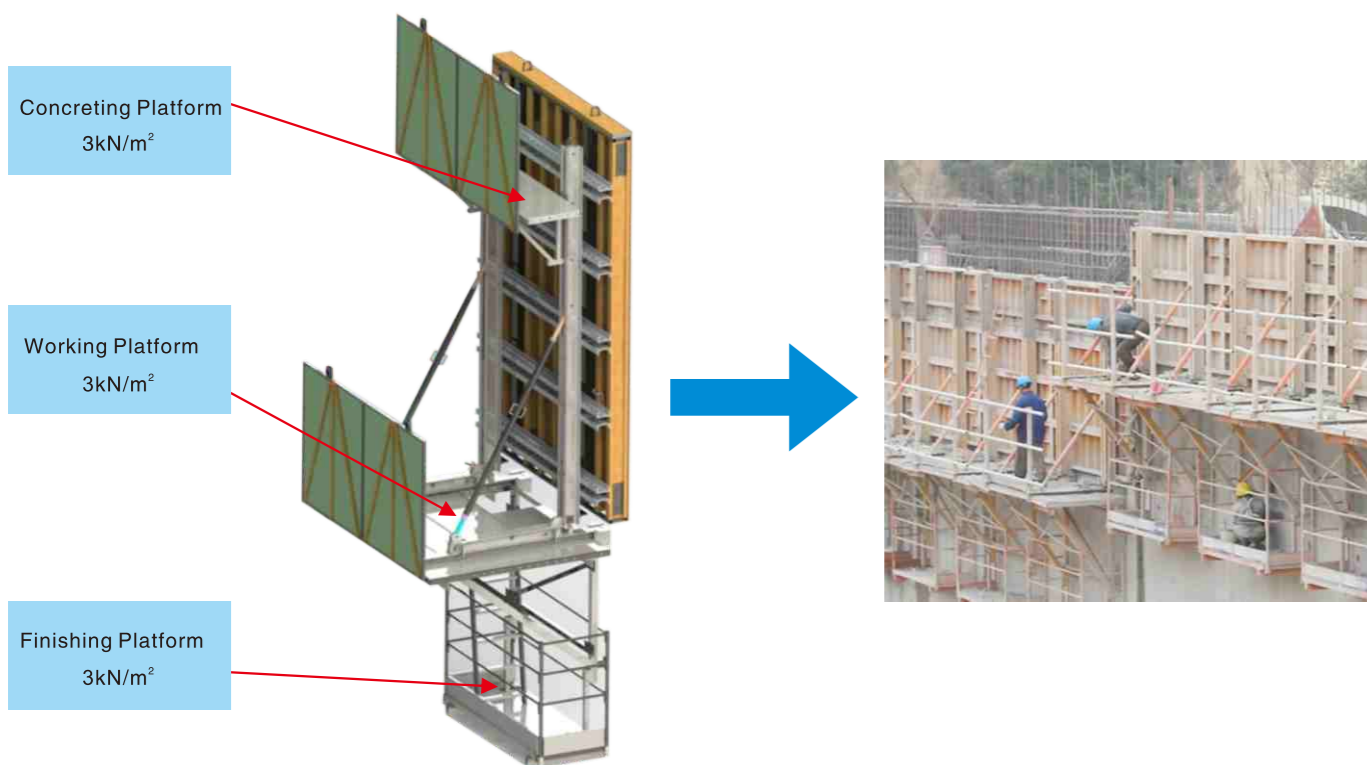
► Nuclear Power Station Project in Taishan, China



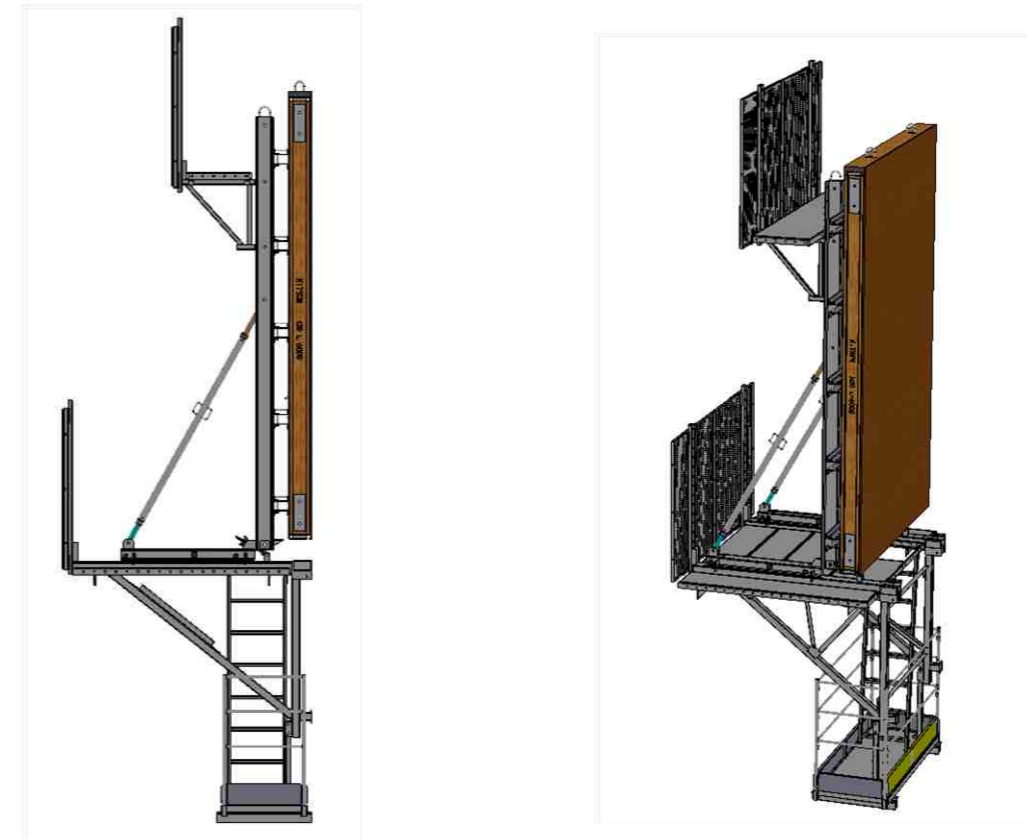
Major Formwork Sliding



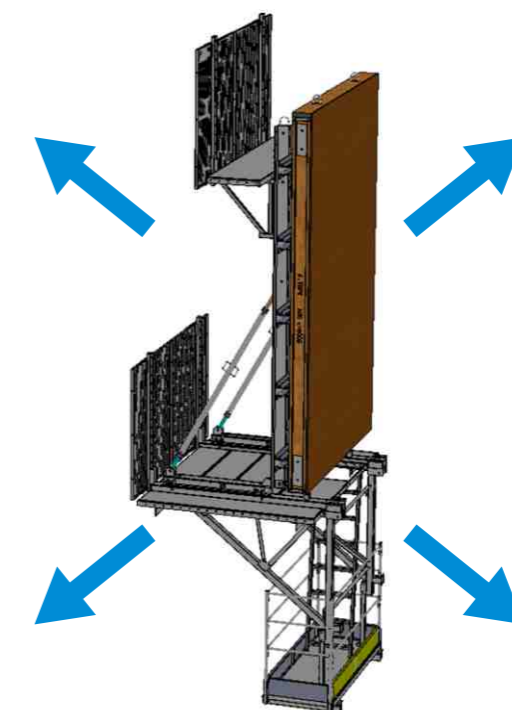
Three Working Platforms



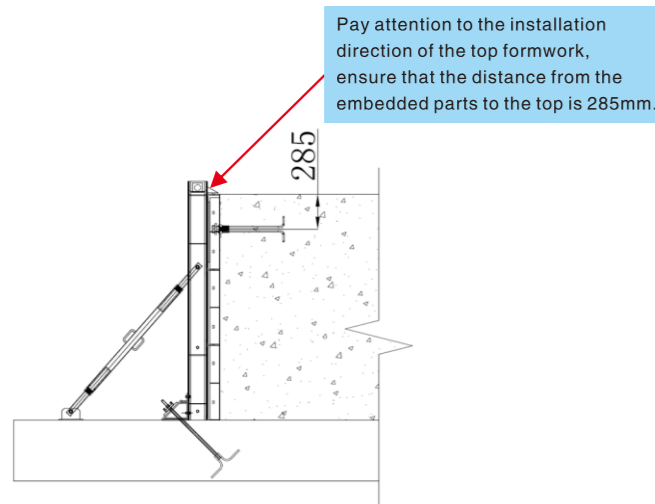
Work with Traditional Formworks



Other Types of Major Formworks

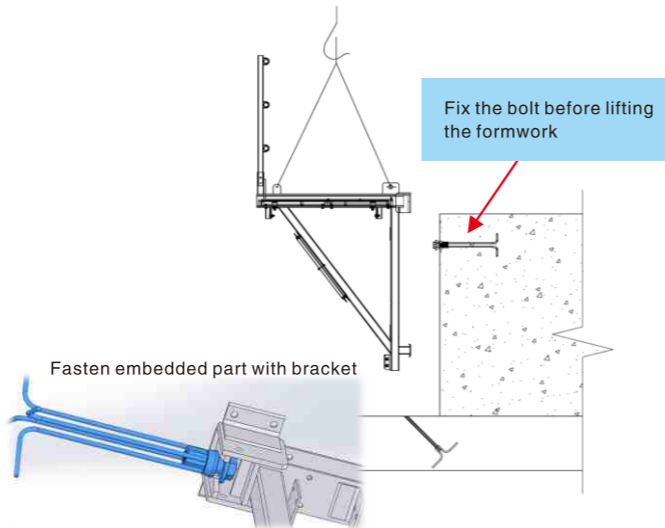


1. First Layer Construction:



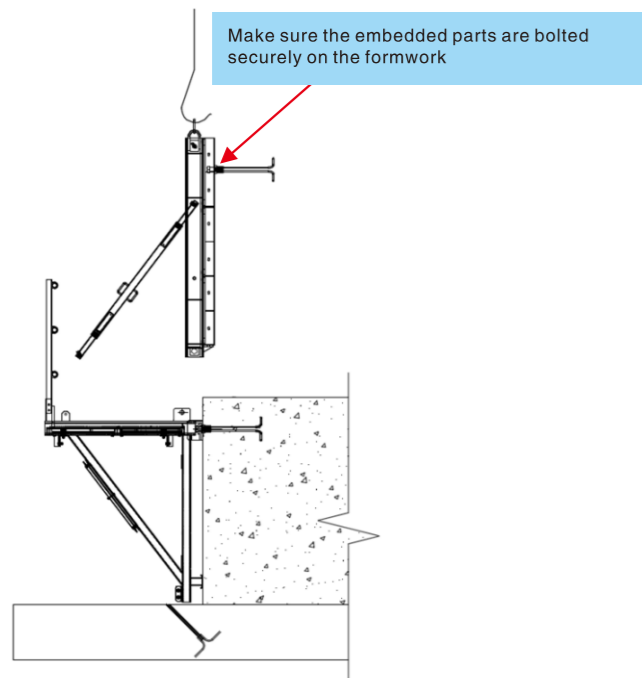
Embed tie rod in the determined position to fix the formwork, the carrier should be fixed with bolts which needs to be removed first while dismantling the embedded part.

2. Platform Lifting:



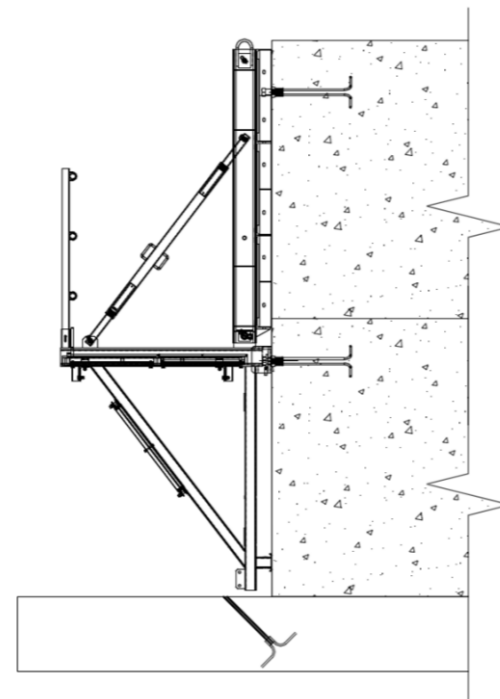
The working platform can only be installed when the concrete reaches the strength (>12MP). Before lifting the working platform, it shall be confirmed that the embedded parts are firmly connected with the bolts. During lifting, it shall be confirmed that the working platform is completely hung on the bolt before loosening the hook.

3. Formwork Lifting:



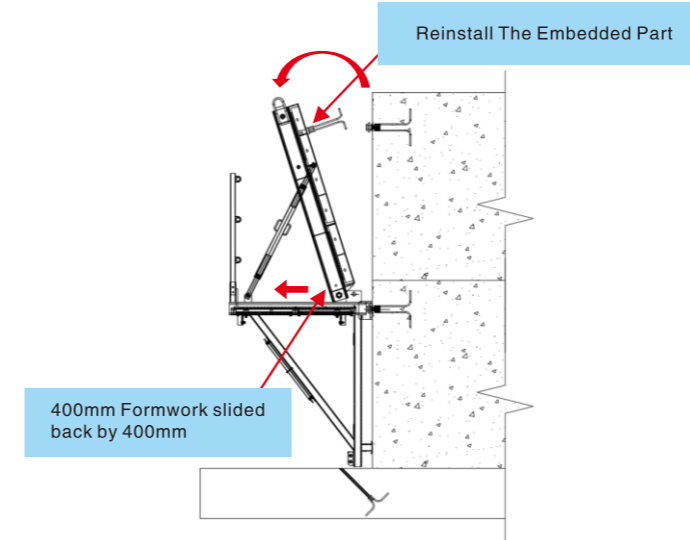
Lift the formwork after working platform installed. The formwork frame shall be sure to be securely hung on the bolts and inserted with the lock pin before releasing the hook.

4. Concrete Pouring:



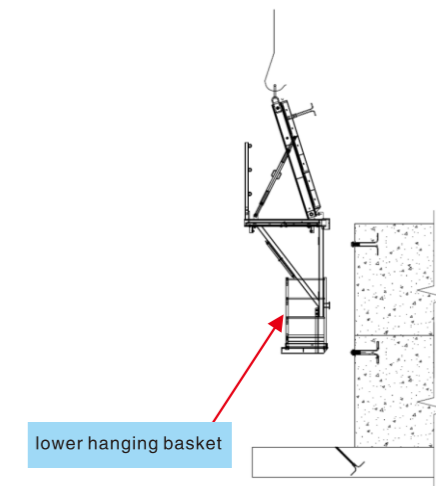
Adjust the formwork to the exact position. The top formwork needs to tilt inwards to a certain size to ensure that it will move to the vertical position after concrete pouring.

5. Formwork Removal:



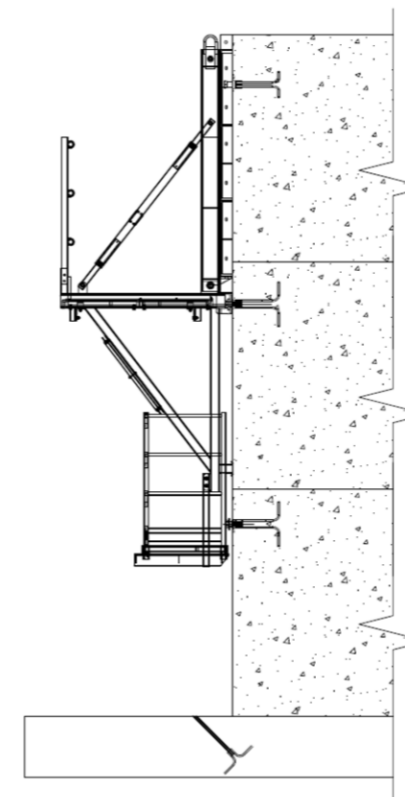
When the concrete reaches the required strength, loosen the bolts on the embedded parts first, adjust the supporting pipe to make the formwork tilt back to a certain Angle. Slide back formwork by 400mm so that there is enough space to install the positioning sleeve and embedded parts.

6. Formwork Climbing:



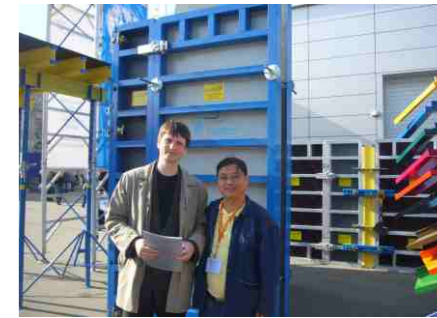
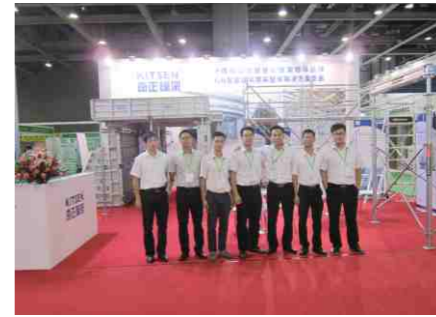
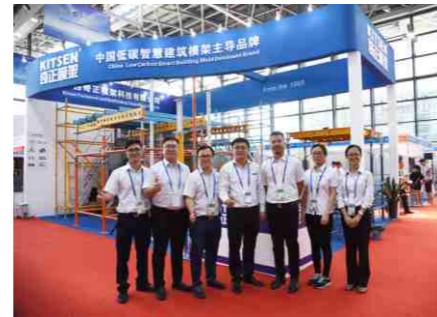
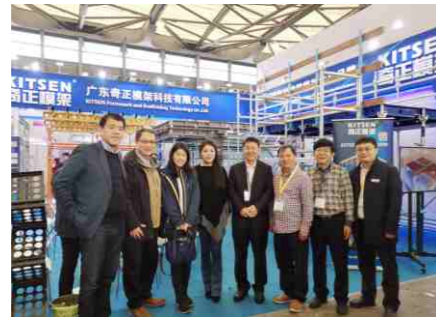
Install the lower hanging basket after the hanger leaves the concrete, ensure that the concrete reaches the design strength (>12MP). Pay attention that the embedded parts should firmly be connected with bolts before lifting the working platform. During climbing, make sure that the working platform is completely hung on the bolt before loosening the hook.

7. Concrete Pouring:



Adjust the formwork to the exact position. The top formwork needs to tilt inwards to a certain size to ensure that it will move to the vertical position after concrete pouring. Concrete can only be poured after removing the locating sleeve and bolts on the ground floor.

EXHIBITION AND PROJECT



EXHIBITION AND PROJECT