



MEWP

Safety Operation Guide






2025-외국인전담팀-229

Mobile Elevated Work Platform (MEWP)

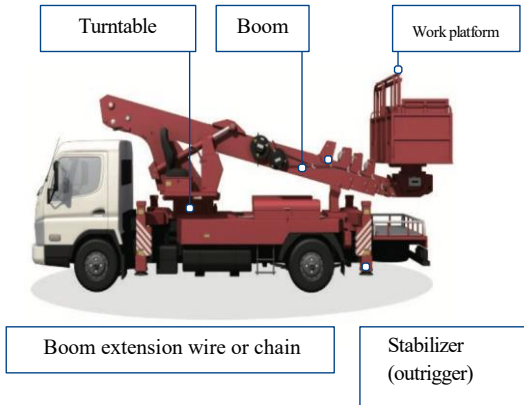
Definition	Equipment that moves workers to their work locations
Composition	Work platform, extension, and vehicle
Use	Used for various elevated tasks, including painting, welding, grinding, and installing suspended scaffolds on a ship under construction

1 Type and Structure

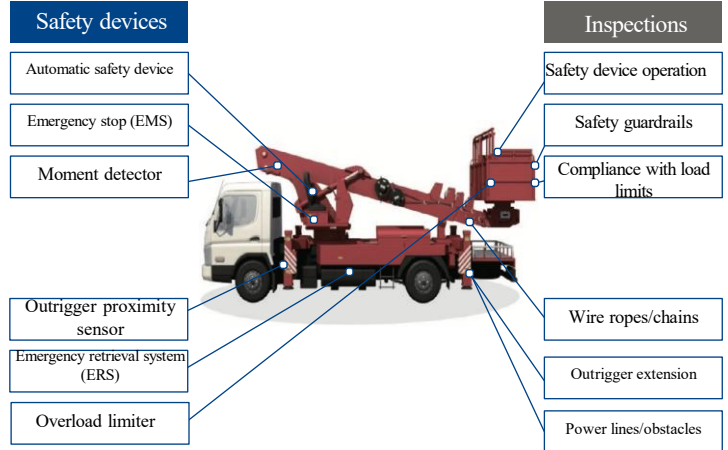
✓ General

	Truck-mounted	Scissor-lift	Self-propelled
Types			
Purposes	Ship painting, welding, grinding, hull cleaning, and painting during ship repairs	Welding, grinding, installing block bottoms, and installing suspended scaffolding	Connecting or removing riggings during ship painting, welding, grinding, and block mounting

[Truck-mounted]

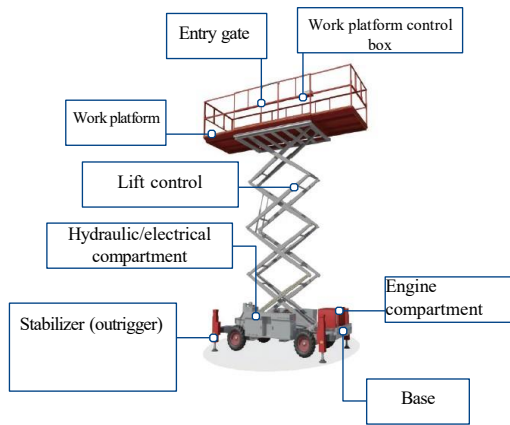


Structure

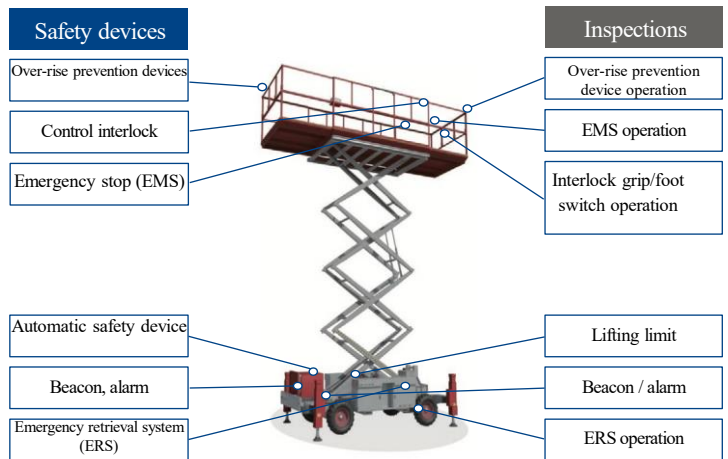


Safety devices and inspections

[Scissor-lift]

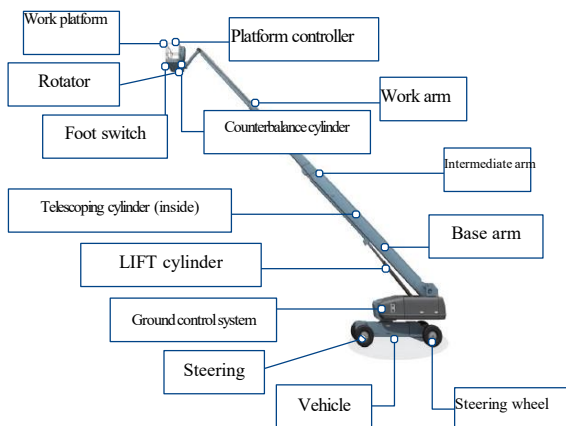


Structure

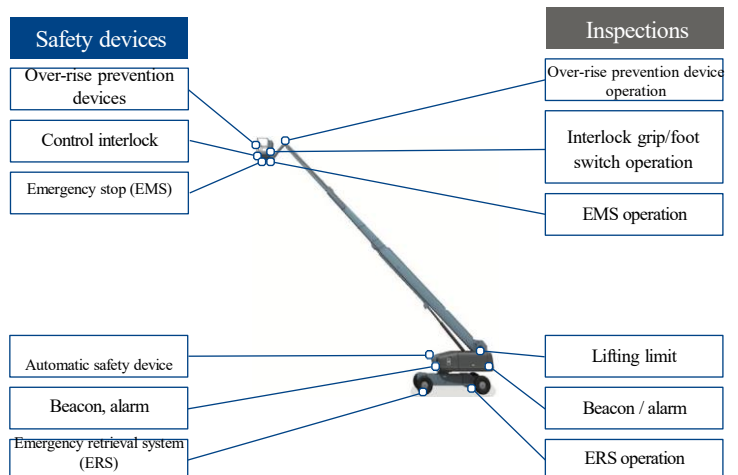


Safety devices and inspections

[Self-propelled]









Structure



Safety devices and inspections

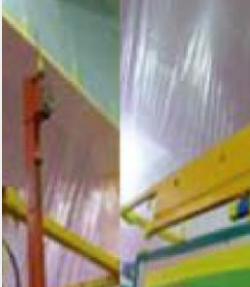








Safety Devices and Inspections

[Truck-mounted]

Main safety devices	How to inspect
<p>Overload limiter</p> 	<p>Check if the boom extension and lifting are restricted with an alarm when the weight or personnel on the work platform exceed the allowable load.</p>
<p>Boom, outriggers, interlocks</p> 	<p>Check if the boom (work platform) lifting and extension are restricted when the outriggers are not fully extended.</p>
<p>Emergency stop</p> 	<p>Check if the engine shuts off and the boom extension or rotation is restricted after pressing the emergency stop button while the engine is on.</p>
<p>Moment detector</p>  <p data-bbox="391 1451 726 1478">Boom length sensor Boom angle sensor</p>	<p>Check if the boom length changes according to the work platform angle.</p>
<p>Outrigger sensor</p> 	<p>Check if the boom movement is restricted after partially extending the outriggers before contact with the ground.</p>
<p>Integrated controller and monitor</p> 	<p>Check if the work platform load, height, work radius limits, boom length, and angle are displayed accurately.</p>

Safety Devices and Inspections

[Scissor-lift and self-propelled]

Main safety		How to inspect
Over-rise prevention devices	  <p>Limit switch Safety bar</p>	Check if the safety bar (with pressure detection) or limit switches (at 4 points) on the work platform stop lifting when manipulating the lever.
Control interlock	  <p>Interlock grip Foot switch</p>	Check if the lifting stops when the safety bar or limit switch is activated during lever manipulation.
Emergency stop (EMS)		Check if lifting and movement are restricted after pressing the emergency stop button on the work platform or lower base.
Automatic safety device (travel speed limiter)	 	Check if movement is restricted when switching to operating mode after raising the work platform and driving.
Emergency retrieval system (ERS)	  <p>Button Lever</p>	Check if the work platform descends to the lowest point after pressing the emergency stop button and pulling the retrieval lever.

2 MEWP Safety Checklist (Example)

Department	Manager	Date		
Type	Self-inspections	Results	Actions	
Before work	Preparation and implementation of the MEWP work plan *Measures for fall, drop, overturn, entrapment, and collapse hazards; operation routes; and work methods			
	Deployment of work supervisors or guides and adherence to the work plan			
	Conducting safety certification and inspections			
	Ensuring safety guardrails are intact and secure			
	Checking the proper function of entry gates (hinge-type, gravity-type) with automatic return mechanisms			
	Inspecting the work platform for cracks, deformations, and damages, including connecting pins, safety bars, and limit switches			
	Verifying proper operation of the emergency stop system, including engine stop and foot switches			
	(Truck-mounted) Ensuring operator qualifications			
	(Truck-mounted) Maintaining appropriate loading and working radius for boom length and angle			
(Scissor-lift) Installing and operating over-rise prevention devices				
During work	Ensuring horizontality with the floor and securing outriggers (truck-mounted) or engaging brakes during work			
	Prohibition of exceeding the allowable load by placing excessive objects or additional workers on the work platform			
	Ensuring all work platform occupants wear safety helmets and safety belts			
	Prohibition of transporting workers while the work platform is raised			
	Prohibition of unauthorized personnel from entering the work area			
	Installation of safety devices such as over-rise prevention devices (scissor lift) and prohibition of unauthorized dismantling			

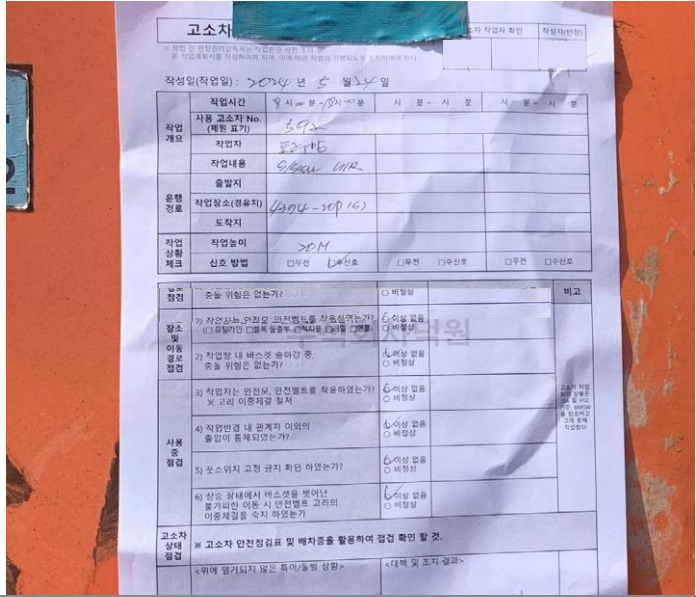
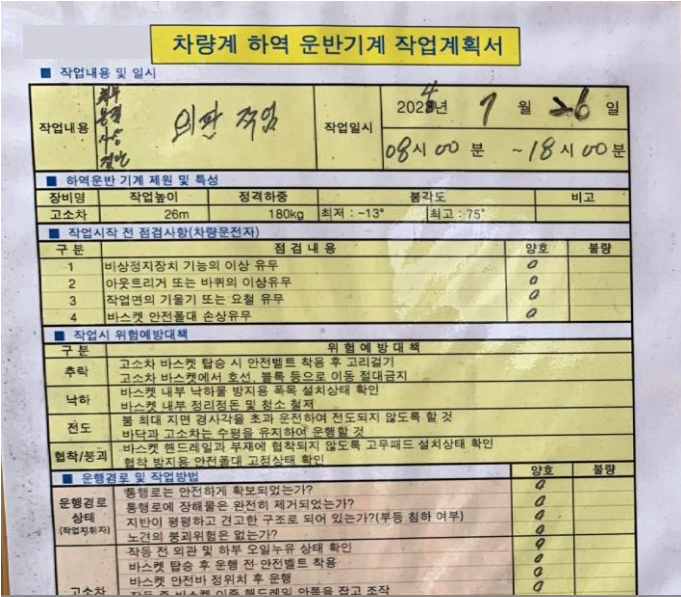
※ This checklist is for reference purposes. Please add your inspections that are suitable for each workplace characteristics (such as near-miss accident cases, risk assessments, etc.).

3 Risk Assessment (Example)

- ① Work planning ② Equipment installation ③ While working ④ Finishing work

① Work planning

Hazards	Measures	Rules on Industrial Safety and Health Standards
Risk of falling, dropping, tipping, or collision due to the MEWP being unsuitable for the task or lack of a plan	<ul style="list-style-type: none"> Establish a plan that considers working height, load, etc., and use appropriately specified equipment. Prepare, review, and approve the MEWP work plan. 	Article 38
Risk of falling, dropping, tipping, or collision due to unqualified personnel or those not completing special safety training	<p>[Truck-mounted MEWP]</p> <ul style="list-style-type: none"> Check the operator's qualifications and passenger training. <p>[Scissor lift, self-propelled MEWP]</p> <ul style="list-style-type: none"> Check the operator's training 	Article 29 Rules on Restrictions on Employment in Harmful and Dangerous Work, Industrial Safety and Health Act
Risk of falling, dropping, tipping, or collision due to using external MEWPs without safety certification or inspection	<ul style="list-style-type: none"> Check if the MEWP has undergone safety certification and inspection before being brought from outside. 	Article 36
Risk of falling, collision, electric shock, tripping etc., due to failure to inspect the work location at height	<ul style="list-style-type: none"> Implement safety measures after checking the work environment, including ground conditions and nearby high-voltage lines. 	Article 186



Example of a work plan

② Equipment installation

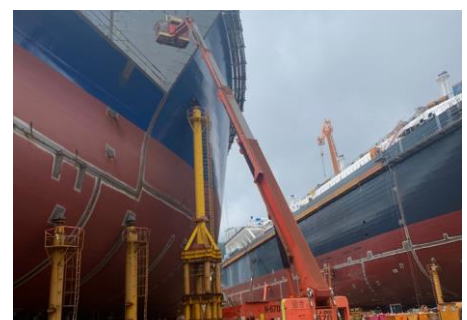
Hazards	Measures	Rules on Industrial Safety and Health Standards
<p>Risk of falling, tipping, collision, or crushing due to safety device failure or equipment malfunction from lack of pre-work inspections</p>	<p>[Truck-mounted MEWP]</p> <ul style="list-style-type: none"> . Conduct a safety inspection before work (equipment specifications: check permissible working radius, safety certification, safety inspection, etc.). <p style="text-align: center;">Major inspections</p> <ul style="list-style-type: none"> - Check the installation of safety guardrails on all four sides and inspect for corrosion (or detachment). - Check safety devices (boom length, angle sensors, overload limiter, etc.). <p>[Scissor-lift, self-propelled MEWP]</p> <ul style="list-style-type: none"> . Conduct a safety inspection before work (equipment specifications: check permissible working radius, safety certification, safety inspection, etc.). <p style="text-align: center;">Major inspections</p> <ul style="list-style-type: none"> - Check the operation of the over-rise prevention devices and other safety devices. - Check for corrosion, detachment, etc., of safety guardrails. 	<p>Article 35, Article 186</p>
<p>Risk of hitting or crushing surrounding structures when moving the raised work platform without guides.</p>	<ul style="list-style-type: none"> . Do not move the work platform when it is elevated. . Place a guide during movement and closely monitor the direction of travel 	<p>Article 172, Article 186</p>
<p>Risk of falling from the work platform due to improper use or failure to wear driver protection equipment.</p>	<ul style="list-style-type: none"> . Ensure workers on the work platform wear and use protective equipment correctly, with the safety harness hook attached to the platform structure before starting operations. 	
<p>Risk of collision with the MEWP while moving due to guides approaching the moving platform</p>	<p>[Scissor lift, Self-propelled MEWP]</p> <ul style="list-style-type: none"> . Ensure the guide wears an identifiable safety helmet and reflective vest and maintains an appropriate distance to avoid collision with the equipment. 	<p>Article 32</p>
<p>Risk of collision due to incorrect switch operation on the control panel if the paint on switches is unreadable</p>	<ul style="list-style-type: none"> . Ensure regular maintenance of the control switch panel (e.g., labels and directional markings) for visibility and operator identification. 	



Keeping the control panel maintained (e.g., labels, directions)



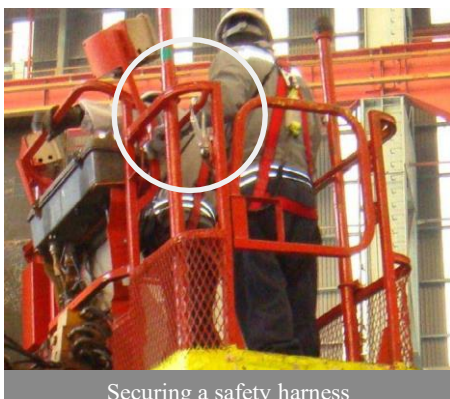
Moving the MEWP while a guide is arranged



Raising the work platform to the work position

③ While working

Hazards	Measures	Rules on Industrial Safety and Health Standards
Risk of worker falling due to dismantling safety guardrails or failure to wear personal protective equipment for convenience during work	. Prohibit the arbitrary removal of safety guardrails and ensure proper use of protective equipment.	
Risk of getting caught between the structure and upper guardrails due to dismantling the over-rise prevention device for convenience	. Prohibit the arbitrary removal (deactivation) of safety devices such as over-rise prevention devices.	Article 186 Article 32
Risk of the MEWP tipping over or malfunctioning if the work platform is overloaded with workers or tools (overload limiter disabled)	. Check the rated load capacity of the MEWP and use it within the rated load limits.	
Risk of collision during crane movement if the MEWP is positioned above the crane rail	. Avoid working on the crane rail whenever possible. If unavoidable, coordinate with the crane signal operator to manage mixed operations and assign a supervisor.	Article 35, Article 39
Risk of the MEWP tipping over due to deteriorating weather conditions.	. Stop outdoor work during inclement weather like strong winds or heavy rain.	Article 37
Risk of falling objects, like tools, hitting workers below due to inadequate work area control	. Control the work area and assign guides.	
Risk of equipment tipping over during platform elevation due to unstable terrain or ground conditions	<p>[Truck-mounted, Scissor lift]</p> <ul style="list-style-type: none"> - Extend the outriggers fully for level installation and use the brakes. Add footplates beneath the outriggers to prevent sinking into the ground. <p>[Self-propelled, Scissor lift]</p> <ul style="list-style-type: none"> - Prohibit use on uneven surfaces. 	Article 20, Article 186



Securing a safety harness



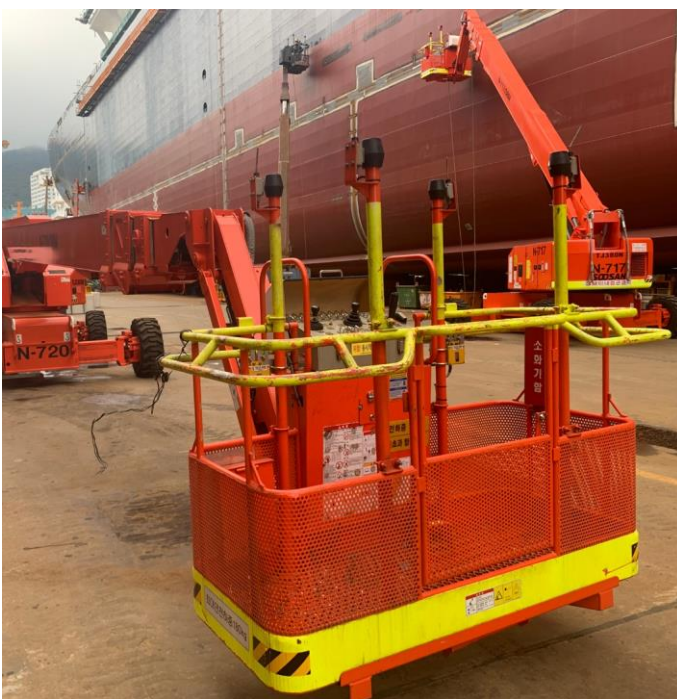
Working with a scissor-lift MEWP



Working with a self-propelled MEWP

④ Finishing work

Hazards	Measures	Rules on Industrial Safety and Health Standards
Risk of fire or explosion from simultaneous upper and lower painting and hot work operations using the MEWP	<ul style="list-style-type: none"> . Register the work permit and coordinate mixed operations in advance. . Implement measures to prevent spark scattering. . Assign a fire watch and place fire extinguishers during hot work. 	Article 241
Risk of the MEWP tipping over due to excessive boom extension beyond the allowable radius	<ul style="list-style-type: none"> . Prohibit work beyond the allowable working radius specified in the equipment specifications. . Move and stabilize the MEWP within the radius before continuing work. 	Article 186
Risk of boom bending due to strong winds when parked with the boom extended after work	<ul style="list-style-type: none"> . Fully retract the boom and lower the work platform to the lowest position to park, ensuring no obstruction to passage. 	Article 99
Risk of falling, dropping, or tipping over due to unauthorized operation when the ignition key is not removed after parking	<ul style="list-style-type: none"> . Remove and store the ignition key in a designated location after work or when leaving the MEWP. 	



Parked with the boom fully retracted



Parked without obstructing other equipment passage

3 Best Practices for MEWP Usage

✓ Safety hook detection system

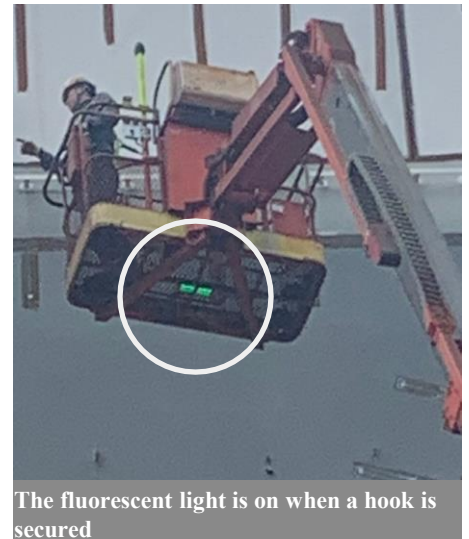
This device allows verification from the lower base that the worker on the platform has secured their safety harness hook. A fluorescent indicator light turns on when attached to the designated point, and the hook attachment warning alarm deactivates.



Safety hook attachment



Safety hook detection system



The fluorescent light is on when a hook is secured

✓ MEWP operator qualification reader

RFID tags are assigned to qualified personnel using their employee ID cards. A reader on the MEWP verifies the operator's qualifications before enabling the ignition and operation of the equipment.



Qualification reader



Accident Case **Entrapment in the top-block T-bar during inspection**

✓ Summary

After grinding work on the bottom deck block, a worker boarded the MEWP to inspect the top T-bar. While inspecting, the worker accidentally touched the lift lever, causing the work platform to rise, and the worker became entrapped between the T-bar and the work platform.



✓ Causes

- **Failure to implement operator protection measures**
 - The safety guard or limit switches to prevent the operator from being trapped between structures like blocks and the basket were not installed.
- **Working with a foot on the foot switch**
 - The worker should have removed his foot upon arriving at the work site. However, while checking, he accidentally triggered the rise lever, causing the work platform to ascend.

✓ Preventive Measures

- **Measures to protect the operator from crush hazards:**
 - Install closed safety guards and limit switches on the work platform to prevent entrapment.
 - Upon arriving at the work site, workers must remove their feet from the foot switch to prevent accidental operation.
 - Establish and enforce safety work procedures for MEWP operation, ensuring workers are trained and closely supervised to avoid unsafe behaviors during work.