

# 부산항 안전기준 매뉴얼



본 안전수칙 매뉴얼은 「부산항 항만하역 근로자 안전관리에 관한 지침」 제27조(안전매뉴얼)에 따라 제정

연구 및 감수 : 한국항만연수원부산연수원  
Korea Port Training Institute Busan

문서 제·개정 이력

문서명	부산항 안전기준 매뉴얼		
적용범위	부산항		
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2	October 21, 2024	October 21, 2024	줄걸이작업 안전수칙 추가
3	December 18, 2025	December 18, 2025	줄걸이작업 안전수칙 변경

# 부산항 10대 안전 수칙 YES or NO

## 10 Safety Rules of Busan Port

### 안전 수칙 YES



#### 출입부두 운영사의

이름: [Blank] -# [Blank]  
Company: [Blank] / rules



#### 안전보호구 착용

(안전모 / 안전화 / 안전조끼)  
※ 차량 하차 시에도 반드시 착용  
Wear protective equipment (hard hat/safety boots/safety vest)  
※ Be sure to wear it before getting out of the vehicle



#### 제한속도 준수 및 이전벨트 착용

www [Blank]  
Do not exceed the speed limit and wear a seat belt while operating a vehicle



#### @BfLHOI@AI 차량 또는 지정보행로 이용

When moving within the port, use vehicle lanes or designated pedestrian paths

### 안전 수칙 NO



#### 작업/운전/보행 중 휴대전화 사용금지

Using a cell phone while working / driving / walking is prohibited



#### 지정장소 외 주차금지

Stopping or parking cars in designated areas



#### 통제구역 외 출입금지

Prohibited from entering the off-limits areas



#### 음주자 출입금지, 지정장소 외 흡연금지

No drinking allowed / Smoking is not allowed except in designated areas



#### 중장비 작업 반경 내 접근금지

No access to heavy machinery work areas



#### 안전 장치 기능 임의 해지 금지

Do not arbitrarily disable safety functions

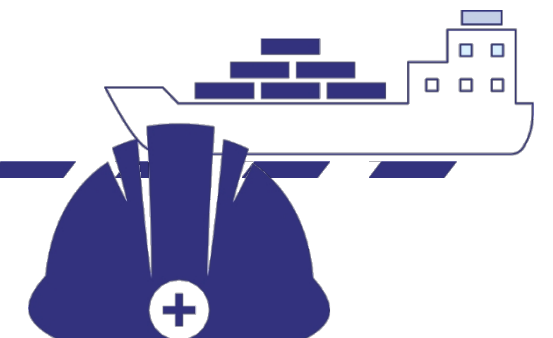
### 안전수칙 위반자에 대한 제재조치

[근거 : 부산항 항만출입증 발급 및 출입자 관리 세부시행지침 별표2의 1]

- ☑ 일 1회 위반 적발 (출입자 안전교육 현장계도 조치)
- ☑ 주 3회 위반 적발 (3일 출입제한 및 운영사 통보)
- ☑ 주 2회 위반 적발 (당일 출입 제한, 안전교육 이수 후 출입허용)
- ☑ 월 4회 이상 위반 적발 (상시 출입증 회수 및 출입제한 30일)

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9.3 Emergency Evacuation

9.4 Situation-Specific Emergency Response Procedures

9.5 Emergency Contact Network for Relevant Agencies

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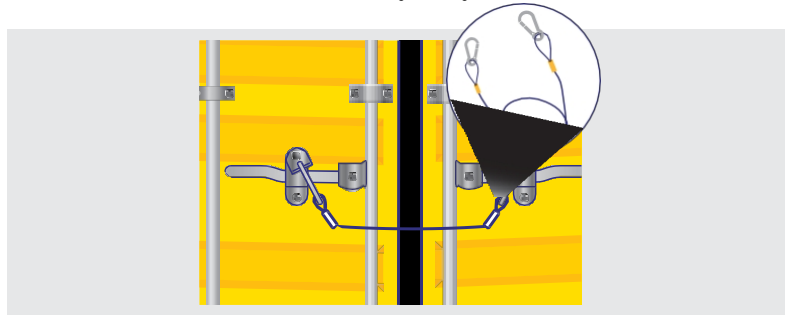


Y/T Entrapment Prevention Measures

"In accordance with Article 18 (Safety Management of Loading and Unloading Equipment) of the Safety Management Guidelines, the terminal must install anti-slip devices on the floor of the terminal or container support structure to prevent cargo from shifting due to collisions with transport equipment. Anti-slip devices must be installed on the floor of the container frame or container base. In particular, anti-slip devices must also be installed between twin containers.

"Before opening container doors at CFS warehouses and other locations, measures must be taken using forklifts or tools to prevent cargo from spilling out.

"Care must be taken to avoid collisions when a forklift is reversing or turning.



Measures to Prevent Cargo Spillage

"Inspectors are prohibited from temporarily operating forklifts.

### 8.2.3 Other Operations

"In the event of a spill of hazardous or toxic substances, or if there is a risk of such an incident occurring

immediately notify nearby workers to evacuate and contact the terminal supervisor or the chain of command.

"Smoking is strictly prohibited when inspecting flammable, combustible, or petroleum products, explosives, or cotton.

"When inspecting toxic substances, do not touch the cargo, and if exposed, take immediate first aid measures.

## 8.3

### 8.3.1 Operation All

and

### Rope Handling Operations (Fall Prevention)

In accordance with Article 5 (Protective Equipment) of the "Safety Management Guidelines," rope handlers must wear protective equipment

life jackets.

"In accordance with Article 9 (Access by Third Parties) of the "Safety Management Guidelines," the terminal's safety management policies must be followed.

"Before performing rope-handling work, a supervisor must be assigned to conduct pre-work training for workers, prepare tools and equipment, and perform a preliminary on-site inspection.

"When working at night, workers must wear a high-visibility life jacket with reflective strips or a high-visibility safety vest.

"Supervisors must have a lifebuoy equipped with a rope (3007 or longer) ready to rescue workers who fall into the sea."

"At least two high-performance LED flashlights must be prepared to quickly locate workers who have fallen into the water during night shifts.

"Supervisors must receive the mooring plan from the stevedoring company at least 30 minutes before work begins and instruct workers to secure the mooring lines to the correct mooring posts.

"Supervisors must have all workers on standby at least 30 minutes before the vessel's arrival or departure.

"The employer responsible for line handling must deploy sufficient personnel and equipment to handle the mooring lines as follows and ensure worker safety through prompt operations.

"For manual operations, assign at least two personnel each to the bow and stern, depending on the size of the vessel (cargo ships, passenger-cargo ships, cruise ships, and fishing vessels of 300 metric tons or more) and the weight of the mooring lines

(applies to both berthing and unberthing operations)

"For the front bumper Method 5 and the winch method, deploy one work vehicle each at the bow and stern

(Applies to both berthing and unberthing operations)

"For the front bumper method and the winch method, assign at least 3 workers per work vehicle

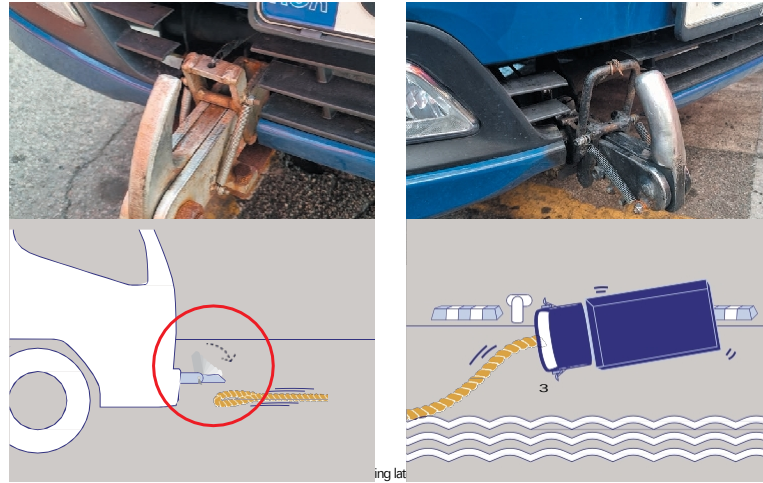
"When using the front bumper method, assign one driver and at least two workers to handle the rope

"The supervisor must provide the work plan and instructions to all workers before work begins and lead them in warm-up exercises."

"The supervisor must maintain smooth communication with the vessel and instruct the vessel on its stopping position, the status of the spring lines (50008100—whether moored or not—and other necessary matters) via the line handler (22RHlineman) or a radio, or a loudspeaker.

"Workers other than professional linehandlers—such as cargo handling workers—are prohibited from temporarily assisting with linehandling tasks.

When using a vehicle's front bumper (Z2) to tow a mooring line, the work must be performed using a vehicle equipped with the following safety devices.



**Sudden Acceleration Prevention Device Installation** (A sudden acceleration prevention device that operates only in the apron area)

Devices with forward collision prevention functions (468, Autonomous Emergency Braking, etc.)

For forward collision avoidance systems, this applies only to cases where a taxi operator registers or replaces a vehicle after this safety manual takes effect. It is prohibited to deactivate the forward collision avoidance system.

Vehicles must comply with the following requirements:

**Rope Handler** When a work vehicle is on standby, it must be parked in a safe location; except when necessary, the engine must be turned off, the transmission must be in neutral, and the parking brake must be engaged.

Line-handling vehicles must be parked in a safe location while on standby, unless necessary, the engine must be turned off, the gear must be in neutral, and the parking brake must be engaged. Work vehicles must be positioned at an angle of 45 degrees or less from the quay wall.

However, you must put the gear in P or L, apply the parking brake, and place chocks under the wheels.

(It is recommended to install a brake pedal lock in the driver's seat.)



Vehicles used for rope-handling operations must be clearly identifiable with hazard lights so that their status—whether on standby or in operation—can be recognized. (Install a sign within the work area.)

Vehicles used for line-handling operations must keep their windows open to facilitate communication among workers and to allow for emergency evacuation in the event the vehicle falls into the sea.

Vehicles used for line-guiding operations must inspect the installed safety devices and verify the presence of position-marking buoys and 71EEE life-saving equipment in case of a fall into the sea; these must be checked frequently.

Conduct thorough regular vehicle inspections and maintenance, and keep records in the inspection log.

### 8.3.2 Work In Progress

During mooring (0007000008) operations, the use of a shoulder sling is prohibited. (The mooring line must be removed manually.)

\*Shoulder-hooking refers to the process of hooking a messenger rope connected to a vehicle over the top (back side) of a mooring post and pulling it toward the vehicle to release the mooring line in one go.

When performing winch-assisted mooring operations, do not connect the messenger rope to the winch's wire rope and pull it using the vehicle's power.

Supervisors must immediately halt work upon discovering any hazards during the operation and consult with the ship's bridge.

When a throw line (7623W0178line) is to be thrown from the vessel, the shore-based hauling worker must remain in a safe zone away from the line.

When the throw line is being thrown, all line handlers must keep a close watch on it.



All mooring crew members are prohibited from pulling throwing lines and messenger ropes with bare hands and must wear appropriate gloves at all times.

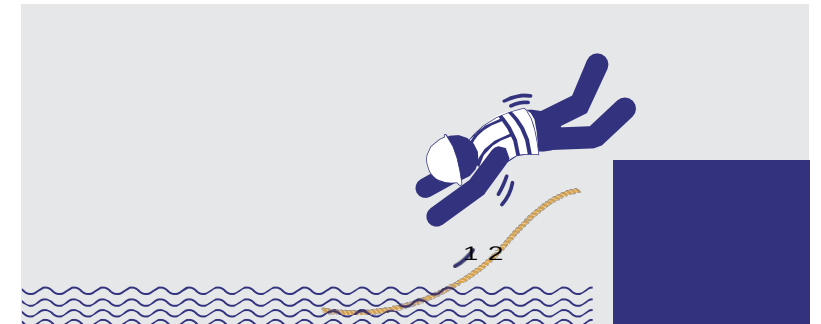
If there are any obstacles or equipment between the mooring posts at the berth where the vessel is to dock, the supervisor must request that the terminal remove them.

When pulling mooring lines, use a dedicated vehicle whenever possible; if a dedicated vehicle is not available, the work must be performed by a team of at least two people.

Rope handlers must use their legs and lower back to pull the rope, taking care not to slip or fall, and must not exert excessive force.

When pulling the line, the worker must firmly plant one foot on the wharf curb, shift their center of gravity backward, and pull the line.

Supervisors must prohibit rope handlers from standing on the rubber fenders of the quay wall or on the curbstones while pulling or lifting the rope.



When performing mooring tasks, keep a close watch on mooring winch crew's actions and signals.

When mooring lines from another vessel or bow/stern lines of other vessels become entangled, or when securing the working vessel's mooring line to the mooring post, proceed as shown in the figure below.

**<When securing the mooring line in the same direction>**

Insert the loop of the other bow/stern line into the loop (6/6) of the bow/stern line already attached to the mooring post, as shown in the figure.

= Schumann Knot (SA160730 Knot): When inserting the loop of the other line without a hitch.

by A method of interlocking the loops.  
% Also known as "interlocking/stacking" (clip the 6/2)

**<When securing the mooring line in the opposite direction>**

1. Insert the red line (from the working vessel) into the loop of the purple line as shown in the illustration.
2. When you pull the red line, the red line's loop rotates and is pushed under the purple line.
3. If you tighten the red line further (by pulling it toward the vessel), the blue loop will ride over the red loop, pushing the red loop all the way to the bottom.

**<Method for Removing the Lower Mooring Line (Unmooring Operation)>**

1. Loosen the tension on the red line and pull it as far as possible so that the red line's loop can pass over the purple line's loop.
2. Lift the red line loop over the bollard as shown in the illustration to detach it from the mooring post.
3. The purple ring will then wrap around the red ring's loop (bite) by 1/2, and in this state, you can pull the red line out completely using the ship's winch.

※ If the purple lines mentioned above are very taut, the red ring may get temporarily caught, but it usually comes loose when pulled by the ship's winch.

※ Compared to mooring line E(R)(ALHEN), the line handler should stand at a distance, positioned 90 degrees from the direction of the line, to observe for any abnormalities.

When the vehicle front bumper 202 AMES, lower both windows completely before beginning work before beginning work. (Vehicle Extraction)

= If there is oil or other slippery substances or ice, snow, or other that could cause slipping, tow truck drivers and workers must be careful not to slip; they should spread sand or similar materials to prevent slipping and remove oil and other substances.

As follows 22 environmental signs, the rope handler must ensure that workers do not approach the area around the anchor point.

Mooring line is caught on a bollard, and excessive winding of the main line by the winch (2IX(winch)) is detected

Strong winds, strong winds and rough seas cause the vessel to sway, widely placing tension on the mooring line

When severe aging or damage to the mooring line is detected upon visual inspection

When tension is suddenly applied to the mooring line, causing it to become taut, and the loop of the mooring line moves toward the top of the bollard or begins to tremble

When another vessel is approaching and is likely to strike the mooring line or collide with the vessel

The mooring line must be hauled in only after it has been fully lowered into the water, and the operation must be performed while ensuring that the line is being released smoothly from the vessel's winch.

= Under no circumstances should operations such as unmooring the mooring line be performed without a signal from the crew member in charge of the vessel.

While winding the mooring line onto the ship's winch during unmooring, continuously monitor to ensure that the mooring line or messenger rope does not get caught on protrusions or gaps on land, such as the 2I mark on the quay.

The ship's captain and the person in charge of mooring must comply with the following items to ensure safe mooring

"The vessel must inspect and maintain its throw lines, mooring lines, winches, and other equipment to ensure they are always in good condition."

Once the vessel has safely approached the quay, the crew should scan the surrounding area onshore and, when it is safe to do so, throw the heaving lines from the bow and stern toward shore, and quickly release the mooring lines to prepare for any contingencies, such as engine failure or the effects of currents and tides.

"Use mooring lines that are in good condition; the use of mooring lines made of dissimilar materials, such as wire rope, is prohibited in principle."

In case the vessel's throw lines are too far away to reach the mooring crew, two or more throw lines must be prepared.

"For safety guidelines by work process for the front bumper blackening method and the winch method, refer to "9.3.4 Safety Guidelines by Work Process for the Front Bumper Blackening Method" and "8.3.5 Safety Guidelines by Work Process for the Winch Method."

### 8.3.3 After Work

"After the mooring lines have been fully wound onto the winch and the vessel has moved away from the pier, and prepare to withdraw from the work area.

"Any abnormalities discovered during line-handling operations, such as issues with mooring lines or throw lines, must be reported to the ship's crew.

"After completing the line-handling operation, all tools and ropes at the site must be neatly cleared away.

### 8.3.4 Front Bumper

Reg. Method By Work Process  
0:1Hoo=

#### Safety Rules

#### Berthing Operations (Front M = Method)

#### General Safety Rules

1. Rope Handler                      When Using Vehicles                      At least three people                      (1 driver, 2 or more workers)
2. Vehicles must be equipped with a sudden acceleration prevention device (forward motion function) to prevent sudden acceleration within the apron area.
3. The use of vehicles equipped with a forward collision avoidance system (468) is recommended. However, for vehicles purchased after the safety regulations take effect, installation of this system is mandatory. (Disabling this function is prohibited.)
4. Vehicle Driver Age: It is recommended that drivers be under 65 years of age.
5. All line-handlers must wear automatically inflatable life jackets.
6. Vehicle drivers must keep all windows open at all times while working (to allow the driver to escape in the event of a fall into the sea).

#### 1. Throwing a lifeline by crew members



##### 1-1. Line Handler      Vehicle Standby

\*The vehicle must stand by in advance at the expected point where the messenger rope will be hoisted; the driver must put the vehicle in neutral and apply the parking brake while waiting

"It is recommended that workers under the age of 65 operate the vehicle.

"It is recommended to use a vehicle equipped with a forward collision avoidance system  
(Mandatory for vehicles purchased after the safety guidelines took effect)

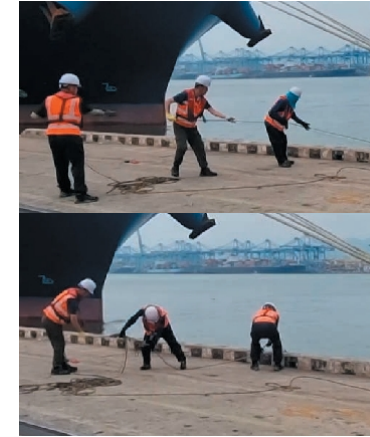
"Install a forward collision mitigation system in the vehicle.

##### 2-1. Throwing the heaving line

"Position yourself well away from the rear of the crane or other areas where the heaving line (throwing rope) might fall to avoid being struck in the chest or face by the monkey fist, which acts as a counterweight

"Monkey fist weight: 5008-2 kg

#### 2. Pulling the hauling line and securing the messenger rope to the ground



##### 2-1. Pulling the heaving line

"When pulling the heaving line, two people should pull from opposite ends.

"Various kinds of Rope Resistance Can Cause Lower Back Pain and Other Issues

22. If the messenger rope is long, pull it up to the front of the vehicle and secure it by stepping on it

2-3. If the messenger rope is short (B2), pull the mooring line all the way to the front of the vehicle and secure it by stepping on it

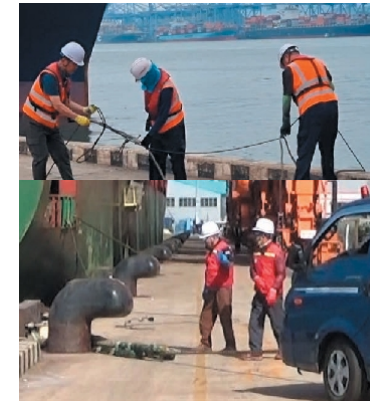
"When pulling up the messenger rope and mooring line, there is a risk of lower back pain or losing your balance and falling into the water

Two or more people should pull it up

Support the sole of your foot against the fender at the end of the quay, keep your center of gravity shifted backward, and pull

"If the messenger rope or mooring line falls into the water, you may trip over your foot that is securing it or have your ankle entangled in the rope and fall into the water; therefore, two or more people must secure the rope to the quay at a 90-degree angle to the quay wall, ensuring it is securely tied in a 7L configuration

#### 3. Untie the heaving line knot, connect the messenger rope to the vehicle, and pull the mooring line



##### 3-1. Untie the heaving line knot from the messenger rope

##### 3-2. Connect the messenger rope to the front bumper of the vehicle

"If the vehicle's waiting area is far away and the vehicle needs to be moved, move slowly in accordance with signals from the shore-based workers

##### 3-2. Reverse the vehicle to move the mooring line to the mooring post where you intend to secure it

- After securing the messenger rope, ensure the vehicle is positioned at an angle of 45 degrees or more from the front of the vehicle

"The driver must confirm that the shore-based worker is positioned at a 45-degree angle from the front of the vehicle before reversing

"Before reversing, check for port facilities, other workers, or other obstacles behind the vehicle, and then reverse

#### 4. Securing the mooring line to the mooring post



##### 4-1. Tying a Line to a Mooring Post

Two or more people should work together to  
(to prevent musculoskeletal disorders)

\*The driver should put the vehicle in  
in park and apply the parking brake while waiting  
(Do not exit the vehicle)

Before the mooring line is pulled out by a winch on a vessel, all workers must evacuate the area around the mooring post

Risk of the mooring line snapping (snapback) or the line becoming taut and striking the shins =4

#### Towing Operation (Front Bumper)

##### Method)

##### General Safety Rules

1. Do not use a shoulder sling. (Use manual labor to remove the mooring line.)  
\* Shoulder-hoist method: A technique in which the messenger rope connected to the vehicle is draped over the top (back) of the mooring post and pulled by the vehicle to remove the mooring line in one go
2. When operating a guide vehicle, a minimum of three people must be on board (one driver and at least two operators).
3. Vehicles must be equipped with a sudden acceleration prevention device (forward motion function) to prevent sudden acceleration within the apron area.
4. The use of vehicles equipped with a forward collision avoidance system (&68) is recommended. However, for vehicles purchased after the implementation of these safety guidelines, such a system must be installed. (Disabling this function is prohibited.)
5. Vehicle Driver Age: It is recommended that drivers be under 65 years of age.
6. All workers on the job site must wear self-inflating life jackets.
7. Vehicle drivers must keep all windows open at all times while working (to allow the driver to escape in the event of a fall into the sea).

#### 1. Vehicle 20 | Messenger Rope Connection

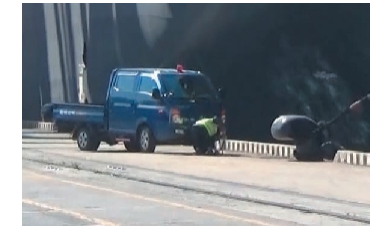


##### 1-1. Mooring post Vehicle on standby nearby

Check the length of the messenger rope before starting work

\* Do not move the vehicle  
near the mooring post  
(Wait no closer than the length of the messenger rope)

=7| Park the vehicle and apply the parking brake before waiting



##### 1-2. Secure the messenger rope to the vehicle's front bumper (Soft)

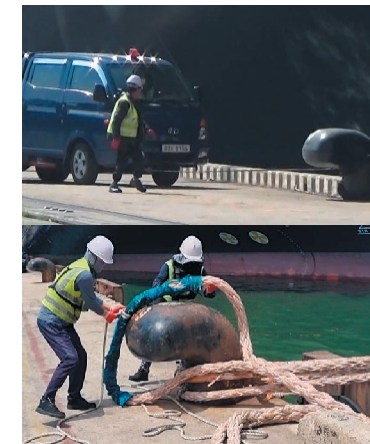
\*Work begins once the vessel loosens the mooring line

\*The worker in charge of securing the line must clearly signal the vehicle driver to begin work—either verbally or with hand signals—and start work only after making eye contact with the driver

\*The vehicle driver must keep the transmission in neutral and the parking brake engaged; do not operate the vehicle until the hooking operation is complete

\*When using a lanyard, ensure that the sling has a working load limit of 51/[(safe working load)] of 4 metric tons or more  
with a safety working load of 51/[(safe working load)] ≥ 4 metric tons

#### 2. Pulling the Messenger Rope with the Vehicle



##### 2-1. Pull the messenger rope by reversing the vehicle

\*It is strictly prohibited to remove the mooring line from the mooring post in one go using a vehicle (shoulder hoist).

\*Before reversing the vehicle, on-site workers must wait at a 45-degree angle or more to the side of the vehicle's front

\*The driver must reverse only after confirming that the on-shore worker has evacuated and is in a safe position

\*After the messenger rope has been fully pulled, use the manual release button inside the vehicle to detach the messenger rope from the cleat

##### 2.2. Removing the mooring line from the mooring post

\*The vehicle driver must shift to Park (PR), engage the parking brake, and wait inside the vehicle (under no circumstances should the driver exit the vehicle)

\*Onshore workers must verify that the vehicle's parking brake is engaged

and then approach the mooring post

At least two people must work together to release the mooring line

\*When pulling the released mooring line toward the ship's winch, there is a risk of tripping over the line or falling into the water; therefore, evacuate immediately after releasing the line

\*Before moving to the vehicle, check that the mooring line being pulled by the ship's winch is not caught on the quay fenders, structure 677061, or other obstacles

### 8.3.5 Winch Method

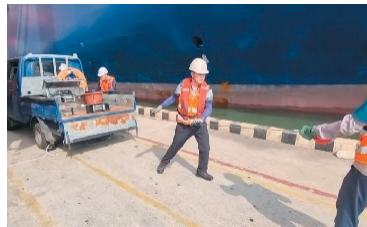
Low Noise Brush

#### Berthing Operations (Winch Method)

General Safety Rules

1. Rope Handler When Using Vehicles At least three people (1 driver, 2 or more workers)
2. Vehicles must be equipped with a sudden acceleration prevention device (forward motion function) to prevent sudden acceleration within the apron area.
3. The use of vehicles equipped with a forward collision avoidance system (460) is recommended. However, this system must be installed on all vehicles purchased after the safety regulations take effect. (Disabling this function is prohibited.)
4. All rope handlers must wear self-inflating life jackets.
5. No one is allowed inside the vehicle during winch operations.

#### 1. Crew Member Throwing the Hiking Line



- 1-1 , rope handler Park the vehicle and prepare for winching
- \*Park the vehicle in advance at the anticipated mooring point, put it in first gear, and apply the parking brake
  - \*Place chocks under the vehicle's wheels
  - \*Unwind the winch to release the messenger rope up to the expected point where it will rise; unwind the winch by 2 turns.
  - \*Conduct a visual inspection of the winch wire rope to ensure there are no kinks, snags, etc.



- 1-2. Throwing the heaving line
- \*Position yourself well away from the expected fall zone, such as behind the crane, to avoid being struck in the chest or face by the monkey fist, which acts as a counterweight for the heaving line
  - \*Monkey fist weight: 500g-2 kg

#### 2. Pull the hauling line and secure the messenger rope to the ground



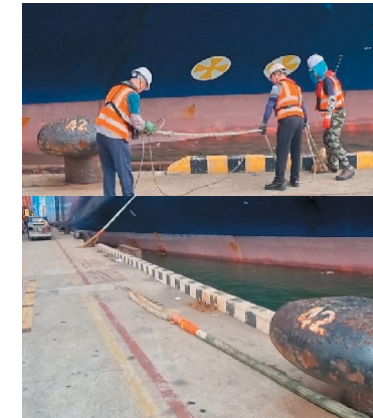
- 2-1 , Pulling the heaving line
- \*When pulling the hauling line, ensure that at least two people are pulling it
  - \*Back pain and other issues caused by various rope resistances



- 2-2. If the messenger rope is long, pull it up to the front of the winch and secure it by stepping on it
- 2-3. If the messenger rope is short, consider either pulling the mooring line up to the front of the winch and securing it with your foot, or extending the winch wire rope
- =Risk of back pain or losing balance and falling into the water when hauling up the messenger rope and mooring line
  - =Lift loads weighing 201 or more to be hauled up
- \*Quay Use the sole of your foot to brace against the fender and keep your center of gravity shifted backward while pulling

\*If a messenger rope or mooring line falls into the water, you could trip over your own feet or have your ankle get tangled in the rope and fall into the water; therefore, at least two people should secure the rope firmly against the quay wall at a 90-degree angle in a '2' configuration secure the line to the quay wall at a 90-degree angle in a secure position

#### 3. After untying the heaving line knot and connecting the messenger rope to the winch 2of, pull the mooring line pull



- 3-1 , untie the heaving line knot from the messenger rope
32. Connect to the messenger rope winch
- Ensure that at least 23 is secured so that the messenger rope does not slip back into the water
33. Wind the wire rope onto the winch to move the mooring line to the mooring post
- \*Use a winch equipped with an H2 release mechanism
  - Work begins once the mooring line is loosened from the vessel
  - \*After securing the messenger rope to winch Z0f, all workers must evacuate to a radius of at least 3 meters
  - \*In the event of a winch wire rope or messenger rope breakage, evacuate to the safe zone outside the danger zone (503? Back)
  - \*One worker must use a pole or similar tool from a safe position to help wind the rope to prevent the winch from over-winding
  - \*If a pilot or captain requests that the vessel be moored quickly due to the risk of a collision between vessels caused by the vessel being swept by currents or tides during inclement weather, consider securing the first spring line by pulling it 202 toward the front bumper of the vehicle

4. Securing the mooring line to the mooring post



4-1. Securing Mooring Lines to Mooring Posts

1012 Winch SOM: Securing and Releasing the Messenger Rope

⌚ If it is determined that the mooring line is about to slip back into the water, secure the messenger rope or mooring line with your foot before attempting the operation

Two or more people should work together to pull the mooring line onto the mooring post (to prevent musculoskeletal disorders)

⌚ The winch operator should release the winch and return it to its home position in preparation for the next task

\*Before pulling the mooring line with the winch from the vessel, all workers must evacuate the area around the mooring post

Mooring line Risk of snagging (snapback) or the mooring line becoming taut, posing a risk to the shins = 4

Mooring Operation (Winch Method)

—General Safety Rules

1. (The mooring line must be released manually.)

※ "Shoulder hoist": The process of draping the messenger rope attached to the vehicle over the top (back) of the mooring post and pulling it with the vehicle to release the line in one go

2. When using a line-handling vehicle, at least three people must be assigned (one driver and at least two workers).

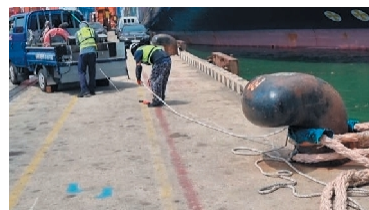
3. Vehicles must be equipped with a sudden acceleration prevention device (forward movement function) to prevent sudden acceleration within the apron area.

4. The use of vehicles equipped with a forward collision avoidance system (&68) is recommended. However, such systems must be installed on all vehicles purchased after the implementation of these safety guidelines.

5. All workers involved in towing operations must wear self-inflating life jackets.

6. No one is allowed inside the vehicle during winch operations.

1. Connecting the winch to the messenger rope



1-1. Mooring post Park the vehicle nearby

⌚ Check the length of the messenger rope before starting work

⌚ Park the vehicle in a location that allows for the messenger rope length and

distance the winch can be wound

⌚ After engaging the gear and applying the parking brake, place a chock under the vehicle's wheel



1-2. Secure the messenger rope to the winch

⌚ Winch Use one equipped with a release mechanism

\*Work begins once the mooring lines are loosened on the vessel

⌚ After securing the messenger rope to the winch hook, all workers must evacuate to a distance of at least 3 meters

⌚ Evacuate outside the AHE (Snap Back) danger zone in case of a winch wire rope or messenger rope break

⌚ When using a lanyard, use a sling belt with a 50/(working load limit) rating of 400 or higher

2-1. Pulling the Messenger Rope with a Winch

⌚ The winch operator must confirm that all workers have evacuated the danger zone before operating the winch to pull the mooring line forward.

⌚ It is strictly prohibited to use a vehicle to remove the mooring line from the bollard in a single motion (shoulder pull).

⌚ It is strictly prohibited to allow the mooring line to become entangled with another vessel's mooring line, preventing it from being pulled or when two mooring lines are

To pull the vehicle

⌚ It is strictly prohibited to pull the vehicle forward while the winch is connected to the messenger rope (risk of rope breakage)

⌚ If another vessel's mooring line becomes entangled, consider pulling it away using the vehicle's front bumper

⌚ The winch operator must also operate from outside the AW zone (remote control recommended)

2-2. Unmooring from the Mooring Post

⌚ The winch operator must stop the winch from reeling in and allow the wire rope to slacken by letting it out before instructing workers to proceed

⌚ Workers shall approach only after pulling the messenger rope and confirming that the winch wire rope has become slack

=201 or higher. Use to remove the mooring line

⌚ When pulling the released mooring line with the ship's winch, there is a risk of tripping over the line or falling into the water; therefore, evacuate immediately after releasing the line

⌚ Before moving to the vehicle, verify that the mooring line being pulled by the ship's winch is not caught on the quay fender (560061) or other structures

⌚ The winch operator must release the winch and return the drum to its proper position in preparation for the next operation.

2. Pulling the messenger rope with the winch

