Lever Puller

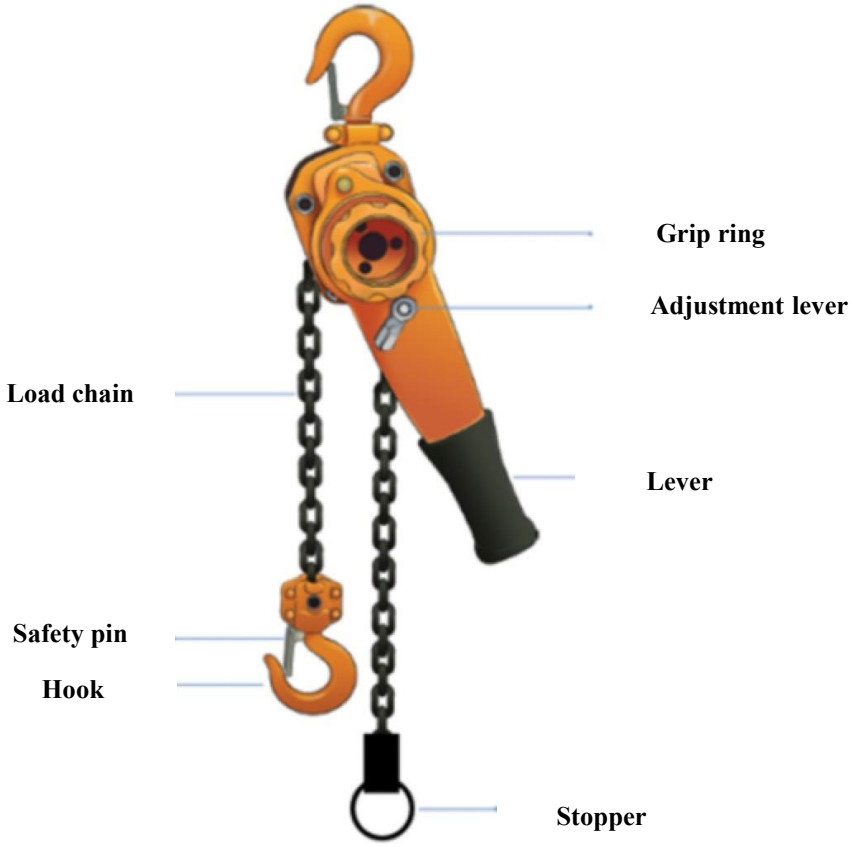
Safety Operation Guide

2025-외국인전담팀-244

Lever Puller

Definition This lifting device, also known as a lever block, is used to handle heavy loads manually, lifting or pulling objects vertically or moving components to a desired position.

Composition Body, lever, chain, etc.



Structure of a lever puller

1 Major Hazards

✓ Impact hazard

•Risk of impact due to hooking onto an unstable structure, which could cause the hook to slip off or snap

- Hanging directly on the target object (e.g., steel plate) without using a pivot clamp (pivot clamp) or lug
- Hanging from a lug with insufficient welding
- Hanging from a damaged lug
- Hanging using other unstable methods

✓ Tipping hazard

•Risk of heavy objects tipping over due to the use of a defective lever puller

- The hook opening has been stretched by 10% or more beyond the product specifications provided by the manufacturer.
- Hooks or chains that are deformed, damaged, corroded, or worn
- The chain length exceeds 5% of its original length at the time of manufacture
- The cross-sectional diameter of the ring has decreased by more than 10% from the original ring diameter at the time of manufacture
- Use of a lever puller without a stopper

• Risk of tipping heavy objects due to exceeding the rated load by using a pipe on the lever of the lever puller

• Risk of tipping heavy objects due to chain breakage or slippage from improper load chain alignment

✓ Collision hazard

• Risk of collision from unintended movement of unstable heavy objects when workers operate them with a lever puller

2 Main Inspections

• Abnormal noise without load

• Damage, deformation, wear, or cracks in the chain and hook

• Proper lubrication of the chain

• Attachment and condition of the stopper

• Firmness of the hooking area (e.g., pivot clamp, lug, etc.)

3 Examples of Unsafe Use of Lever Pullers

Attaching the lever puller hook directly to the target object

Attaching to a lug with insufficient welding

Attaching to a severely damaged lug

Attaching to a structure at risk of the hook detaching

Using a lever puller with a damaged hook (e.g., broken hook end)

Using a lever puller with a pipe attached to the lever

Using the load chain without aligning it in a straight line

4 Safety Measures

✓ Secure the hook to a stable structure

- Avoid hooking directly onto the target object, and instead attach to the pivot clamp or lug.
- Secure to an adequately welded lug in good condition without damage.

✓ Perform regular inspections

- Conduct regular inspections according to the manufacturer's manual.
- After the inspection, mark the inspection date and pass/fail status (e.g., pass sticker).

✓ Use load chains with care

- Ensure the load chain is aligned in a straight-line during use.
- Avoid applying direct external force to the load chain.
- Ensure the load chain is not twisted during use.

✓ Do not use it with other equipment

- Do not connect with other equipment where the rated load cannot be verified.
- Do not use auxiliary hooks with a lower capacity than the lever puller.

✓ Operate the lever puller with care

- Do not force a pipe onto the lever puller or use your foot to operate it.
- After securing the load, return the operating adjustment lever to the neutral position.
- Operate the lever puller's lever lightly with one hand.

✓ When using a lever puller, check the fixed (support) point, considering the possibility of sudden movement of the heavy load.

✓ Do not throw the lever puller onto the floor.

✓ Avoid contact with the adjustment lever or chain while the load is applied.

✓ Restrict access of unauthorized personnel to the work area.

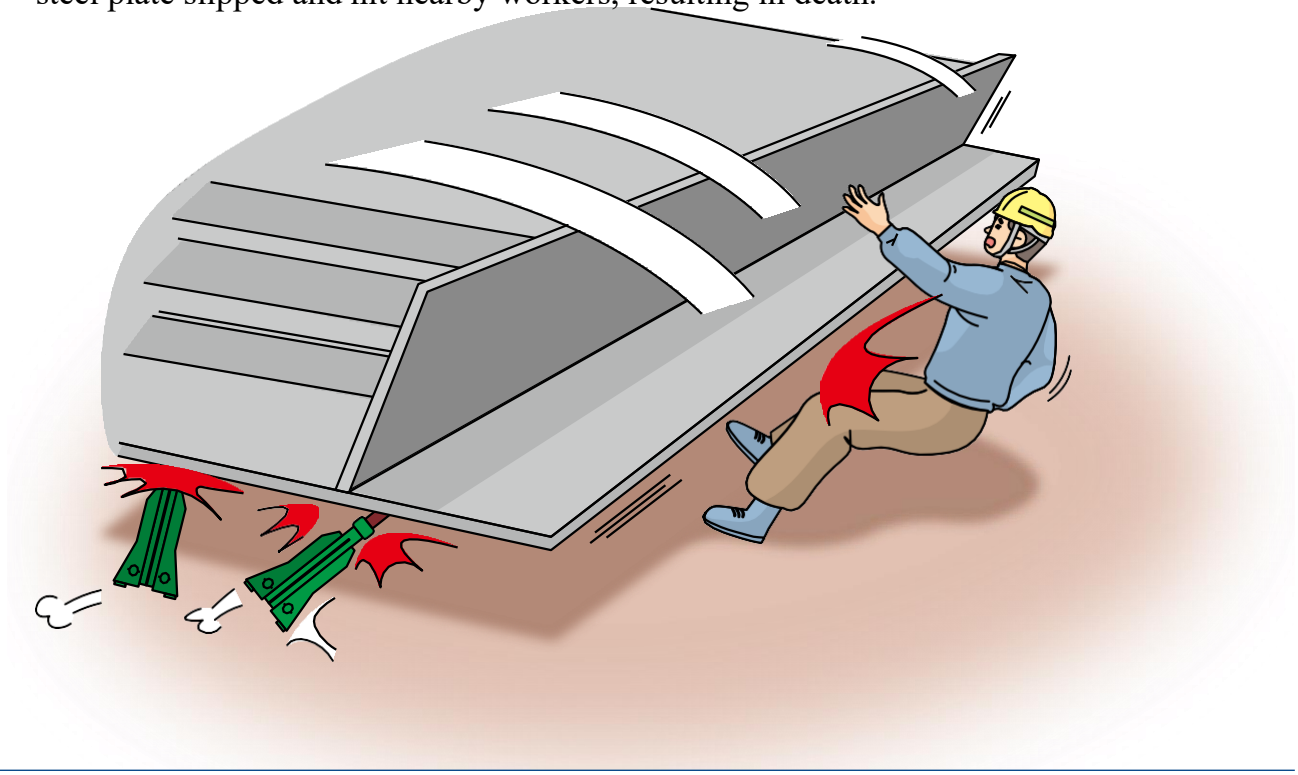
5 Risk Assessment (Example)

Hazards	Measures	Rules on Occupational Safety and Health Standards
Risk of impact from hook detachment or rebound when the hook is directly attached to the object	• Attach the hook to the pivot clamp or lug	Article 96
Risk of impact from lug failure due to insufficient strength	• When hanging on the lug, check if the lug is solid	-
Risk of load tipping due to the use of a defective lever puller	• Perform regular inspections according to the manufacturer's manual • Check for deformation or damage to the hook, chain, etc., before work	Article 96
Risk of load tipping due to breakage from exceeding the rated load when using a pipe on the lever	• Do not use a pipe inserted into the lever of the lever puller.	Article 96
Risk of load tipping due to breakage or rebound from misaligned load chain	• Always use the load chain so that it receives a straight load.	-
Risk of collision from lever rotation caused by sudden impact when the adjustment lever is not in neutral after securing the load	• After fixing the heavy load, keep the operation adjustment lever in the neutral position.	-
Risk of load tipping due to chain breakage when the load chain is twisted	• Check for twists in the load chain before operating the lever.	-
Risk of collision from unintended load movement, such as slipping, when working with an unstable load using a lever puller	• When using the lever puller, check the fixing (support) point, considering the possibility of sudden movement of the heavy load. • Control access to the area around the work area with potential hazards.	-

Accident Case **A steel plate secured by a lever puller detached and struck nearby workers.**

✓ Summary

A worker was operating a lever puller holding a steel plate in place during slab work. The steel plate slipped and hit nearby workers, resulting in death.



✓ Causes

- The possibility of unintended weight movement was not considered when using the lever puller.
- Access to surrounding areas with potential hazards was not restricted.

✓ Preventive Measures

- Consider the possibility of unintended weight movement when using a lever puller and secure additional fixation points if necessary (e.g., install supports, tack welding, use a crane to prevent tipping).
- Restrict access to surrounding areas with potential hazards.