

BAILEY®

FALL PROTECTION

USER INSTRUCTIONS

HARNESSES

Complies with AS/NZS 1891.1 2007 - Industrial fall arrest systems and devices.
Part 1: Harnesses and ancillary equipment.



*Image for illustrative purposes only.
Actual product may differ

(This manual applies to Werner Co. Harnesses 108055 & 108064)



CAUTION!

*If use of fall protection equipment is necessary then the work environment is dangerous and potentially deadly. Werner Co. products are designed to eliminate as much of the hazard as possible but can do that **ONLY** if they are used correctly. Use this equipment as it was designed to be used, after appropriate training, under the direct supervision of a competent person, according to the instructions provided, and in accordance with local safety regulations.*

*User **MUST** read and understand all cautions and instructions. Failure to heed these guidelines could result in injury or even death.*

*Please, **WORK SAFE! WORK SMART!***



Certified to AS/NZS 1891.1
Issued by SAI Global

This product is marked with the SAI Global Certified Product insignia. This indicates that the product conforms to the technical requirements of AS/NZS 1891.1 2007 in both design and testing. This also indicates the conformance of the manufacturing and quality control processes that are in place to produce this product. Annual reviews are undertaken by SAI Global to ensure consistent product conformance and quality.

AS/NZS 1891.1 2007. Lic. No.: SMK40545

HARNESSES

USER INSTRUCTIONS

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WARNING!

*This product is just one part of a personal fall arrest, work positioning, travel restraint, climbing or rescue system. It must be matched correctly with other components to form a complete and functional system. The user must understand the function of each of these components and follow the manufacturer's instructions for use for each. Australian standards require that training in the use of these products be provided by a competent person. The user must be provided these instructions, should read and follow them, and then consult the competent person who will supervise his work if he has any questions about any part of the instructions. Australian and International Standards require the users of fall arrest equipment to be trained before they use this type of safety equipment. These instructions may be used as part of a training program that is appropriate for the user's occupation. The equipment should be used **ONLY** in accordance with these instructions, local ordinances and codes, the applicable Australian standards, and the employer's safety plan. Alterations or misuse of this product, or failure to follow instructions may result in serious injury or death.*

IF YOU HAVE ANY QUESTIONS ABOUT ANYTHING IN THESE INSTRUCTIONS, THE EQUIPMENT, OR PROPER USE OF THE EQUIPMENT, CONTACT WERNER CO. FOR MORE INFORMATION.

Note: All images in these instructions are for illustrative or instructional purposes only. They do not necessarily represent the actual product(s) in this kit.

HARNESSES

USER INSTRUCTIONS

Safe Work Practices

Before you start working always assess your work environment for factors that will affect your safety. Have a plan of how you are going to carry out your tasks safely. Prepare fall arrest, fall restraint, work positioning, suspension and rescue systems prior to working.

A competent person must conduct a risk assessment to determine the best equipment and the safest work practices. Consider the following:

- Ensure that the forces applied to the body through a lanyard or anchor age line at fall arrest, do not exceed 6kN (600kg).
- The pendulum effect if a fall occurs
- Falls over sharp edges
- Working on slopes
- Choosing suitable anchor points
- The clearance to the closest obstacle below the user
- Comfort, during extended suspension
- Rescue and retrieval systems to prevent suspension trauma
- Confined space hazards
- Electrical, chemical and fire hazards
- Climatic and environmental conditions
- Consider if a restraint system is suitable instead of a fall arrest system
- Only use equipment in accordance with manufacturer's instructions, that is; method of fitting, adjustment, use and capacity

Rescue and Retrieval

A rescue and retrieval plan should be a part of any safe work practice. It is important for all persons working at heights to consider how a person can be rescued in the event of a fall. If a person needs to be rescued from a free fall it is important for the rescuers to act quickly. Within 3 minutes a person suspended in a harness can suffer from suspension trauma. This condition is caused by blood pooling in the legs, and can lead to loss of consciousness, renal failure and eventually death. If the suspended person is conscious they should be encouraged to keep their legs moving or even push against a surface with their legs.

Training

For your safety, it is important to fully read these instructions and understand them. These instructions should always be readily available for reference by the user. They should be read at periodic intervals and when the operator has not used these products for an extended period. Training performed by a competent person in the safe use of this equipment will help understand the correct use of height safety equipment.

Australian and International Standards require the users of fall arrest equipment to be trained before they use this type of safety equipment. These instructions may be used as part of a training program that is appropriate for the user's occupation. Users of safety equipment must read and understand (or have received an explanation of) all instructions, warning labels and markings supplied with these products.

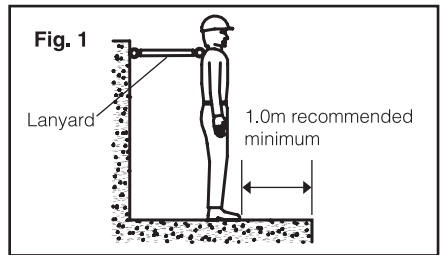
Terminology

Competent Person

A competent person is defined in Standard AS/NZS 1891.4 as “a person who has, through a combination of training, education and experience, acquired knowledge and skills enabling that person to correctly perform a specified task.”

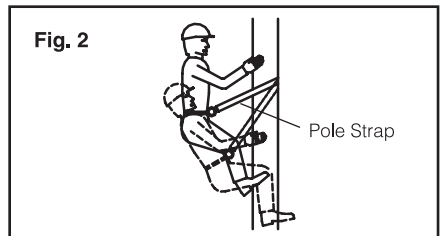
Total / Fall Restraint – Fall not possible

This should be the aim and first option for any fall protection setup. A total/fall restraint system is designed to prevent the user from reaching an area where there is a risk of a fall, so a free fall or limited fall is not possible. It is recommended that a fall restraint system is set up to prevent a user from being within at least 1 metre from an edge where a fall could occur. See **Fig. 1**.



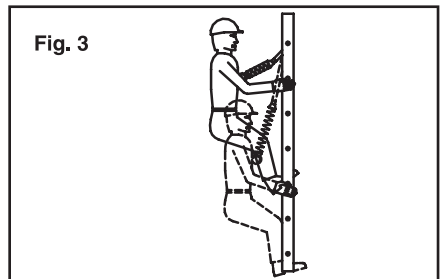
Restrained Fall / Work Positioning

A restrained fall occurs when a person suffers a fall but they are partially restrained by a device such as a pole strap. See **Fig. 2**.



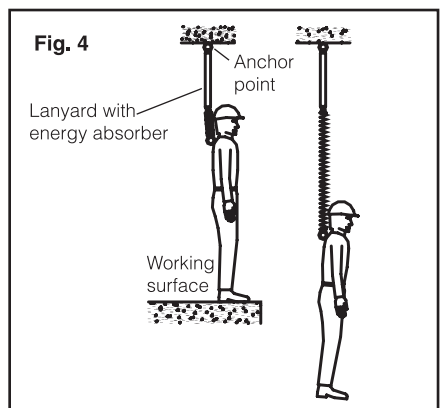
Limited Free Fall

Free fall distance less than 600mm. A limited free fall occurs when a person falls less than 600mm either vertically or on a slope where it is not possible to walk without a handrail. See **Fig. 3**.



Free / Fall Arrest

Free fall greater than 600mm. A fall arrest system is designed to stop the free fall of a user and limit the maximum arresting forces imposed on the user to 6 kN or less. Free falls greater than 2.0m are not acceptable under normal circumstances. Refer to AS/NZS 1891.4 paragraph 8.3(c). See **Fig. 4**.



Suspension

A suspension system is designed to enable access to a workplace by suspending a person attached to a rope line and a secondary safety system.

Fall Clearance

The fall clearance is the clear distance between the user and the nearest obstruction after they have had an arrested free fall. The fall clearance should be a minimum of 1.0m. See **Fig. 5**.

To calculate fall clearance the distance between the anchor point and the obstruction below needs to be measured. Then subtract from this distance the height of the user, the lanyard length and the energy absorber extension distance (1.75m maximum). **The remainder of the distance is the fall clearance which must be at least 1.0m.**

For example: If a 1.8m tall person falls from a working surface and the distance from the anchor point to the obstruction below is 6.55m, and the lanyard length is 2m and the energy absorber deploys over a distance of 1.75m then the fall clearance would be the minimum of 1.0m.
($6.55\text{m} - [1.8\text{m} + 2\text{m} + 1.75\text{m}] = 1.0\text{m}$).

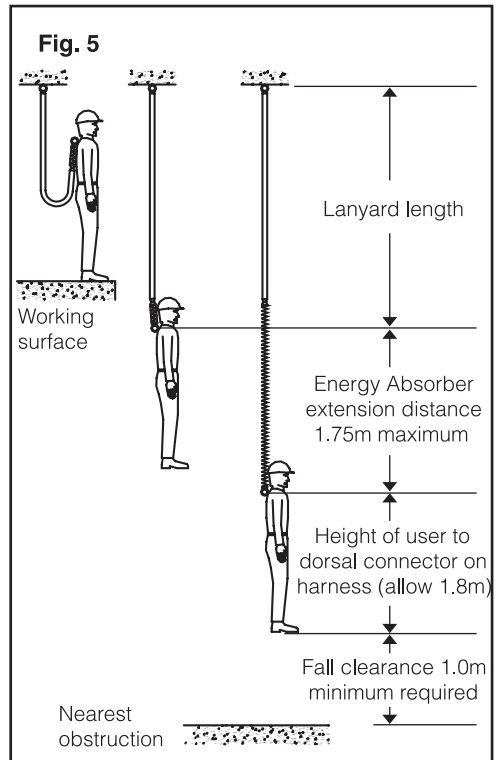
Note: Height of user = From ground level to dorsal D-ring attachment point (allow 1.8m). Allow 1.75m maximum extension of energy absorber.

Rescue – Emergency Procedure

A rescue system is designed to provide effective and timely assistance or rescue to raise or lower a user to safety in the event of an emergency. Due to the risk of suspension trauma a person should be removed from the suspended position as soon as possible.

Working Slack

You should use the shortest lanyard practical to carry out your work. The slack should not be excessive, so if a fall occurs the free fall distance will be kept to a maximum of 2.0m. Wherever possible keep the anchor point attachment end of the lanyard above the harness attachment point.



Additional Standards for Reference

Australian Standards set out recommendations for selection and safe use of safety equipment, plus outline minimum acceptable performance of different types of safety equipment. They do not necessarily indicate best work practices. Additional reading of relevant safety standards as listed below is recommended:

AS/NZS 1891 Series (Industrial fall-arrest systems and devices)

AS 1353 Series (Flat synthetic-webbing slings)

AS 1666 Series (Wire-rope slings)

AS/NZS 2865 Series (Safe working in a confined space)

AS 4142 Series (Fibre ropes)

AS/NZS 4488 Series (Industrial rope access systems)

AS 4497 Series (Round Slings-synthetic fibre)

Harness Adjustment and Use

Harness Fitting Instructions

Step 1

Pick up the harness by the large metal D-ring on the back of the harness. This D-ring sits between the 2 shoulder straps. Unravel and layout the straps to identify the chest and leg straps.



Step 2

Pass arms through shoulder straps like putting on a vest. Adjust shoulder straps so the chest strap/retainer is just under the level of your armpits.



Step 3

Connect leg strap buckles together on both legs, and adjust tension. If waist strap is included, connect buckles together and adjust tension. Fold away excess webbing.



Step 4

Clip chest strap buckles together and adjust tension so the chest strap is firm, but not too tight which will inhibit breathing. Fold away excess webbing.



Step 5

Ensure the harness is adjusted correctly, but not too tight. To check the correct tension on your harness, you should be able to slide your flat hands between the straps and your body. Check your harness for straps that are twisted, they should be flat against your body.



This harness is a life saving device, correct fitting and adjustment will ensure it performs effectively during a fall. Ensure you are confident with fitting and use of this product. If you have any doubt, you must seek clarification

Attachments and Connections

Making Connections

Only use self-locking snap hooks and karabiners with this equipment. Only use connectors that are suitable to each application. Ensure all connections are compatible in size, shape and strength. Do not use equipment that is not compatible. Ensure all connectors are fully closed and locked.

Connectors (snap hooks and karabiners) are designed to be used only as specified in each product's user's instructions. See inappropriate connections.

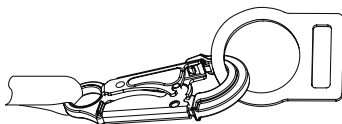
Snap hooks and karabiners should NOT be connected:

- i. to a D-ring to which another connector is attached.
- ii. in a manner that would result in a load on the gate. If the connecting element that a snaphook or karabiner attaches to is undersized or irregular in shape, a situation could occur where the connecting element applies a force to the gate of the snaphook or karabiner. This force may cause the gate (of either a self-locking or a non-locking snaphook) to open, allowing the snaphook or karabiner to disengage from the connecting point.

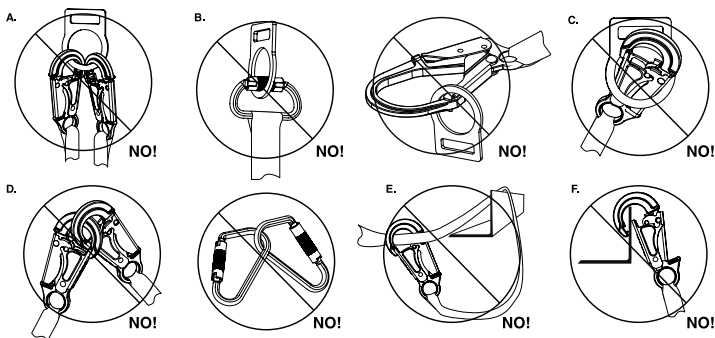
Connectors always need to be compatible with the attachment or anchor points they are being connected to. If a snap hook or karabiner cannot properly engage its locking mechanism when being connected to an attachment point another connection method must be found.

If connecting with a snap hook or karabiner to an attaching point that has an irregular shape or is too small, there is a chance that it may disengage the locking mechanism. This action is called 'roll-out'. Roll out occurs when the attaching device applies force onto the tip of the gate on the hook thus forcing it open. Bailey snap hooks and karabiners have a dual action, gate mechanism which will reduce the risk of 'roll-out' occurring.

Proper Connection



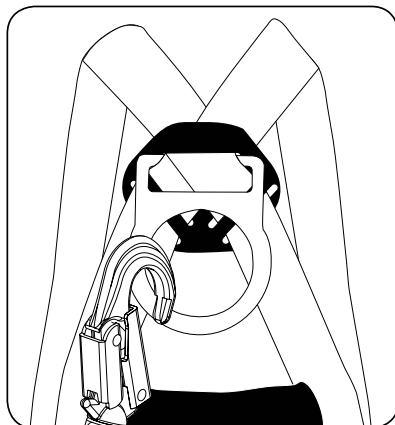
Inappropriate Connections



Attachments – D-Ring

For fall arrest applications, connect to the dorsal D-ring located between the shoulders on the back of the full body harness.

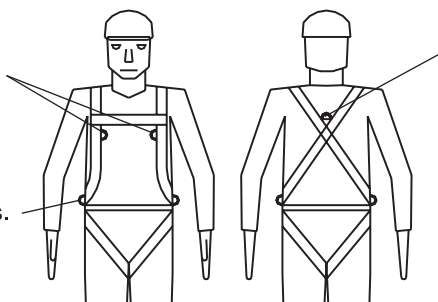
The pack end of a shock pack energy absorbing lanyard, or the designated end of an internal shock absorbing lanyard should be attached to the harness rear D-ring. With twin leg lanyards, the center hook should be attached to the harness.



Harness Attachment Points

Belay frontal attachment points. Always use both points together. (Used for rope suspension, fall arrest and rescue)

Side attachment points. (Used with horizontal restraint systems and positioning)



Rear fall arrest attachment point (Preferred attachment point for fall arrest)

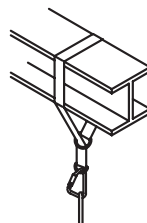
Suitable Anchorage

Fall prevention and fall arrest safety equipment needs to be suitably connected to anchor points that can withstand the forces that may be applied to them during a fall arrest situation. These strength requirements for anchorages are outlined in the Australian Standard AS/NZS 1891.4 Table 3.1. The strength required for a single point anchorage is 15 kN for a one person free fall arrest and 21 kN for a two person free fall arrest.

The building or structure and anchorage points shall be assessed by an engineer, unless it is clear to a competent person that the anchorage system is structurally adequate. Refer to AS/NZS 1891.4 3.1.2.

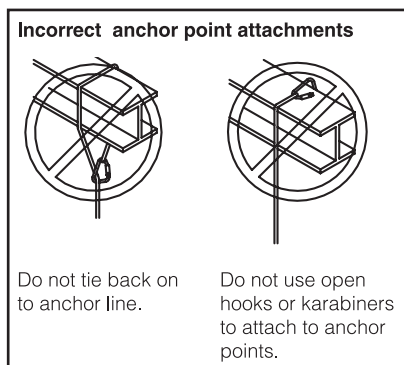
Correct use of a sling on an anchor point

Small D-ring passes through larger D-ring on the sling.



Anchor points should be visibly inspected for damage or wear by the user before attaching to them. The supporting structure, that holds the anchor point should be a sound structure free from defects or corrosion. When a designated anchor point is not available, a suitable structure can be connected to using appropriate slings.

Wherever possible the anchor point should be above the attachment point on your harness. If the anchor point is lower than your attachment point you risk falling twice the length of your lanyard. Refer to “Working Slack” on page 8.



Energy Absorbing Fall Arrest Lanyards

Single Leg Lanyards

Single leg lanyards with energy absorbers are common fall arrest devices. The energy absorber can expand to a maximum length of 1.75m whilst arresting a fall. The working slack on a lanyard should be kept to a minimum. If a free fall is possible, the lanyard length, height of the user and the 1.75m energy absorber length must be considered to prevent the user from hitting obstacles below. Refer to the “fall clearance” calculation on page 8.

Energy absorbing lanyards must only be used in conjunction with full body harnesses. The energy absorber end of the lanyard attaches to the harness. If an energy absorbing lanyard has been used to arrest a fall it must be taken out of service and destroyed.

Conditions of Use

All safety equipment should be stored correctly and kept in good condition. Additions or alterations made to such devices may reduce their ability to function correctly, therefore becoming unsafe. Unauthorized additions alterations or repairs shall not be made to such devices and would void any warranty. **If this equipment has been involved in a fall it must be taken out of service and destroyed.** If this equipment has been damaged, come in contact with corrosive chemicals or exposed to excessive heat or sunlight it must be destroyed or returned for inspection.

Werner equipment is designed for use with Werner approved components and subsystems only. Werner Co cannot be held responsible for connections made to other manufacturers' safety equipment. Even though this safety equipment has been developed to help users work safely at heights, it is the responsibility of the user and/or the owner of the equipment to assess working and environmental conditions. A risk assessment of working conditions should be undertaken prior to selecting appropriate safety equipment. Exercise care when working in cold conditions with rope and webbing products. Do not use these products if they are wet, frozen or thawing as their performance can be considerably impaired.

Caution: Always be aware of working near live electrical hazards

Inspecting Safety Equipment

To keep safety equipment in good working order it must be inspected and maintained at regular intervals in accordance with Australian Standard AS/NZS 1891.4 Table 9.1. Safety equipment should always be inspected before and after each use by the user. Fall-arrest devices need to be inspected every 3 months by a competent person. Harnesses, belts and lanyard assemblies need to be inspected by a competent person every 6 months or at sooner intervals if it is recommended by the supplier or manufacturer. If any safety equipment is used in an extreme working environment, it may need to have a stricter inspection or maintenance schedule. Refer to table 1.1.

Webbing products, including harnesses, belts, shock absorbing lanyards and pole straps have a service life of 10 years. Regardless of their condition or frequency of use they must be removed from service and destroyed no later than 10 years after their date of manufacture (D.O.M.).

Written inspection records must be kept for safety equipment. Australian Standard AS/NZS 1891.4 Table 9.2 indicates relevant information which needs to be recorded for particular types of safety equipment. A sample harness and belt inspection checklist table is printed on page 17. This checklist can be used for inspections on individual safety apparatus.

Inspection	Inspected by	Products / Applications
Before and after each use.	Operator	All personal equipment (full body harnesses, lanyards, connectors and fall arrest devices)
3 monthly	Competent person (Inspection record must be kept)	Fall arrest devices external check only
6 monthly	Competent person (Inspection record must be kept)	Belts, harnesses, lanyards, connectors and associated personal equipment
12 monthly service and inspection.	Approved certified agent (Inspection record must be kept)	<ul style="list-style-type: none">• Permanently installed anchorages• Fall arrest devices-full service including dismantling where indicated• Vertical / horizontal lifelines and rails, including integral components and permanently installed mobile attachment devices.
Entry and re-entry into service	Competent person (Inspection record must be kept)	All the products listed above
After a fall arrest and before further use.	Remove from service.	All the products listed above

Table 1.1

Inspection Cleaning and Storage

Inspecting Harnesses and Ancillary Equipment Before and After Fitting

Always inspect these products before and after use. The user should always visually inspect these products before use and pay particular attention to the following:

- Labels must be visible and legible.
- Date of manufacture, out of service date, and serial number.
- Cut, worn or frayed webbing.
- Frayed or cut stitching.
- Excess dirt, grease or chemical stains on webbing.
- Deformation, wear or corrosion of metal components.
- Missing parts.

If the product has been inspected by the user and they have any doubt about its integrity, it should be taken out of service, tagged and inspected by a competent person. If the competent person inspecting the product deems it unfit for use the product shall be destroyed.

Cleaning and Storage

Keeping safety equipment clean is part of its maintenance schedule and should be done at regular intervals. If equipment is used in environments where it is constantly exposed to foreign matter (eg. dust, moisture and chemicals) it may require more regular cleaning. Any contaminants found on safety equipment should be wiped off with a cloth. Mild detergent and lukewarm water may be required to thoroughly clean some surfaces. It is important to rinse off with clean water, then wipe down and allow to dry properly in a ventilated area away from direct sunlight. Do not use strong chemicals when cleaning these products. Do not oil or lubricate any metal components on these products.

Ensure all safety equipment is stored in a clean, dry and well ventilated location. Avoid storing safety equipment in environments that will expose them to heat, sunlight, sharp edges, chemical fumes and corrosive substances. If the equipment has been recently cleaned with water it must be completely dry before storing.

Inspection Checklist and Record Card

For Harnesses, and Ancillary Equipment

Item description: _____ Serial No.: _____

Manufacturer / Supplier: _____ Date of manufacture: _____

Date of purchase: _____ Date first used in service: _____

Date of inspection: _____ Date of next inspection: _____

Date out of service: _____

Details of any connections used: _____

List usage limitations: _____

Inspected by (print name): _____ Signature: _____

Component	Condition or fault to be checked	Pass	Fail	N/A
Webbing	Cuts, tears or holes			
	Abrasion damage			
	Excessive stretching			
	Corrosive chemical, solvent or heat damage			
	Deterioration due to rotting, mildew or ultraviolet exposure			
Sewing	Broken, cut or worn threads			
	Corrosive chemical, solvent or heat damage			
Karabiners and Snap hooks	Distortion of hook or latch shape			
	Cracks			
	Excessive wear at swivels and latch pivot pin			
	Open rollers			
	Free movement of the latch over its full travel			
	Broken, weak or missing latch springs			
	Free from dirt, debris or corrosion			
D-rings	Cracks			
	Damage or distortion of shape			
	Excessive wear			
Buckles and adjusters	Damage or distortion of shape			
	Cracks			
	Bent tongues			
	Open rollers			
Ropes	Cuts			
	Abrasion or fraying			
	Stretching			
	Corrosive chemical, solvent or heat damage			
	Deterioration due to rotting, mildew or ultraviolet exposure			
Chains	Damage			
	Attachment points to snap hooks and rings			

NOTES

NOTES



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