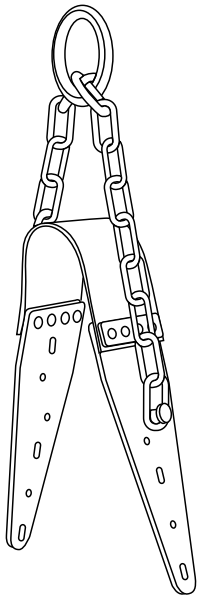
TIE DOWN SAFETY

Shuttle Roof Anchor Instruction Manual

Part ID: 13720



Keep these instructions for future reference. Read and understand these instructions before using this product.

WARNING

This product is part of a fall protection plan, including fall arrest and fall restraint. A Personal Fall Arrest System (PFAS) is typically composed of an anchorage and a Full Body Harness (FBH), with a connecting device, i.e., a Shock Absorbing Lanyard (SAL), or a Self-Retracting Device (SRD), attached to the dorsal D-ring of the FBH.

Provide these instructions to the user of this equipment. The user must read and understand the manufacturer's instructions for each component or part of the complete system. Follow manufacturer's instructions for proper use, care, and maintenance of this product. The user must retain these instructions and keep them available for reference at all times. Alterations or misuse of this product, or failure to follow instructions, may result in serious injury or death.

A Fall Protection Plan must be on file and available for review by all users. It is the responsibility of the user and the purchaser of this equipment to assure that users of this equipment are properly trained in its use, maintenance, and storage.

Training must be repeated regularly. Do not expose employees or users of equipment to fall hazards while training. When this equipment is in use the employer must have a rescue plan, the means, and training to safely implement a rescue plan to users, authorized persons, and rescuers.

Consult a doctor if there is reason to doubt your fitness to safely absorb the shock of a fall event. Age and fitness seriously affect a worker's ability to properly wear a FBH and withstand falls. Pregnant women or minors must not use this equipment.

NOTE: For more information consult ANSI Z359

This manual is intended to meet the Manufacturer's Instructions as required by ANSI Z359 and should be used as part of an employee training program as required by OSHA. This manual assumes the user has received training in the use of this equipment.

WARNING: This product can expose you to chemicals including Nickel, which is known to the State of California to cause cancer. For more information go to: www.P65Warnings.ca.gov

Instruction Sheet #08370
E1818, Rev. 3/3/21

TIE DOWN MANUFACTURING INGENUITY

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Shuttle Roof Anchor

DESCRIPTION

The Tie Down Shuttle Roof Anchor provides an anchor point for persons working at height on wood structures, such as residential rooftops, and who are subject to fall hazards. The Shuttle Roof Anchor is used by construction and maintenance personnel on residential and commercial roofs, where fall hazards exist. The Shuttle Roof Anchor is temporary and reusable, provided it no fall arrest forces occur and it passes inspection, as described on page 7. The anchor also works as a restraint anchor, depending on the workplace position and the available restraint system components.

MATERIAL

The anchor is composed of two steel anchoring plates riveted to a flexible rubber located in the center of the plates. Each plate contains holes for nails and shaped holes for lag screws or nails. A length of chain passes through a connection O-ring, allowing the O-ring to slide. Each end of the chain is fastened to an anchor plate with a welded chain-securing stud.

The anchor discussed in this manual meets all applicable OSHA 1926.502 regulations.

APPLICATION

The Shuttle Roof Anchor installs on a wood structure roof and used as single person anchor point for a PFAS to protect the user in the event of a fall. The anchor may also be used in pairs as the end anchors for a Horizontal Lifeline (HLL). The anchor may also be used as an anchor for restraint applications.

Installation fasteners, twelve 16d nails, and six 1/4" x 2-1/2" lag bolts, are provided. Installation fastener selection depends on ultimate application. Fasteners, nails or lag screws, must engage a truss or rafter. The anchor is reusable provided there has been no fall arrest load and the unit passes the inspection procedures.

DO NOT use the anchor to lift tools or materials.

Personal Fall Arrest System Application: PFAS typically include an anchorage point, a Full Body Harness (FBH), and a deceleration device such as a SAL, an SRD, or a connecting Subsystem when used with a rope grab. Maximum permissible free fall is six feet.

The unit may be installed on the roof ridge (see Fig. 8-2) to allow access to both sides of a peaked roof, or on the roof field, (see Fig. 8-2) for use on one side of the roof. Two anchors may be installed on the field or ridge as an opposed pair and used as end anchors for an approved HLL system for multiple users.

Horizontal Lifeline Applications: An HLL fall arrest system typically includes two anchorage connectors, a lifeline tensioner, and the horizontal lifeline. HLL units must be used as instructed according to the procedures detailed in the manufacturer's manuals. Only use Tie Down's Temporary HLL System

Restraint Application: Restraint systems are designed to prevent the user from reaching a fall hazard area. These systems are of two types; a restraint lanyard in conjunction with a manual rope adjuster or one equipped with a parking feature connected to a VLL, or a short tether attached to the anchorage to prevent the user from reaching a fall hazard. No vertical free fall is permitted.

Application Limits: The anchor is subject to load direction restrictions, dependent on installation fastener.

Shuttle Roof Anchor

Installed with Nails: The anchor may be installed on the ridge or on the field with the twelve provided 16d nails driven through the holes in the anchor plates, through the sheathing, and into a truss or rafter. Installed with nails, the anchor is an OSHA compliant 3,600lb single point anchor. Application is as follows

Use on the Ridge – The anchor installed with nails on the ridge provides user access to both slopes of the ridge. On a low-slope roof, the user has considerable mobility, but must remain aware of edges and swing fall hazards. On a roof of normal slope, user mobility is limited to 30° on each side of the anchor's longitudinal (in line with anchor plates) centerline. Ensure the chain and connection eye is straight down after crossing the ridge and that the connection eye is not caught on the opposite side of the ridge.

Use on the Field – Installed on the field, the anchor may be used for a single user in a PFAS or restraint application. Do not cross the ridge to work on the other side. On a low-slope roof, the user has considerable mobility on the one side, but must remain aware of edges and swing fall hazards. On a roof of normal slope, user mobility is limited to below the anchor, and up to 30° on each side of the anchor's longitudinal (in line with anchor plates) centerline.

Installed with Lag Bolts: The anchor may be installed on the ridge or on the field with the six 1/4" x 2-1/2" lag bolts driven through the lag bolt holes in the anchor plates, through the sheathing, and into a truss or rafter. Installed with lag bolts, the anchor is an OSHA compliant 5,000 lb anchor.

APPLICATION IS AS FOLLOWS

Use on the Ridge – Installed on the ridge with lag bolts, it may be loaded in any direction. Placed on the middle of the ridge on a low-slope roof, mobility is 360°, with access to most areas of the roof, to the limit of the PFAS device being used for fall protection. On a normal slope roof, mobility is 360°, within the limits of the PFAS device. Be aware of edges and swing fall hazards, and ensure the connection O-ring and chain realign properly, without kinks or binding on the chain attachment stud. The anchor may be installed with lag bolts on the ridge and used as the end connectors for an approved HLL system.

Use on the Field - Installation with lag bolts on the field allows the anchor to be loaded at right angles to the longitudinal axis. Do not work above the anchor if installed on the field. Low-slope roofs offer more latitude in use. Do not cross over the ridge and work on the opposite slope. Use caution, remain aware of edges and swing fall hazards. The anchor may be installed in pairs with lag bolts on the field and used as the end connectors for an approved HLL system.

SYSTEM REQUIREMENTS

Capacity: Limit user weight to 130 – 310 lbs., (59 – 140.6 kg), including clothing, tools, etc. No more than one PFAS may be attached to one anchor at any time.

Compatibility of Connectors: Connectors are considered compatible with connecting elements when they have been designed to work together in such a way that their sizes and shapes do not cause their gate mechanisms to open inadvertently, regardless of how they become oriented. Please contact Tie Down if you have any questions about compatibility. Connectors must be compatible with the anchorage or other system components. Do not use equipment that is not compatible. Non-compatible connectors may unintentionally disengage. Connectors must be compatible in size, shape, and strength. DO NOT attach rebar hooks to this anchor. A side load on the gate may cause an unintentional disengagement. Use only self-closing, self-locking snap hooks and carabiners.

Compatibility of Components: Equipment is designed for use with approved components and subsystems only. Substitutions or replacements made with non-approved components or subsystems may jeopardize compatibility of equipment and may affect the safety and reliability of the complete system.

Personal Fall Arrest System: PFAS used with the chain roof anchor must meet ANSI Z359 requirements and applicable OSHA regulations. An anchorage selected for PFAS must be able to sustain a static load applied in the direction permitted by the PFAS of at least:

a) Two times the maximum arrest force permitted when certification exists, or
b) 5,000 lbs., (22.2 kN) in the absence of certification.

An FBH must be worn when this equipment is used as a component of a PFAS. As required by OSHA, the personal fall arrest system must be able to arrest the user's fall with a maximum arresting force of 1,800 lbs., and in this application limit free fall to 12 feet or less. If the maximum free fall distance must be exceeded, the employer must document, based on test data, that the maximum arresting force will not be exceeded, and the personal fall arrest system will function properly.

Restraint System: An anchorage selected for restraint must be able to support a static load applied in the direction permitted by the system of at least:

a) Two times the foreseeable force when certification exists, or
b) 1,000 lbs. (4.4 kN) in the absence of certification.

An FBH must be worn when this equipment is used as part of a fall restraint system. As required by OSHA, the restraint system must prevent the user from reaching a fall hazard area. Free fall is not permitted.

DEFINITIONS

Authorized Person: A person assigned by the employer to perform duties at a location where the person will be exposed to a fall hazard (otherwise referred to as "user" for the purpose of these instructions).

Certified Anchorage: An anchorage for fall arrest, positioning, restraint, or rescue systems that a qualified person certifies to be capable of supporting the potential fall forces that could be encountered during a fall or that meet the criteria for a certified anchorage prescribed in this standard.

Competent Person: One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Qualified Person: A person with a recognized degree or professional certificate and with extensive knowledge, training, and experience in the fall protection and rescue field who is capable of designing, analyzing, evaluating and specifying fall protection and rescue systems to the extent required by this standard.

Rescuer: Person or persons other than the rescue subject acting to perform an assisted rescue by operation of a rescue system.

INSTALLATION AND OPERATION

Installation of anchorages must be under the supervision of a competent person trained in their design and use.
NOTE: Approved fall protection may be required during installation of all Anchorage units discussed in this manual.
DO NOT use any anchorage discussed in this manual until the system has been completely installed, inspected, and approved for use by a competent person.

Fall Clearance Distance: Take action to reduce the danger of falls. Ensure sufficient clearance in the fall area to arrest the fall before striking the ground or other objects. The actual clearance required is dependent upon the type of connecting subsystem used (SAL, SRD, etc.). Swing fall conditions will increase the Clear Fall requirement, and HLL systems will require additional fall clearance. Consult the HLL user instructions.

Swing Fall: Swing falls occur when the anchorage point is not directly above the point where a fall occurs. The total fall distance may be greatly increased during a swing fall. The force of striking an object in a swing fall may cause serious injury. Minimize swing falls by installing anchors at least six feet from exposed roof edges and by working as directly below the anchorage point as possible. Move the anchor as required or install additional anchors no more than 8 feet apart.

Installation Requirements: Inspect the anchor before each use according to the inspection procedure. Consider conditions and circumstances that could affect user safety. Select a suitable anchor point that will support the strength requirement and minimize free fall and swing hazards. The anchor is designed for roof installation on wood frame structures, located along the ridge, or on the field, on top of sheathing, directly over and attached to a truss or rafter. Install the anchor a minimum 6ft. from any exposed edge, and a maximum of 8ft. apart along the ridge or on the field. For hip roofs, install at least one anchor per hip face.

NOTE: Approved fall protection may be required during installation of all anchorage units discussed in this manual.

Anchor Location: Plan the installation carefully. Determine the location and usage. Location choices are on the ridge, or on the field, as shown in diagram on page (?)

Install on the Ridge: Lay the anchor on top of the ridge with the flexible portion centered. Ensure the location is 6ft. from the edge, and that the anchor is directly over a truss or rafter. Ensure the location will support the anchor load.

To Install on the Field: Choose a location on the field, 6ft from any edge, directly over a truss or rafter, and not on a gable, eave, or fascia. Ensure the chosen site can provide a minimum of 6ft of fall clearance. Ensure the location will support the anchor load detailed in Section 3 of this manual.

Install with Nails: With the anchor in the correct location on the ridge or on the field, drive in twelve 16d nails. Ensure all 12 nails engage the center of the truss or rafter. Installation for PFAS with nails creates an OSHA compliant 3,600lb anchor only within 30° of the anchor's longitudinal axis, in line with the anchor plates.

An anchor for restraint application may be installed with nails.

Work Below the Anchor: If the anchor is installed on the ridge, the user may cross the ridge and work on both slopes. If moving to the opposite side of the ridge, ensure the anchor chain is moved completely and the connection O-ring is on the work side of the ridge. The user must remain within the prescribed work zone defined by the 30° limit on either side of the anchor's longitudinal axis on both slopes.

If the anchor is installed on the field, the user must remain within the prescribed work zone defined by the 30° longitudinal limit. Do not cross over the ridge.

Install with Lag Bolts: The anchor may be installed on the ridge or the field using lag bolts. Choose a location directly over a truss or rafter and a minimum of 6ft. from any edge. Place the anchor. Drill a 3/16" pilot hole in all six lag bolt holes. Drive in six 1/4" x 2-1/2" lag bolts. When the anchor is installed on the ridge or field as a single point anchor with lag bolts, the anchor is an OSHA compliant 5,000lb anchor and may also be loaded perpendicular to the anchor plates. HLL applications as shown in Fig. 8-2 must be installed with lag bolts.

Shuttle Roof Anchor

DO NOT

- Mount an anchor directly onto a truss without sheathing substrates
- Mount the anchor on unsupported roof areas such as eaves, gables, and overhangs
- Use an anchor mounted downslope on the opposite side of the ridge
- **W**ork above the anchorage
- Use the anchorage until complete installation, inspection, and approval of system is completed by a competent person

Connect PFAS or Restraint System to the Roof Anchor: Connect to the roof anchor using an approved restraint system. Do not connect a rebar hook or a large throat opening carabiner to the chain roof anchor. Consult the PFAS manufacturer's user instructions for details.

Use caution on a normally sloped roof and avoid swing falls. When installed on the field, do not cross the roof ridge.

Connect to The HLL Roof Anchor: Connect an approved HLL system to the anchors. Consult the HLL manufacturer's user instruction manual for details.

After a Fall: Remove product from service immediately when subjected to fall arrest forces or exhibiting damage consistent with the effect of a fall event.

Removal: The Shuttle Roof Anchor is designed as a temporary, reusable anchor. When nailed, pry loose the anchor while exercising caution. Do not bend or deform the anchor plate. Do not pull on the chain or O-ring to detach the anchor. When installed with lag bolts, remove the lag bolts with appropriate tools.

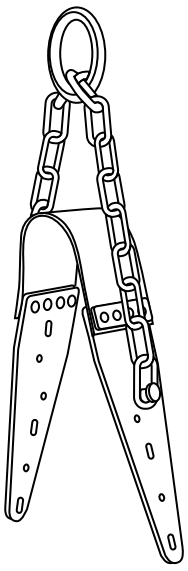
MAINTENANCE AND STORAGE

No regular maintenance is required for this product.

Storage: Store in a clean, dry area. Avoid direct sunlight and exposure to harsh environmental elements. Do not place other equipment or objects on top of the anchors. Do not store in a way that bends, cracks, contaminates or otherwise damages the unit.

Remove From Service: Remove the anchor from service when subjected to fall arrest forces or fails inspection. Return to Tie Down when this occurs.

Fig. 6-1



Specifications

Part #13720

Includes: (12) 16D Nails
(6) 1/4"x 2-1/2" Lag Screws

Dimensions:

Length:	25" Overall
Plate:	1/4" x 3" x 9"
Chain:	5/16" Grade 80
O-Ring:	2-5/16"

Minimum Tensile Strength and Material

Anchor:	5,000 lbs.
Plate:	Low Carbon Steel
Chain:	Alloy Steel 5,000 lbs.
O-Ring:	Alloy Steel 5,000 lbs.

Maximum User Capacity
310 lbs.

INSPECTION OF CHAIN ANCHOR

Prior to each use, the user must inspect the anchor for any physical damage, wear, corrosion or missing parts. If the anchorage has been subjected to fall arrest forces it must be removed from service.

Inspect for:

1. Cracks or fractures
2. Broken welds, rings, or studs
3. Corrosion
4. Bent plates or rings
5. A build-up of contaminants

If routine inspection reveals damage to the anchor, discontinue use and remove it from service. Record inspection results on the Inspection Record found in Appendix A or on any suitable record.

LABEL

The following label must be present and legible:

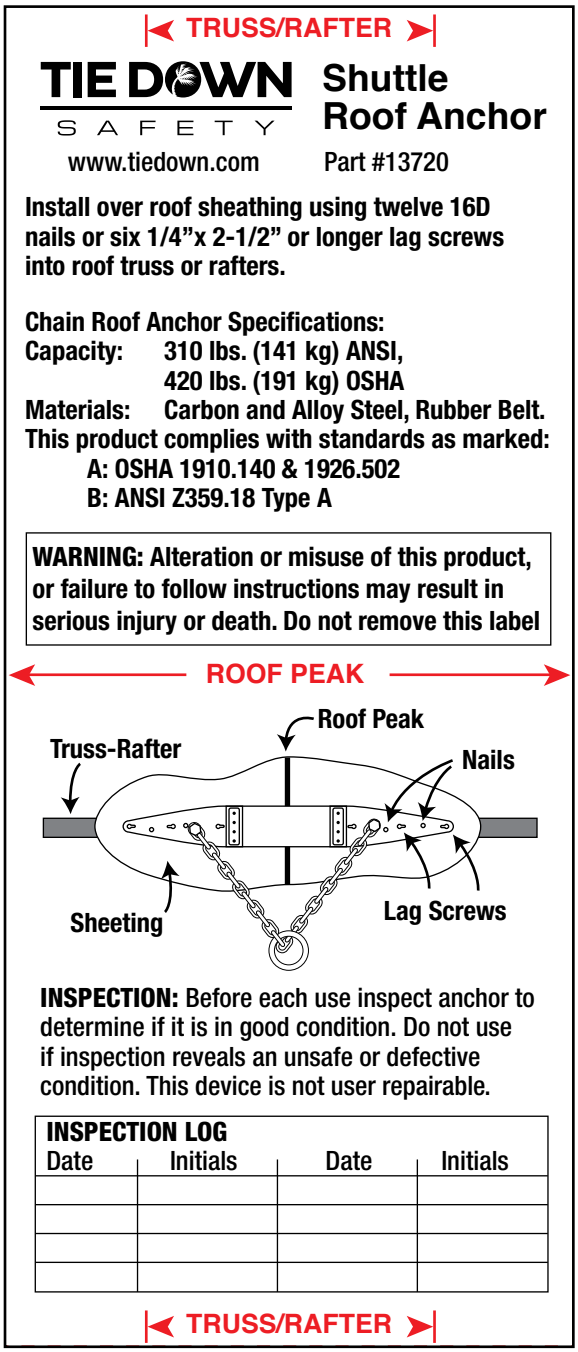


Fig. 7-1

Shuttle Roof Anchor

INSTALLATION AND OPERATION

Anchor Location: Choices are on the ridge or on the field, as shown in Fig. 8-2.

Install on the Ridge: Lay the anchor on top of the ridge with the flexible portion centered. Ensure the location is 6ft. from the edge, and that the anchor is directly over a truss or rafter. Ensure the location will support the anchor load.

To Install on the Field: Choose a location on the field, 6' from all edges, directly over a truss or rafter, and not on a gable, eave, or fascia. Ensure the chosen site provides a minimum of 6' of fall clearance. Ensure the location supports the anchor load detailed in Section 3 of this manual.

Install with Nails: With the anchor in the correct location on the ridge or on the field, drive in twelve 16d nails. Ensure all 12 nails engage the center of the truss or rafter. Installation for PFAS with nails creates an OSHA compliant 3,600lb anchor only within 30° of the anchor's longitudinal axis, in line with the anchor plates.

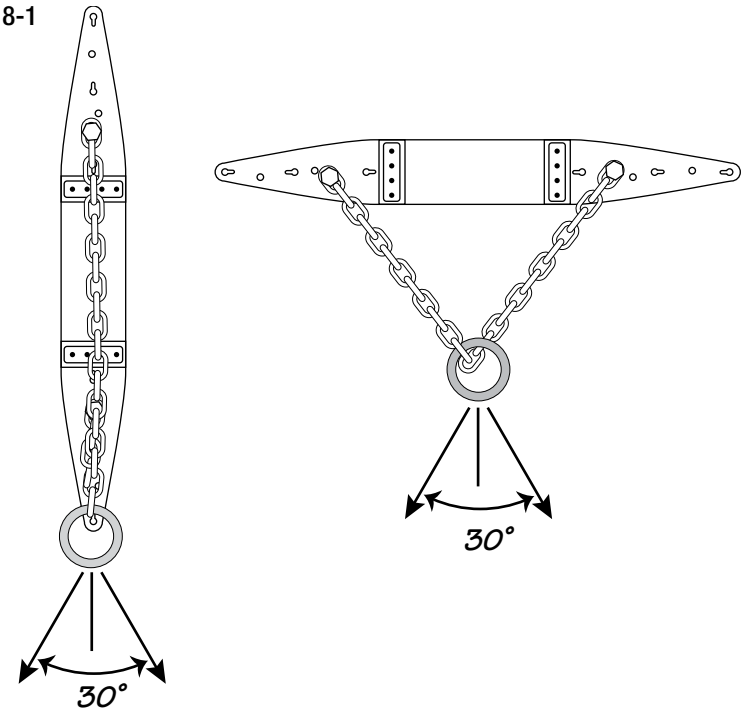
Installation with nails makes an anchor for restraint application.

Work Below the Anchor: If the anchor is installed on the ridge, the user may cross the ridge and work on both slopes. If moving to the opposite side of the ridge, ensure the anchor chain is moved completely and the connection O-ring is on the working side of the ridge. The user must remain within the prescribed work zone defined by the 30° limit on either side of the anchor's longitudinal axis on both slopes.

If the anchor is installed on the field, the user must remain within the prescribed work zone defined by the 30° longitudinal limit. See Fig. 8-1. Do not cross over the ridge.

Install with Lag Bolts: The anchor installs on the ridge or the field using lag bolts. Choose a location directly over a truss or rafter and a minimum of 6' from all edges. Place the anchor in the desired location. Drill a 3/16" pilot hole in all six lag bolt holes. Drive in six 1/4" x 2-1/2" lag bolts. The single point anchor is now an OSHA compliant 5,000 lb. anchor and may also be loaded perpendicular to the anchor plates. HLL applications as shown in Fig. 8-2 must be installed with lag bolts.

Fig. 8-1



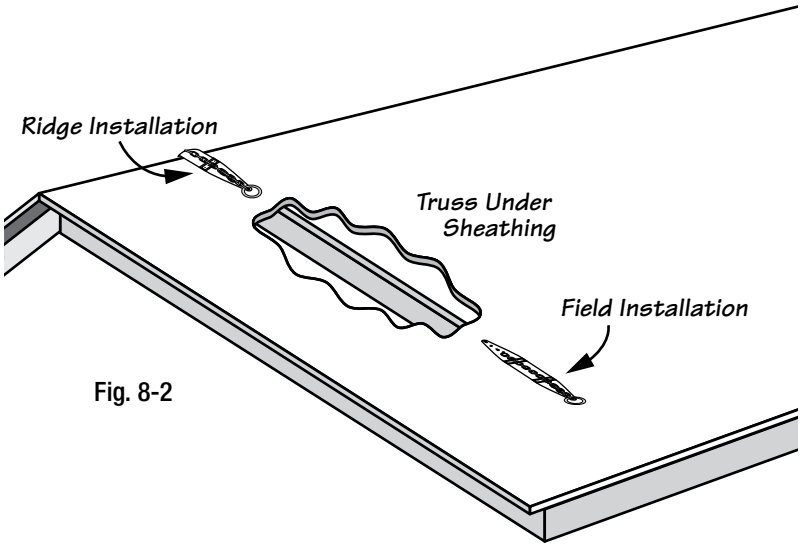


Fig. 8-2

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MANUFACTURING INGENUITY

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