



PULLEY

Manual



WARNING :

- Activities involving the use of this equipment are inherently dangerous and can lead to severe injury or even death. You must be responsible for your actions and decisions.
- Read and understand the instructions before use.
- Before using this product, it is essential to have got adequate training, understood and mastered the basics and techniques.
- This product must not be used beyond its limits, nor be used for any purpose other than for which it is designed.



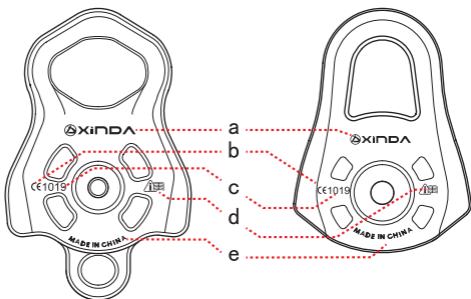
Pulley Mode

A



XD-8610-black

Marking



a: The name of the manufacturer or the brand

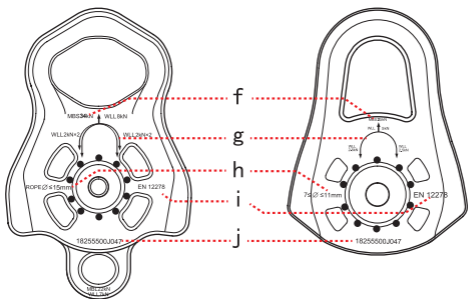
b: CE certification marking

c: Body controlling the manufacture of this product

d: Logo to remind

to read the instru

e: Origin

B**H-PU03****C****H-PU02**

and the user
functions

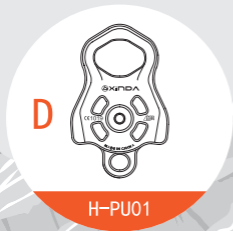
f: Minimum breaking strength

g: Work load limit

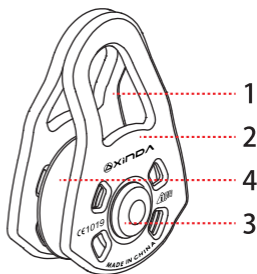
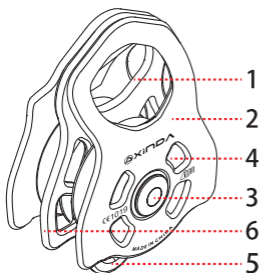
h: Diameter of the compatible rope

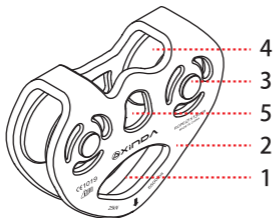
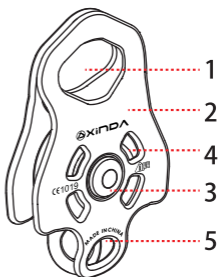
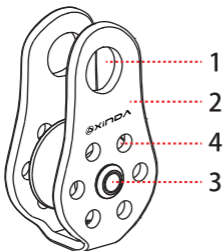
i: Used standards

j: Tracking code



Nomenclature



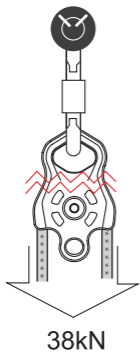


- 1: Main attachment hole
- 2: Side plates
- 3: Axle
- 4: Sheave
- 5: Secondary attachment hole
- 6: Middle plate

Bar Code

 **XINDA**®

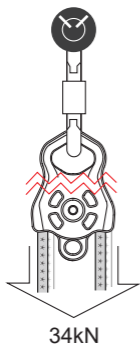
PICC 



Pulley C
H-PU02



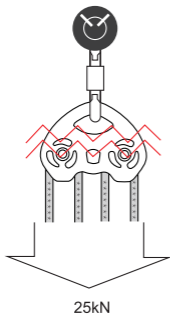
Work load: $3.5\text{kN} + 3.5\text{kN} = 7\text{kN}$
Minimum breaking strength: 38kN



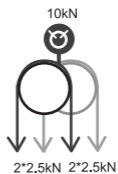
Pulley D
H-PU01



Work load: $2\text{kN} * 4 = 8\text{kN}$
Minimum breaking strength: 34kN

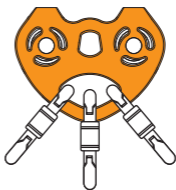
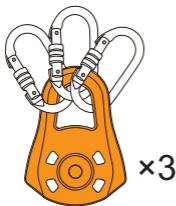


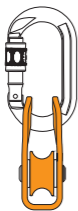
Pulley E
XD-Q9676



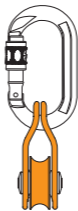
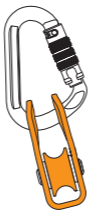
Work load: $2.5\text{kN} \times 4 = 10\text{kN}$
Minimum breaking strength: 25kN

Connection

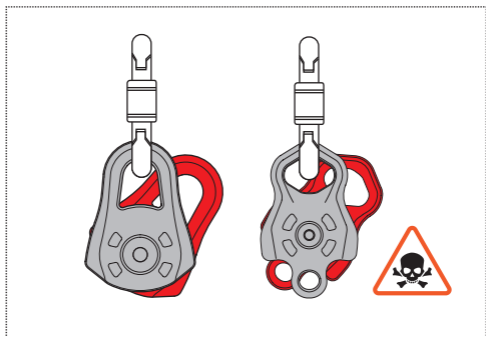


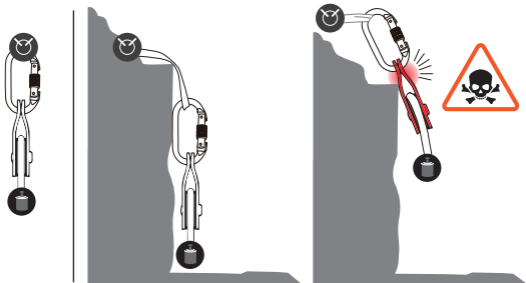


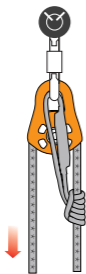
OK!



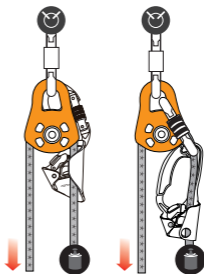
OK!



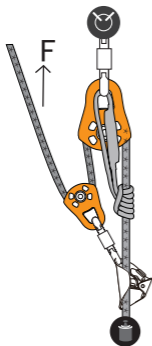




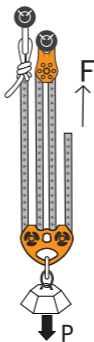
One-way braking:
Prusik cords can be installed
on C and D pulleys.



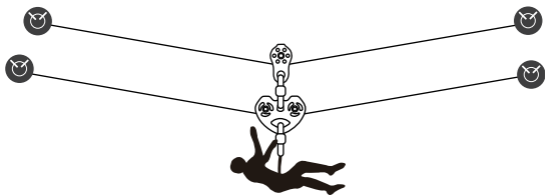
Or work with an ascender:
**Note: The carabiner should
be long enough.**



Efficiency in theory: 1:3



Efficiency in theory: 1:4



XINDA®

This manual explains how to use the equipment and only appropriate techniques and uses are described. Warning signs tell the potential risks but they don't cover everything.

Please read every each warning carefully and use your equipment properly. Any misuse might lead to danger. If you are in doubt, please contact Xinda.

※ Product details and application

	A: XD-8610B Jack	B: H-PU03	C: H-PU02	D: H-PU01	E: XD-Q9676
Compatible rope diameter:	8-13mm	7-11mm	5-15mm	5-15mm	8-13mm/8-12mm wire cable
Breaking load:	20kN	23kN	38kN	34kN	25kN
Work load:	5kN	5kN	7kN	8kN	10kN
Efficiency:	0.92	0.93	0.93	0.92	0.92
Wheel diameter:	3.5cm	3.5cm	5.5cm	5.5cm	3.5cm
Weight:	142g	68g	272g	402g	289g
Bearing type:	ball bearing	ball bearing	ball bearing	ball bearing	ball bearing
Standard:	EN12278				
Main materials:	aluminum alloy and steel				

Field of application

Those pulleys are used as PPE (personal protective equipment) which is designed for climbing, caving, canyoning and increasing the efficiency of the hauling system. The pulleys are used with ropes and must not be used beyond its limits, nor be used for any purpose other than for which it is designed.

Load

The pulley will break at its minimum breaking strength (MBS), a resultant force generated from the ropes on the two ends.

Efficiency: It means the efficiency when the rope turns 180 ° within the pulley's work load limit (WLL). Pulley efficiency in practice can vary depending on the angle of the rope, load and friction. Overly great load will break the ball bearing, increase the friction or stop the wheel.

Safety check

Before each use

Check if the product is free of cracks, deformation and corrosion etc. Verify that the pulley runs well and check the space between the side plates and wheels. Check if the wheel, side plates and attachment holes wear.

During each use:

Check if the pulley is tensioned normally, the carabiner is loaded from the main axle, the rope is pulled straight. Make sure that no foreign object comes into contact with the pulley.

Note: Sand, water or other stain will lower the efficiency or even stop the pulley from rotating.

Use and compatibility

Verify that the product is used properly with other equipment in the system.

-The carabiners with a locking system must be clipped into all the main attachment holes of the pulley's side plates at the same time.

-The single-axled double pulley must work with two wheels as having only one single wheel will cause uneven loading and damage the side plates.

-No other leverage on the pulley.

-Choose appropriate rope diameters as unfit wire cable will wear the ropes fast.

Note: Ropes with small diameter ($\varnothing < 4\text{mm}$) may get stuck between the wheel and side plate.

-The prusik cord, ascender and fall arrester can make a one-way braking system with the single pulley. The braking effect depends on the rope grab equipment. Please pay attention to the state of the rope grab system, positioning of the pulleys and the braking effect. Overly great load will fail the rope grab or even

damage the ropes. Make sure that the rope is tensioned straight and no dynamic impact will be loaded on the rope.

-Pay attention to the tension, angle and load of the traverse system. Overly great load will fail the system.

-Watch the traversing speed as overly high speed may lead to severe collisions.

-Verify that no thin and soft objects are stuck inside the pulley, such as hair or twigs.

Warning: Dynamic impact and highly proportioned pulley system will generate very high loading on the anchors or the system. Please check the anchors and system strength as to avoid any overload.

-Verify that all the equipment working with the pulley(anchors, ropes and carabiners etc) meet necessary standards and regulations. If you have any doubts, please contact Xinda.

Additional safety information:

●The user's health and body condition must be fit for working at heights. Unconscious suspension at height can lead to severe injury or even death.

●In the industrial environment, the ascender must be used with a fall arrest system when it is applied to a rope access system. It is essential to check the required clearance below the user in order to avoid any impact with the ground or with an obstacle in case of a fall.

●In the industrial use, the breaking load of a single anchor point must be 12kN at least or meet the standards of EN 795.

●In a safety system, the weakest component determines the strength of the whole system.

●Avoid that the rope and other braided fabric rub against sharp edges or rough surfaces.

●A risk assessment is needed and protection measures should be taken before use.

●Working alone is not allowed and you should have a rescue plan and the means to implement it in case of encountered difficulties.

Life span, regular inspection and retirement:

●No storage limit for the metal in the proper environment; the plastic parts of the equipment can be stored up to 10 years.

●The equipment may need to be retired only after one use because of misuse, accidents or compatibility problems.

●The practical lifespan depends on the type and intensity of usage, harsh environment(marine environment, extreme temperatures, sand and mud etc). Equipment check has great effect on the lifespan.

The comprehensive inspection is required once every 12 months minimum,

apart from normal check before use, during use and after use. The greater the intensity of use, the more checks are needed. Record the results of the inspection.

- The inspector must be competent or authorized by the manufacturer.

- Inspections included:

- Check if the products are free of corrosion, melting, cracks, wear, deformation or stain;

- Check if the attachment points are overworn (0.5mm at most);

- Check the effectiveness of the springs and pivots;

- Check if the cam teeth are worn greatly;

- Check the functionality of the ascender;

- Check if the markings are illegible;

You should maintain or retire the equipment, or hand to the manufacturer for further inspection when the results are negative such as deformation, malfunction of the pivots.

- Information included on the inspection manual Model number/data matrix/purchase date/manufacture date/first time to use/standards/inspection date/records (malfunction, condition, user's usage record) /results and suggestions (to retire the equipment or not)/next inspection date/inspector's data (name and contact)

- When to retire your equipment:

- You don't know its usage history;

- You doubt about its performance, strength or safety;

- It fails to pass PPE inspection;

- Malfunctions are found;

- It fails to meet updated regulations or standards;

- It has been subjected to a major fall or load;

How to retire your equipment:

Mark it with irremovable labels or destroy it as to prevent further use. For instance, drill or cut it. Or return it to the manufacturer for disposal.

Responsibilities

- You are responsible for your actions and decisions. If you can not take the responsibilities, don't use it.

- Only qualified person or the person under supervision of a competent and experienced party can use this product.

- You must take training course including theory and practice, basics for working at height, proper ways to use and relevant safety system knowledge before use.

- When it is resold to other countries or regions, the instruction manual must be made in local languages.

- XINDA is not responsible for any direct or indirect non-quality induced consequences.



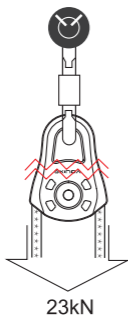
Pulley A

XD-8610



Work load: $2.5\text{kN} + 2.5\text{kN} = 5\text{kN}$

Minimum breathing strength: 20kN



Pulley B

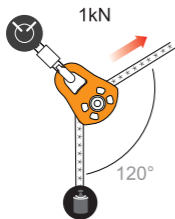
H-PU03



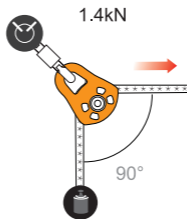
Work load: $2.5\text{kN} + 2.5\text{kN} = 5\text{kN}$

Minimum breathing strength: 23kN

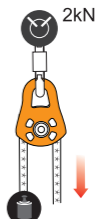
Hauling system and efficiency



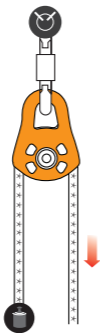
$P=100\text{kg}$



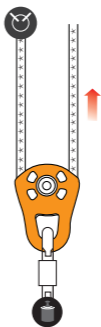
$P=100\text{kg}$



$P=100\text{kg}$



Efficiency in theory: 1:1



Efficiency in theory: 1:2

Storage and transport

Remaining fluid and other stain on metal equipment must be rinsed and dried and then stored in a dry environment, 10°C-30°C. The equipment must not come into contact with abrasion, loading, chemicals, sharp edges or heat source etc as those are inherently harmful. Metal equipment must be specially stored in the container and transported in compliance with storage requirements. The use and storage of the product is suggested to be taken care of by accountable people.

Maintenance

Proper maintenance and storage can extend the lifespan of the equipment and also guarantee the user's safety.

-Cleaning: Use clean water(20°C) and soft brush to rinse the external and internal of the product. No high-pressure water. No industrial-grade cleansers. Rinse afterwards and dry it naturally. No heat drying.

-Long time use of the equipment will reduce the lubrication of the parts such pivots. Lubricating oil or grease is suggested to be in use.

Warning: No modification, alternation or improper maintenance is allowed. It can only be repaired in the XINDA factory.

Traceability:

The code is used for product tracing.

Meaning: For instance, 18096500J47: 18 096: Manufactured on the 96th day of 2018; 500J: Batch and quality inspection; 47: Product increment.

Limited warranty:

XINDA provides a 3-year warranty against any material or manufacturing defects. Exclusions: normal wear and tear, deformation, oxidation, modifications or alterations, misuses, incorrect storage, poor maintenance, uses for which this product is not designed.