

RATCHET ABC



**expert in
textile
technology**

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1-piece ratchet (cam buckle) straps

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The one-piece ratchet strap, also known as the cam buckle strap, is designed to strap down the load and therefore does not require any connecting elements (hooks).



Locking mechanisms for cam buckle straps

We generally offer three different one-piece ratchet strap models. The classic locking elements are the ratchet, the plastic buckle and the metal wedge lock.



Ratchet types for ratchet straps

Classic standard ratchet

The ratchet pictured here is the most common.



Robust TD1 ratchet

The TD1 ratchet is made of strong steel and has a solid handle. Together with its strong spring and two toothed wheels on both sides, it is more durable than the classic standard ratchet.



Strong ERGO ratchet

The TD5 is a robust pull ratchet for stepless release that is made of strong steel and has a solid handle. The ratchet also features a reinforced ratchet handle and three toothed wheels on both sides for a long lifespan. It can be released in steps for your safety. The ERGO ratchet has an STF of 750 daN, which is much higher than that of classic ratchets.



2-piece ratchet straps

2-piece ratchet straps

A two-piece ratchet strap comprises two elements. The short piece and long piece are also known as the restraining element (ratchet) and connecting element (hook).



Connecting elements

Wire hook

The wire hook can be fixed to the attachment point quickly and easily



S hook

The plastic coating on the S hook helps to avoid scratches on vehicles. The S hook can also be fixed to the attachment point quickly and easily.



Carabiner hook

The latch prevents the carabiner from sliding off the attachment point.



Triangle hook

The latch prevents the carabiner from sliding off the attachment point, and the triangle enables the carabiner to be fixed to the attachment point flexibly and conveniently.



Ratchet strap labels

The label complies with the European standard 12195-2. The date on the label is the date of manufacture, not the expiry date!


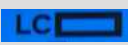






Label structure

The ratchet strap label pictured below shows the visible part of a two-piece strap, which is sewn onto both parts (the short and long pieces).



Meaning of the label details

-  **Lashing Capacity**
Maximum force permissible in straight pull
-  **Lashing Capacity;**
Maximum force permissible in round pull
-  **Standard Hand Force**
The standard hand force that a user can apply to the ratchet to pull it tight
-  **Standard Tension Force**
The standard tension force to be achieved
-  **The date shown on the strap is the production date**
-  **The name of the manufacturer of the ratchet strap**

Usage advice

Observe the permitted tension force (both pieces must be identical in two-piece ratchet straps).

Check that the strap is in perfect condition before each use.

Check for damage (incisions, wear, ratchet).

10 % tear = up to -50 % of the permitted tension force.

After a short distance, check the strap and tighten if necessary.

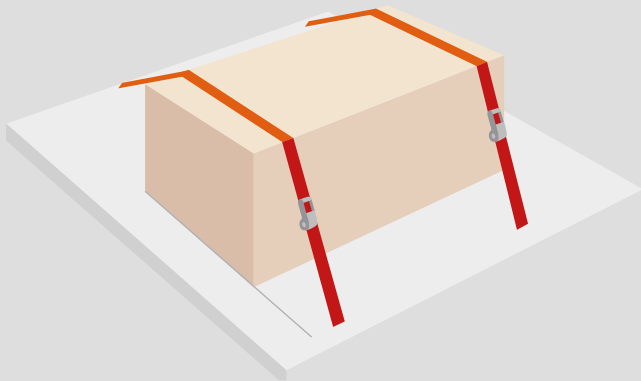
Check the load before releasing the strap (is it hanging from the strap?).

Ratchet straps are not permitted to

- be used above the lashing capacity
- be used without a label
- be knotted or twisted
- be used for lifting
- be used in the case of sharp edges (protect them!)



Strapping down



Strapping down

When strapping down a load, the aim is to press it so firmly onto the loading area that, by means of friction alone, the load does not slide during transport. At least two straps must be used when strapping down loads! Strapping down loads is a friction-locked process.

Influencing factors when strapping down loads

When strapping down a load, the following factors must be considered to guarantee safe transport. It is essential that at least two straps are used. It is possible to calculate how many straps need to be used to strap down a load.

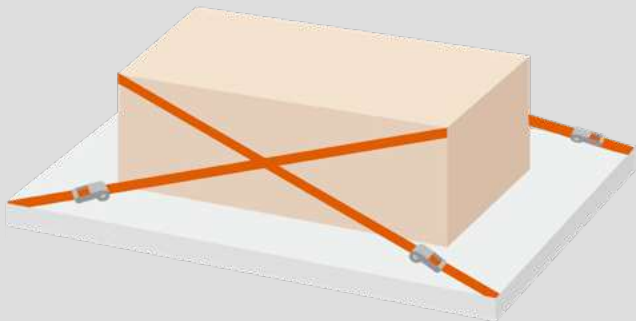
Friction coefficient: The friction resistance depends on the surfaces (how easily the load shifts)
Bad case: greasy, metal on metal = 0.05
Ideal case: dry, concrete on wood = 0.6

Angle: The angle should ideally be steep.
Bad case: angle less than 30 %
Ideal case: angle of 90 %

Pre-tension force: The STF pre-tension force is defined by the ratchet.

Weight: The weight of the load must be considered.

Diagonal strapping



Diagonal strapping

Diagonal strapping is essentially a positive form locking method for securing loads with four strapping elements that do not run parallel to any vehicle axle. During transport, the inertia forces be safely transferred between the vehicle and load when braking, accelerating and going round bends. There are two ways of doing this: positive form locking and traction. In the case of positive form locking, the load is precisely connected with the vehicle if friction plays no part when the forces incurred are transferred.

Protect your strap

To extend the lifespan of your high-quality product, it makes sense to avoid tightening the strap over sharp edges. If tightening the strap over a sharp edge is unavoidable, you can protect the strap with mamutec protection angles.



Instruction manual

Read the instruction manual!

It is essential that you read the information in the instruction manual supplied with your product.

You can also use our ratchet strap calculator for strapping down.

Instruction manual



Ratchet strap calculator



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