Functionality

Tandem Dollies

Made in Germany

Distributed by
Toolwell
North America

Application Range

4-point

vs.

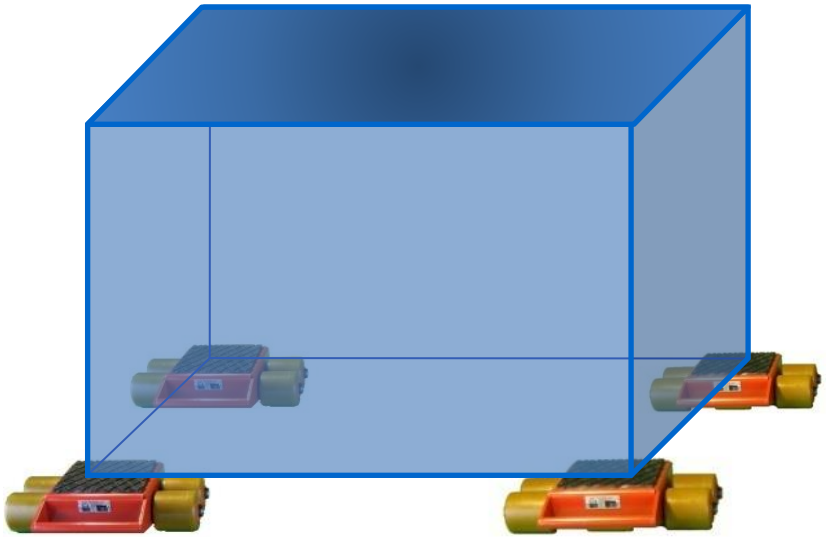
3-point

Standard
3-point system

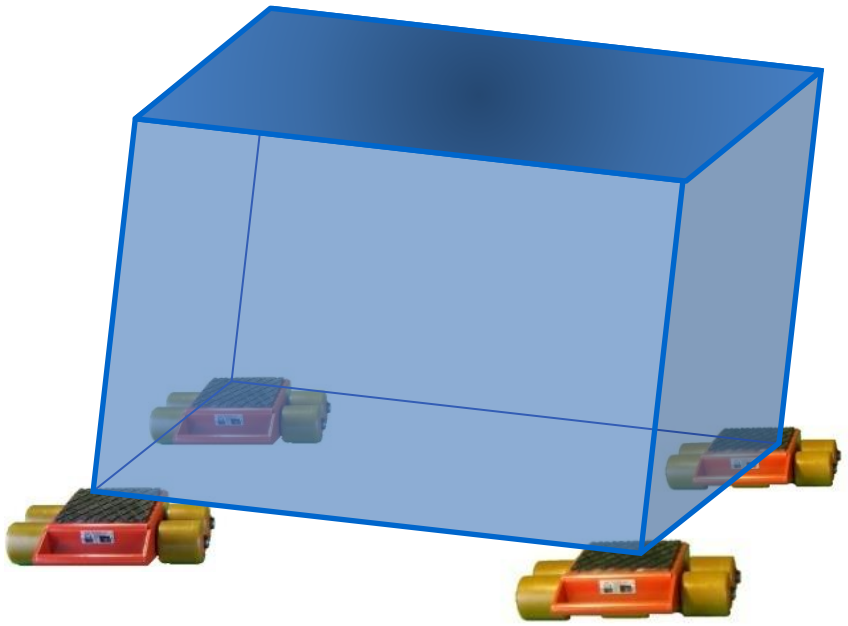
Special application
4-point system

Please consider using a 3-point system before employing a 4-point system.

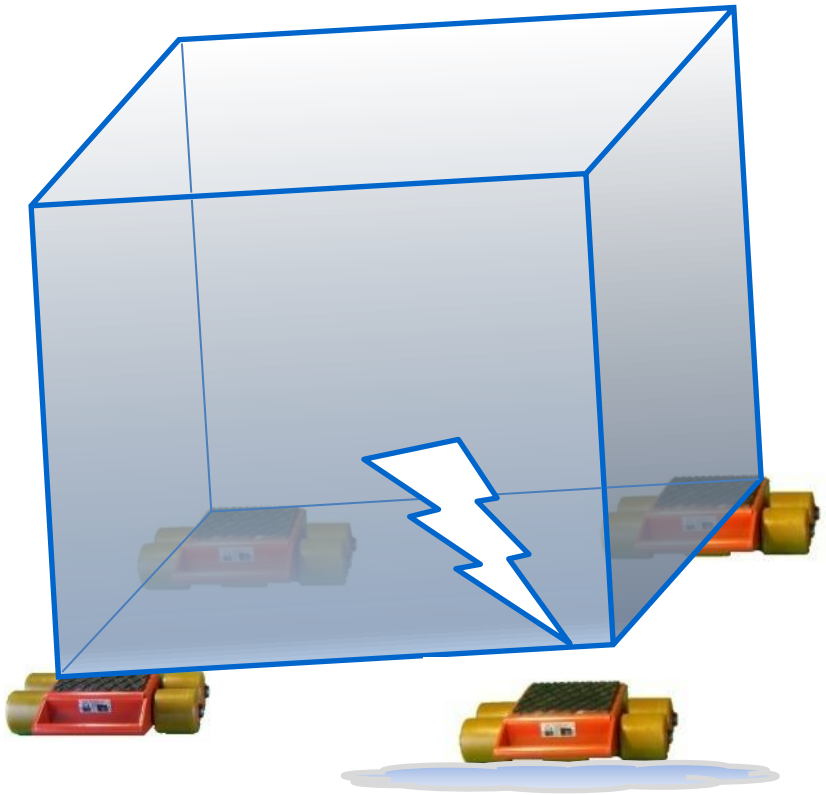
See why…



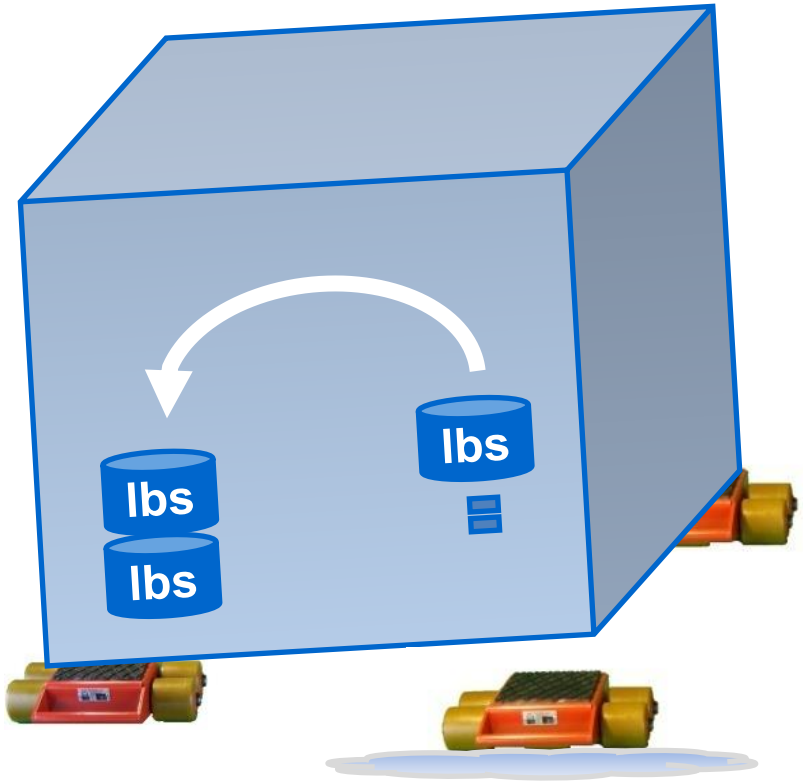
Placing your load on four dollies seems like the most logical thing to do, but there is a problem with this mode of transport.



If you are traveling over an uneven surface, your load will rock
just like a 4-legged chair on uneven ground.



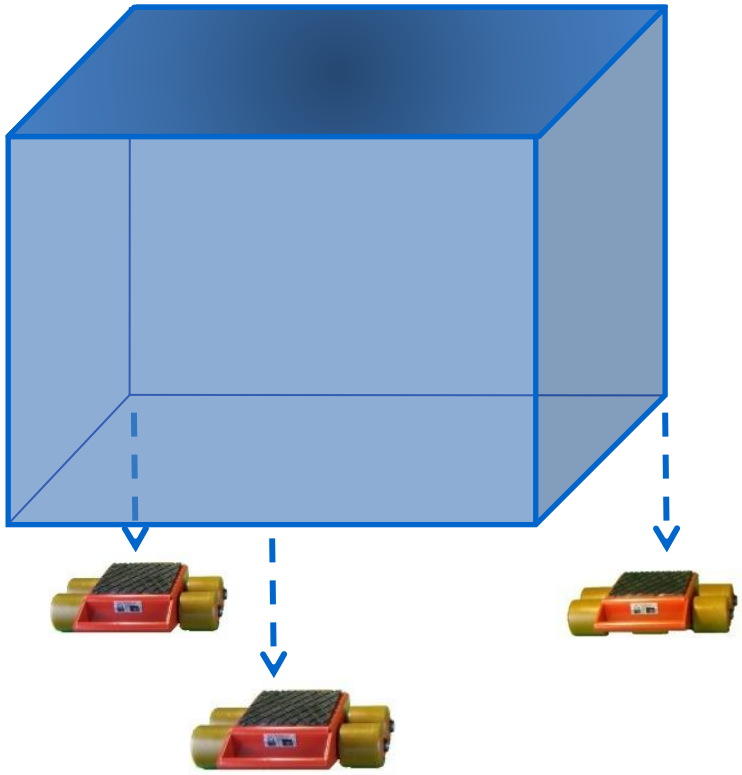
One dolly may lose contact with the load...



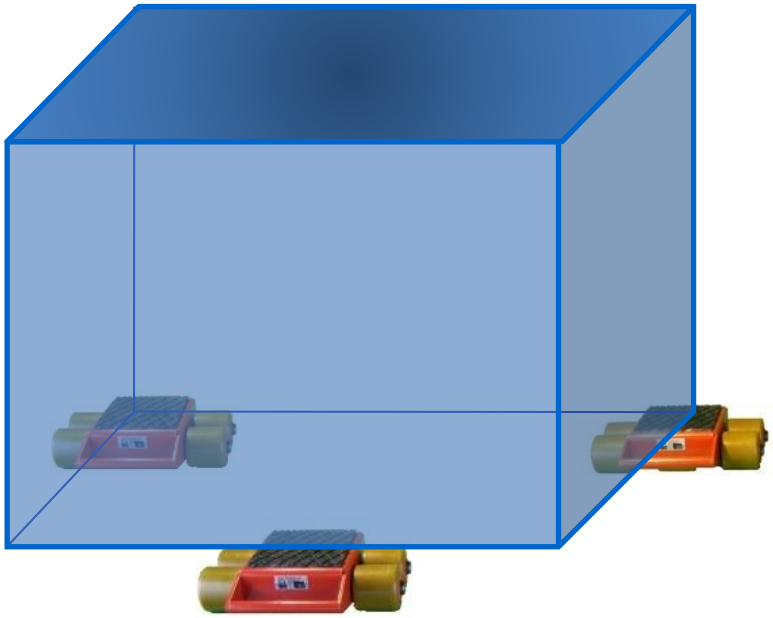
…causing the remaining dollies to carry more weight

Loads almost never travel over perfectly level surfaces. Floors slant towards drains, concrete is often full of cracks, and there are often ledges to overcome.

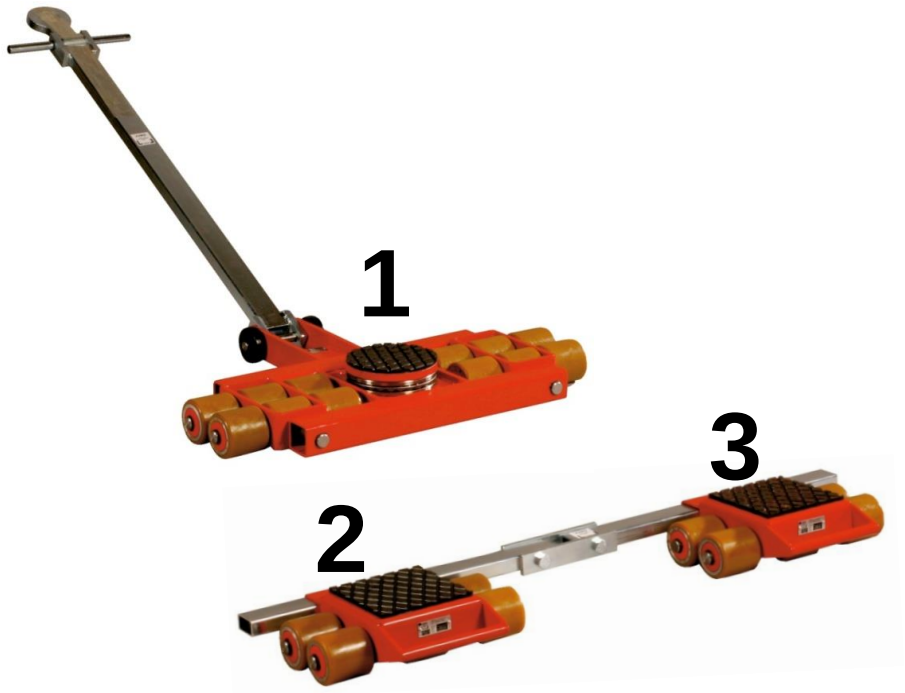
Now imagine a 3-legged chair and place it on an uneven ground. The chair will **not** rock.



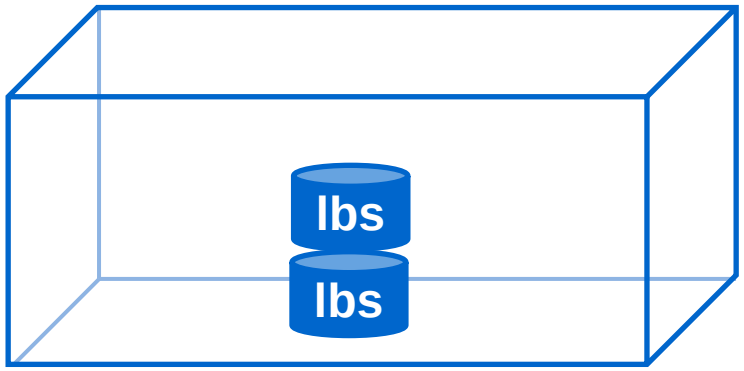
Setting your load on 3 dollies will have the same effect; the load can’t rock. Its weight is evenly distributed, pressing down onto the dollies at all times and keeping the dollies firmly in place.



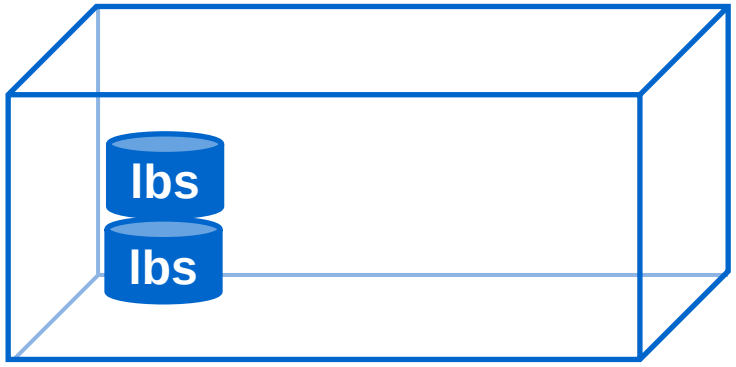
Now you can travel over uneven surfaces and not worry about the dollies slipping.



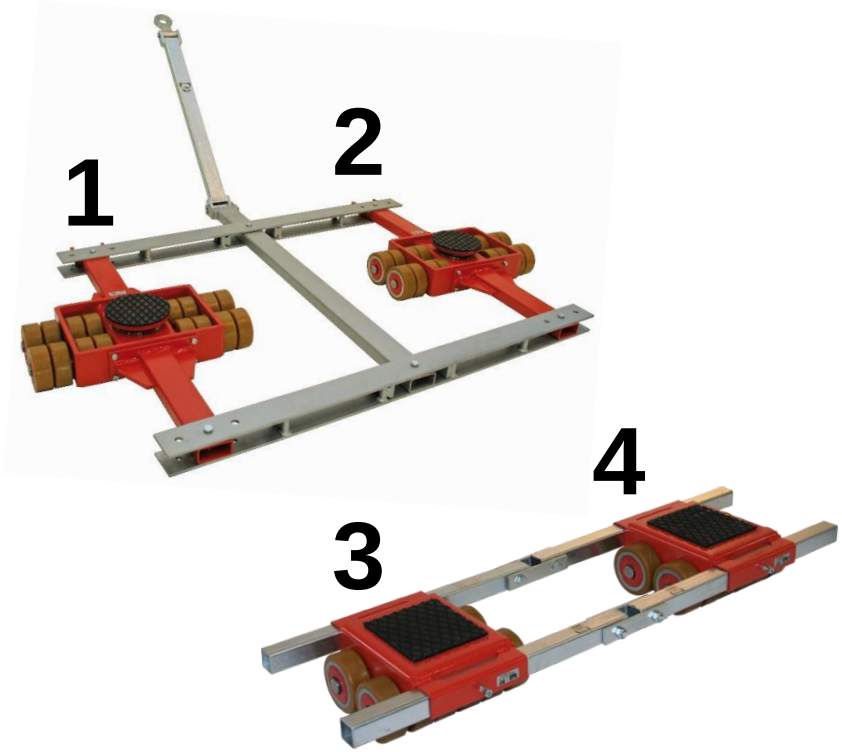
We therefore recommend using a 3-point dolly support...



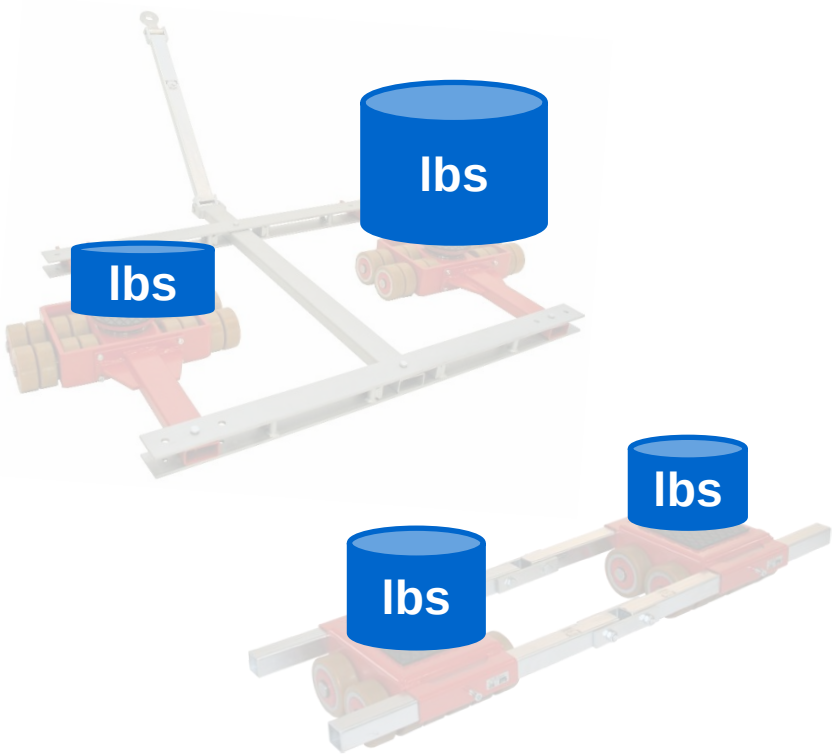
… provided the Center of Gravity is in the middle of the load.



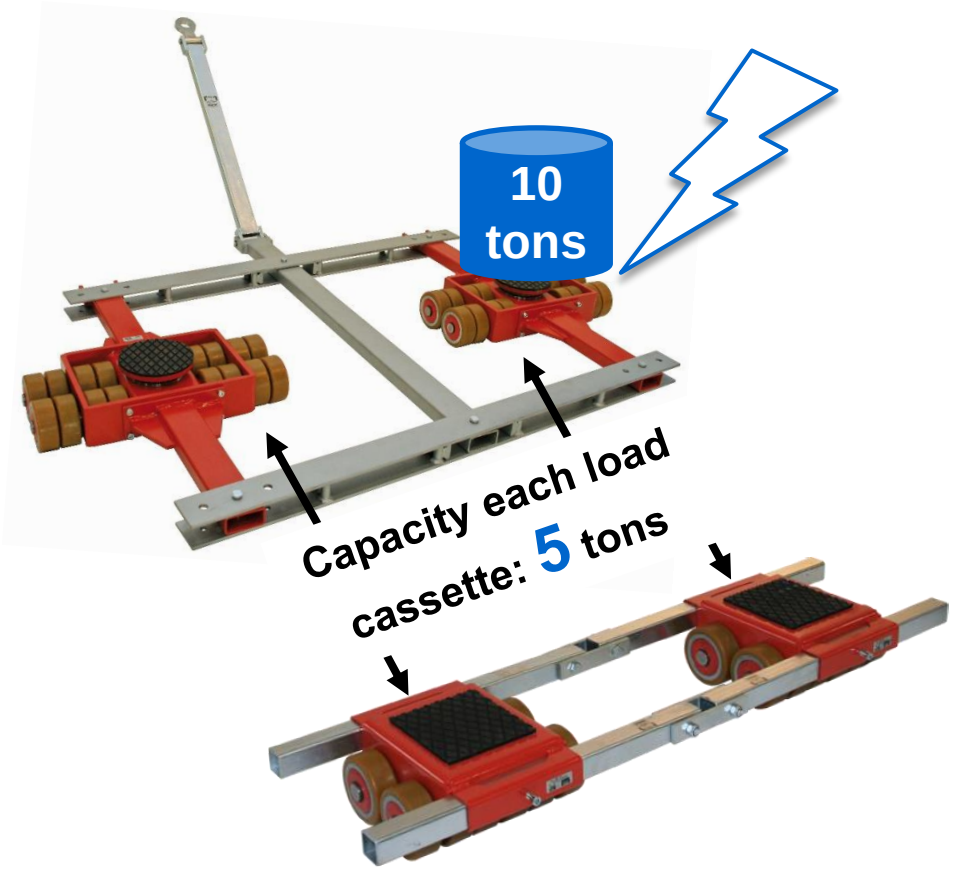
However, if the load has a Center of Gravity concentrated towards one corner or one side…



…the load must then be supported by 4 points. Consequently, we recommend using the tandem dollies only when using a 3-point support system is not feasible.



But remember:
If you are choosing a 4-point dolly system, please be aware that the weight may NOT be evenly divided between each loading point.



So, make sure the load capacity for each load cassette is not exceeded.

Tandem dollies are used for applications in which the center of gravity is not centered.

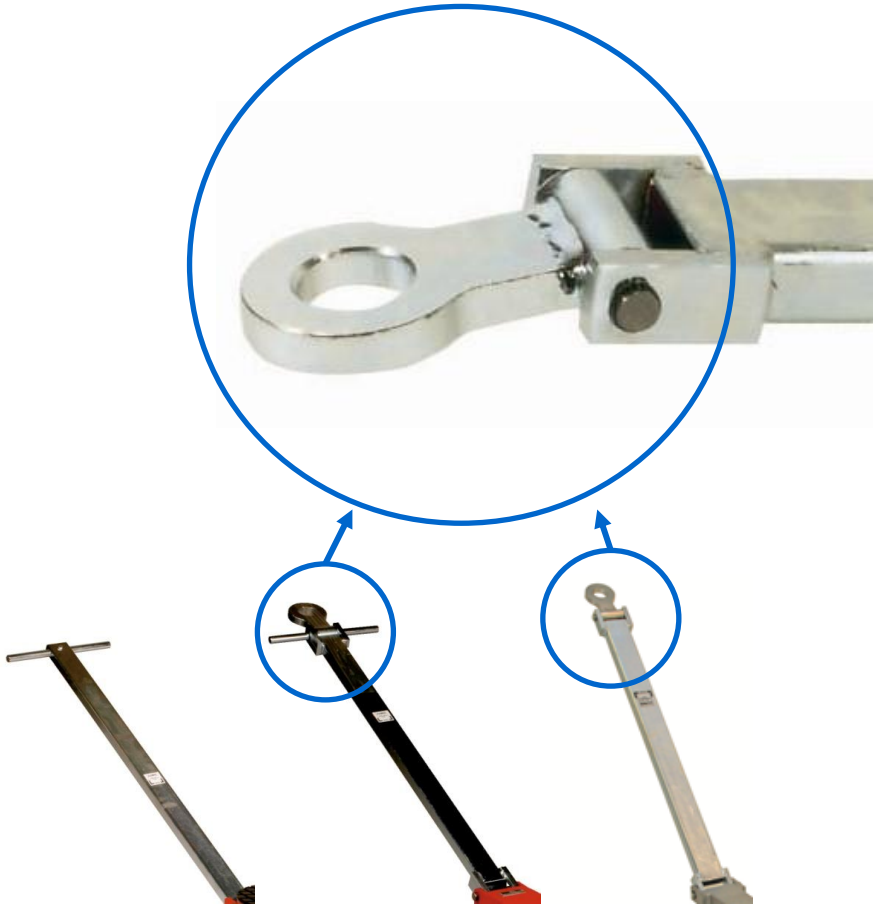
Mix & Match

A standard configuration consists of one steerable tandem dolly combined with one straight-line rear dolly.

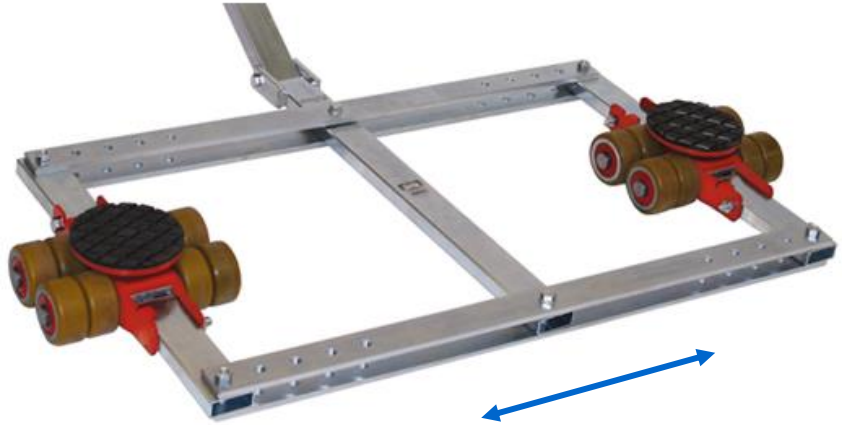
However, every application is different and that is why our dollies are interchangeable. You can mix and match our dollies in any configuration to meet your specific needs. Just choose dollies of identical height.

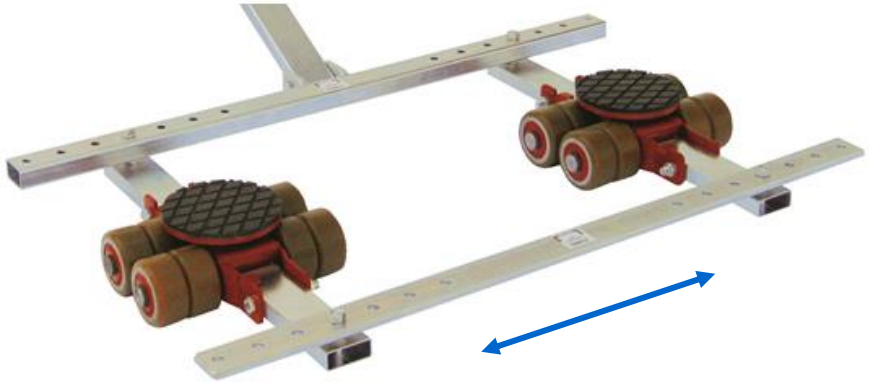
Functionality

Tandem Dollies

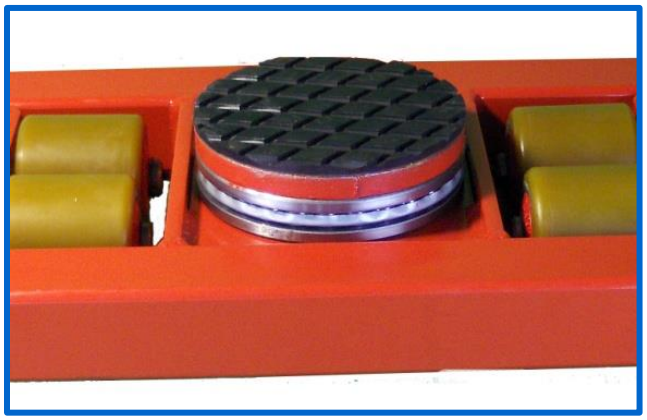


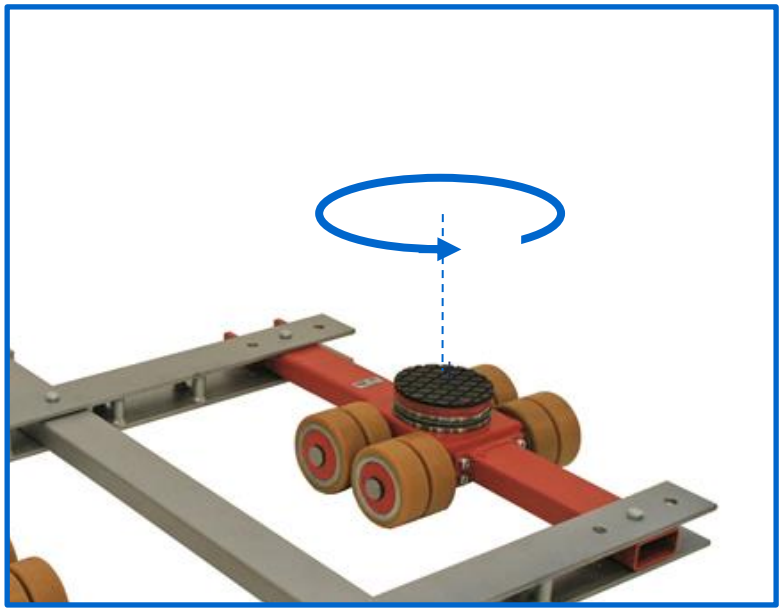
The tandem dolly comes with a pulling handle which, on the larger dollies, also has a towing eye that allows for a connection to a forklift or other pulling vehicles.



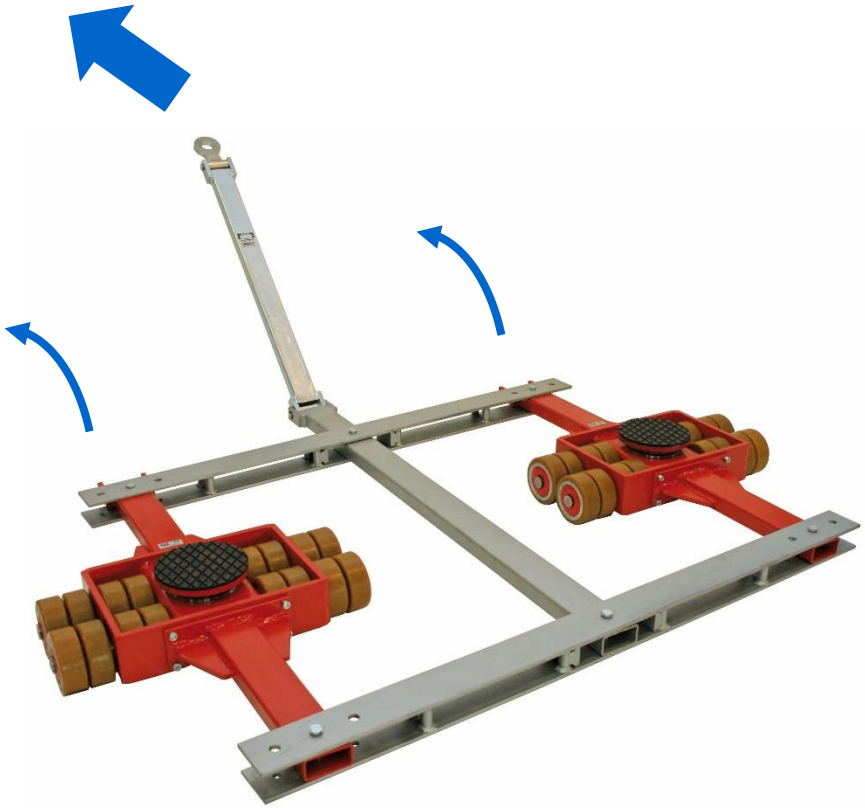


The connecting bars are adjustable in width.





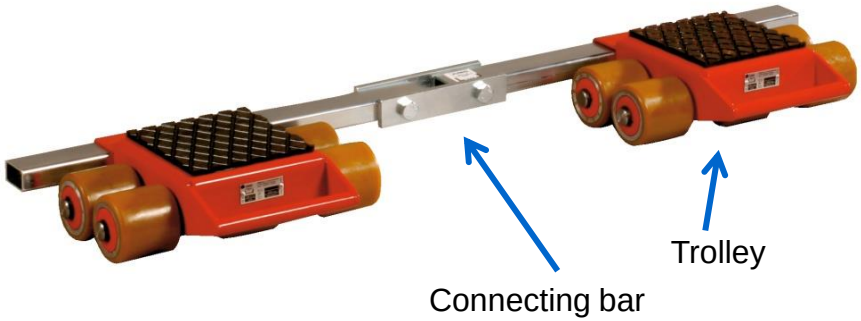
The loading platform consists of a 360-degree swiveling turntable. It allows for easy turning and steering of the dolly underneath the load. The dolly spreads the weight out over a large footprint, and this reduced floor pressure facilitates easy turning.



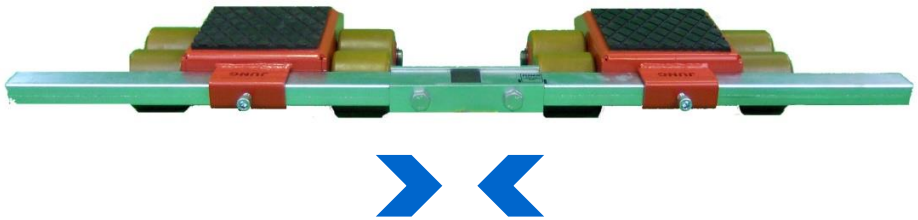
The pulling bar aligns the front and rear connecting bars into the direction of movement and synchronizes the turning of the left and right loading cassettes.

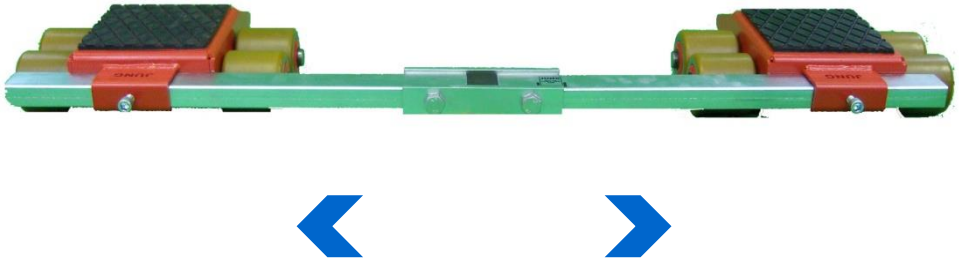
The straight-line rear

Next, we will look at the straight-line rear dollies.



The straight-line dollies come with connecting bars and a pair of trolleys.



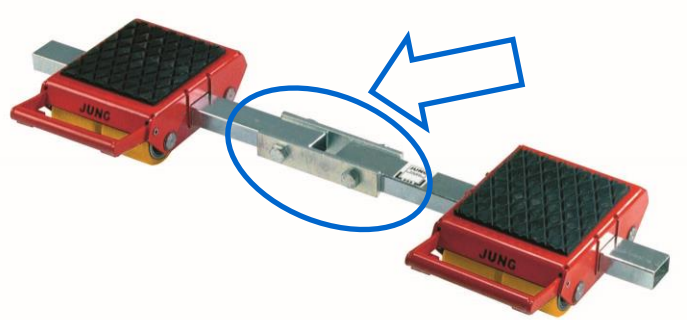


The bar keeps the rollers of each trolley aligned in the same direction. The trolleys can be used without the connecting bar, but it’s not recommended as the roller material can wear down like the tires on your car if out of alignment.

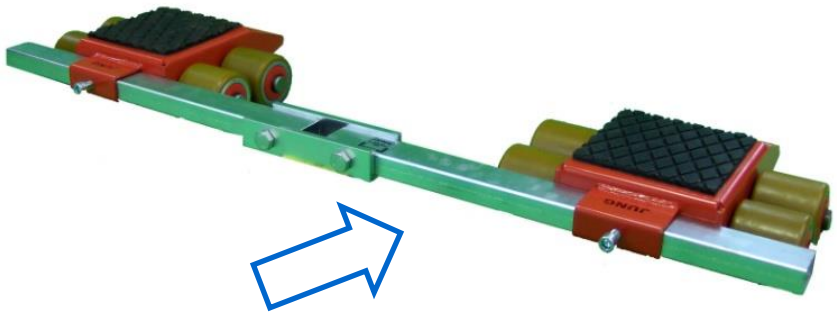
Connecting Bar

If you need a connecting bar that is longer than the one provided, you can easily build your own and clamp it into the fitting. The bar is made of standard 1x2 inch steel tubing.

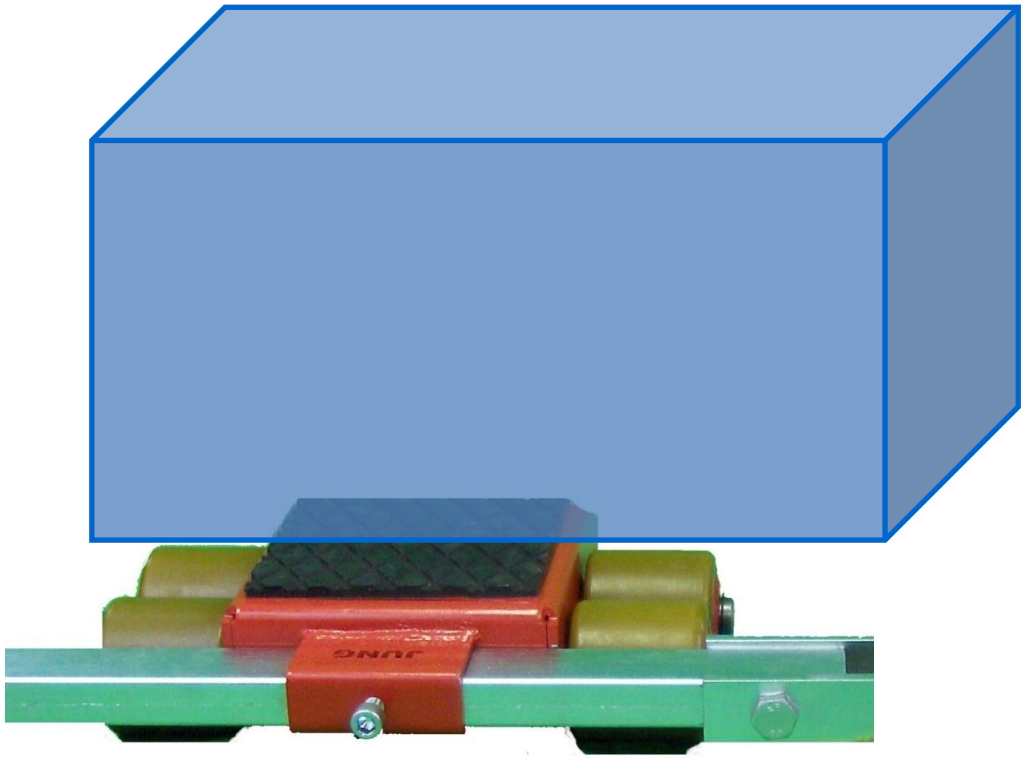
OLD style



NEW



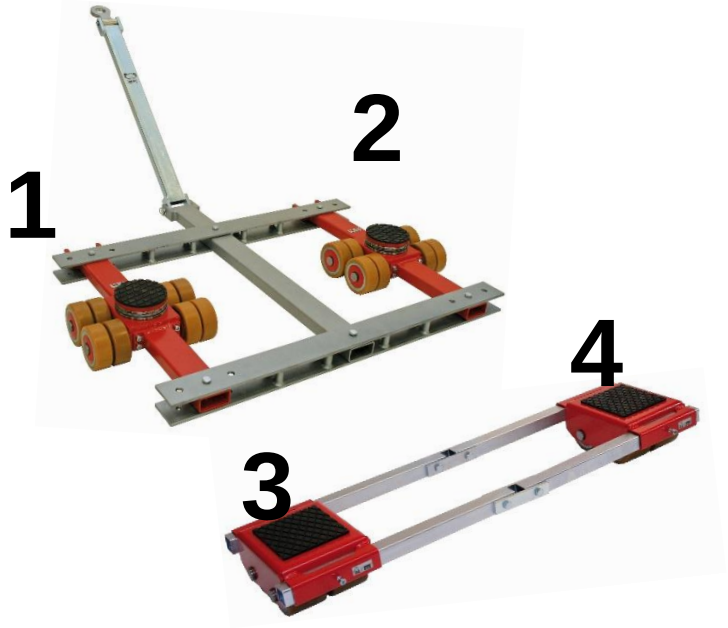
The design of the connecting bar has been changed from the earlier models. It now attaches to the outside of the dolly rather than through the middle. This design may seem a little strange, but …



… it allows you to place the dollies under the load and adjust the connecting bar from the outside without having to reach underneath.

If you are using 4 dollies to transport your load, we also recommend using the connecting bar. The connecting bar will keep the dollies in place in the event that the load rocks and one dolly loses contact.

Front and rear together



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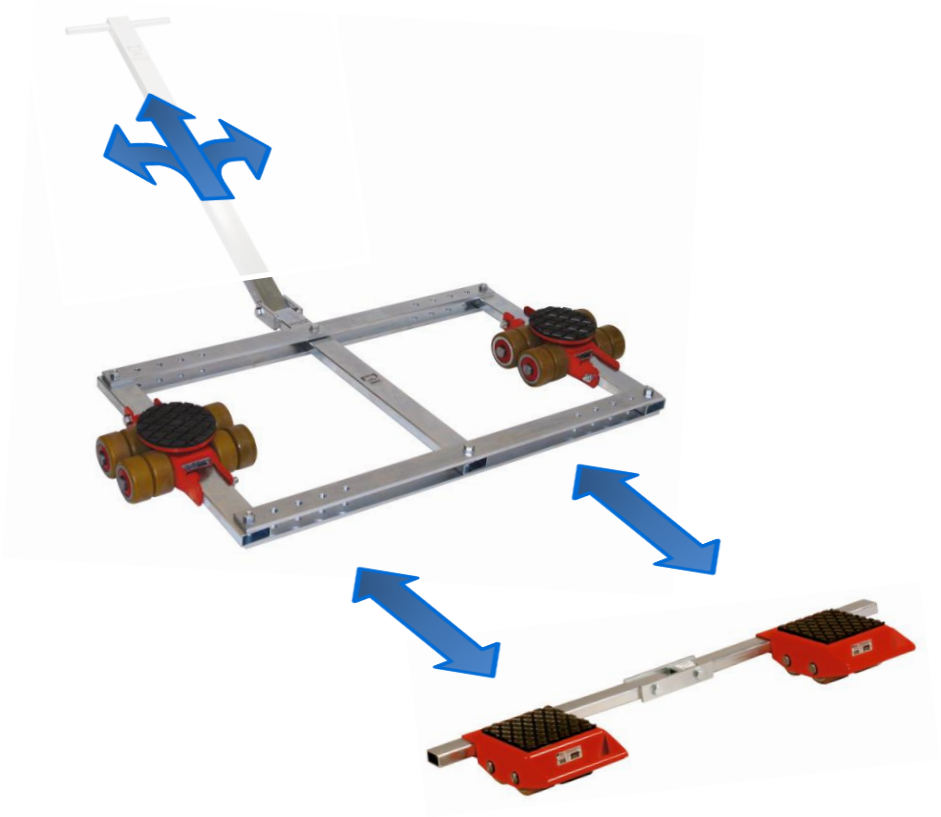
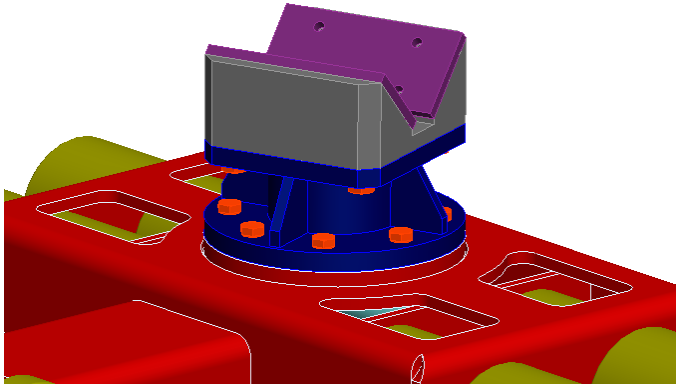


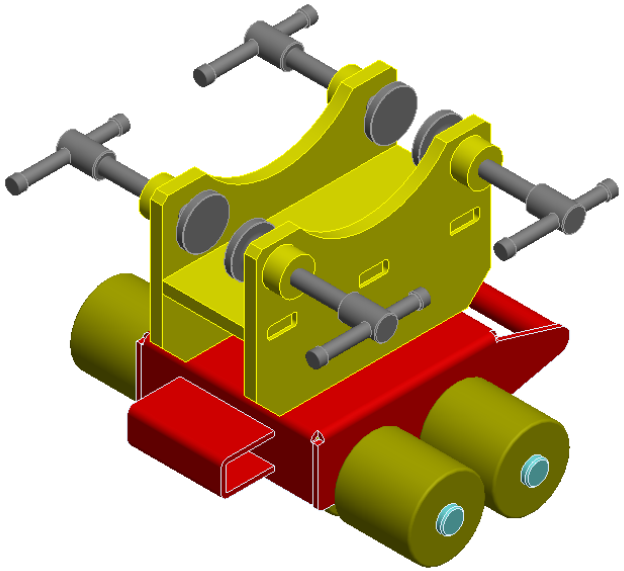
Using the steerable dollies and straight line trolleys together provides maneuverability like your car, as the front steers and the rear follows in a straight line.

Small footprint	Large footprint
	
Full-size rollers	Half-size rollers

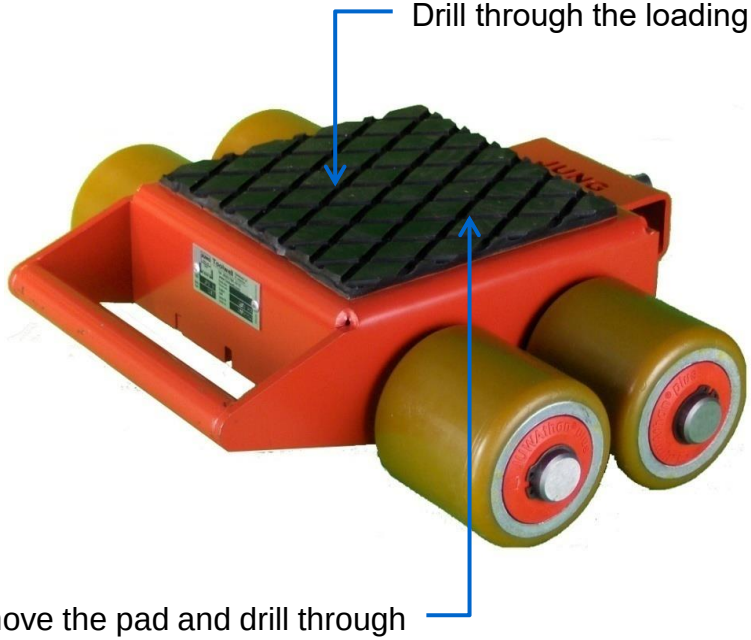
Some of the larger dollies are outfitted with both half-sized and full-sized rollers to reduce the turning resistance.

The loading platform is steel with a rubber ¼-inch heavy duty anti-slip load pad.



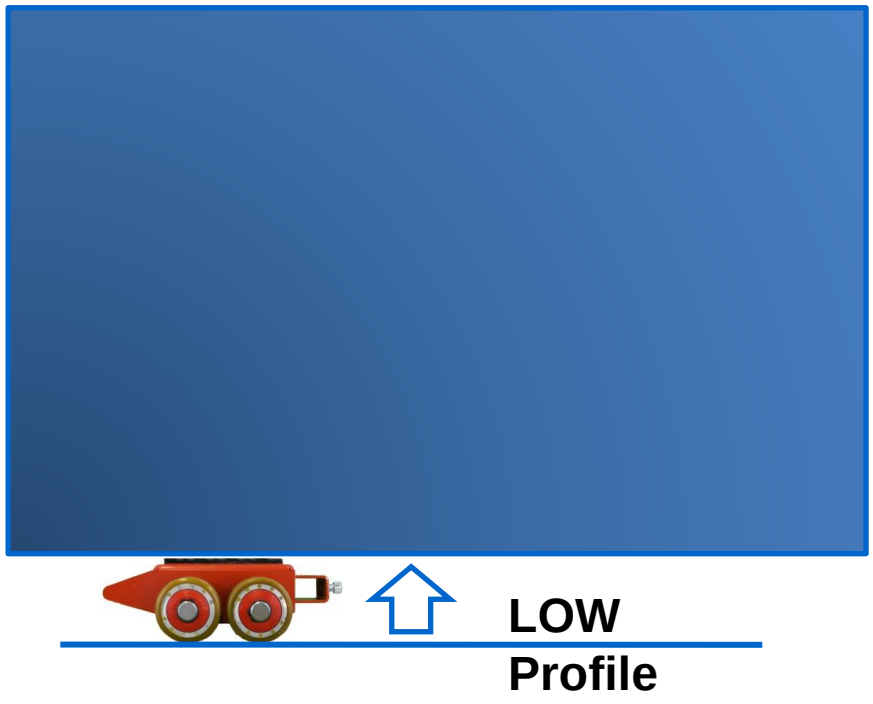


Customers who wish to affix the dollies to their load have two options…



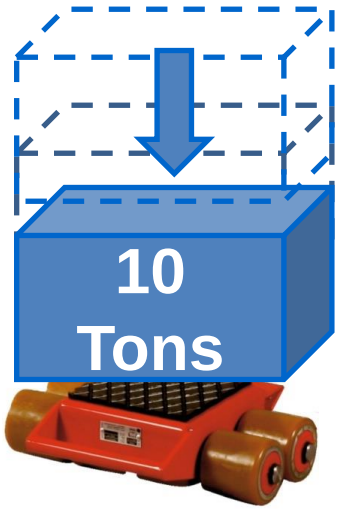
Option 1:
Drill through the loading platform to bolt on a bracket or fitting.

Option 2. Pry off the rubber pad to expose a steel welding surface.



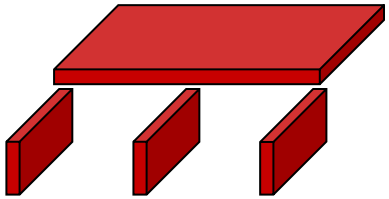
Our dollies have a very low profile. Loads are transported as close to the ground as possible for enhanced safety and low head clearance.

Impact Loading



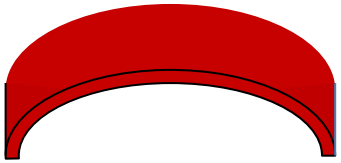
Our dollies are made to withstand the impact force from loading.

Steel Bending Technology



OLD: Welded frame using thick rigid steel

Will snap under shock



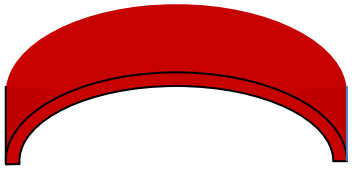
NEW: Frame created by bending steel

Absorbs shock through higher strength & elastic construction

The impact loading resistance is achieved through:

1. Steel bending technology that provides higher strength and elasticity …

Welding Seams



Steel bending reduces number of welding

Welding robots ensure higher quality welds

… 2. Fewer welding seams and higher quality welding seams through welding robot …

Shock resistant rollers

OLD: hard brittle roller

Will crack under shock

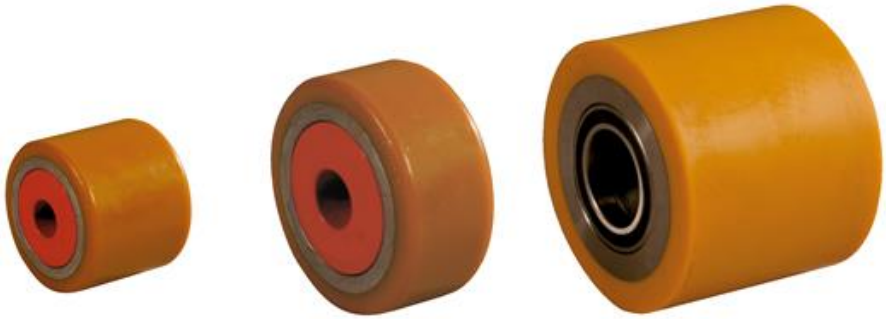
NEW: elastic roller

Absorbs shock through elasticity

… 3. Elastic shock absorbent roller material.

Rollers

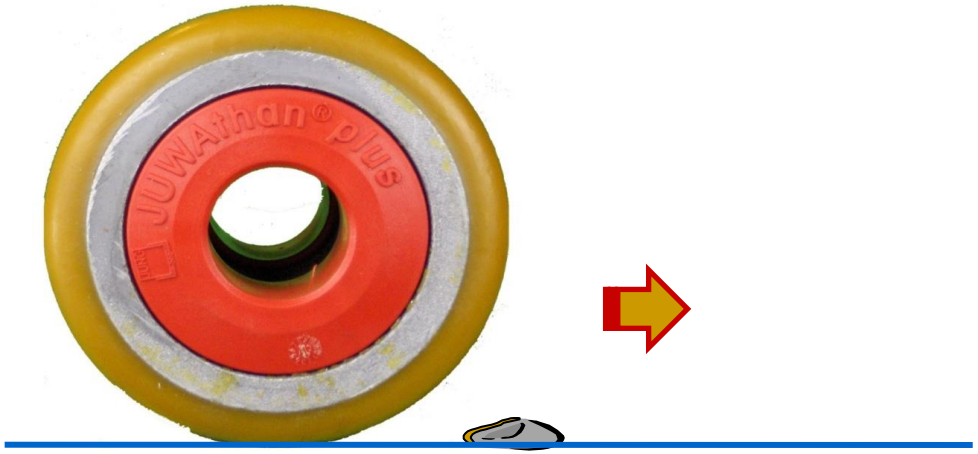
JUWAthan Rollers



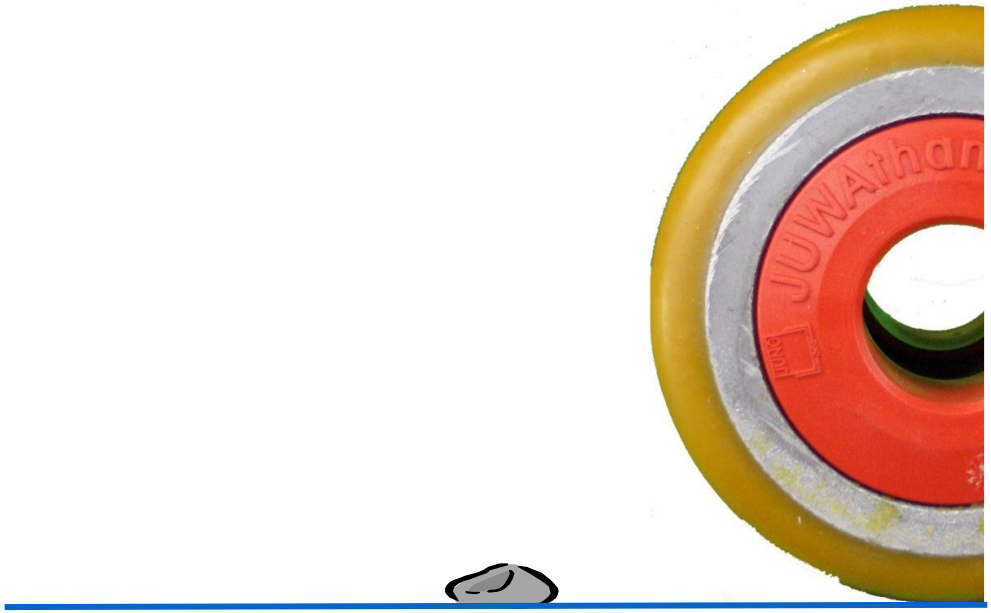
Traditional Rollers
Nylon, Steel, Urethane,

35 years of development has led to a roller material called “JUWAthan,” which is superior in performance and durability over traditional polyurethane, composite or steel rollers.
Here is why:

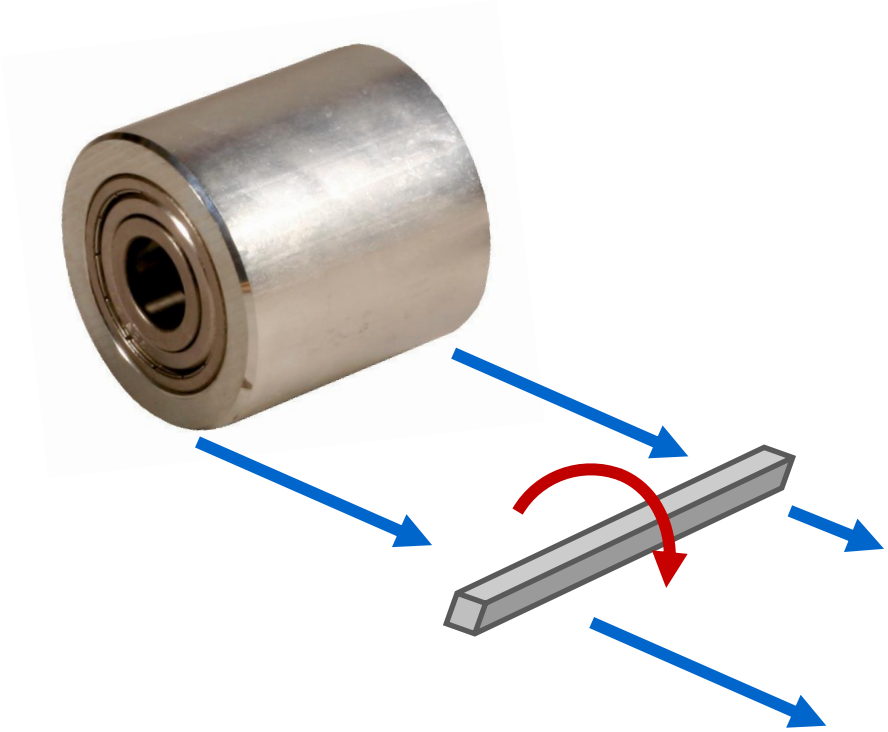
1. Traditional polyurethane rollers get punctured by metal shavings, nails or rocks. The debris can become embedded in the roller, wearing down the material and resulting in a short life expectancy.



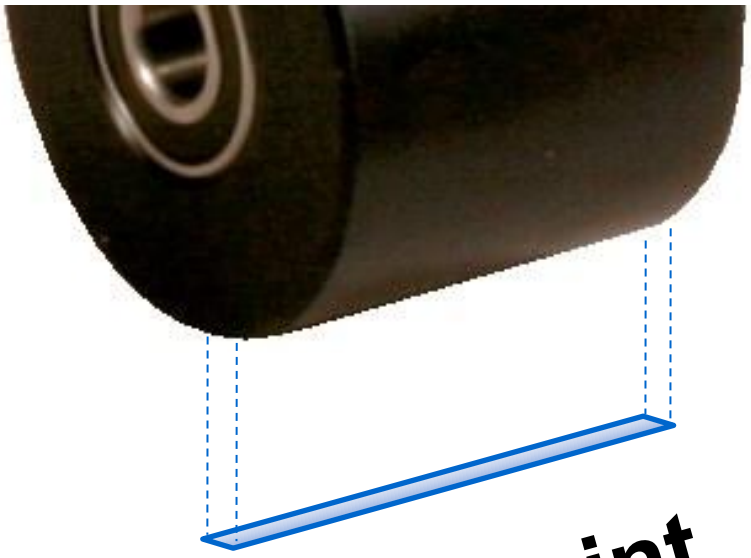
Our patented JUWAthan material is elastic and will mold around obstacles on the ground like the tires on your car.



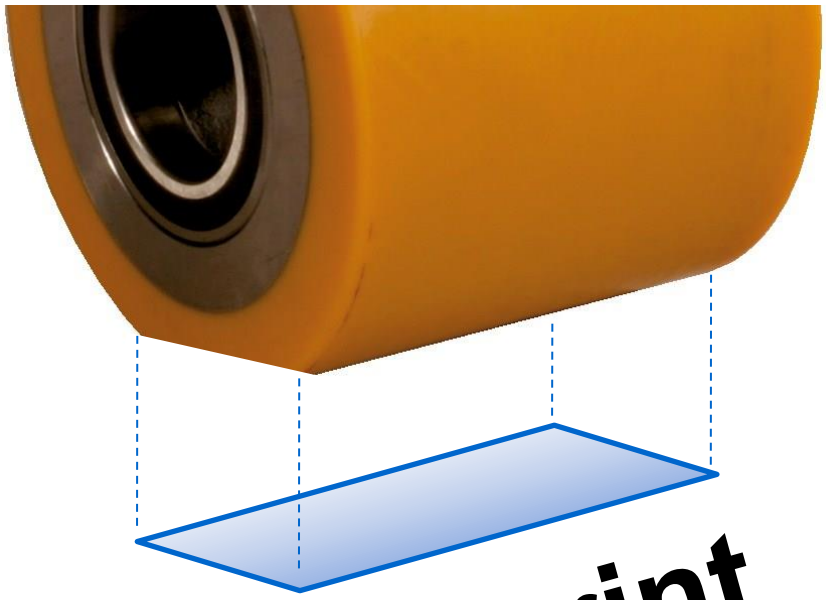
Obstacles will not puncture or become imbedded in the rollers and therefore cannot break down the material. The result is a roller with much higher durability.



2. In addition, this elasticity means that the rollers do not have to get up and over the obstacle. Loads are not stopped as they would be with steel, nylon or hard polyurethane rollers.

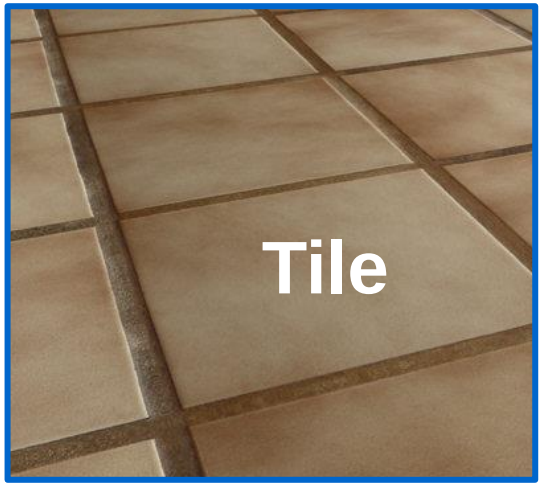


3. Traditional rollers have a small footprint because only a small surface area touches the ground.



Footprint

The elastic JUWAthan spreads out under the weight to increase the contact area with the floor. The larger footprint of each dolly divides the weight over a larger area so that the pressure onto the floor is reduced.



Radically reduced floor pressure means that even under extreme loads the rollers are:

1. Non-marking &
2. Non-damaging

You can take the dollies over tiled floor or sensitive epoxy without damaging or marking the floor.

- **Steering**
- **Move forward**
- **Break-out from standstill**

=

Less Manpower

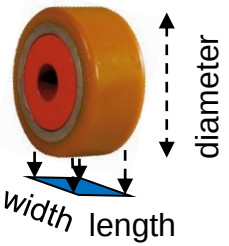
Reduced pressure on the ground also means:

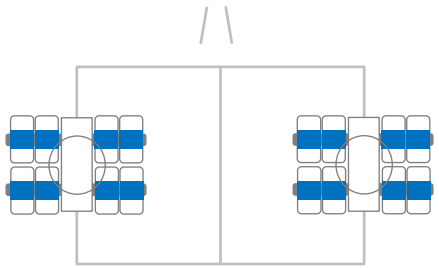
- Easy steering
- Easy rolling
- Easy break out from standstill

…which translates into fewer manpower requirements.

pdf

Footprint





$$\text{Pressure (psi)} = \frac{\text{Load weight (lbs) per dolly}}{\text{Footprint (in}^2\text{) per dolly}}$$

If you are travelling over thin floors (like on a submarine) and are worried about breaking through, please consult our guide to calculate the exerted pressure per square inch. You will find the information under the link “Pressure for Thin Floors.”

You can leave your load sitting on top of the dollies for extended periods of time. This will not damage the dollies or rollers. The rollers will begin to sag until the load starts moving, and then the roller material will return to its original shape.

To maintain the round shape without warping over time, the roller has an aluminum or steel core (depending on the dolly size). Two precision ball bearings are held inside.

The rollers become larger for heavier loads, compensating for the difficulty of getting over obstacles. All of our dollies maintain the ability to bridge small ledges, gaps and obstacles.

Because of their elasticity, the rollers perform well both inside and outside: in workshop facilities with metal scrap on the floor, on rough parking lots, over cracks in concrete or even over countersunk rail tracks.

However, the rollers are designed for low profile applications so they’re small in size. The dollies will get stuck in gravel or soft surfaces, like grass… so use the dollies only on hard surfaces.

Load Capacity

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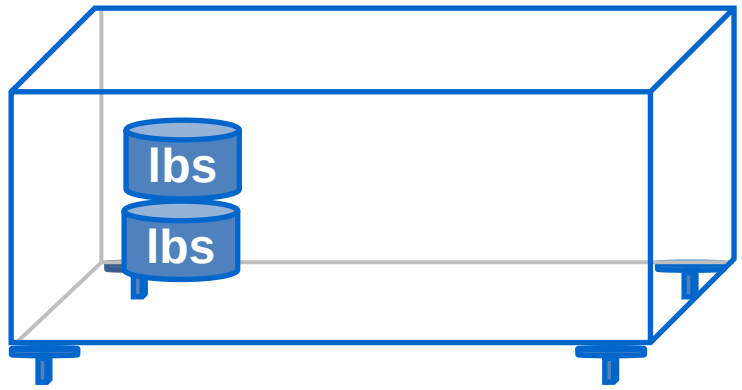
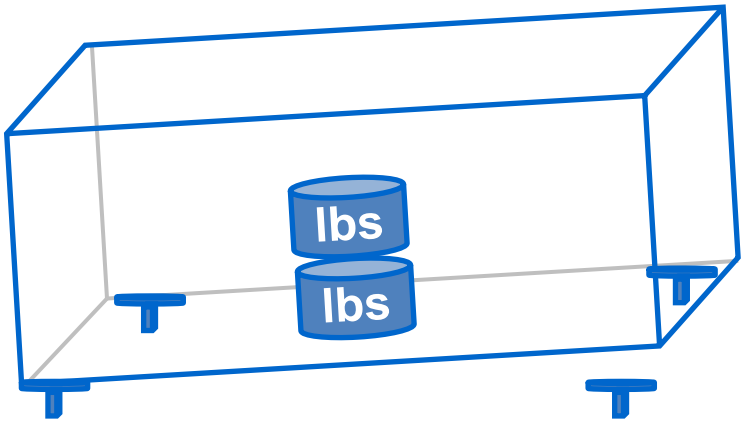
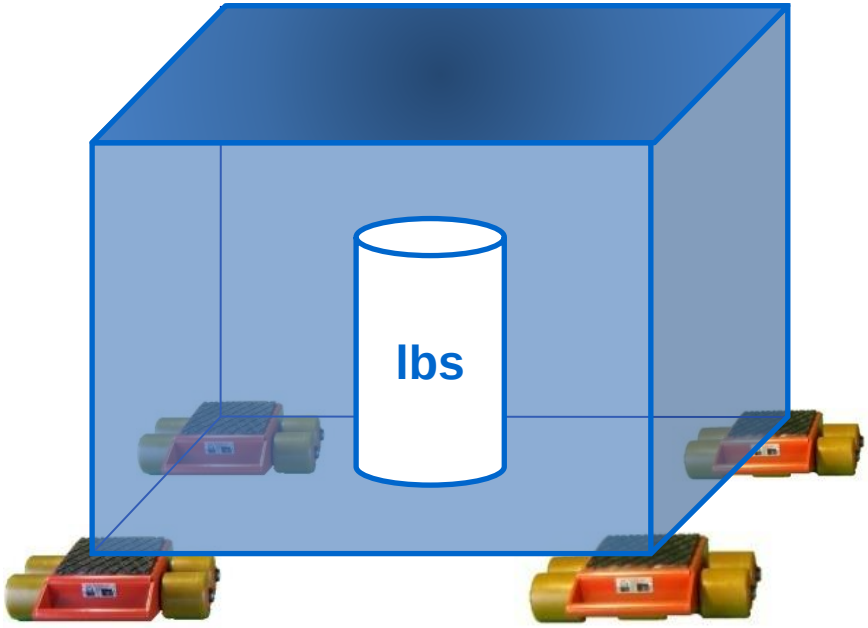
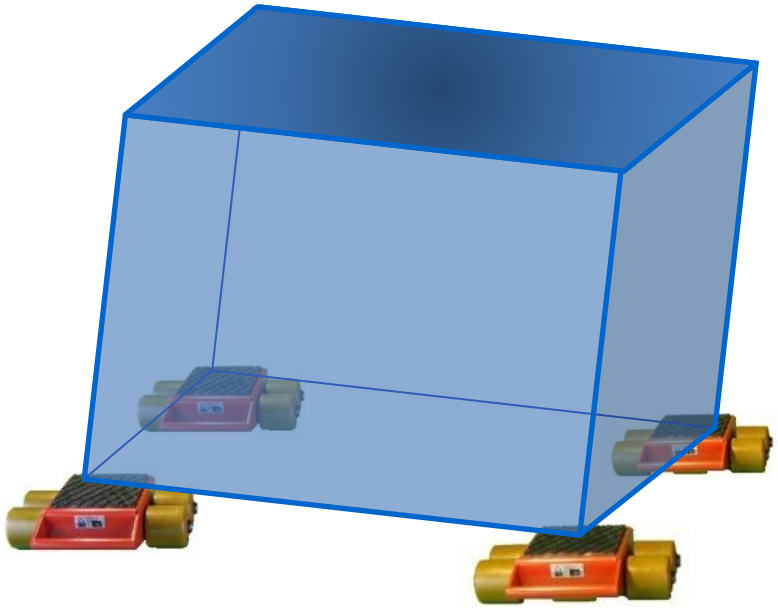




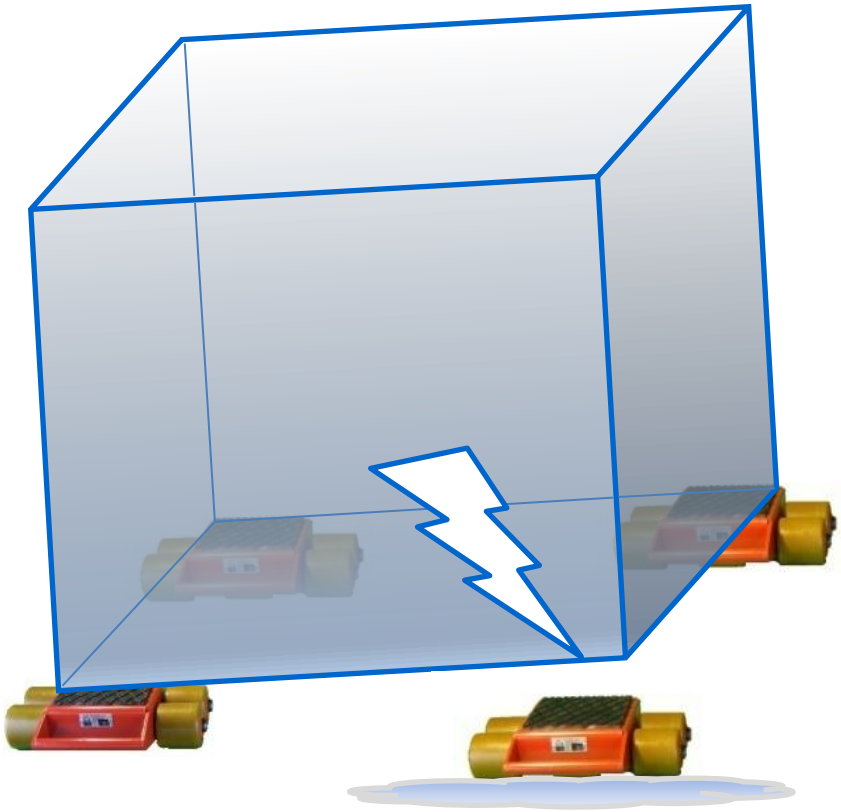
Be aware that the weight may NOT be evenly divided between each dolly…



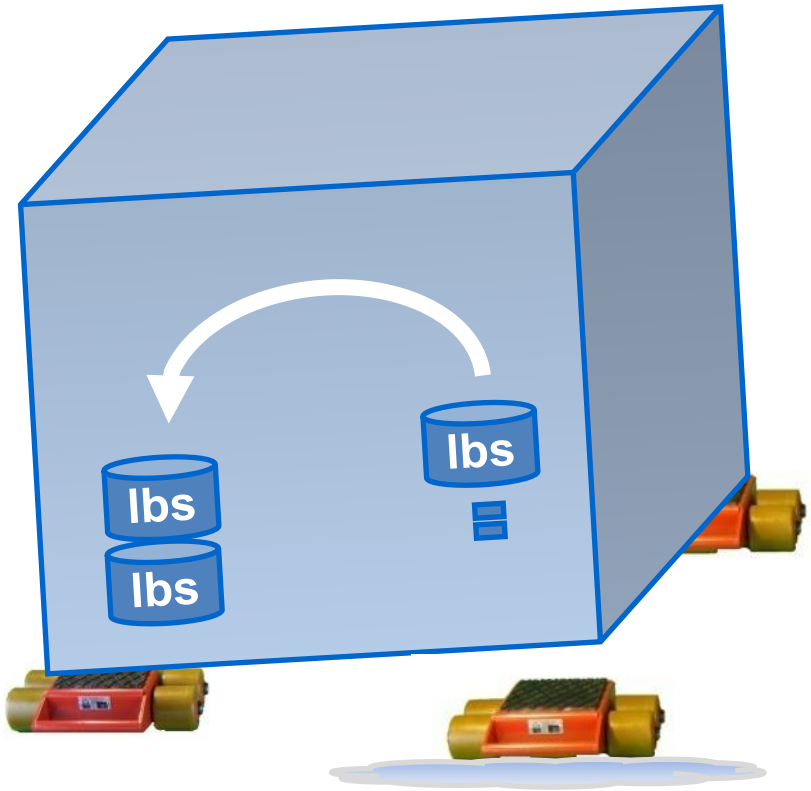
… even if the weight is perfectly distributed and the center of gravity is in the middle.



If you are traveling over an uneven surface, your load will rock
just like a 4-legged chair on uneven ground.

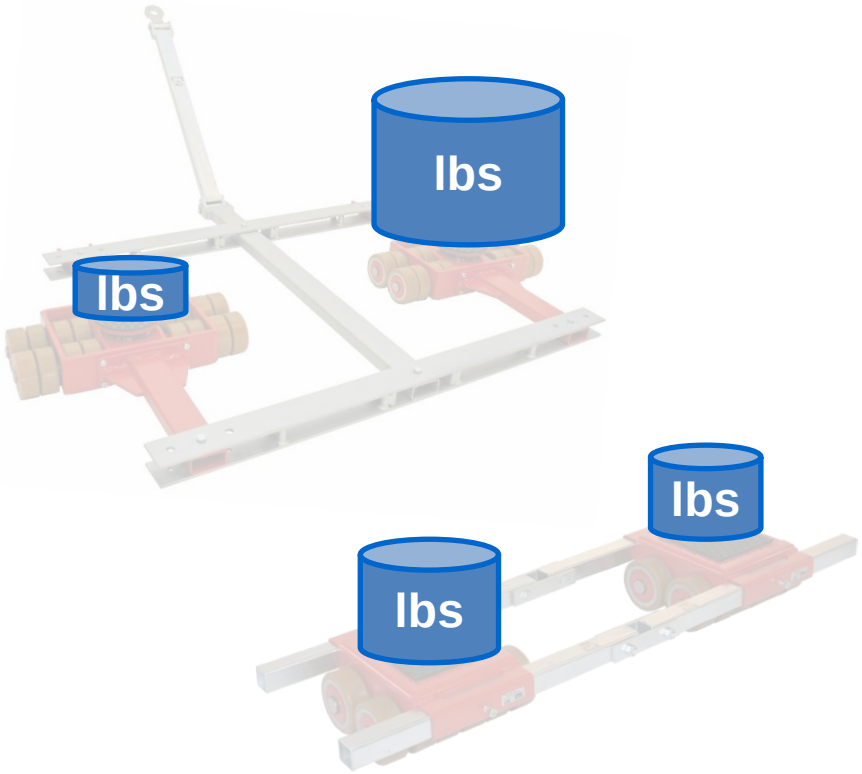


One dolly may lose contact with the load...

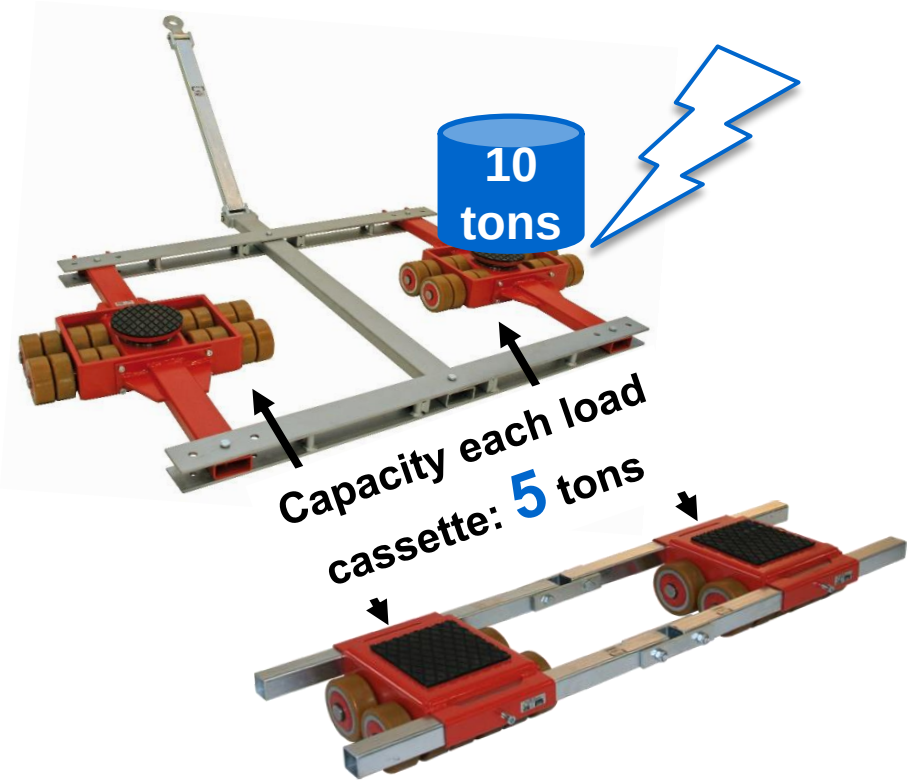


…causing the remaining dollies to carry more weight

Loads almost never travel over perfectly level surfaces. Floors slant towards drains, concrete is often full of cracks, and there are often ledges to overcome.



So please be aware that the weight may NOT be evenly divided between each loading point.

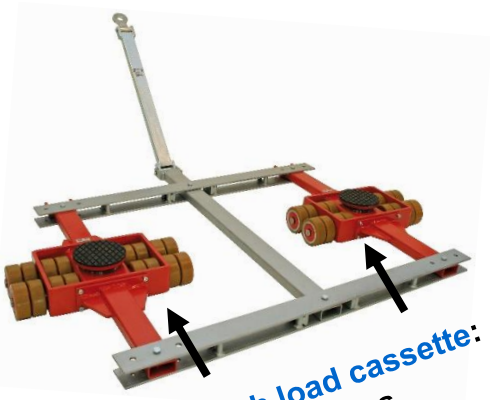


So make sure the load capacity for each load cassette is not exceeded.

Load Capacity

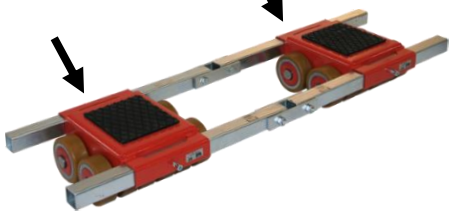
Combined : 20 tons

applies if each dolly carries same weight



Each load cassette:
5 tons

Each dolly model:
10 tons



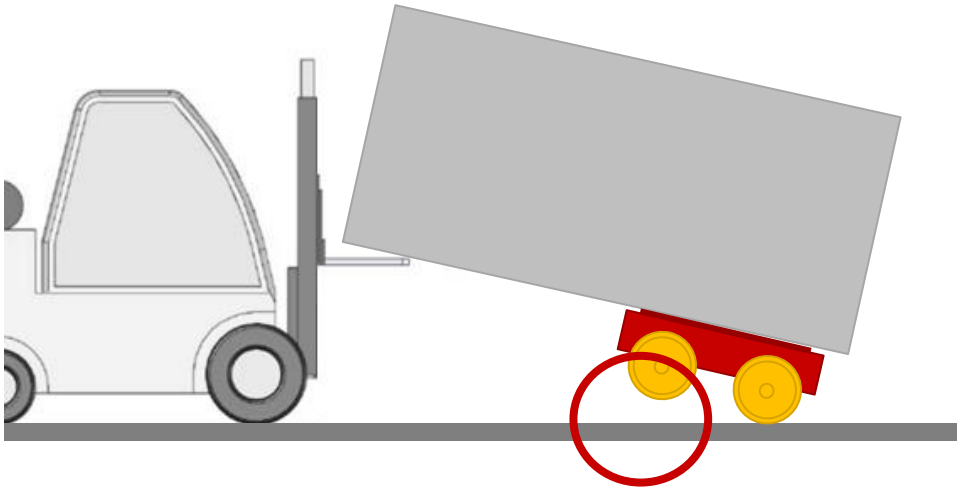
Please understand load capacity as being listed:

- Combined
- Each dolly model
- Each load cassette

SAFETY FACTOR

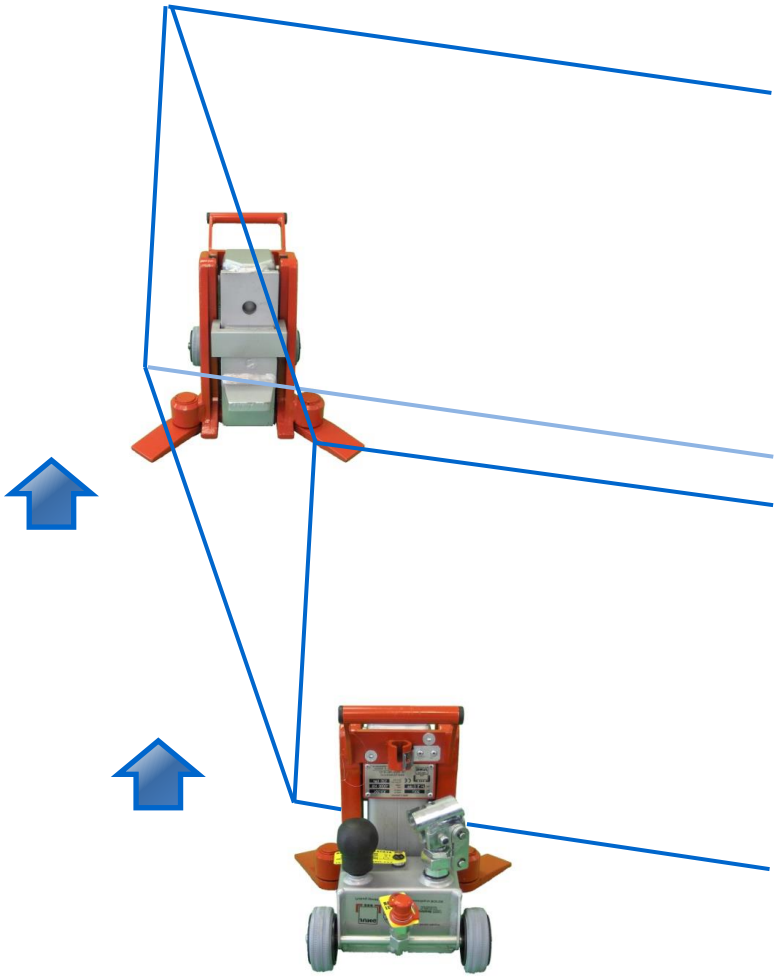
All our dollies have a significant safety capacity above and beyond the rated load bearing capacity. So even if you max out the allowed weight, you will maintain maneuverability and the dollies will not break.

Exaggeration



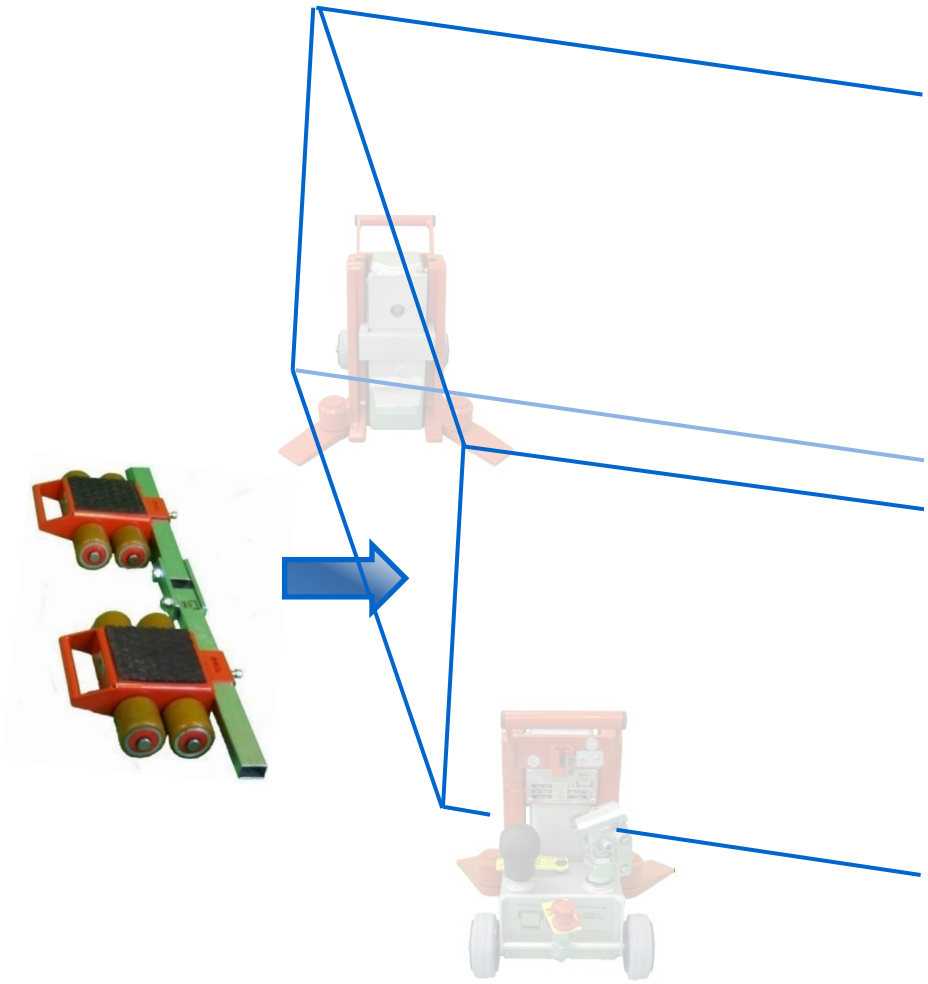
Please use caution when using the dollies to support one end of a load with a forklift on the other. The height difference will tilt the dollies and lift up one row of rollers, overloading the remaining ones. For this, please use a dolly with twice the load capacity.

How to use



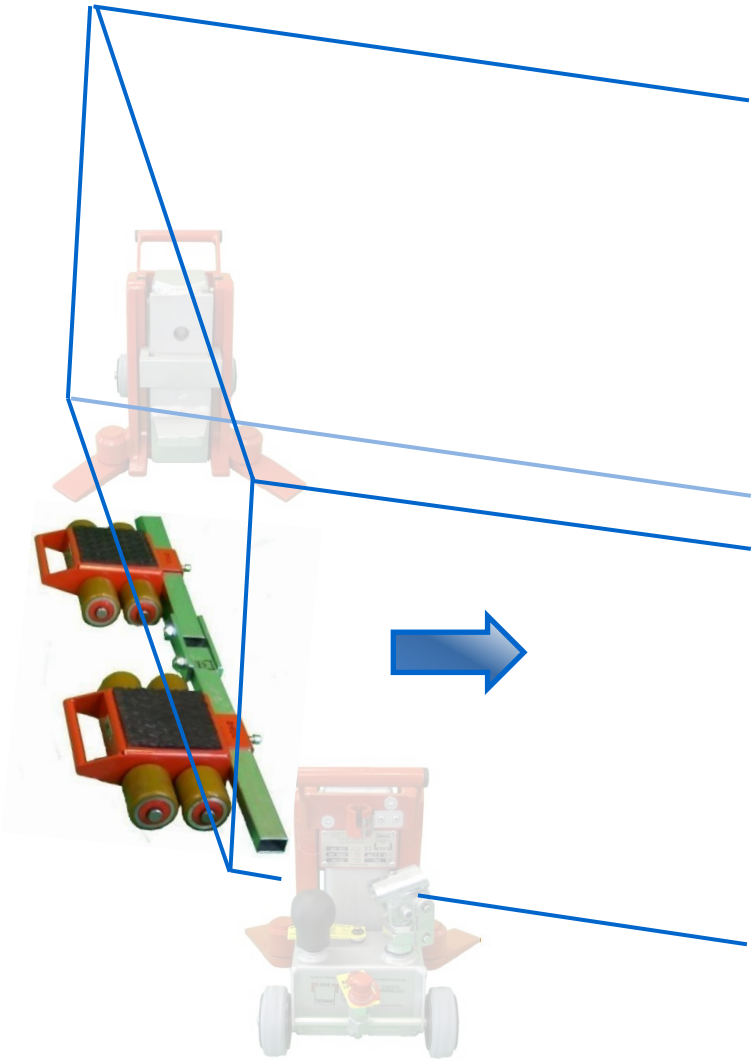
Step 1:

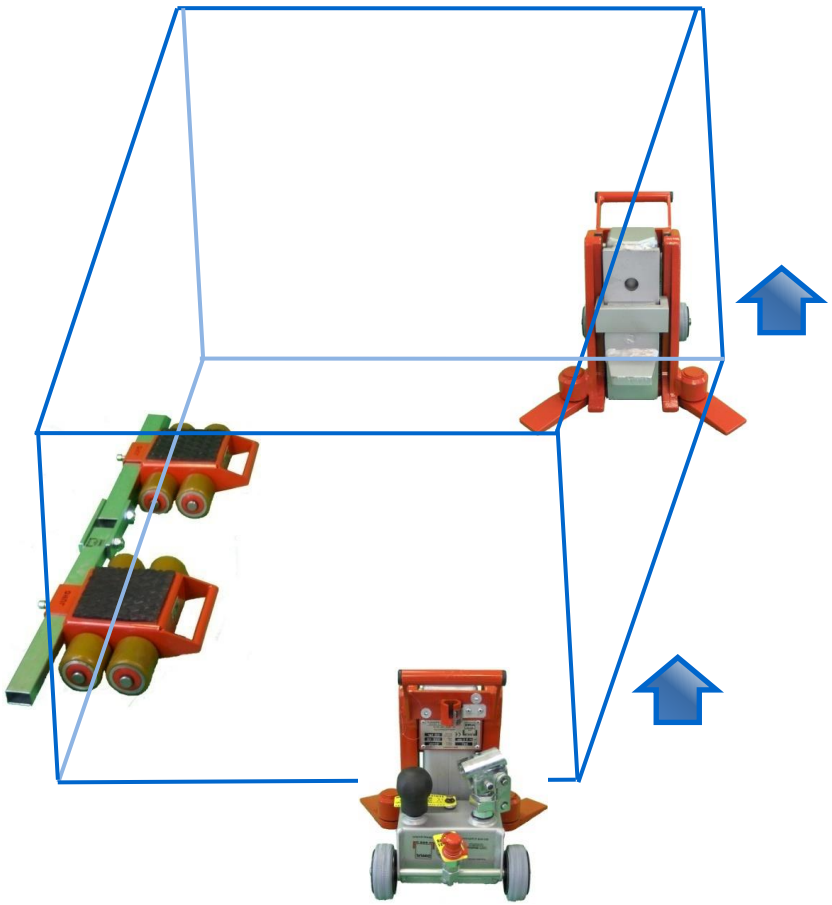
Lift up one end of the load first. You can use one or two jacks simultaneously.



Step 2:

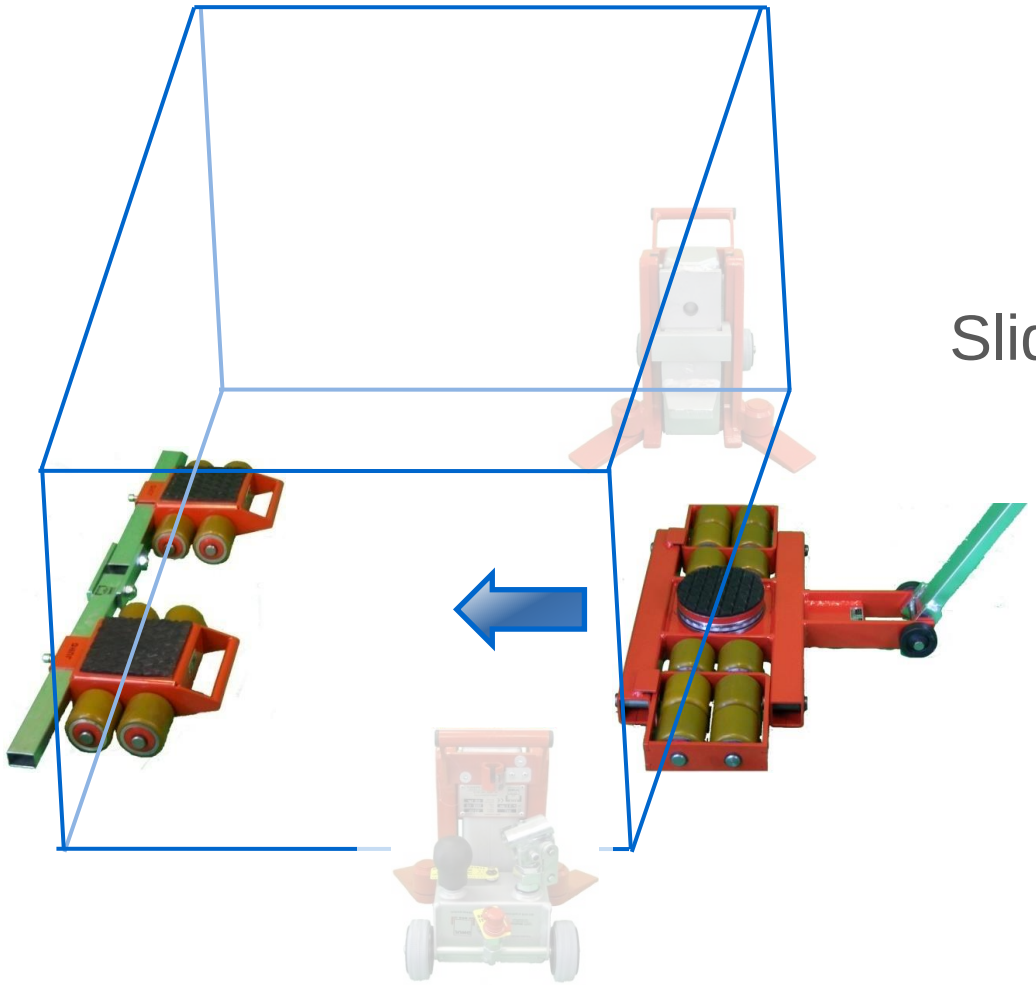
Slide either the rear dollies or the front dollies underneath the load, then lower the load onto the dollies.





Step 3:

Now lift up the other end of the load.



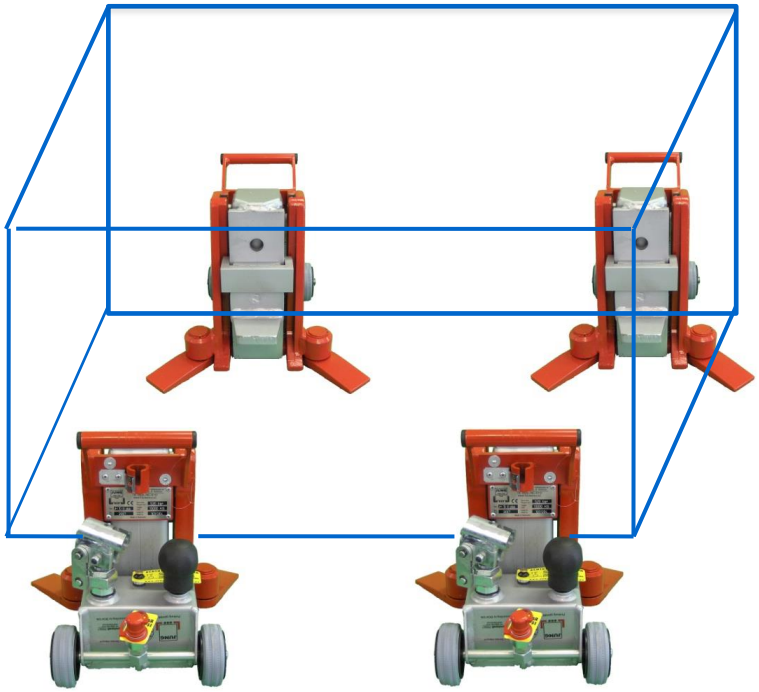
Step 4:

Slide the other dollies underneath.

Lower the load onto the dolly.

Step 5:

Now push the load. The pulling handle can also be hooked to a forklift for towing.



You can also use 4 jacks simultaneously to lift up all four corners so you can position all of the dollies at the same time.

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