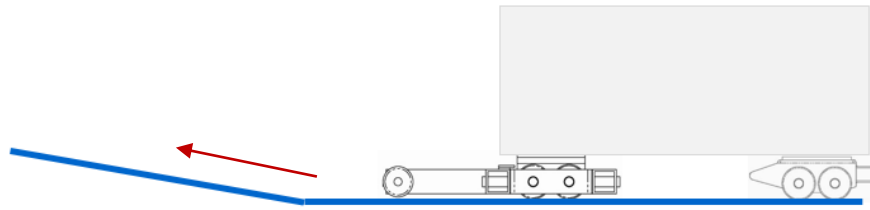


Inclines

Machine Skates



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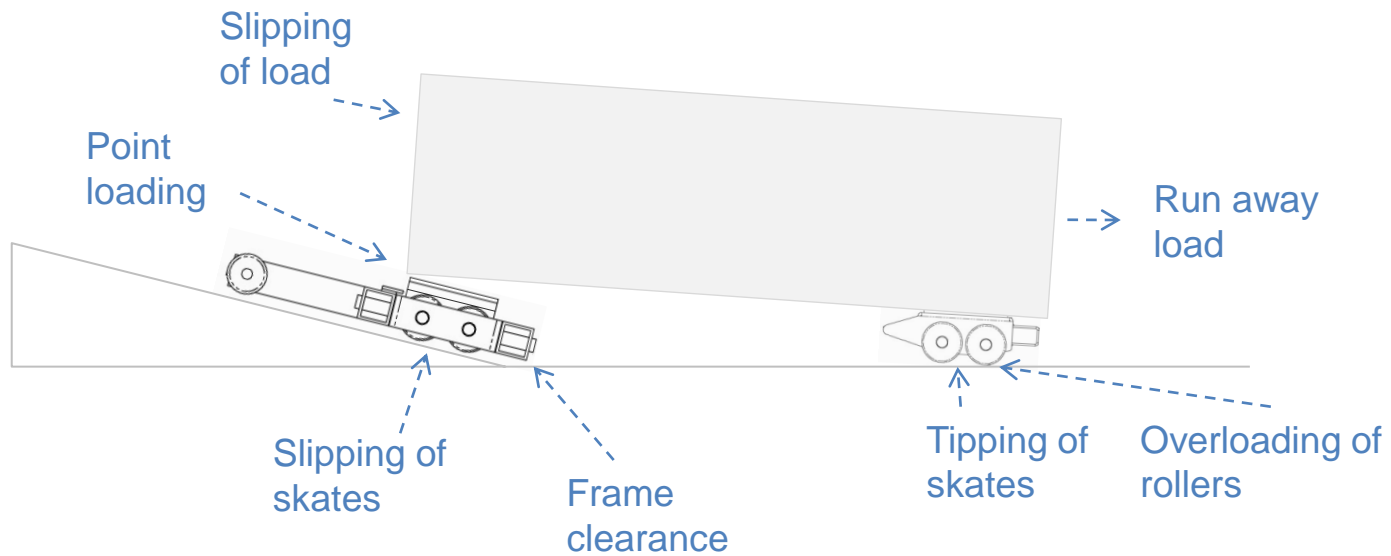
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Movement over ramps can cause multiple problems. Safety considerations must be given to a multitude of factors.

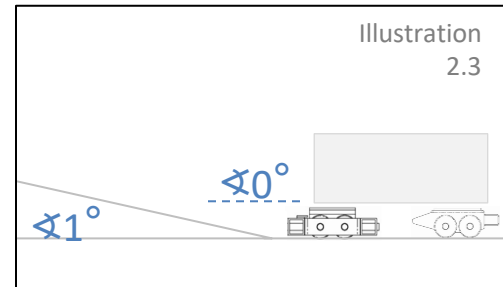
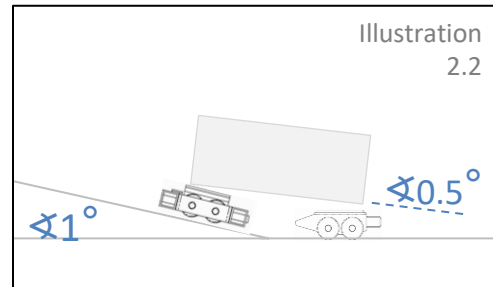
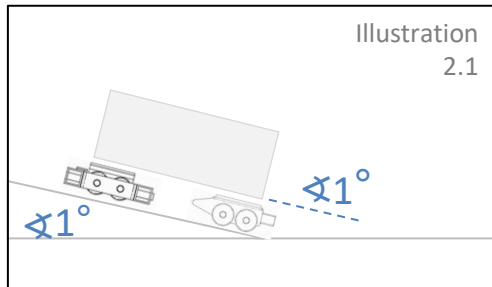
Safety considerations

Illustration
1.1



As the skates transition from a level plain and up a slope, the inclination angle of the payload gradually increases.

Slope angle and payload inclination angle



The inclination angle of the payload finally becomes greatest (equal the slope inclination) when front and rear dollies are on the slope.

Inclination angle of load = slope inclination

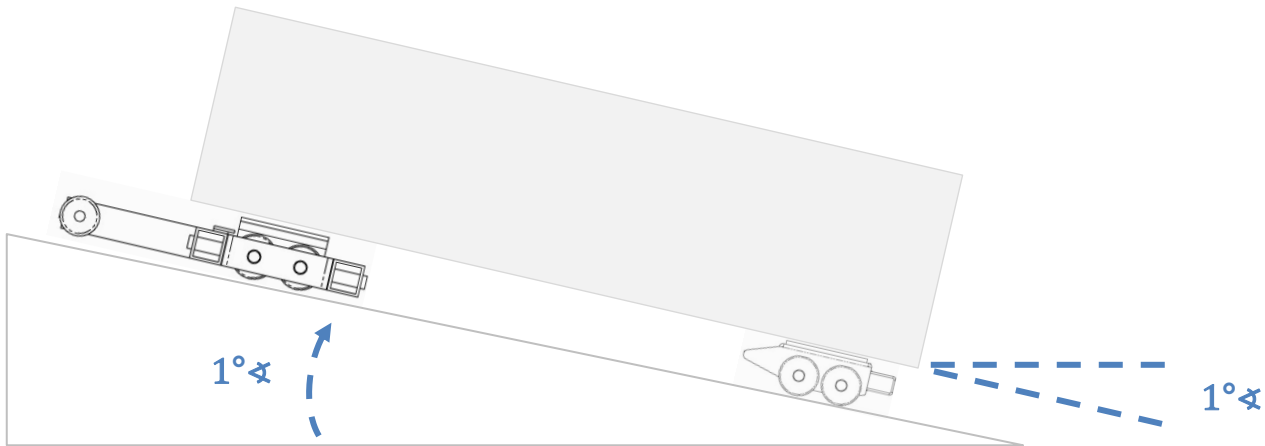


Illustration
3.1

The skates have such low rolling resistance that a load will run away even at the smallest declines.

Danger: Run away load on declines

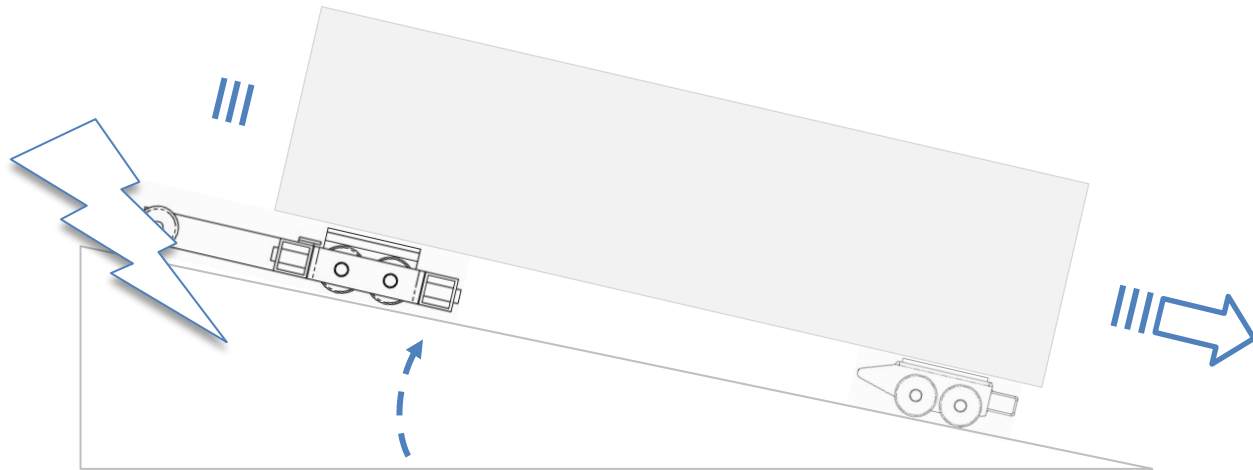


Illustration 4.1

The rubber load pad and the elastic roller material will compensate to some degree for the tilting of the load as well as tilting of the skates.

Compensation from elastic material

Illustration 5.1

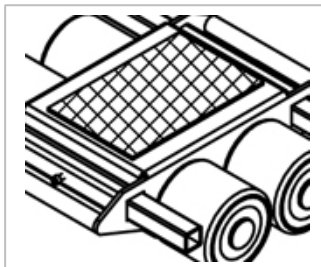
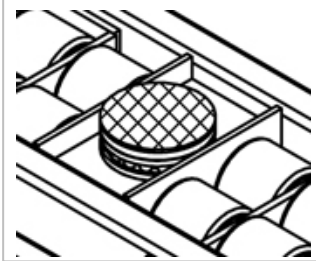
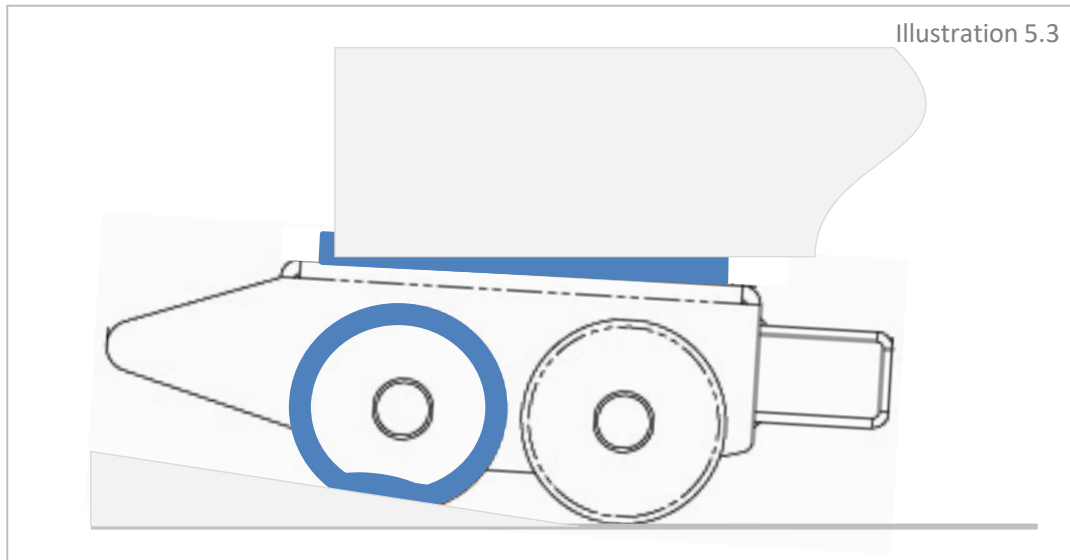


Illustration 5.2

Illustration 5.3



If the angle between the load and skate is too great, the contact area and the slip resistance (friction force) between the load pad and the load is dangerously reduced.

Reduced friction resulting in load slipping

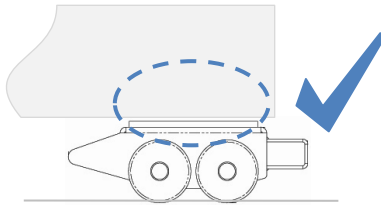


Illustration 6.1

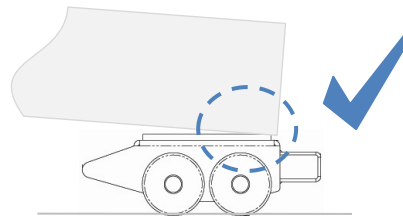


Illustration 6.2

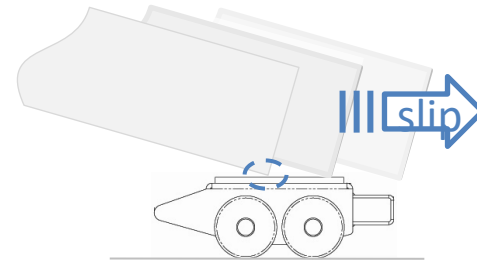


Illustration 6.3

If the angle between the load and skate is too great, the load weight is also no longer spread out across the skate but creates dangerous point loading.

Point loading

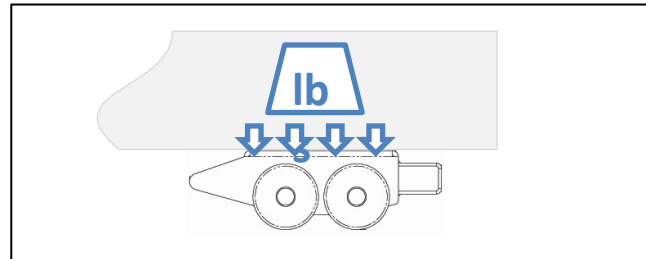


Illustration
7.1

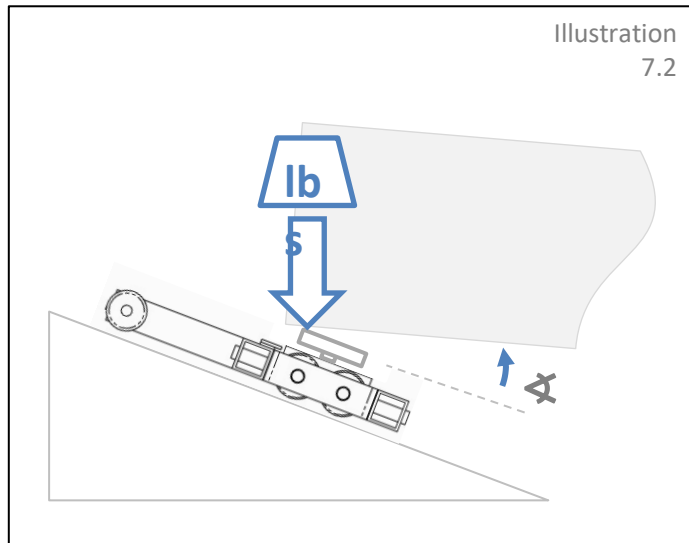


Illustration
7.2

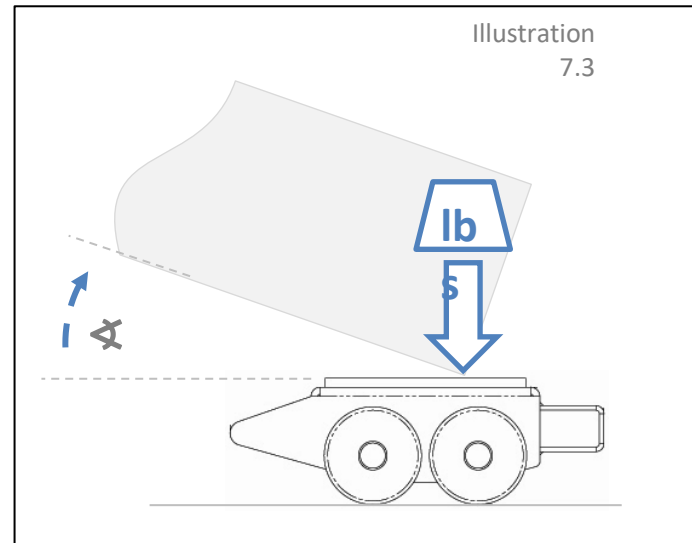
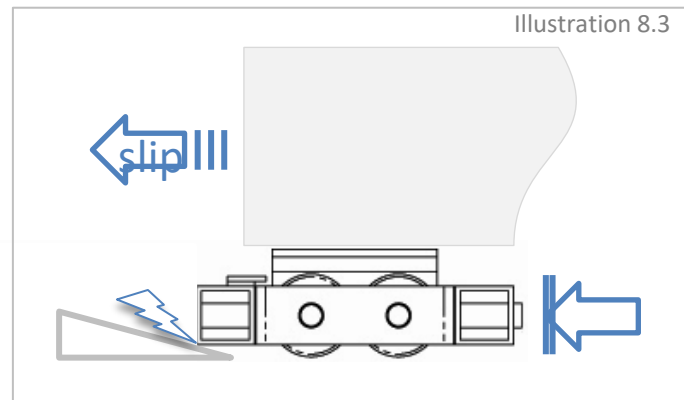
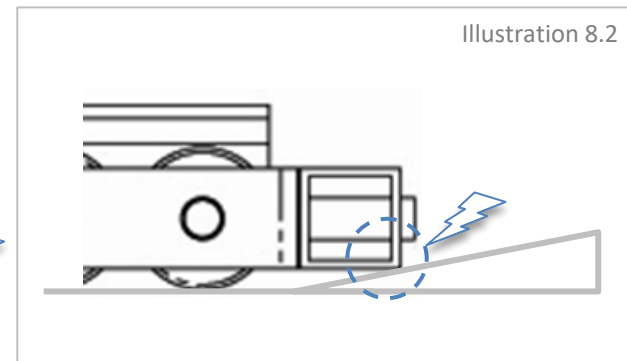
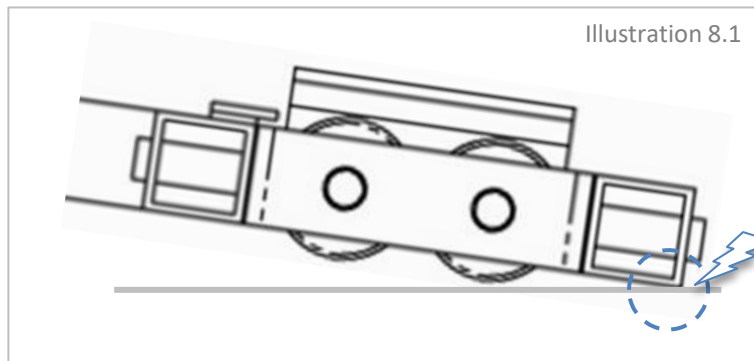


Illustration
7.3

On inclines as well as when the skates are tipped, the frame can hit the ground and stop the skate's movement. Any such caused abrupt stop can cause the load to slip.

Ground clearance with frame



If the skate leans with the load (load tilts loading platform), one axle is lifted of the ground and all the weight is concentrated on remaining axles.

Tipping of skates

Illustration 9.1

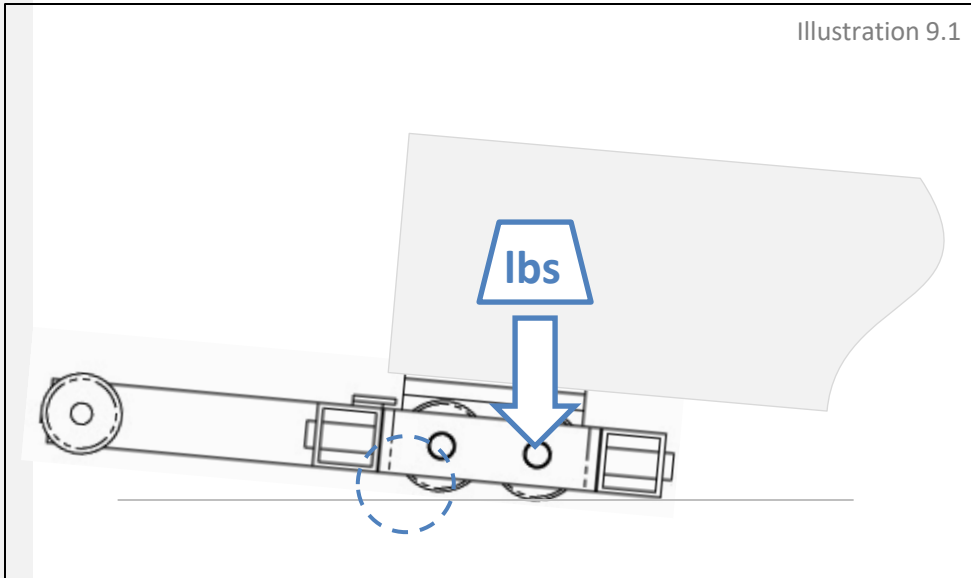
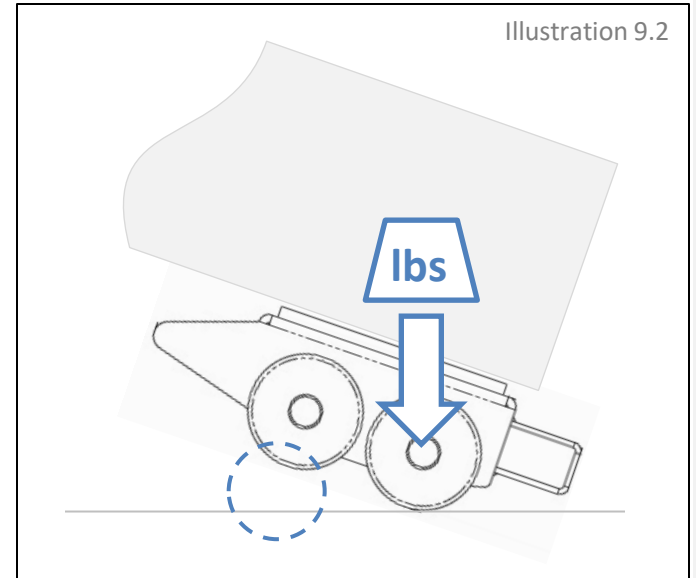


Illustration 9.2



In the event, that the load presses down on the edge of the loading platform (beyond the outer axle), the skate could slip out from under the load.

Slipping of skate

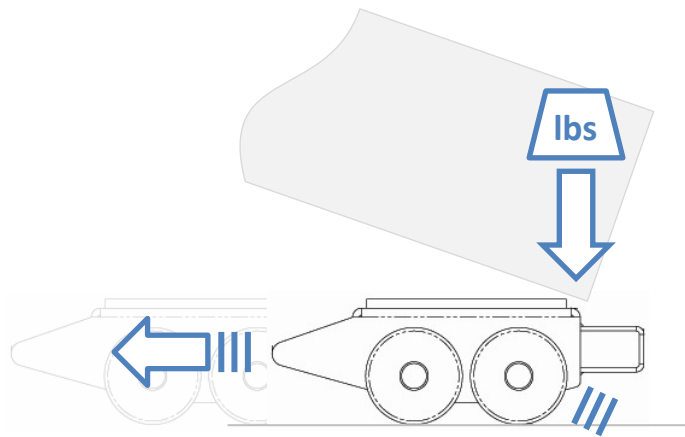


Illustration 10.1

It is consequently recommended to use the skates on flat surfaces only. Using the skates on inclines is dangerous.

Recommended use

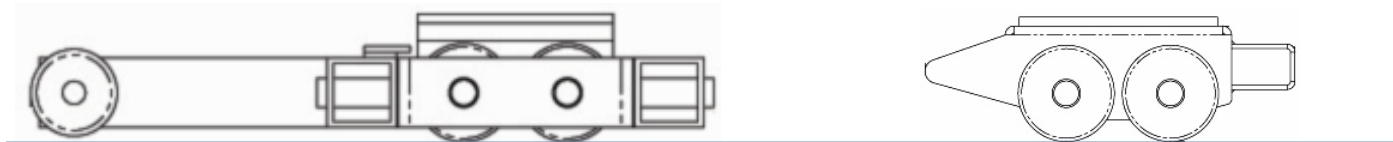


Illustration 11.1



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