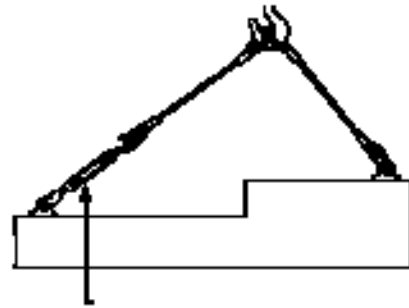
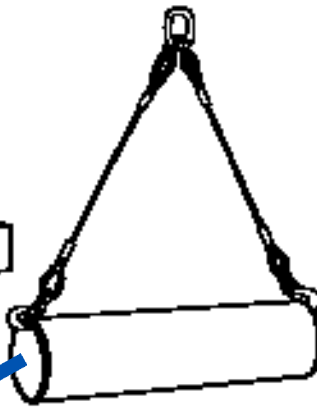
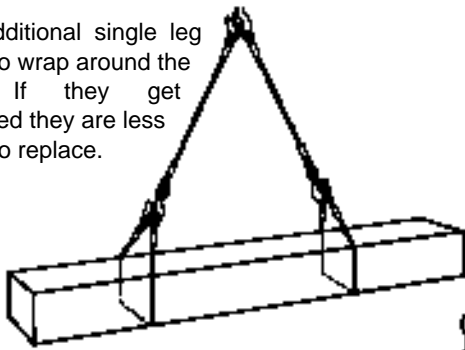




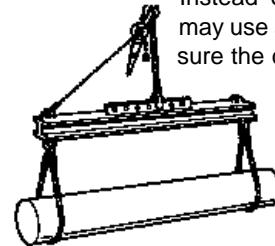
## Multiple Leg Slings

Use additional single leg slings to wrap around the load. If they get damaged they are less costly to replace.



If you lift an off-center load the sling leg can be fitted with a turnbuckle to level the load. Instead of a turnbuckle you may use a come-along but be sure the capacity fits the job.

When lifting pipes make sure you do it with the right hooks. Point loading the hook tips only may result in bent hooks.

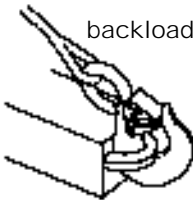


### DO NOT ....

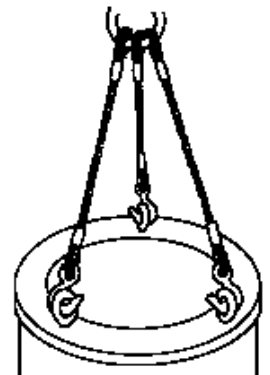
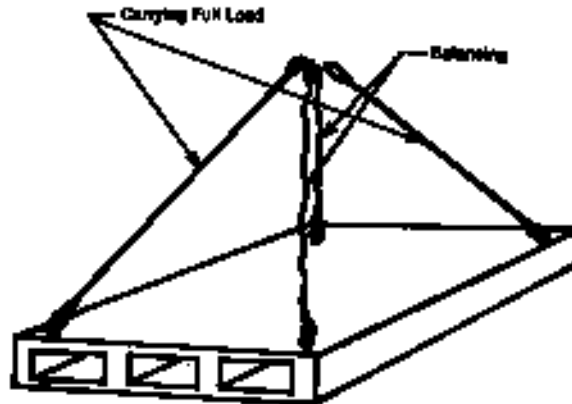
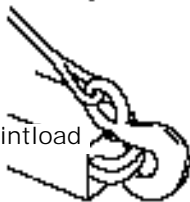
sideload...



backload...



or pointload



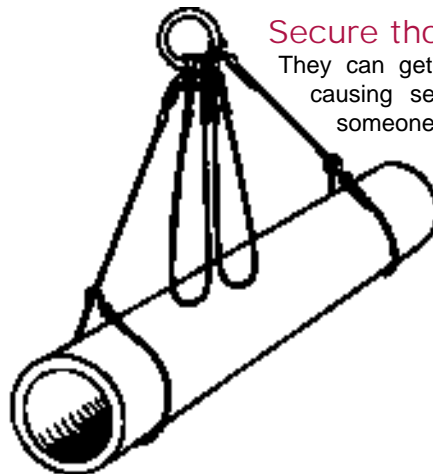
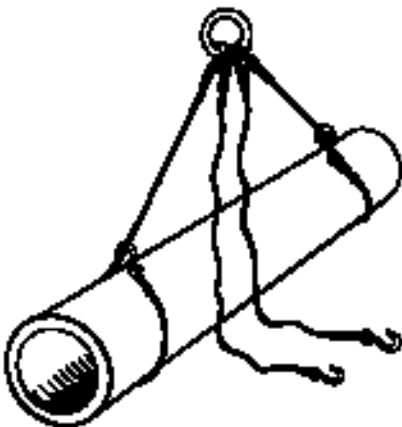
### Are all sling legs loaded equally?

The load in 3- and 4-leg slings may only be supported by 2 legs while the others are only balancing the load. Unequal length sling legs may be one reason, off-center or buckling loads another. **YOU**, the user, must evaluate each lift taking into consideration the type of load, and the type of sling. Same capacity sling legs will stretch unequally if loaded unequally.

All wire rope sling capacity tables (e.g. in ASTM B30.9 and Wire Rope Users Manual) consider ALL legs sharing EQUAL loads.

### Secure those legs

They can get stuck under another piece of equipment causing severe overload of the crane or hoist, or someone may trip over them. Do not lift when loose equipment is not secured.



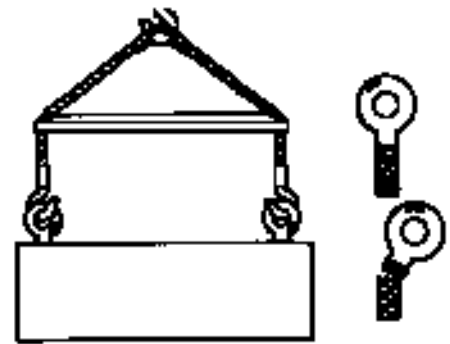


## Slings and Eye Bolts

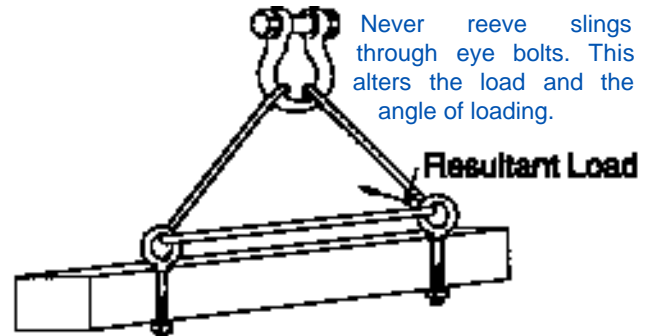
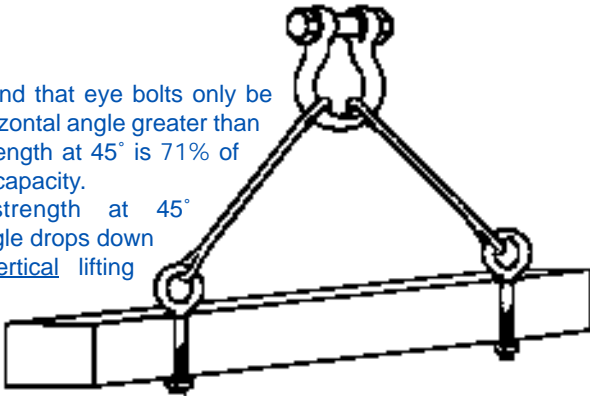
Many types of equipment either come with Eye Bolts or are fitted with Eye Bolts for lifting purposes. There are some considerations when you use such Eye Bolts:

- 1) Eye Bolts are marked with their thread size, NOT with their rated capacities. ONLY Swivel Hoist Rings are marked with their rated capacities.
- 2) If you assume that a standard eye bolt has the same angularity strength loss factor as your sling, YOU ARE WRONG.  
A sling used at a horizontal angle of (for example) 45° retains 71% of its VERTICAL capacity.  
A standard eye bolt used with that same 45° horizontal angle retains just a mere 30% of its VERTICAL capacity. This is important if you shackle an eye bolt into a sling and assume that if the VERTICAL sling capacity matches the VERTICAL eye bolt capacity you have a safe sling system. Nothing is farther from the truth !
- 3) NEVER, and that means NEVER, rig a sling through eye bolts. You severely increase the stress on the eye bolt and the bolt can break.
- 4) Although eye bolts can be used down to a 30° horizontal angle, we DO NOT RECOMMEND this practice. The strength loss of an eye bolt approaches 75% of vertical rated capacity, and any even slight decrease in horizontal lifting angle may break the bolt.
- 5) Use only eye bolts which are designed for LIFTING. Do not use 'no name' products. You cannot determine the steel grade by 'feel' or 'look'.
- 6) Use Shoulder (Machinery) Eye Bolts for angled lifts.
- 7) It is BEST to use Swivel Hoist Rings for EVERY angled lift. They adjust to any sling angle by rotating around the bolt and the hoisting eye pivots 180°.
- 8) For a further discussion on how to safely use eye bolts please refer to our CROSBY® catalogue, or ask your local UNIROPE representative for advice.

With Regular (non Shoulder) eye bolts use a spreader bar to keep the lift angle at 90° to the horizontal.

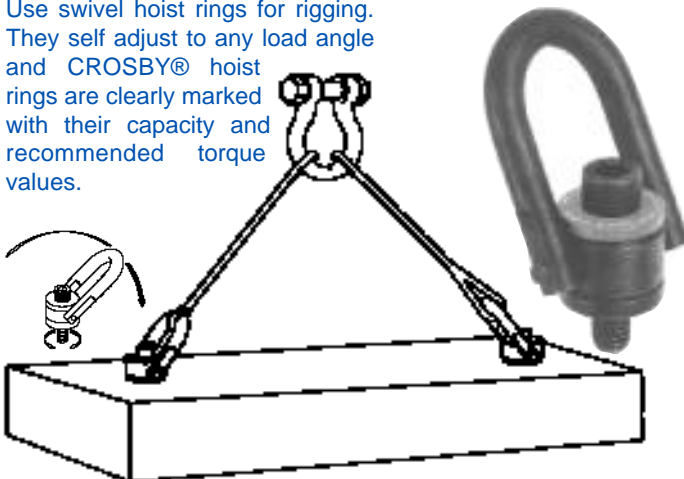


We recommend that eye bolts only be used at a horizontal angle greater than 45°. Sling strength at 45° is 71% of vertical sling capacity.  
Eye bolt strength at 45° horizontal angle drops down to 30% of vertical lifting capacity.

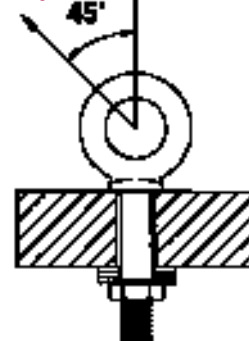


Never reeve slings through eye bolts. This alters the load and the angle of loading.

Use swivel hoist rings for rigging. They self adjust to any load angle and CROSBY® hoist rings are clearly marked with their capacity and recommended torque values.



100% Capacity  
30% Capacity

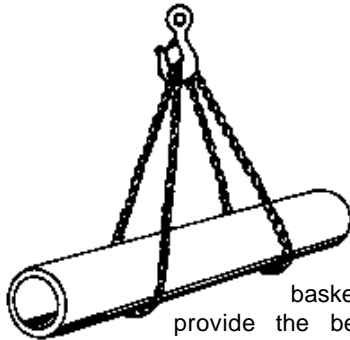
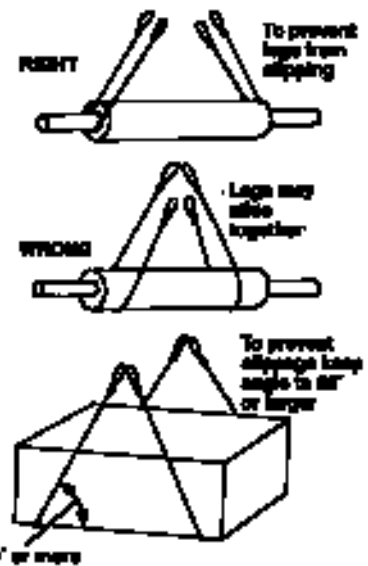
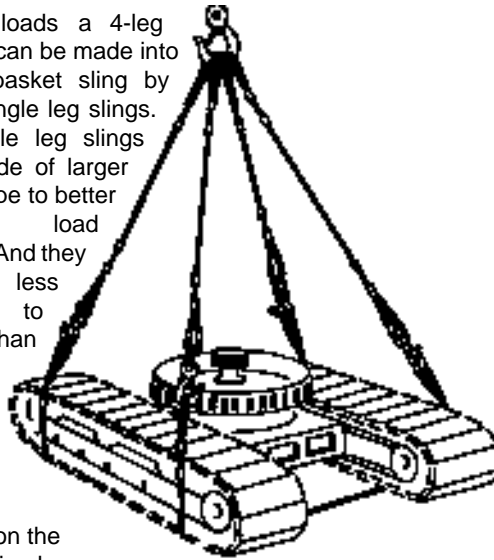


AT 45° lifting angle eye bolts have just 30% of their rated VERTICAL capacity.  
A sling (any type) used at the same 45° angle retains 71% of its vertical capacity.

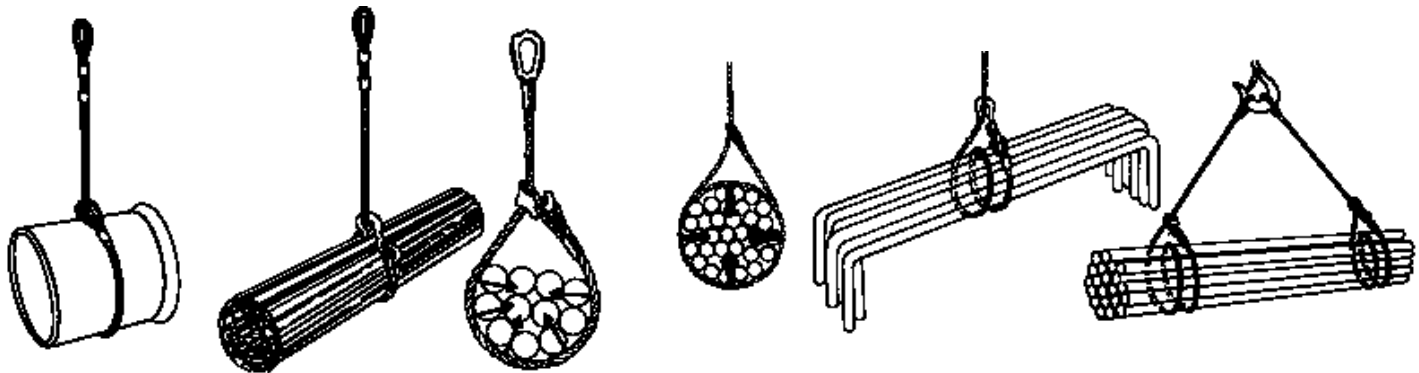


## Choker and Basket Hitches

For large loads a 4-leg  
bridle sling can be made into  
a double basket sling by  
adding 2 single leg slings.  
These single leg slings  
can be made of larger  
diameter rope to better  
withstand load  
conditions. And they  
are less  
expensive to  
replace than  
the entire  
4-leg sling.

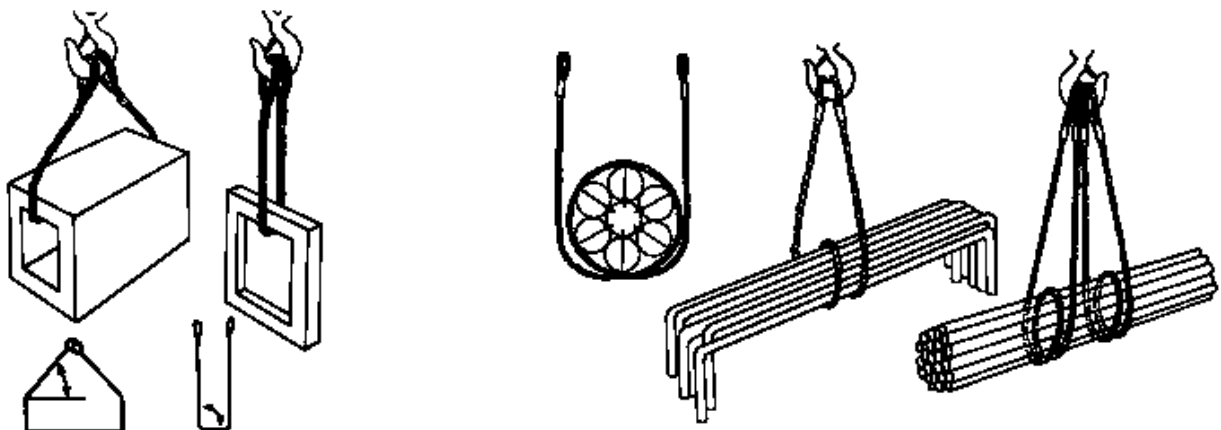


Depending on the  
load a simple  
basket hitch may not  
provide the best load stability.  
Danger of the load slipping out of the sling



Standard choker hitches provide better load control as long as the loads are short. When lifting longer bundled loads there is the danger that some of the bundle content may slide out of the sling. As can be seen, a standard choker hitch compresses the load from three sides only

A better way to do the same lift. Use a double wrap choker hitch and for long loads use 2 slings. The double wrap compresses the load on all 4 sides and provides far better load control. Observe the choker hitch reduction factors as outlined on page -8-.



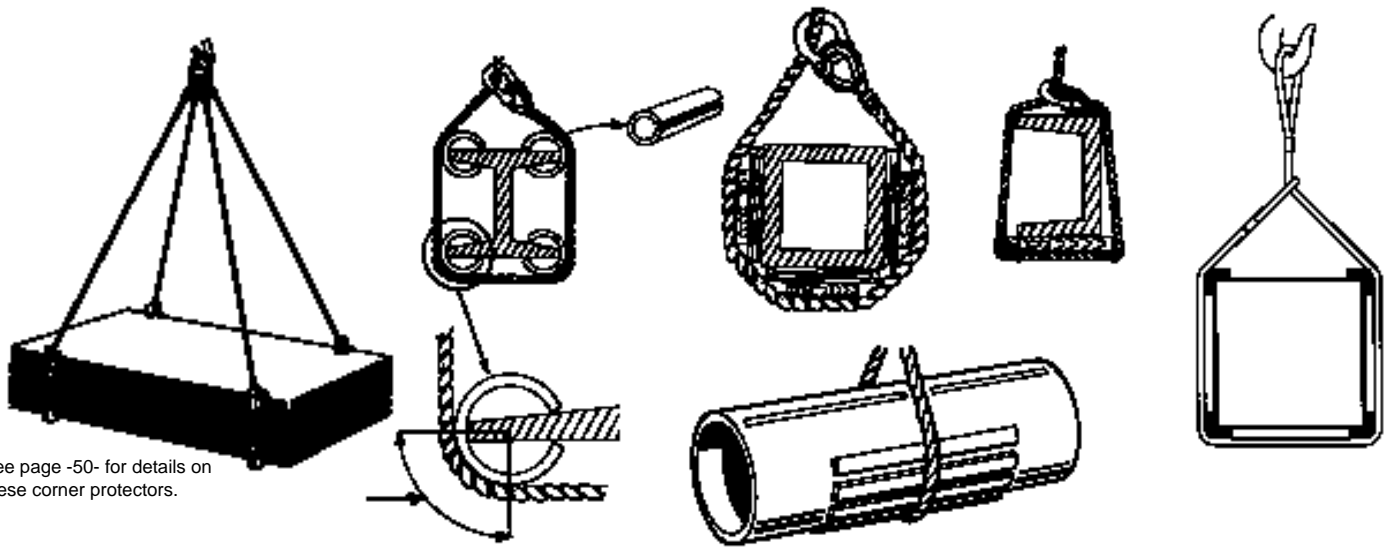
When using a basket hitch you must take the  
sling angle into account. Make sure the load is  
properly padded to prevent sling damage.

The same principle as above, but here we use a plain double wrap hitch. Both  
sling eyes are placed into the load hook. You do not have to consider choker  
hitch reduction factors, but when loads get wider you may have to reduce the  
sling capacity due to the angularity factor.



# Some Useful Guidelines

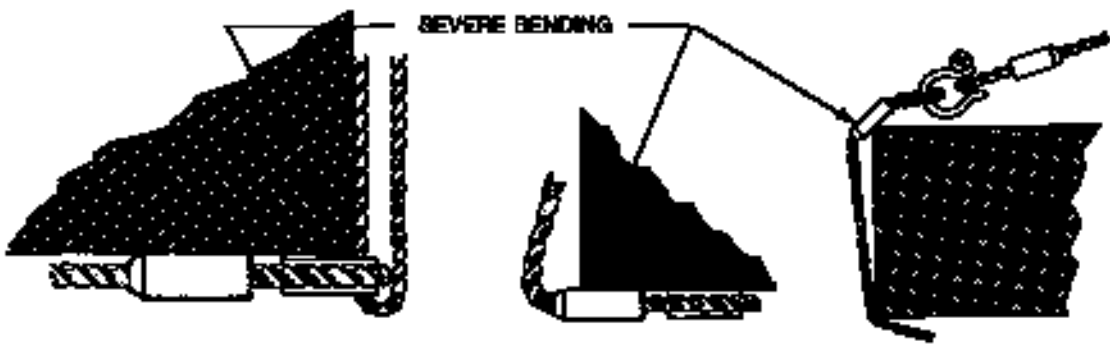
## Prevent Damage to the Sling AND the Load



See page -50- for details on these corner protectors.

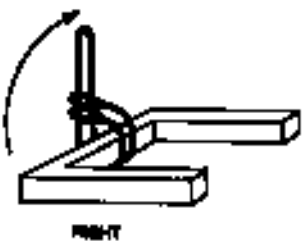
Use proper corner protection. A sharp steel edge will cut through any wire rope sling; at least it will permanently damage the sling. Sliced steel pipes have proven to be an effective corner protector. For square and round objects proper wooden padding will be sufficient. Before making the final lift do a trial lift and check if the padding is strong enough and does not crack under the load weight.

## Do not Damage the Rope Sleeves



Do not place the splice sleeves, rope thimbles, or sling hooks around corners. A sleeve failure under these condition will result in the failure of the sling and you WILL drop the load. Check the sleeves regularly for nicks and cracks. Rope sleeves are NOT designed to be hooked under loads and be used as a swaged button; rope sleeves secure the rope ends and are not intended to lift the load. DO NOT WELD ANYTHING ONTO THE ROPE SLEEVE OR TO ANY ROPE END ATTACHMENT.

## Turning the Load



Turning the load with a double choker (that is a loop & loop sling used inverted) gives good load control. To rig place both sling eyes on top of the load, pointing in the OPPOSITE direction of the turn. The body of the sling is then passed under the load and through both eyes.

