



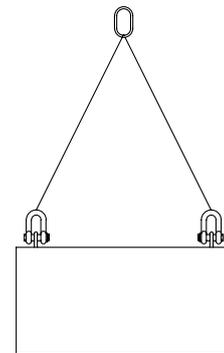
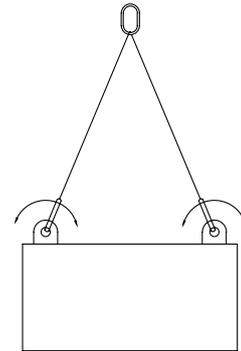
 **SHACKLES**

SHACKLES

Application Fields: In dynamic systems with lifting operations and in static systems with lashing operations, the shackle is used as a connecting element which can be removed and reattached to connect the steel wire rope, chain and other connection units. Screw pin types are generally used in permanent applications and cotter pin types are generally used in temporary applications. Use between -20 °C and 200 °C. Safety factor is 6.

Application Instructions:

- ★ Must be chosen the correct shackle and tonnage (load) according to the application field.
- ★ The identification marks on the shackle should be readable (legible).
- ★ The pin and body of the shackles to be used must be the same type and should be even the same brands.
- ★ Any other locking system should not be used instead of the pin of the shackle.
- ★ Bolt and body must be free of cracks and grooves (nicks).
- ★ The threads of the screw must be undamaged.
- ★ Corroded material should not be used.
- ★ Never make heat treatment application, don't re-shape the shackle and auxiliary equipments of the shackle.
- ★ When using shackles in connection with 3 - 4 leg slings, angle between the legs of the sling must be taken into consideration.
- ★ Load should be aligned properly.
- ★ Usage information from the manufacturer should be requested for shackles to be used in heat, unfavorable environmental conditions or other dangerous conditions.



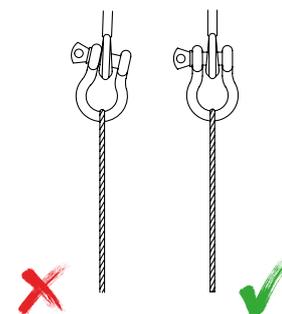
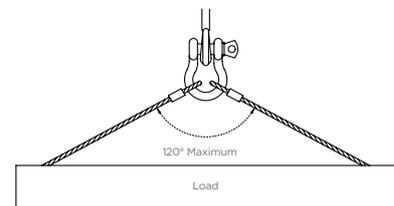
Assembly Instructions:

Ensure that the pin is correctly screwed into the shackle eye, and then you can proceed to the tightening process.

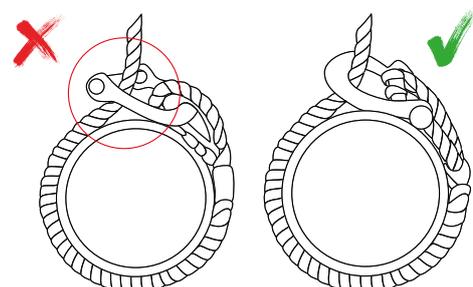
Incorrect seating of the pin may be due to a bent pin, too tight fitting thread or misalignment of the pin holes. Do not use the shackle under these circumstances. Please make sure that the shackle is connected correctly, avoid unaligned load and overloading.

When a shackle is used to connect two slings to the hook of a lifting device, a bow type shackle must be assembled with the slings in the shackle body and the hook engaged with the shackle pin. The angle between the slings should not exceed 120°. Otherwise, the shackle loses its functionality and it will be used in a tonnage (load) above the working load limits.

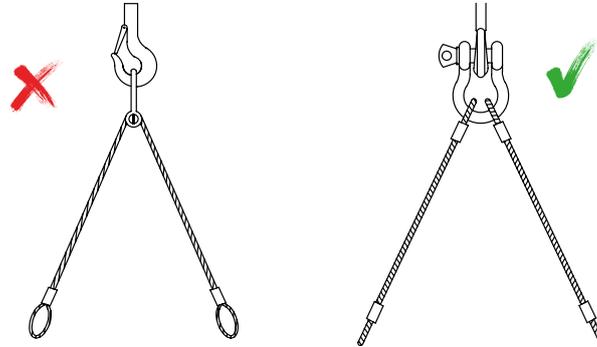
There may be a gap between the shackle and the hook. You can close this gap by using loose spacers. Otherwise, the load will be lifted unbalanced by shackle and lifting capacity of the shackle will reduce. Do not reduce the width between the shackle jaws by welding washers or spacers to the inside faces of the eyes or by closing the jaws.



When a shackle is used to secure the top block of a set of wire rope blocks the load on this shackle is increased by the value of the hoisting (choking) effect

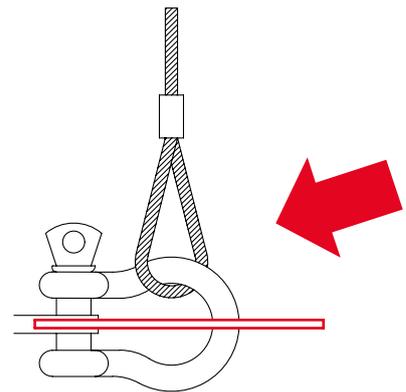


Avoid applications where due to movement (e.g. of the load or the rope) the shackle pin can rotate and possibly be unscrewed. If such an application is necessary or when the shackle is to be left in place for a prolonged period or where maximum pin security is required, use a shackle with a safety bolt, nut and pin cotter pin.



When you do not avoid side loads, there will be reductions in the working load of the shackle. The following table shows the percentage of tonnage (capacity) losses caused by side loaded shackle.

Angle of Side Load	Loss %
0 - 10	0
11 - 20	15
21 - 30	25
31 - 45	30
46 - 55	40
56 - 70	45
71 - 90	50



Inspection and discard criteria: It is required that the shackles are regularly inspected by an expert person and recorded considering operating conditions and frequency of use. Some of the cases where the shackles should not be used and discarded are shown below.

