

# Materials Handling

## Materials Handling - Use of Shackles

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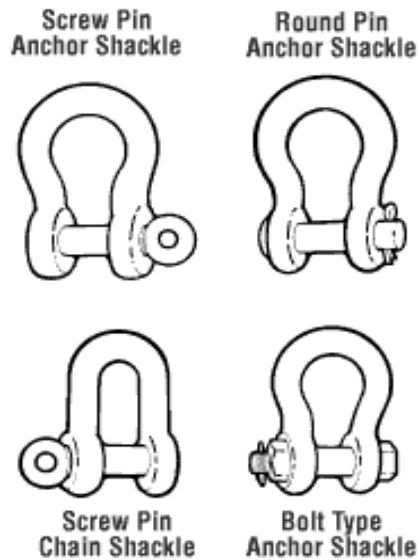
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### What are the types of shackles that you can choose?

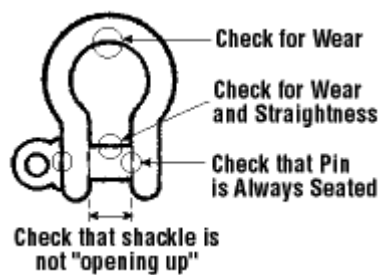
A shackle has two main parts, the body and the pin. The body can have the anchor shape (bow) or a chain shape (D type). Each body shape can be used, depending on the specific application, with a screw pin or bolt-type pin.

- When selecting the right shackle, refer to manufacturers' tables for the safe working loads of the shackles. The rated capacity should be imprinted on the shackle and be visible.
- Shackles are sized according to the diameter of the bow section rather than the pin size. Never use a shackle if the distance between the eyes is greater than listed in the manufacturer's tables.
- Consult with the manufacturer if using shackles in extreme conditions (e.g., temperature higher than 204°C or lower than -40°C, or exposure to corrosive fumes).
- Use a shackle when 2 or more ropes must be placed on a hook.



## How should you inspect shackles?

- Inspect shackles regularly.
- Inspect the shackle eye and pin holes for stretching (elongation) and wear. Elongation means the metal is being overloaded.
- Inspect the shackle body for bending. A bent shackle indicates excessive side-loading.
- Inspect all shackle pins for distortion, surface blemishes, wear and fractures.
- All pins must be straight and all screw pins must be completely seated.
- Replace shackles that are bent, show excessive wear by more than 10% of the original diameter, or have an elongated eye or shackle pin holes.



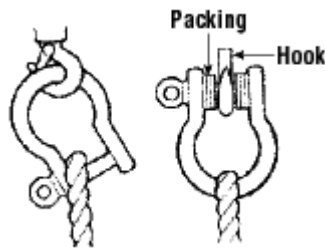
Inspection points for a shackle

## What should you avoid when using shackles?

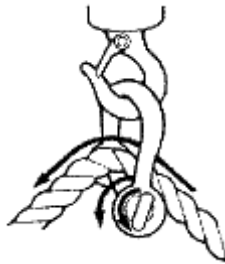
- Do not replace the shackle pin with a bolt or unidentified pins. A load will bend the bolt.



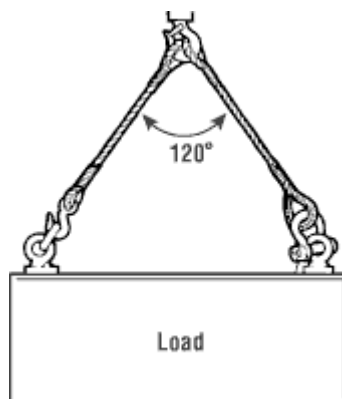
- Do not allow a shackle to be pulled at an angle. The legs will open. Pack the pin with washers to center the shackle.



- Do not use screw pin shackles or fit pins in contact with moving parts if the pin can roll and unscrew. If the load shifts, the sling will unscrew the shackle pin.
- Do not use round pin shackles restrained only by a cotter pin for overhead lifting.



- Do not use shackles with bent pins or deformed bodies.
- Do not force, hammer or wedge shackles into position.
- Do not exceed 120 degrees for the angle when using multiple leg slings.



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