

Attention

Looseness

Please ensure that Thread or Nut is tightened completely before using shackles. Please also ensure that cutter pin is cut in case of Bolt & Nut type before using Shackles.

Dangerous act

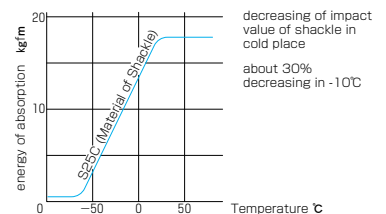
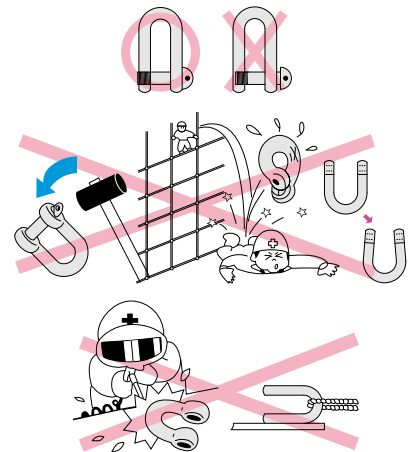
Please don't throw away, hitting by hammer or such tools, and put heavy thing on shackles. It become cause of damage.

Prevention of Arc Strike(wound by arc welding)and Prohibition of welding

Please don't weld shackle with other products and don't weld around shackles for prevention to occur Arc Strike or attach sputtering. Otherwise change of material can be happened, then become weak and easy to broken because of above several incident.

How to treat in cold place

- Please handle carefully in cold place because impact value is much decreased because of cold brittleness.
- Please don't put outside after finish operation.
- Please disconnect from lifting cargo in night time and then stock at fixed place.



How to inspect shackles and standard of scrap.

	Matter of inspection	Standard of Scrap
1	<p>Please inspect whether there is Arc Strike or not.</p> <p>Close up crack of fatigue change of base material</p>	<p>Please certainly scrap if there is Arc Strike. (Wound and crack is stimulated rapidly.)</p>
2	<p>① Please check whether deformation is on Body, Bolt, and Pin or not. ② Please check as Body, Bolt, and Pin are assembled. ③ Please calculate deformation ratio by checking caliper or etc if deformation is remarkably.</p> <p>Deformation Ratio (%) = $(S - S1) / S \times 100$ Deformation Ratio (%) = $(l - l1) / l \times 100$ S : Original width of bow S1 : Deformed width of bow l : Original Length l1 : Deformed width of bow</p>	<p>① Please scrap if there is deformed Bolt or Pin. ② Please scrap if thread or cutter pin cannot be assembled. ③ Please scrap if deformation ratio is over 8%. Please never repair it by yourself.</p>
3	<p>Please inspect whether there is wound, notch, crack.</p>	<p>Please scrap if the depth is more than 5% against original size after cutting down the wound or notch. Please inspect by Magnetic Particle Testing or Penetrant Inspection. Please scrap if there is crack.</p>
4	<p>Please inspect whether crown and Bolt are wear or not.</p> <p>Wear Ratio (%) = $\frac{d - c}{d} \times 100$ d: Original Diameter c: Diameter after wear</p>	<p>Please scrap if wear ratio is more than 10%.</p>
	<ul style="list-style-type: none"> ● Please wash rust, oils and fats etc... of shackles by kerosene or washing oil to find defect easily when inspecting shackles. ● Please inspect shackles by Magnetic Particle Testing regularly. ● Please remove dust and rust, and daub oil and fats at Thread part after using, and then keep shackles. ● Please keep shackles as avoiding wind and rain. ● Please keep shackles as never touching on the ground. ● Please keep shackles as assembling Body and Bolt. ● Please keep shackles without piling up. (For avoiding wound, and collapse of cargo piles.) 	