EAGLE CLAMP CO.,LTD.
EAGLE TRADING CO.,LTD.

MANUFACTURER OF "EAGLE" BRAND
LIFTING EQUIPMENT

INSTRUCTION MANUAL

EAGLE CLAMP

SC-150

Ultra-light Clamp for Safety Belts
150 kg model

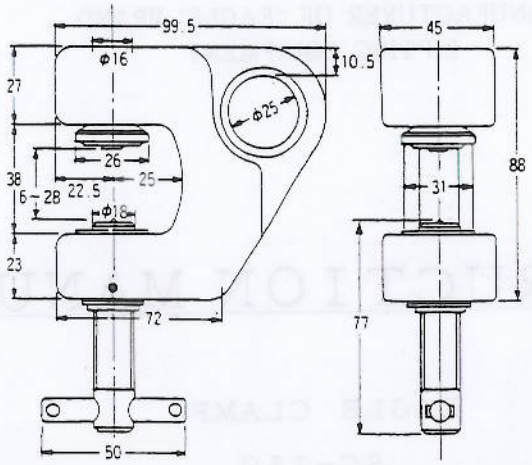
* Safety factor: 10 times or greater than the maximun allowable load

* Patent pending

Thank you for purchasing the 150 kg Model SC clamp for attachment to a safety belt.

We produced the Model SC clamp after carefully considering the strength and safety required by this product. However, since it is used in critical applications such as lifting, transportation, slip resistance, attaching guide ropes, etc., please handle it with special care.

●Specifications and Dimensions

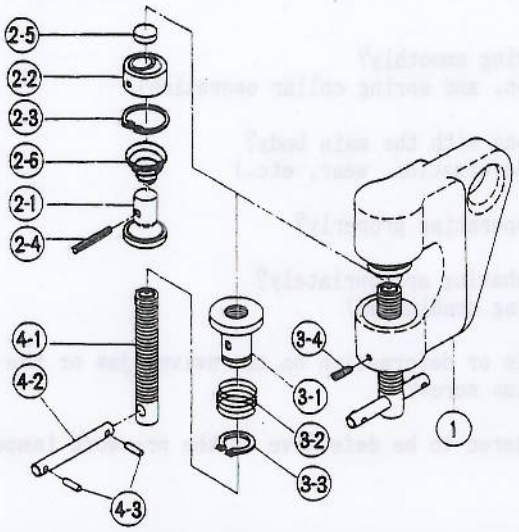


Model	Maximum working load (kg)	Opening (mm)	Weight (kgf)
SC-150	150	6 - 28	0.7

*Material specifications of the parts

- Main body: A2014 BE/T6 - 45 kgf/mm or more
- Swivel jaw and screw: SNCM447 - 90 kgf/mm or more
- Pressure nut: SCM435 - 80 kgf/mm or more

●Exploded Construction Drawing (parts and names)



1	Main body		
2	Swivel jaw	2-1 2-2 2-3 2-4 2-5 2-6	Jaw Bearing Snap ring Round pin Bottom plate Spring collar
3	Pressure nut	3-1 3-2 3-3 3-4	Pressure nut Spring Snap ring Set screw
4	Clamp screw	4-1 4-2 4-3	Clamp screw Clamping handle Round pin

●Pre-work Inspection

Before using this clamp, be sure to perform a pre-work inspection of the following items.

(1) Is the swivel jaw moving smoothly?
(Rotation, inclination, and spring collar operation)

(2) Is there anything wrong with the main body?
(Cracks, corrosion, deformation, wear, etc.)

(3) Is the pressure nut operating properly?

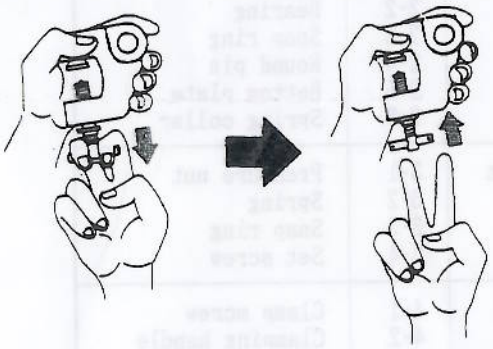
(4) Is the clamp screw behaving appropriately?
(Tightening and opening conditions)

(5) Are there wear, cracks or deformation on the swivel jaw or the edge projection of the clamp screw?

(6) If any part is considered to be defective in the pre-work inspection, do not use the clamp.

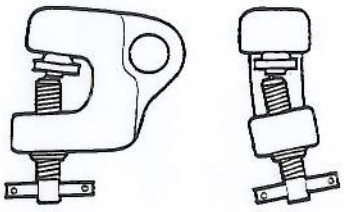
*How to inspect the pressure nut

Hold the main body in one hand and pull the clamp screw with your other hand. Then, let go of it. If the clamp screw returns to the original position with a click, the pressure nut is working properly.



*How to check the main body for deformation

When the clamp screw is tightened until it touches the swivel jaw, if the edge of the clamp screw is not in the center of the swivel jaw, the main body has become deformed.



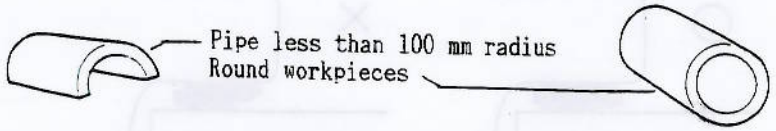
●Precautions for Installation

(1) This clamp should always be attached to a flat surface.

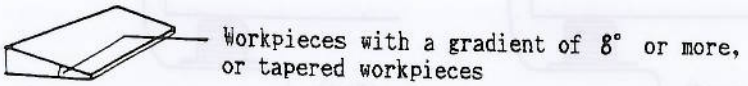
(2) The thickness of the steel plates that can be clamped, one at a time, is from 6 mm to 28 mm.

(3) Do not use this clamp on odd shaped workpieces such as the examples shown below.

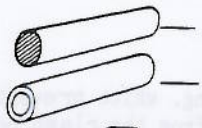
(a)



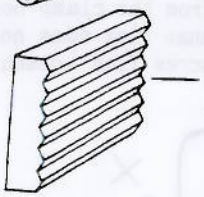
(b)



(c)



(d)



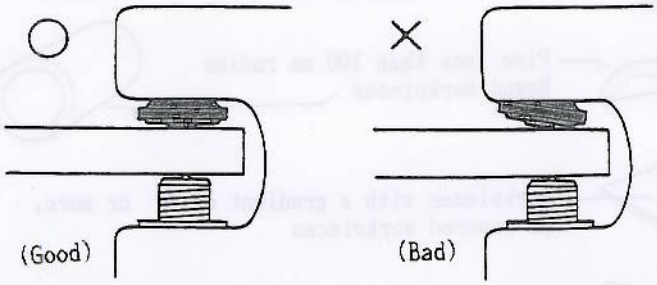
(e) Workpieces which have a clamping area 45 mm or less in length

(f) Workpieces that any worker thinks are dangerous for use with this clamp.

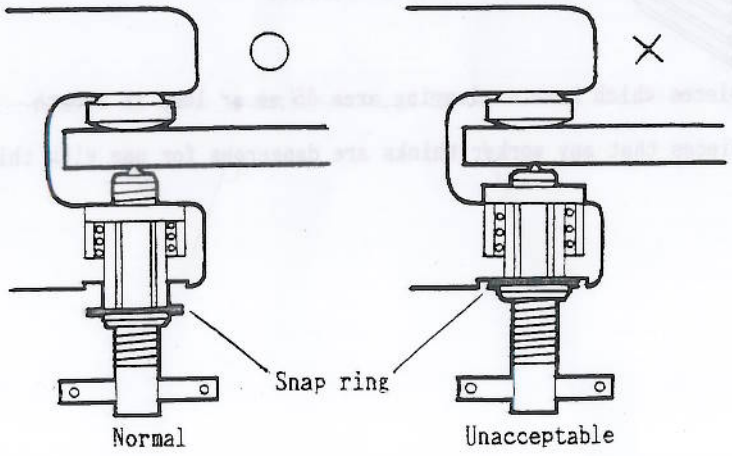
●Installation method

(1) Insert the clamp completely over the edge of the steel plate.

(2) Be sure to set the swivel jaw so that it touches the surface of the steel plate horizontally making a straight line between the clamp screw and the swivel jaw (see the illustration).



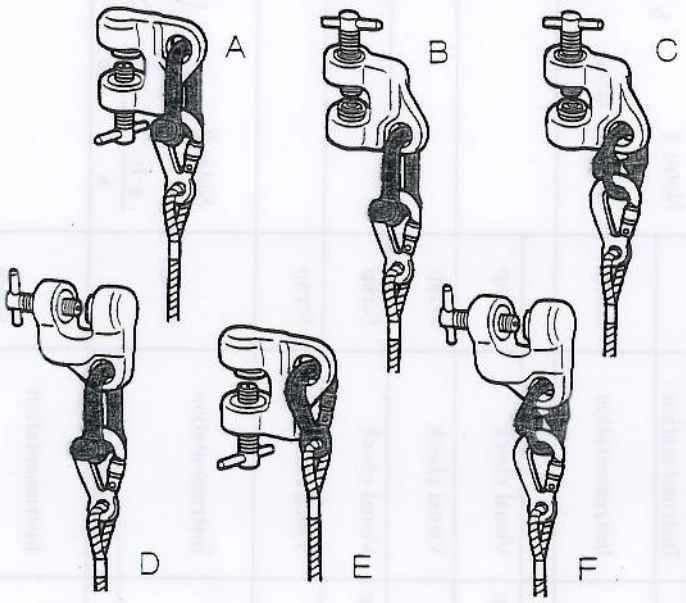
(3) Tighten the clamp screw securely.
(Tightening torque: 50 kg/cm or more)
Tighten the clamp screw firmly until the snap ring, which prevents the pressure nut from slipping off, has lifted away from the clamp body. Make sure that the snap ring lifts off. If this snap ring does not lift off, the safety device for preventing the clamp screw from loosening will not work.



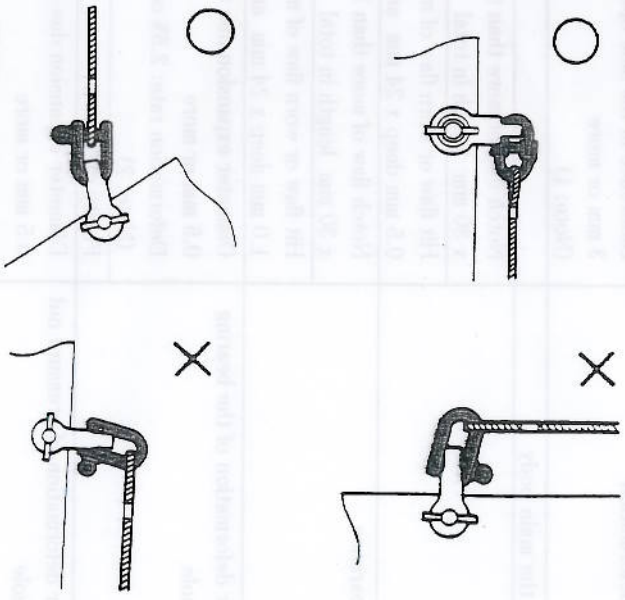
(4) If this clamp is used continuously for many hours, be sure to retighten the clamp screw for safety, each time the clamp is moved.

●How to attach a safety belt hook

(1) To attach a safety belt hook to the Model SC clamp, use a shackle or a special connecting link. Or connect the hook directly to the SC clamp's shackle, and then make sure the hook moves smoothly.

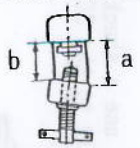
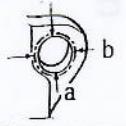


(2) To use a JIS shackle, insert the crown of the shackle into the clamp's shackle hole. Make sure not to apply excessive force to the clamp.



Checking Standards

* Main body

	Items to be checked	Checking standards	Checking method	Remedy	Remarks
1	Deformation of the main body				Note: 1  a − b > 3 m/m
	A) Jaw opening	1/20 or more the depth size	Instrumentation		
	B) Jaw deformation	Difference in the side opening size : 3 mm or more (Note: 1)	Instrumentation	Scrap	
2	Flaw of the main body				
	A) Jaw	Notch flaw of more than 0.5 mm deep x 30 mm length in total	Visual check	Scrap	
		Hit flaw or worn flaw of more than 0.5 mm deep x 24 mm area in total	Visual check	Scrap	
	B) Appearance	Notch flaw of more than 1.0 mm deep x 30 mm length in total	Visual check	Scrap	
		Hit flaw or worn flaw of more than 1.0 mm deep x 24 mm area in total	Visual check	Scrap	
3	Wear or deformation of the bearing fitting hole	Diameter expansion due to wear : 0.5 mm or more Deformation rate: 2.5% or more (Note: 2)	Instrumentation	Scrap	Note: 2  $\frac{a-b}{a} > \frac{2.5}{100}$
		Faulty operation	Operation check		
4	Wear or deformation of pressure nut fitting hole	Diameter expansion due to wear : 0.5 mm or more Deformation rate: 2.5% or more (Note: 2)	Instrumentation	Scrap	
		Faulty operation	Operation check		
5	Wear and deformation of the lifting hole	Diameter expansion due to wear : 1 mm or more	Instrumentation	Scrap	Note: 3  $\frac{a-b}{a} > \frac{5}{100}$
		Deformation rate: 5% (Note: 3)	Operation check		

* Clamp screw

	Items to be checked	Checking standards	Checking method	Remedy	Remarks
1	Wear or flaw on threads	Worn 1/20 or more the normal size (less than 17.1M when the outside is 18M)	Instrumentation	Replace	
		Faulty operation due to hit flaw or deformation	Operation check	Replace	
2	Wear, deformation or chip on the edge projection	Wear diameter: 1 mm or more Deformation or chip is found.	Instrumentation	Replace	
3	Wear, deformation or chip on the thread edges	Wear width: 0.5 mm or more Deformation or chip is found.	Instrumentation	Replace	
4	Deformation, bending or breakage of the screw	Faulty operation due to deformation such as bending. Breakage is found.	Operation check MT check	Replace	
5	Deformation or fallout of the handle bar	Cannot be secured due to the deformation or fallout of the handle.	Operation check	Replace	

* Swivel jaw

1	Wear, deformation or crack of the swivel edge	Wear width: 0.5 mm or more Deformation or crack is found.	Instrumentation Visual check	Replace	
2	Deformation or breakage of the main body	Deformation or breakage is found.	Visual check	Replace	
3	Spring collar (conical spring)	Deformation, breakage or fatigue is found.	Operation check	Replace	Adhesion repulsion: 500 g or more
4	Breakage, deformation or wear of the bearing	Faulty operation of the swivel jaw due to broken, deformed or worn bearing.	Operation check	Replace	
5	Wear, deformation or breakage of the bottom plate	The plate thickness is reduced by 1 mm or more due to wear or indentation. Crack or breakage is found.	Instrumentation, visual check	Replace	

* Pressure nut

	Items to be checked	Checking standards	Checking method	Remedy	Remarks
1	Wear or deformation in the outside diameter	Worn 1/20 or more the normal size.	Instrumentation	Replace	
		Does not function properly due to flaw or deformation.	Operation check		
2	Wear or flaw in threads	Wear, hit flaw or deformation causes faulty operation.	Visual check	Replace	
3	Wear or deformation in guide grooves (vertical movement)	Faulty operation due to hit flaw or deformation.	Operation check	Replace	
4	Deformation, breakage or fallout of the snap ring	Does not function properly due to deformation, breakage or fallout.	Visual check	Replace	Replace the snap ring.
5	Deformation or breakage of the compression spring	Shrinkage in free length: 3mm or more	Instrumentation	Replace	Replace the compression spring. Adhesion repulsion: 13kg or more
		Flaw or breakage is found.			
6	Breakage or fallout of the rotary stopper screw	Does not function due to deformation, breakage or fallout.	Operation check	Replace	If the screw is broken and cannot be replace the pressure nut.

●Other Precautions

* A special aluminum alloy is used for the material of the SC clamp body. If the clamp is used for a long period of time, the strength of the clamp may be reduced if corrosion forms on the surface. Also, never use any clamp which has cracks or hit marks on it.

* If an impact load is applied to the clamp even once, stop using it. Please return it to our Technical Division for inspection.

* Lubrication
  Make sure the swivel jaw and the moving part of the clamp screw are lubricated sufficiently.
  (If there is not enough lubrication, they will not move properly.)

* If you have any suggestions for improvement, please contact us.