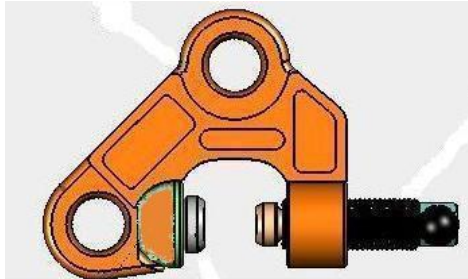


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## Model PCK-SL Locking Screw Clamp



### APPLICATION

The PCK-SL locking Screw Clamp is a versatile multipurpose lifting turning pulling clamp capable of lift and turn operations from the horizontal through 180 degrees arc. The clamp can also be used for the assembling of steel plates, structural members and welded sections. The clamp is generally used in pairs for the purpose of drawing two plates or members together or to a predetermined position adjacent to each other. The adjusting screw is used to accommodate various thicknesses of material and to facilitate the attachment of the clamp to the member being worked on. The Model PCSL-K incorporates a spring loaded Swivel Jaw and Screw Cup. The spring loaded Screw Cup serves as an indicator when the Locking Screw has been properly tightened.

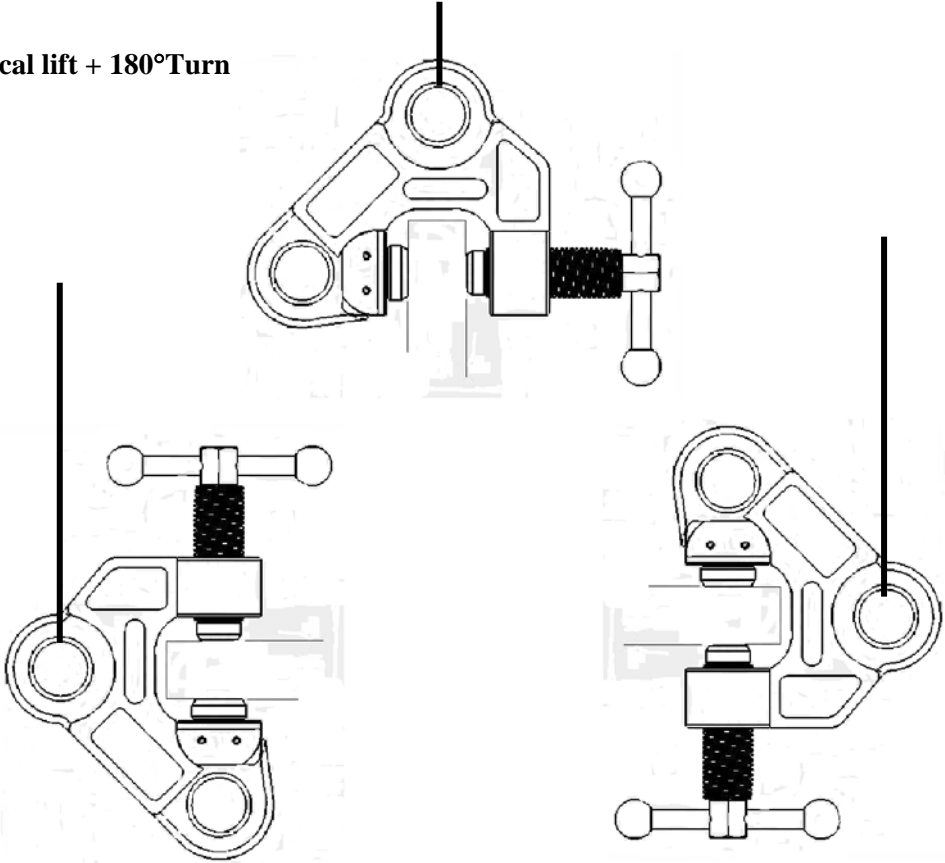
**WARNING: Read and fully understand the following instructions before using this product.**

Refer to next page for allowable load ( sling ) angles when selecting the proper application of this product.

**WARNING: Refer to the sections on Operation and Maintenance for the approved procedure in the Operation and Maintenance of this product.**

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**Vertical lift + 180°Turn**



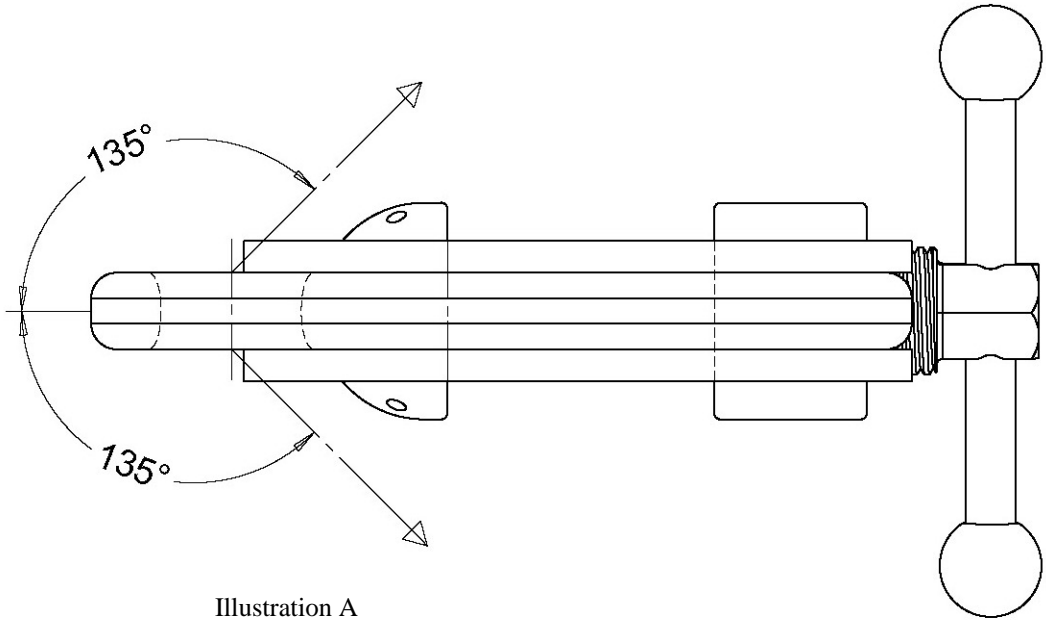


Illustration A

See Illustrations A & B for allowable sling angles for pulling

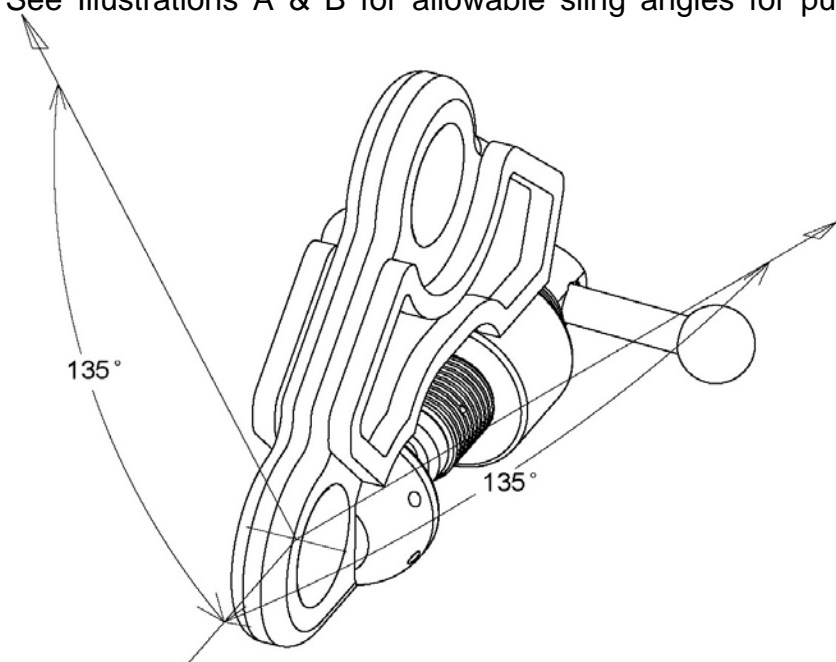


Illustration B

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## **OPERATION**

### Step 1.

Refer to Application Section on previous page to confirm the operation to be undertaken is appropriate for this product.

### Step 2.

Determine force to be applied to the Shackle Eye of the clamp and the thickness of section of member to which the clamp will be attached. Capacity is the maximum allowable force applied to the Shackle Eye of the clamp body by any means.

**WARNING: Never exceed rated capacity or use on material whose thickness is not within the range of the Jaw Opening stenciled on the clamp. NEVER INSERT MORE THAN A SINGLE MEMBER INTO THE JAW OPENING AT ONE TIME.**

### Step 3.

Inspect each clamp before each use.

**WARNING: Do not use if in need of repair.**

If in doubt of the condition of the clamp, refer to the Maintenance Section of this manual for detailed maintenance instructions.

- Check the clamp to be certain the Identification and warning tags are present and legible.
- Do not use the clamp if the tags are missing or illegible
- Inspect gripping surfaces for wear and defects. Gripping surfaces must be sharp and free of foreign matter.
- Swivel Jaw must rotate and the spring tension should hold the Swivel Jaw in the centered position. Refer to Illustration D.
- Screw Cup must rotate. The Screw Cup spring must firmly extend the Screw Cup from the Locking Screw to the full extent of its travel. Refer to Illustration D.
- Inspect clamp body for wear and damage. Inspect inside of jaw opening for displaced metal.
- Inspect Shackle Eyes for distortion and wear.

**WARNING: Remove all clamps from service that are in need of repair.**

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Inspect the Locking Screw for wear and defects. The Locking Screw should turn freely.

**WARNING: Do not use the clamp unless the swivel jaw and screw cup perform as noted above.**

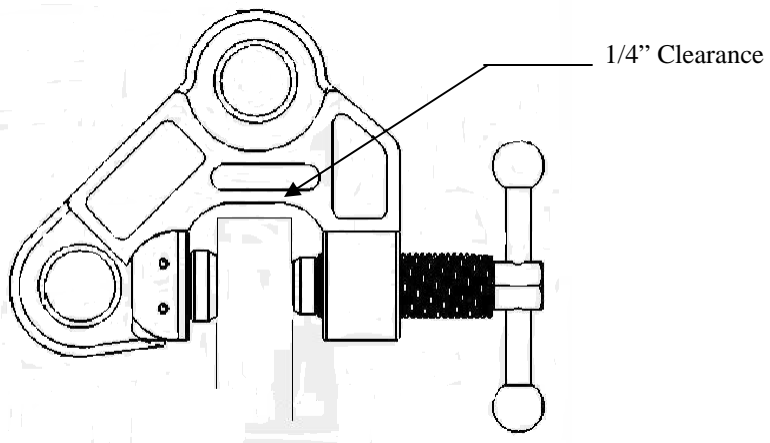
Step 4.

The clamp is a component of the rigging used in the handling of members. It is important to use safe and adequate rigging.

**WARNING: Improper or excessively heavy rigging may interfere with the operation of the clamp and its ability to maintain proper position on the member. Never attach a crane hook directly to the clamp—always use a sling between crane hook and clamp.**

Step 5.

Turn Adjusting Screw, opening clamp to maximum jaw opening. Position clamp on member to be handled. Do not allow inside of Jaw Opening to rest on member to be handled. Maintain 1/4" clearance. Refer to Illustration A. Do not allow body or handle of clamp to contact adjacent members. Maintain 1/4" clearance between body and any adjacent member. Refer to Illustrations A and B.



**Illustration A**

(\*) Gripping surfaces shown parallel and in full contact with member

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Step 6.

Tighten Lock Screw, the gripping surfaces of the Swivel Jaw and the Screw Cup must be parallel to the surfaces of the member. Refer to Illustration A.

Continue to tighten the Locking Screw until the Screw Cup spring is fully compressed. Then 1/4 turn. Refer to Illustration D.

After each operation ( load applied to Shackle Eye and released with clamp remaining in original position ) tighten Adjusting Screw starting with Step 6.

**WARNING: Make certain member is at rest and in stable position before tightening the Adjusting Screw.**

Step 7.

Commence operation.

**WARNING: The operator should position himself away from and fully clear of the member to be handled. Do not commence operation until all personnel are clear of the area of operation. Never stand under or near a member being handled. When drawing members together make certain the members are in a stable position and the personnel are in a safe location.**

Step 9.

To remove clamp—after the member is fully supported and at rest in a stable position, relax force applied to clamp, loosen Adjusting Screw to maximum open position and remove clamp from plate.

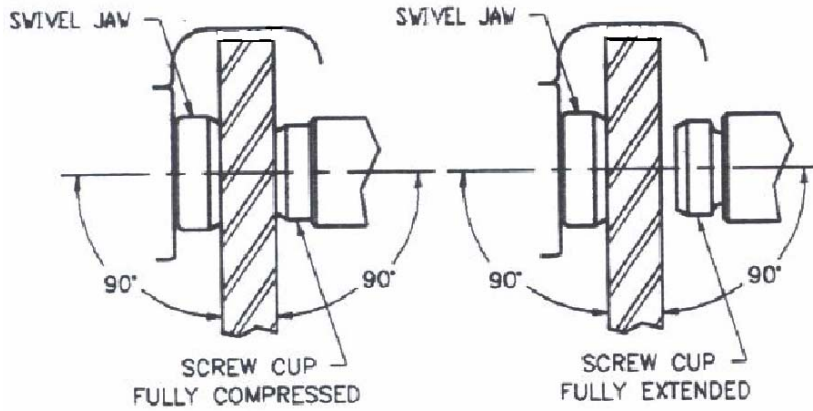


ILLUSTRATION 'D'

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**WARNING:** Make certain the member is fully supported and at rest in a stable position before removing clamp from member.

Step 10.

Inspect clamp, remove from service if in need of repair.

**WARNING:** In the event the stenciling is worn and not legible or the tag containing the model, capacity and other pertinent information is missing—do not use clamp until it has been properly labeled.

Inspection kits are available at no charge upon request from the distributor or RENFROE. Kit contains:



RENFROE clamps are constructed so the wearing parts may be replaced by installing individual parts or by using RENFROE Repair Kits containing all parts generally replaced due to normal wear.



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## Maintenance Program for Renfroe Clamps Manufactured from Steel

The severity of service to which the clamp is subjected in the work place determines the frequency and type of inspection procedure required for the clamp. The frequency and type of inspection is determined by the clamp owner. Renfroe acknowledges the ASME B30.20 safety standard which sets forth minimum inspection requirements for "Below-the-Hook" lifting devices and the Renfroe Recommended Inspection Schedule meets and/or exceeds the ASME inspection recommendations.

**Before using a clamp operators should be trained by a qualified person to visually inspect a lifting clamp that will include but not be limited to the following:**

### **Every lift Inspection:**

*A visual inspection by the operator before and after each lift made by the clamp.*

- A. Check the clamp to be certain the Identification and warning tags are present and legible.
- B. Do not use the clamp if the tags are missing or illegible
- C. Inspect gripping surfaces for wear and defects. Gripping surfaces must be sharp and free of foreign matter.
- D. Swivel Jaw must rotate and the spring tension should hold the Swivel Jaw in the centered position. Refer to Illustration D.
- E. Screw Cup must rotate. The Screw Cup spring must firmly extend the Screw Cup from the Locking Screw to the full extent of its travel. Refer to Illustration D.
- F. Inspect the Locking Screw for wear and defects. The Locking Screw should turn freely. **WARNING: Do not use the clamp unless the swivel jaw and screw cup perform as noted above.**
- G. Inspect clamp body for wear and damage. Inspect inside of jaw opening for displaced metal.
- H. Inspect shackle eyes for distortion and wear.

Remove any clamp from service in need of repair.

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**WARNING: Do not use the clamp if in need of repair.**

If, during the every lift inspection, the operator believes the clamp exhibits excessively worn parts or is damaged, the clamp should be inspected by a qualified person who will make a determination as to its fitness to make a lift. At this time the condition of the clamp should be noted and recorded. After inspection by the qualified person it may be decided that a periodic inspection procedure is necessary.

**Frequent Inspection:**

*A visual inspection (see every lift inspection) by an operator or other designated person timed according to the clamps service class.*

- **Normal Service:** monthly
- **Heavy Service:** weekly to monthly
- **Severe Service:** daily to weekly.

If, during the frequent lift inspection, the operator or designated person believes the clamp exhibits excessively worn parts or is damaged the clamp should be inspected by a qualified person who will make a determination as to its fitness to make a lift. At this time the condition of the clamp should be noted and recorded. After inspection by the qualified person it may be decided that a periodic inspection procedure is necessary.

**Periodic Inspection:**

*A recorded inspection by a qualified person as described in the Periodic Inspection Procedure below timed according to the clamps service class.*

- **Normal Service:** annual
- **Heavy Service:** semi-annual
- **Severe Service:** quarterly.

If during any inspection a condition is found which leads to a periodic inspection then the next periodic inspection is due from the time the clamp is returned to service. See the table below.

**Normal Service-One Year**  
**Heavy Service-6 Months**  
**Severe Service-3 Months**

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**Warning: If any hazardous condition is found that may cause injury to the operator or other personnel then the clamp should be subjected to a Periodic Inspection by a Qualified Person.**

**Repair (replacement of worn parts)**

During regular maintenance when replacing parts that are worn a record should be made of the parts replaced. After the replacement of worn parts clamps need not be load tested.

**Repair (replacement of damaged parts)**

During a repair in which parts are replaced due to damage a record should be made of the repair. At this time the clamp should be marked with the following information as per the ASME B30.20 requirements:

- **Name and address of the repairer**
- **Repairer's unit identification**
- **Clamp weight (if altered)**
- **Rated load (if altered)**
- **ASME BTH-1 Design Category (if altered)**
- **ASME BTH-1 Service Class (if altered)**

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## **Model PCSL-K Periodic Inspection Procedures**

### Step 1.

Verify the identity of the clamp by checking the I. D. plate on the clamp body. If the I. D. plate is missing or not legible an RFID chip (Radio Frequency Identification Device) is embedded in the clamp body or a clamp component. If the I. D. plate is missing and the RFID chip is unavailable call the Renfro factory for instructions on returning the clamp for recertification.

### Step 2.

Completely disassemble clamp.

### Step 3

Remove all dirt, grease and other matter that may inhibit proper inspection of the clamp body or clamp components.

### Step 4. BODY -

- A. Inspect welds for fractures. RENFROE recommends a dye penetrant or similar method of detecting indications on the clamp. If an indication is found it may be necessary to use a magnetic particle, ultrasonic or similar methods for determining damage to the clamp or components.
- B. Inspect inside of jaw opening and Swivel Jaw recess for displaced metal and distortion. Refer to Illustration A.
- C. Inspect Shackle Eye for displaced metal, distortion, fractures and wear. Refer to Illustration A.
- D. Inspect threaded Adjusting Screw block for distortion and wear.

**WARNING: In the event the stenciling is worn and not legible of the tags containing the warning and model, capacity, and other pertinent information is missing—do not use until it has been properly labeled.**

**WARNING: Replace clamp bodies containing fractures, distorted jaw openings, distorted Shackle Eye, distorted and worn threads and jaw opening, shackle eye and the recess for the Swivel Jaw with displaced metal.**

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Step 5.

Locking Screw

- A. Inspect for distortion, damaged threads and wear.
- B. Inspect Screw Cup cavity in Locking Screw for damage and foreign matter.

**WARNING: Replace screws that are bent, have damaged or worn threads, contain fractures and damaged Screw Cup cavity.**

Step 6.

Screw Cup

- A. Inspect Screw Cup for fractures, damage, wear and distortion. The serration should be sharp, free of imperfections and foreign matter. The Screw Cup should rotate and slide freely. When installing a Screw Cup insert lubricant in the Locking Spring Screw Cup cavity. The recommended lubricant is Molybdenum Disulfide grease.

**WARNING: Replace worn, dull or damaged Screw Cups.**

Step 7.

Screw Cup Spring

- A. Inspect Screw Cup Spring for distortion.

**WARNING: It is necessary to replace the screw cup spring when the spring is not functioning properly. The screw cup spring must extend the screw cup firmly to the maximum travel. Never use the clamp unless the screw cup spring is functioning properly. Failure to comply may result in a serious injury.**

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Step 8.

Swivel Jaw

- A. To remove swivel jaw, tighten internal set screw until the swivel jaw lifts free of the swivel jaw block. Removal of the swivel jaw destroys the internal wave spring. The used wave spring must be discarded and replaced with a new unit.

**WARNING: Discard used wave spring. Do not attempt to re-assemble clamp with the old spring. Always install new wave spring after disassembly of swivel jaw.**

- B. Inspect swivel jaw for fractures, damage and wear. Serrations must be sharp and free of imperfections and foreign matter. Retaining spring groove must be free of displaced metal, worn edges and foreign matter.

**WARNING: Replace worn, dull or damaged swivel jaws**

Step 9 ADJUSTING SCREW HANDLE—

- A) Inspect Adjusting Screw Handle for distortion and damage. Rod of handle must be straight and capable of freely sliding its full length through the hole in the Adjusting Screw.

**WARNING: Replace Adjusting Screw Handles that are bent or damaged.**

Step 10.

ASSEMBLY—

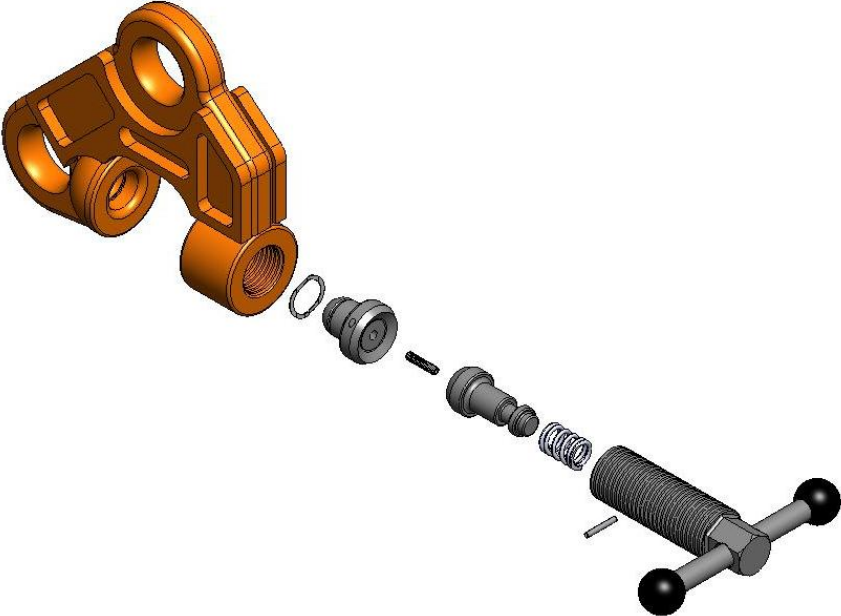
After assembly, check operation of the clamp. All parts must move freely without binding. Refer to Illustration for location of parts.

**WARNING: All retaining pins must be in place.**

GENERAL

RENFROE products may be returned to the factory for inspection and refurbishment in accordance with an established fee schedule.

Use only RENFROE replacement parts to insure maximum efficiency and design factor originally built into the product.



## EXCLUSION OF WARRANTY

THERE EXISTS NO WARRANTIES NEITHER EXPRESSED NOR IMPLIED WHICH EXTEND BEYOND THE DESCRIPTIONS OR STATEMENTS CONTAINED IN THE FACE OR ANY PART HEREOF.



# J.C. RENFROE & SONS, INC.

