⚠WARNING Before putting tool in service, take the manual to your supervisor.

LIMITED LIFETIME WARRANTY

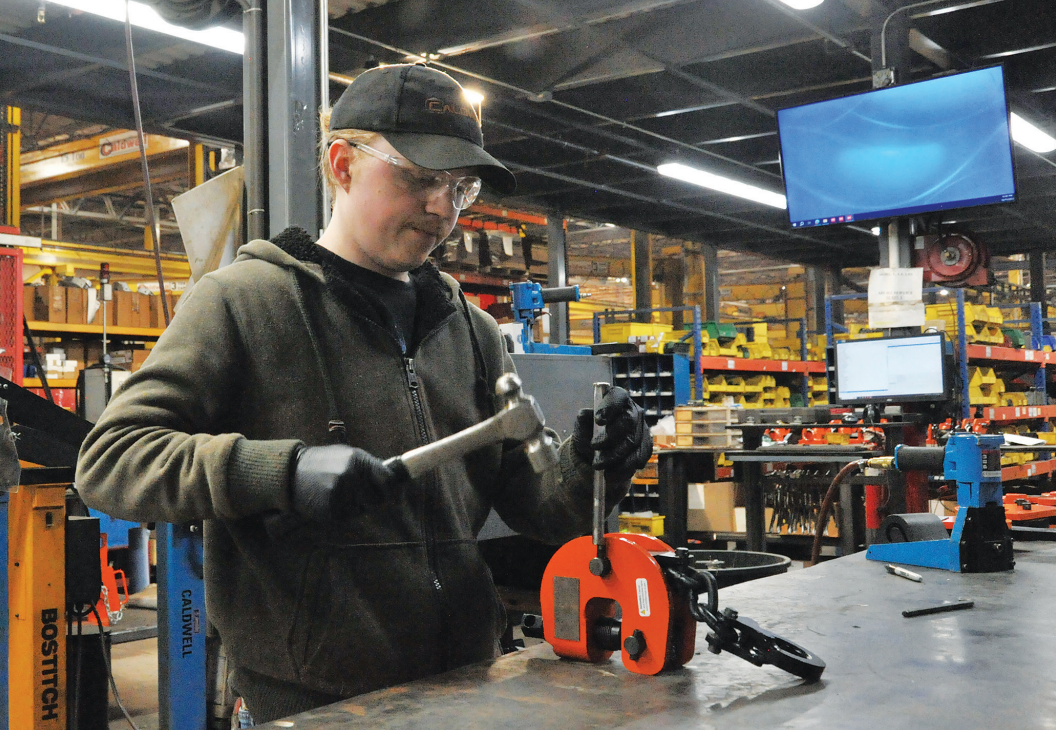
RENFROE™

MODELS SCPA/SCP CLAMPS

APPLICATION, OPERATION, AND MAINTENANCE MANUAL

Model SCPA

Model SCP



Model SCPA/SCP Clamp Operator's Manual

This Operator's Manual covers the application, operation, and maintenance of this RENFROE™ product. Operator's Manuals for other current RENFROE products are available upon request.

RENFROE™

The RENFROE brand has been trusted and preferred by international lifting clamp users for more than 50 years. They are manufactured by The Caldwell Group, Inc. in Rockford, IL, and sold via a worldwide network of stocking distributors who exemplify the same high-quality performance and service standards RENFROE brand stands for.

THE CALDWELL GROUP, INC.

Business Office
200 State Street
Beloit, WI 53511

Manufacturing
4080 Logistics Parkway
Rockford, IL 61109

Distribution Center
2136 12th Street
Rockford, IL 61104

800.628.4263 | 815.229.5667 | caldwellinc.com

Table of Contents

⚠WARNING

Prior to selection, operation, and/or maintenance of RENFROE products, read and understand the information provided in this manual.

The understanding and use of the definitions are important in determining the limitations and proper application of RENFROE products.

Failure to review and utilize recommended applications, operation, and maintenance instructions may result in serious injury to operator and others.

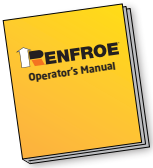
Notice of Exclusion of Warranty

RENFROE has herein set forth in conspicuous language an exclusion of any warranty either expressed or implied, which is not specifically and particularly contained herein. Please refer to that statement for representations and warranties of products manufactured by RENFROE.

This publication supersedes all previously published and/or distributed information by manufacturer and/or its distributors with respect to applicable RENFROE products and subject matter described or contained herein.

RENFROE™ Clamp Oper

1

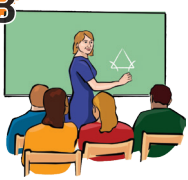


DO read and understand the Operator's Manual before using clamp.

2

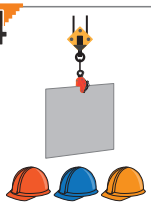
DO consult the Operators Manual or RENFROE when in doubt.

3



DO attend a RENFROE factory training class to establish proper clamp use.

4



DON'T lift over workers, safety areas, or personnel.

5

DO lock clamp closed with lock; **DON'T** lift with lock in open position.

6

DON'T use a connection that may release the clamp.

7

DON'T attach clamp directly to crane hook or use a heavy flexible connection.

8

DO use a flexible connection between crane hook and clamp shackle.

9

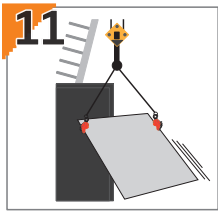
DO use correct clamp for job; **DON'T** use large capacity clamps to lift light loads.

10

DO use clamps within their rated capacity; **DON'T** overload clamps.

ration Do's and Don'ts

11



DO use enough clamps to balance load; **DON'T** lift loads that are not balanced.

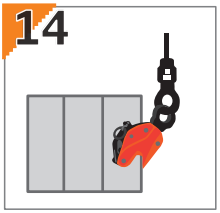
12

DO always refer to pre-lift inspection in Operator's Manual.

13

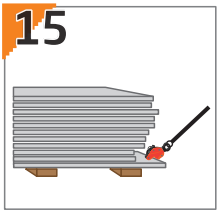
DO inspect clamp before each lift and follow inspection & maintenance instructions.

14



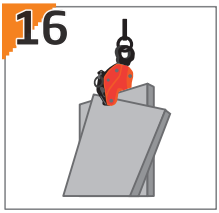
DON'T side load with a straight shackle clamp.

15



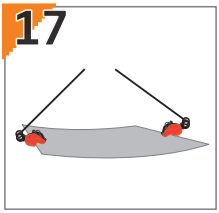
DON'T misuse (i.e. **DON'T** lift plate from bottom of plate stack).

16



DON'T rush—and **DON'T** lift more than one plate at a time with a vertical clamp.

17



DON'T lift plate horizontally with a vertical lift only clamp.

18

DON'T alter the clamp; **DON'T** grind, weld or modify the clamp in any manner.

19

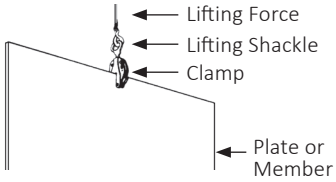
DO secure load before attaching clamp.

20

DO use only RENFROE replacement parts to assure proper operation of the clamp.

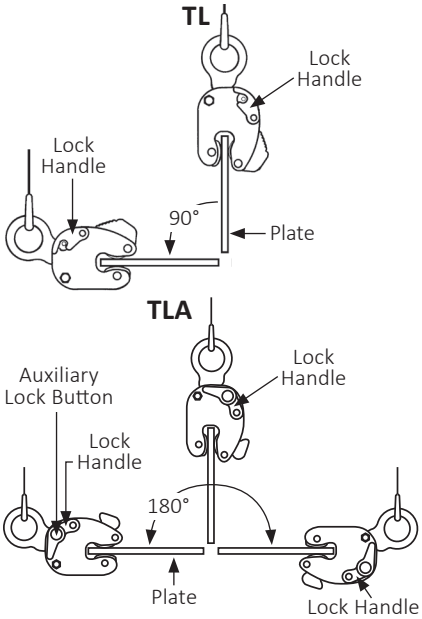
Vertical Lift

The lifting of a single plate or member in which the lifting force exerted by the rigging is directly above and in line with the lifting shackle as shown in the illustration on the right.



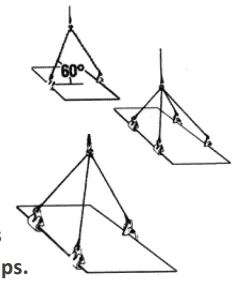
Vertical Turn/Lift

A vertical turn/lift clamp is a vertical lifting clamp specifically intended to turn a single plate or member through a ninety degree (90°) arc and back to vertical through the same ninety degree (90°) arc or from horizontal to vertical to horizontal through a one hundred and eighty degree (180°) arc. Refer to Application Section of specific Turn/Lift clamps for further detail. During the turning operation, the edge of the plate opposite the edge to which the clamp is attached should always be in contact with a supporting surface such as a factory floor and the load on the clamp not exceed one half rated capacity of clamp—refer to illustrations shown on the right.



Horizontal Lift

Clamps (used in pairs or multiples) are attached to the side edges of a plate or bundle of plates positioned horizontally to the floor level. The rigging attached to clamps is generally multi-legged slings with the connecting point of the slings being approximately centered between the distance separating the clamps. Refer to illustrations shown on the right. **WARNING: The capacity of all horizontal clamps is based on a sling angle of sixty degrees (60°). Sling angles less than sixty degrees (60°) increase the load exerted on the clamps. Never exceed the rated capacity of a single clamp.**



Steel Plates

Unless otherwise specified, lifting clamps are manufactured to handle hot-rolled steel plates whose Brinell Hardness does not exceed 300. **WARNING: Do not lift plates with coatings or mill scale that prevent the gripping surfaces of the clamp from making positive contact with the base metal.**

Finished and Polished Plates

Steel plates in this category have other than hot-rolled surfaces such as stainless steel, etc., and are generally handled using non-marring clamp that incorporate smooth-gripping surfaces. **WARNING: For applications using clamps with serrated gripping surfaces on finished or polished plates, secure written recommendations from CALDWELL/RENFROE.**

Structural Members Fabricated Sections

Unless otherwise specified, clamps described as capable of handling structural members and fabricated sections are limited to hot-rolled steel whose Brinell Hardness does not exceed 300. **WARNING: For applications not covered by the above information, secure written recommendations from CALDWELL/RENFROE.**

Rated Capacity

The rated capacity of a RENFROE product is based on the product being in “new or as new” condition and represents the maximum load the product is to be subjected to when utilized in the manner described in this manual. Wear, misuse, abuse, and other factors relating to usage may reduce the rated capacity. Shock loading and the factors listed must be taken into consideration when selecting a RENFROE product for a given application.

Plate Thickness

The minimum and maximum plate/wall thickness a clamp specified for handling plates is capable of lifting. **WARNING: Never use a clamp for lifting a plate where the plate/wall thickness is less than or greater than the minimum and maximum stenciled on the clamp.**

> For applications not covered by the above information, secure written recommendations from CALDWELL/RENFROE.

Jaw Opening

The minimum and maximum plate/wall thickness a clamp specified for handling plates is capable of lifting. **WARNING: Never use a clamp for lifting a plate where the plate/wall thickness is less than or greater than the minimum and maximum stenciled on the clamp.**

Operating Temperatures

Unless specified under the Application Section of the individual model, the approved operating temperature of RENFROE clamps is from 0°F (-18°C) to a maximum of 200°F (93°C). The minimum and maximum temperatures apply to both ambient and the material being handled by the clamp. **WARNING: Secure written authorization from CALDWELL/ RENFROE before using clamps in temperatures other than shown.**

Hot Lifts

The Model R and S clamps are available in modifications that are capable of making lifts where the temperatures of the member being lifted exceeds 200°F (93°C). Depending on conditions, a lift may exceed 1000°F (538°C). The exact application and temperatures of the plates to be handled are critical in selecting the proper mode. **WARNING: Secure written instructions from CALDWELL/RENFROE for all hot lift applications.**

Locking Clamps

Locking clamps are divided into the categories listed below. With the exception of the “Locking Wedge” and “Locking Screw” type, the purpose of the locks is to facilitate the attaching and removing of the clamp from the member being handled.

Lock Closed

An over-center, spring-loaded mechanism in which the spring exerts a force on the gripping cam when the lock handle is moved to the “Lock Closed” position. When the handle is moved to unlocked position, the force exerted by the spring is relaxed and the gripping cam may be retracted by pushing the lifting shackle into body of clamp. Refer to the Operation Section of specific models of “Lock Closed” clamps for additional details. Typical “Lock Closed” clamps are Models DG, FR, and M.

Lock Open Only

Normally used on “Hot Lift” clamps and consists of a manually operated “Lock Stop Pin” that is inserted when gripping cam of clamp is retracted and removed when clamp is positioned on the plate. Tag line may be used to permit operator to remove pin from a greater distance from clamp. Refer to the Operation Section of specific model of “Lock Open Only” clamps for additional details. A typical “Lock Open Only” clamp is the Model RO.

Lock Closed-Lock Open

An over-center, spring-loaded mechanism in which the spring exerts a force on the gripping cam when the lock handle is moved to the “Lock Closed” position. When the handle is moved to the “Lock Open” position, the gripping cam is maintained in the retracted position for ease in installing the clamp on a plate or member. The Model FRD contains individual “Lock Open” and “Lock Closed” mechanisms that must be operated separately. Refer to the Operation Section of specific models of the “Lock Open-Lock Closed” clamps for additional details. Typical “Lock Open-Lock Closed” clamps are Models FRD, R, S, SD, SEA, SX, TL, TLA, TLC, and the J Series.

Locking Wedge

Locking wedge is a fluted steel wedge that is driven in place with a hammer. The body of the wedge is positioned in a slot in the clamp body with the fluted edges contacting the member to which the clamp is being attached. Refer to Operation Section of specific models of the “Locking Wedge” clamps for additional details. Typical “Locking Wedge” clamps are Model A1, B1, B2, and PB.

Locking Screw

“Lock Screw” clamps depend on manually adjusting a screw to hold the gripping surface in place for lifting and removing the clamp from member being lifted. Refer to Operation Section of a specific model of “Locking Screw” clamps for additional details. Typical “Locking Screw” clamps are Models AC, ACP, NM, PC, SCP, and SCPA.

Non-Locking

"Non-Locking" clamps have no mechanisms to aid in attaching or removing clamp from member being lifted. It is necessary to have position of clamp maintained on the member being lifted until a properly applied force is exerted to the lifting shackle. Refer to Operation Section of specific models of the "Non-Locking" clamps for additional details. Typical "Non-Locking" clamps are Model AST, ASTL, BD, LHC, LHD, and WHSR.

Warning

A pointing out and notice of danger. The purpose of a "WARNING" is to apprise the operator and all other affected individuals of potential dangers they should be – but may not be – aware of, and to enable the operator to take appropriate action to protect themselves and others, where applicable, from such hazards. An attempt is made herein to warn against reasonable and reasonably foreseeable danger in the proper use and possible reasonable misuse of CALDWELL/ RENFROE products described in this manual.

Designated Person

A person selected by the employer or the employer's representative as being competent to perform those specific duties.

Qualified Person

A person who, by possession of a recognized degree in an applicable field or certificate of professional standing, or who, by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve problems relating to the subject matter at hand.

Download a RENFROE Catalog

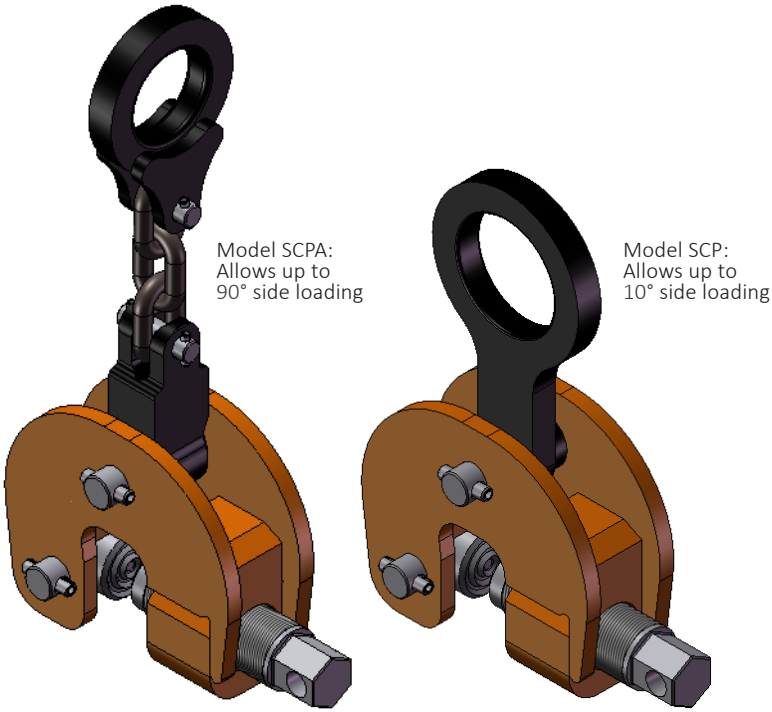
Download a copy of the most current RENFROE catalog to see the full-line selection here:
caldwellinc.com/caldwell-catalog-library

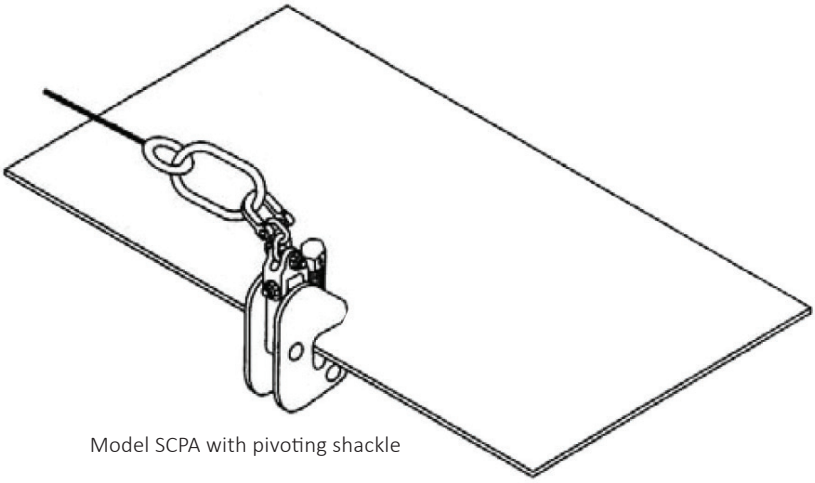
Model SCPA/SCP Vertical Lifting Locking Clamp Series

The Model SCP clamp is capable of handling steel plates from the horizontal through a 180° arc and may be used for handling plate at rolling and forming machines. Refer to Illustrations on the next page. The adjusting screw is used to adjust clamp for various thicknesses of material and attach the clamp to members being lifted.

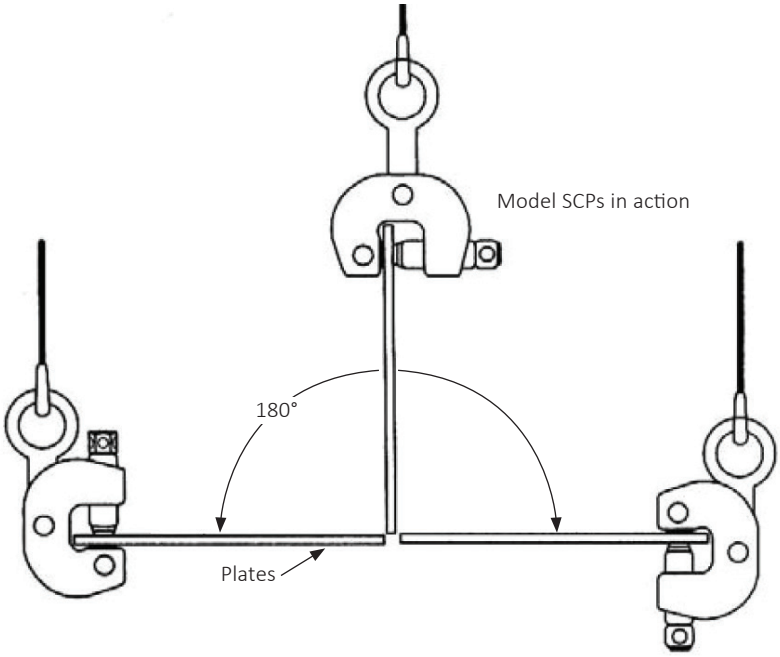
The Model SCPA has the same capabilities as the Model SCP, except the Model SCP is limited to 10° side-loading on the shackle. The Model SCPA incorporates a pivoting shackle permitting 90° side-loading. Refer to Definition Pages for explanation of "Screw Locking" clamp. The clamp features a spring-loaded pivoting cam jaw that "cams in" when a load is applied to the lifting shackle.

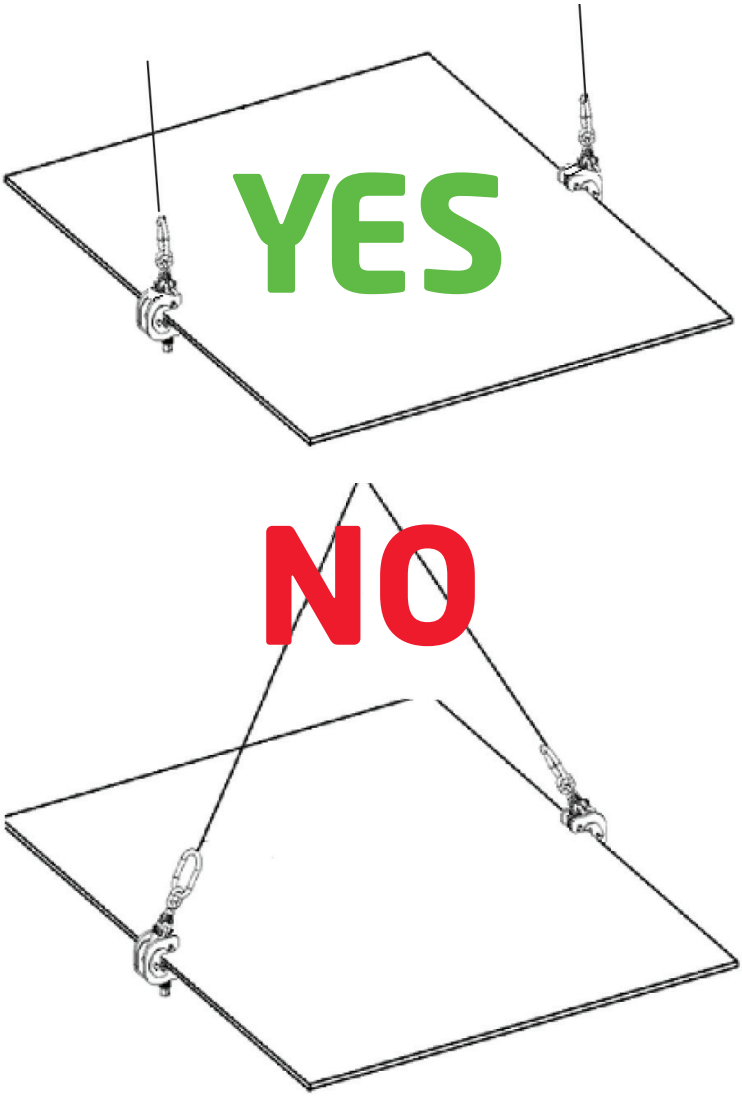
For an exploded view of the clamp parts, turn to page 25 and 26. **WARNING: Refer to the sections on Operation and Maintenance for the approved procedures in the operation and maintenance of this product.**





Model SCPA with pivoting shackle





WARNING: Do not rig Model SCPA clamps in the manner shown above. The Model SCPA cannot bend in the manner shown because it will damage the clamp. The Model SCPA's range of motion is 0 to 180° away from the plate, not toward it as shown.

Model SCPA/SCP Vertical Lifting Locking Clamp Series

STEP 1

Before using any RENFROE clamp, refer to the Application section to confirm the operation to be undertaken is an appropriate application for this product.

STEP 2

Select appropriate capacity and plate thickness. The model designation, capacity, and plate thickness are stenciled on each clamp. **WARNING: Never exceed rated capacity or use on material whose thickness is not within the range of jaw opening stenciled on clamp. Lift only one plate on each lift.**

Alway use clamps with maximum jaw openings and rated capacities that are nearly equal to the thickness and weight of the sections being lifted.

STEP 3

Inspect clamp before each lift. **WARNING: Do not use if in need of repair.**

If in doubt, refer to the Maintenance section for detailed maintenance instructions and exploded view of the clamp for part identification.

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. Screw cup mounted in screw should turn freely.

D. Screw should turn freely. Inspect for wear and damage.

E. Spring must hold cam jaw in “Centered” position parallel to the screw. **WARNING: Do not use clamp unless spring is in place and is holding the cam jaw parallel to length of screw.**

F. Inspect condition of body for wear, damage, and distortion, particularly in the area of the jaw opening.

G. Inspect lifting shackle and all pin holes for wear and damage.

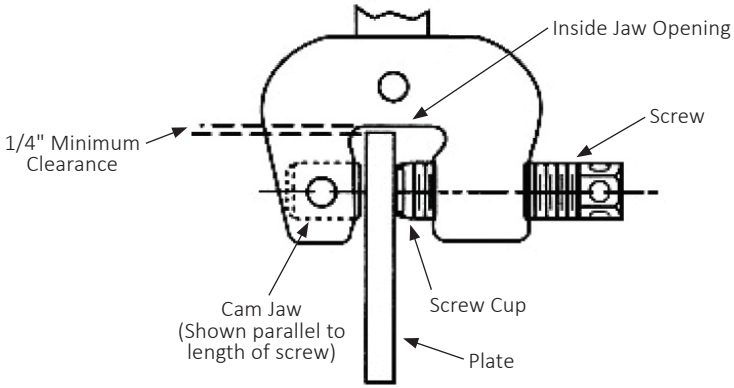
H. Remove any clamp from service in need of repair.

STEP 4

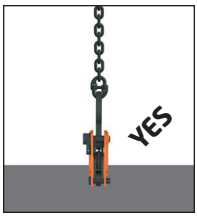
The clamp is a component of the rigging used in lifting or transporting a plate. It is important to use safe and adequate rigging. **WARNING: Improper or excessively heavy rigging may interfere with the operation of the clamp and its ability to maintain a proper position on the plate. Never attach crane hook directly to the clamp—always use sling between crane hook and clamp.**

STEP 5

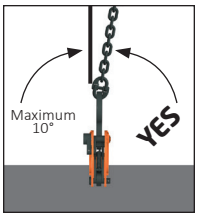
Position clamp on plate to be lifted. Do not allow inside of jaw opening to rest on edge of plate. Maintain 1/4" clearance. Refer to illustration below.



On Model SCP, position clamp so direction of force applied by crane is in line with the lifting shackle. **WARNING: On Model SCP never exceed 10° side loading.**

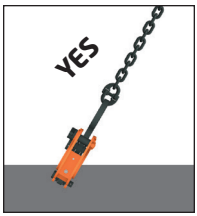


Sling directly above and in-line with the lifting shackle.



Maximum allowable side loading.

Excessive side loading.

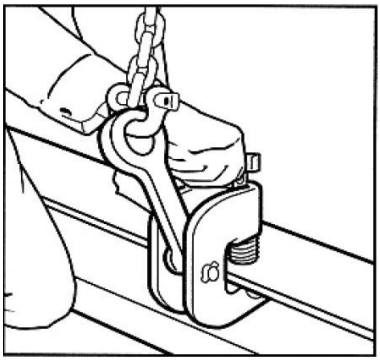


Sling directly in-line with lifting shackle.

STEP 6

Tighten screw making certain both gripping surfaces are parallel to the surface of the member being lifted and are not partially on and off the edge of the plate. Refer to Illustration.

Using a bar, tighten screw hand tight, then an additional 1/4 turn. Do not over-tighten. Refer to photograph and chart below. **WARNING: Apply required torque on screw, do not over-tighten. If performing a second lift with this set up, clamp must be retightened.**



Required Torque on Screw for Model SCPA and Model SCP Clamps				
Capacity in Tons	Operator Force in Pounds with Attached Handle	Operator Force in Pounds with 12" Lever	Operator Force in Pounds with 18" Lever	Operator Force in Pounds with 24" Lever
1/2	40	21	14	—
1 1/2	40	26	18	—
3	50	34	23	—
6	—	78	52	—
8	—	—	83	64
10	—	—	—	85
15	—	—	—	144
20	—	—	201	151

STEP 7

Commence lift. **WARNING: The operator should position himself away from and fully clear of the member to be lifted. Do not commence lift until all personnel are clear of the area of the lift. Never stand under or near a member being lifted.**

STEP 8

To remove clamp after plate is fully supported and at rest in a stable position, relax lifting force, and loosen screw. Lift clamp from plate.

STEP 9

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 or other pertinent information is missing—do not use clamp until it has been properly labeled.**

Inspection tools are available. Find inspection forms, maintenance record forms, and survey report forms at caldwellinc.com/renfroe. Danger tags and inspection stickers are available upon request.

RENFROE clamps are constructed so the wearing parts may be replaced by using the RENFROE Repair Kits. Kits contain all parts generally replaced due to normal wear. To order a repair kit, talk to your distributor or call us at 800.628.4263 or 815.229.5667.

Model SCPA/SCP Vertical Lifting Locking Clamp Series

The severity of service to which the clamp is subjected in the workplace 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.

- 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, and screw cup mounted in screw should turn freely.
- Screw should turn freely—inspect for wear and damage.
- Spring must hold cam jaw in "Centered" position parallel to the screw.
- **WARNING: Do not use clamp unless spring is in place and is holding the cam jaw parallel to length of screw.**
- Inspect the condition of the body for wear, damage, and distortion, particularly in the area of the jaw opening.
- Inspect lifting shackle and all pin holes for wear and damage.
- Remove any clamp from service in need of repair.

Choose Factory Refurbish & Recertification

Do you currently offer clamp refurbishing and recertifications? Count on CALDWELL/RENFROE to handle refurbishments in total for you or to supplement your in-house capabilities. To begin the quote process or learn more about the program, call our customer service department. We'll explain how things work and get you started right away. If requested, we can also provide a certificate of proof test. **Call us at 800.628.4263.**

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 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.

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	1 Year
Heavy Service	6 Months
Severe Service	3 Months

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.

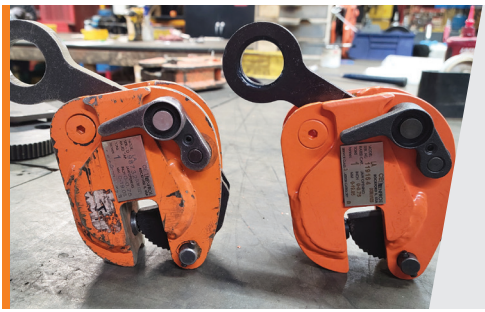
Repair (Replacement of Worn Parts):
During regular maintenance, when replacing parts that are worn, a record should be made of the parts replaced. After the replacement of worn parts, clamps need not be load tested if using RENFROE parts. Non-RENFROE parts are not approved and shall not be used.

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)**

RFID
Some RENFROE clamps are fitted with an RFID chip and can be clearly identified by means of an ID number. This can be captured using the RUD ID EASY-CHECK® (reading device) and transferred to the EYE-D.NET system, for example. The latter application assists you in managing and documenting your components.

Further information can be found online or from your RENFROE contact.



RENFROE Clamps 101: Repair, Rebuild, or Replace?

Know your options when you find a lifting clamp that's showing wear on the CALDWELL blog here: **caldwellinc.com/blog**

Model SCPA/SCP Periodic Inspection Procedures

STEP 1

Verify the identity of the clamp by checking the identification (I.D.) plate on the clamp body. If the I.D. plate is missing or not legible, you should remove the clamp from service and call the factory for further instructions. In some cases, an RFID chip may be embedded in the clamp and can help you identify the unit … but you must still call the factory to arrange next steps, which may include obtaining replacement I.D. and warning tags or recertification before returning the clamp to service.

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 the welds for fractures. RENFROE recommends a dye penetrate 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 surfaces of body side-plates that come in contact with shackle and shackle yoke for wear and damage.

C. Inspect all load bearing pin holes for wear and elongation.

D. Inspect inside jaw opening for displaced metal and distortion. Refer to exploded view. **WARNING: Replace clamps containing fractures, elongated holes, distorted jaw opening, distorted and worn threads and jaw openings, with displaced metal.**

STEP 5

Screw (SCP-1 in parts diagrams on pages 25 and 26):

A. Inspect for distortion, damaged threads, and wear.

B. Inspect for fractures, particularly in the area in which the screw cup mounts and on opposite end where holes are provided for spud wrench or bar.

C. Inspect set screw and threaded hole for damage and distortion. **WARNING: Replace screws that are bent, have distorted and worn threads, contain fractures, and have damaged threads, in set screw hole.**

STEP 6

Screw Cup (SCP-2 in parts diagrams on pages 25 and 26):

A. Inspect screw cup for fractures, damage, and wear. Serrations must be sharp and free of imperfections and foreign matter.

B. Screw cups must turn freely in the screw. When installing screw cup, insert lubricant in recess of screw. Recommended lubricant is powdered graphite or Molybdenum Disulfide grease. Drive spirol pin thru the body of the screw. For capacities greater than 50 tons: Insert screw cup, tighten set screws in screw, making certain that the set screws are positioned in the circular groove provided in the screw cup. Tighten screws until screws lock on screw cup.

C. Back up on set screw until point is just clear of screw cup, but still within the circular groove. Rotate screw cup 360° to make certain that the set screws do not bind on screw cup. Refer to exploded view.

D. Attempt to remove screw cup from screw. Spirol pin will prevent removal when properly positioned. **WARNING: Replace worn, dull, or damaged screw cups.**

STEP 7

Cam Jaw (SCP-3 in parts diagrams on pages 25 and 26):

A. Inspect cam jaw for fractures, damage, and wear. Serrations must be sharp and free of imperfections and foreign matter.

B. Check pin holes for fractures and wear.

The cam jaw is supplied with gripping serrations on both ends. When one set of gripping serrations is dull or damaged, the cam jaw may be reversed to provide new gripping surfaces. **WARNING: Inspect cam jaw body and pin hole for fractures and wear before using reverse side of gripping surface. Replace cam jaws that are worn, have dull or damaged gripping surfaces, or contain fractures.**

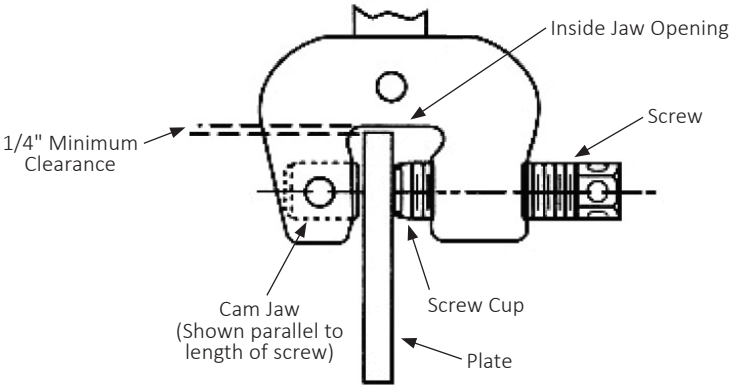
STEP 8

Spring (SCP-4 in parts diagrams on pages 25 and 26):

A. Inspect spring for damage or distortion.

B. Inspect spring retaining screws. Both screws must be in place.

C. Spring must be in place before installing cam jaw. Spring must be depressed to aid in installing cam jaw pin. **WARNING: Do not use clamp without spring or with a spring that does not hold cam jaw parallel to screw. Replace if damaged, distorted, or does not hold cam jaw parallel to screw.**



STEP 9

Shackle Pin and Cam Pin (SCP-5 in parts diagrams on pages 25 and 26):

A. Inspect all pins for:

1. Distortion
2. Surface blemishes
3. Wear
4. Fractures

WARNING: Replace pins that are distorted, have surface scars, are worn, or contain fractures.

STEP 10

Lifting Shackle and Lifting Shackle Pivoted Assembly (SCP-6 and SCP-7 in parts diagrams on pages 25 and 26):

A. Inspect lifting shackle eye for elongation and wear at point where the eye engages the sling attachment.

B. Inspect shackle pin holes for wear and elongation.

C. Inspect shackle body for bending.

D. SCPA-7: Inspect shackle yoke for damage, wear, and distortion, particularly in the area where the shackle yoke engages the side-plates of the clamp body.

E. SCPA-7: Inspect shackle yoke pivot pin. Refer to details on lifting shackle SCP-6 and cam pin SCP-5, steps 8 and 9. **WARNING: Replace shackles that have elongated shackle eye, are worn or distorted, and have elongated pin holes.**

STEP 11

Handle Assembly SCPH-8 (Optional):

A. Inspect handle for distortion or damage.

B. Make certain that the retaining spirol pin is installed evenly and does not project out from one side of the handle or the other. **WARNING: Replace handles that are damaged or distorted.**

STEP 12

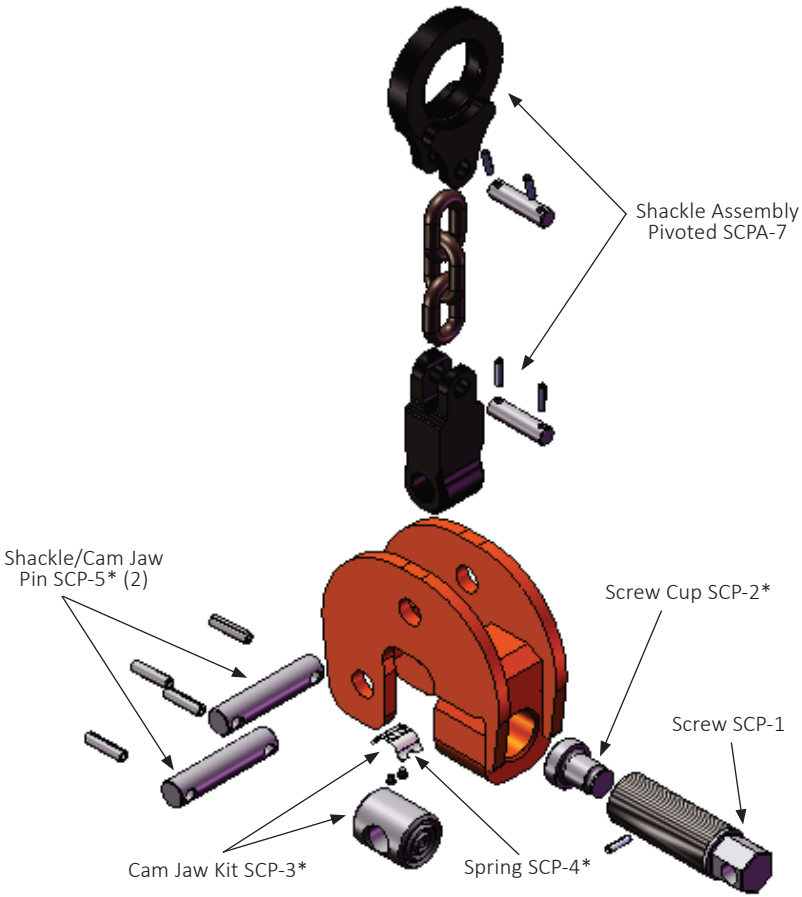
After reassembly, check operation of clamp. All parts should move freely without binding. Refer to exploded view for proper location of component parts. **WARNING: All retaining pins and fasteners must be in place.**

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 safety factor originally built into the product. Refer to CALDWELL Customer Service for instructions on ordering replacement parts.

WARNING: Do not weld, grind, or modify the clamp body or component parts in any manner. In the event the stenciling is worn and not legible or the tag containing the model, capacity, or other pertinent information is missing, do not use clamp until it has been properly labeled.



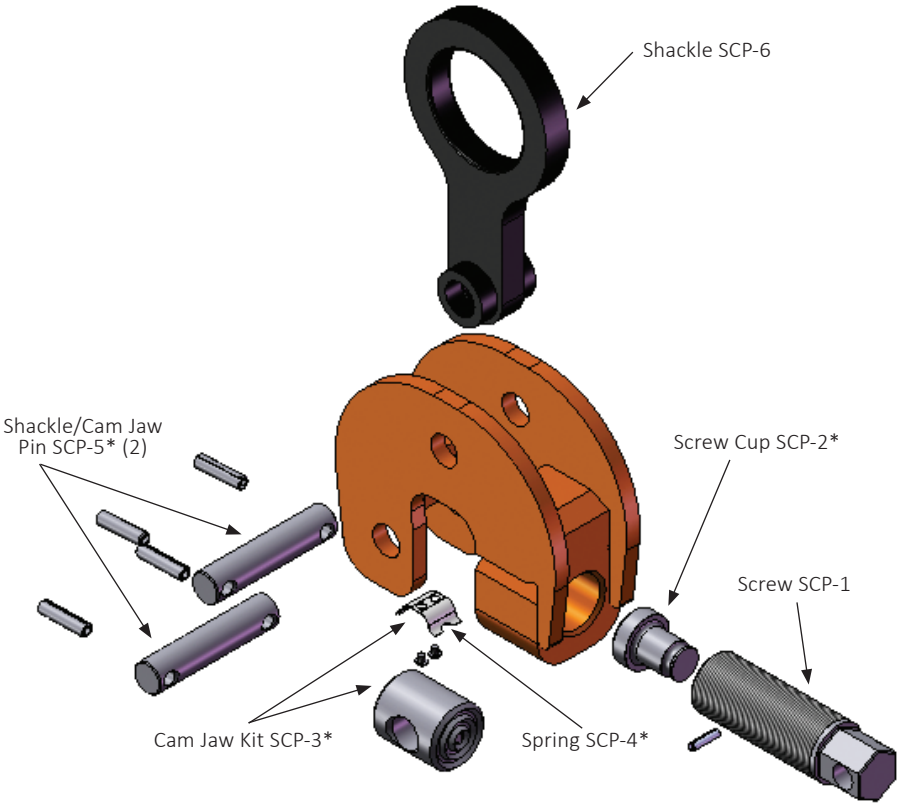
MODEL SCPA EXPLODED VIEW

*These parts are included in the RENFROE Repair Kit.

Note: Spirol pins and fasteners are included in the kit, or with individual parts if required.

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.



MODEL SCP EXPLODED VIEW

*These parts are included in the RENFROE Repair Kit.

Note: Spirol pins and fasteners are included in the kit, or with individual parts if required.

Show Us Your Renfroe!

Do you have a "vintage" RENFROE clamp that's still in good working order? Do you have a brand new clamp that's lifting something cool? We'd love to see YOUR RENFROE clamp in action. **Snap a photo and send it to: marketing@caldwellinc.com.** You never know ... we might make you famous on our blog or social media pages!

FOR OVER 70 YEARS, J.C. RENFROE HAS PRODUCED THE MOST RELIABLE, DURABLE CLAMPS IN THE INDUSTRY

In an independent test against two other manufacturers with comparable clamps, J.C. RENFROE proved to be the most durable in horizontal and vertical cycle/fatigue testing.

- The test was conducted by Rexnord Innovation Center (RIC), a completely independent accredited laboratory
- Fatigue testing was performed on the three manufacturers' comparable clamps in both vertical and horizontal orientations
- RENFROE'S LPA model completed 10 times more cycles in the horizontal configuration than its nearest competitor
- RENFROE load tests every one of its clamps ensuring that the company maintains its reputation for having the most durable clamps in the market

TESTS RESULTS FROM REXNORD INNOVATION CENTER

Horizontal Fatigue Test

RENFROE	1,664,928 Cycles
Supplier #1	Only 159,672 Cycles
Supplier #2	Only 79,352 Cycles

Vertical Fatigue Test

RENFROE	2,000,000 Cycles
Supplier #1	2,000,000 Cycles
Supplier #2	Only 817,310 Cycles

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