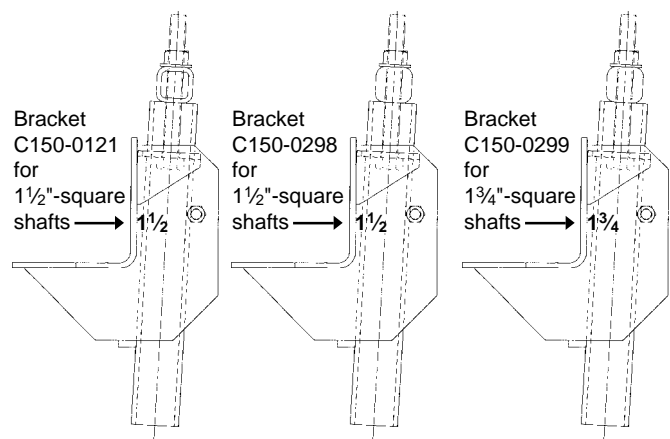
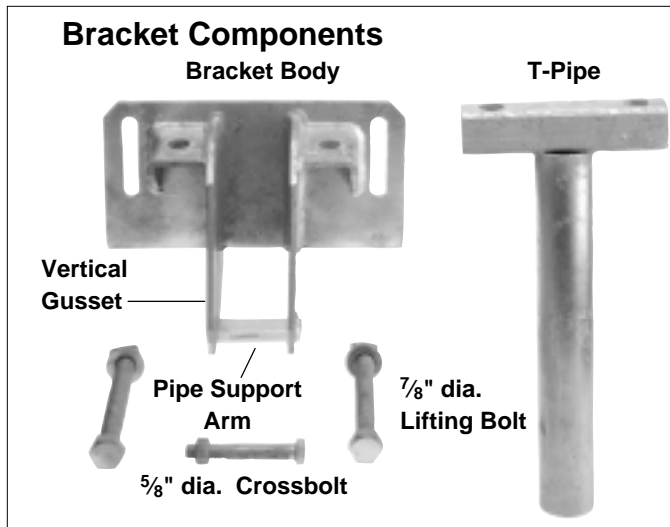


# Installation Instructions for Underpinning Bracket C150-0121, C150-0298 and C150-0299

These products must be installed by A.B. Chance Co. certified dealers trained to install Chance HELICAL PIER® Foundation Systems. Protected by one or more of the following U.S. Patents: 5,011,336; 5,139,368; 5,171,107; 5,213,448; and 5,120,163. HELICAL PIER® Foundation Systems is a registered trademark of Hubbell, Inc.

1. Brackets C150-0121 and C150-0298 may be used with only SS5 and SS150 anchors (1½" square shaft). Bracket C150-0299 may be used with only SS175 anchors (1¾" square shaft). Always use the correct bracket and T-Pipe for the size of anchors to be installed. 1½ or 1¾ is stamped on the vertical gussets of the brackets for identification.
3. Clean off any soil attached to the bottom of the footing. Prepare the footing by chipping away irregularities from bottom and side surfaces. The bracket must fit snug and flush with the footing.



2. Excavate a hole at each location where an underpinning bracket is to be installed. The hole should be excavated to a minimal depth to maintain the maximum amount of undisturbed soil. A depth of at least 12 inches below the footing is usually required to install the bracket. The width of the hole should be at least 18 inches.

**⚠ WARNING**

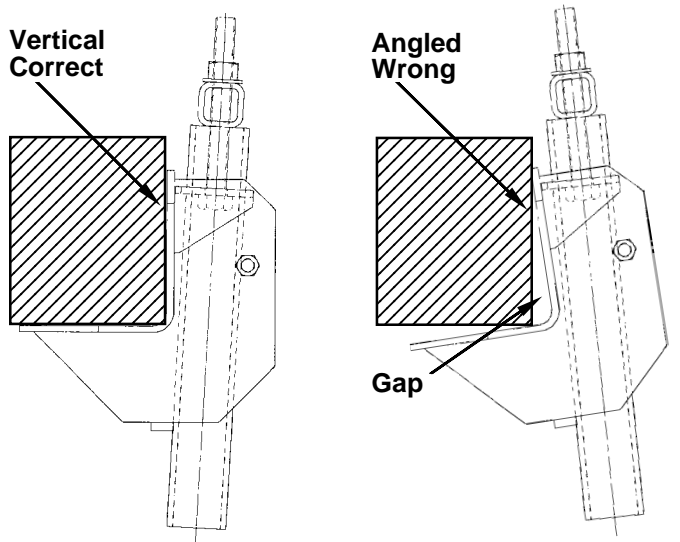
**Potential for Soil Collapse.**  
Can cause personal injury or death.

**When digging large holes, take appropriate shoring measures. Always abide by all local and OSHA requirements.**

**⚠ WARNING**

**Incorrect footing preparation will prevent proper seating of the bracket against the footing. Can result in bracket push-out or rotation, or damage to the bracket, anchor, jacking equipment, footing or entire structure.**

**Provide flat, smooth surface for the bracket to mount against.**



4. Place the anchor in the excavated hole. The anchor should be centered along the width of the hole and as close to the foundation as possible. The lead helix should be placed under the foundation and the anchor shaft should be at a 3 to 5 degree angle from vertical.
5. Secure the top of the anchor shaft to the installing tool/hydraulic anchor driver. Always use the bent arm pins and coil locks provided for secure attachment of the anchor to the installing equipment.

**⚠ WARNING**

**Misuse of anchor installing equipment can result in property damage, severe injury, or death. Read and understand the instructions and warnings included with the installing equipment before beginning anchor installation.**

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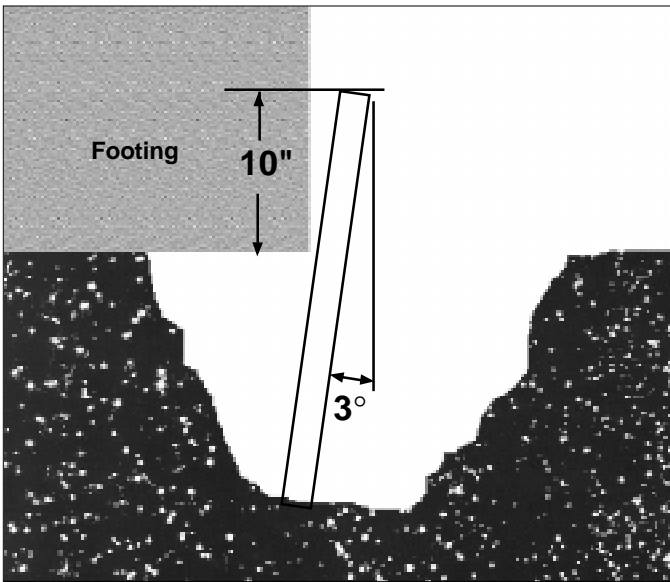
**⚠ WARNING**

**Anchors are electrically conductive.**

**Avoid contact with underground utilities. Contact between anchor and underground objects may result in serious injury, death and/or property damage.**

**Before installing the anchor, determine the location of all underground utilities (electric, gas, water, sewer, telephone, CATV, etc.) to prevent accidental anchor contact or puncture.**

6. Check that the anchor is still at a 3 to 5 degree angle from vertical. Begin the anchor installation by applying down pressure to the anchor. Once the anchor has begun penetrating the soil, down pressure will no longer be required. Continue to drive the anchor at a 3 to 5 degree angle. Add extension shafts as necessary until the predetermined torque has been reached. This predetermined torque should be maintained for at least the final 3 feet of embedment before stopping the anchor installation.



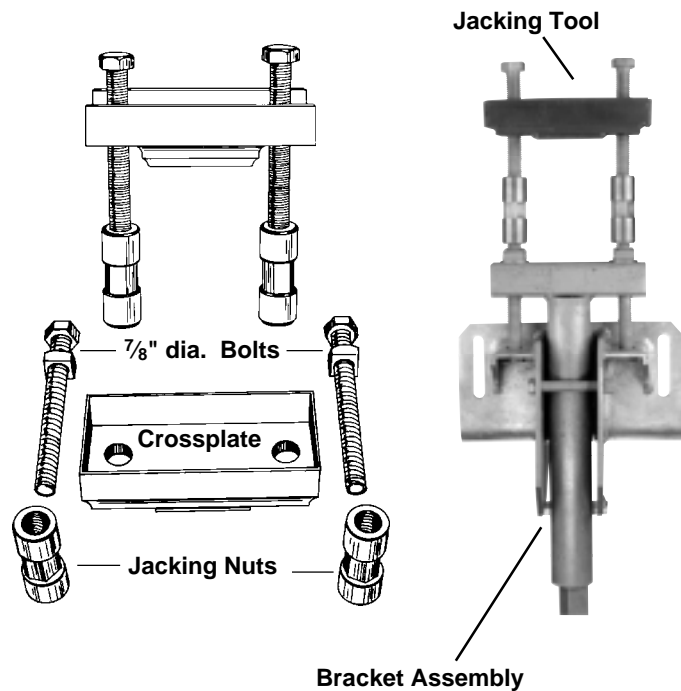
7. The anchor shaft should be terminated with approximately 10 inches of shaft above the footing. A portable band saw may be used to cut the shaft off at the proper height above the footing.
8. Remove the crossbolt from between the two vertical gussets of the bracket. The bracket can be placed on the anchor shaft in two different ways, depending on the size of the excavated hole and hole accessibility. One method is to slide the fully assembled bracket and T-pipe over the anchor shaft backwards (bracket facing away from footing) and let it fall below the footing. Then rotate the bracket 180 degrees until it is facing the footing and lift it up until it is in the correct position (flush with footing). Reinstall the crossbolt and tighten the lifting bolts so that the bracket remains flush with the footing. The second method is very similar and will be easier if work space is limited due to excavated hole size or accessibility. Disassemble the bracket sub-assembly from the T-pipe

by removing the lifting bolts. Slide the bracket sub-assembly down the anchor shaft and into position the same as in method one. Now slide the T-pipe over the anchor shaft. Lift the bracket sub-assembly up and reassemble the bracket using the lifting bolts and the crossbolt, again making sure the bracket is seated flush with the footing. For all installations, the T-pipe should be installed such that the "C" stamp on top faces the foundation, i.e., the "C" will appear backwards to the installer when properly installed on a foundation.

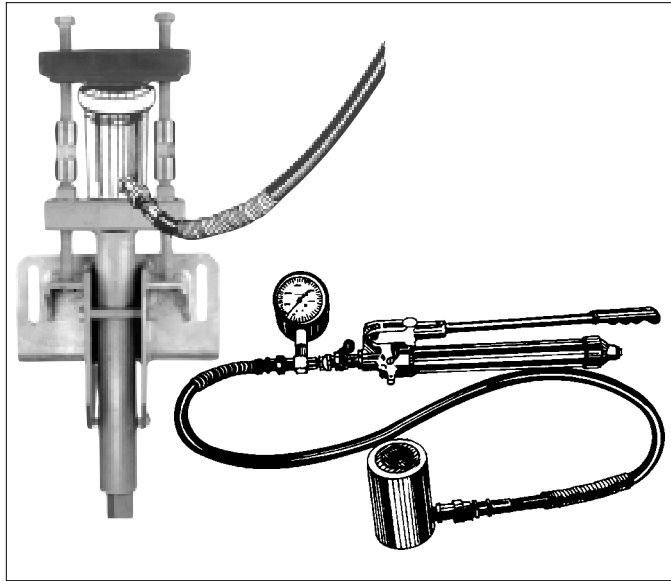
**⚠ NOTICE**

**The "C" stamp on the T-pipe must be installed such that the "C" faces the foundation. Incorrect assembly of the bracket could lead to alignment problems during the jacking process.**

9. Check to see that the T-pipe is all the way down on the anchor shaft; gently tapping the top of the T-pipe with a hammer may be required. The pipe support arm located on the bottom bracket body must be seated snugly against the T-pipe.
10. Drill two holes in the foundation through the mounting hole slots of the bracket. Follow the directions of the anchor bolt manufacturer when installing the anchor bolts. The underpinning bracket requires two  $\frac{5}{8}$  inch anchor bolts, each with 3500 lb. of tension capacity.
11. Attach the jacking tool to the top of the lifting bolts. There must be at least 1" of lifting bolt thread above the top of the T-pipe so that there is adequate thread engagement with the jacking tool.



12. Place jack between the T-pipe and the crossplate on the jacking tool. Adjust the height of the jacking tool to match the height of the jack as required.



13. Apply a small amount of pressure to jack, just enough to take up the “slack” in the assembly. Once again check to see if the bracket is still mounted flush with the footing. Tighten the crossbolt if necessary and check the anchor mounting bolts again before proceeding.

**⚠ WARNING**

**Potential for structural collapse.**  
**Can cause property damage, personal injury or death.**

**Do not raise the foundation unless the necessary structural considerations have been made. Structural integrity of the foundation must be determined by qualified personnel before lifting or stabilizing. A plan of repair must be made and followed to prevent overloading of the foundation, anchor or bracket.**

14. More pressure can now be applied to the jacks to lift or stabilize the structure. Always use a jack with a pressure gage in order to monitor the lifting force. The two nuts on the lifting bolts sticking up through the T-pipe crossmember should be tightened often during the jacking process. This transmits load from the jacking tool to the bracket body. Set up reference points on the foundation to monitor movements both inside and outside the structure.

**⚠ WARNING**

**Potential crushing hazard.**  
**Can cause personal injury or death.**

**Stay clear of any voids created under the foundation during lifting.**

15. Once the lifting or stabilizing of the structure is complete, tighten the nuts on the two lifting bolts down to the top of the T-pipe.
16. When the nuts on the lifting bolts are tight, release the pressure from the jack. Remove the jack and backfill the hole.

Bracket Catalog No.	C150-0121		C150-0298		C150-0299
	1½" Square Shaft		1½" Square Shaft		1¾" Square Shaft
SS Anchor Series	Standard SS5	High Strength SS150	Standard SS5	High Strength SS150	SS175
Minimum Bracket Ultimate Strength	40,000 lb.	40,000 lb.	80,000 lb.	80,000 lb.	80,000 lb.
With 2.0 Safety Factor	20,000 lb.	20,000 lb.	40,000 lb.	40,000 lb.	40,000 lb.
Typical Achievable Installed Capacity*	20,000 lb.*	25,000 lb.*	20,000 lb.*	25,000 lb.*	30,000 lb.*

*\*The capacity of Chance HELICAL PIER® Foundation Systems is a function of many individual elements, including the capacity of the foundation, bracket, anchor shaft, helix plate and bearing stratum, as well as the strength of the foundation-to-bracket connection and the quality of anchor installation. The last row of the table shows typical capacities of the Chance HELICAL PIER® Foundation Systems that are achievable under normal conditions. Achievable capacities could be higher or lower depending on the above factors.*

NOTE: Because Chance has a policy of continuous product improvement, it reserves the right to change design and specifications without notice.