

CHANCE® INTERIOR SLAB BRACKET C1501339

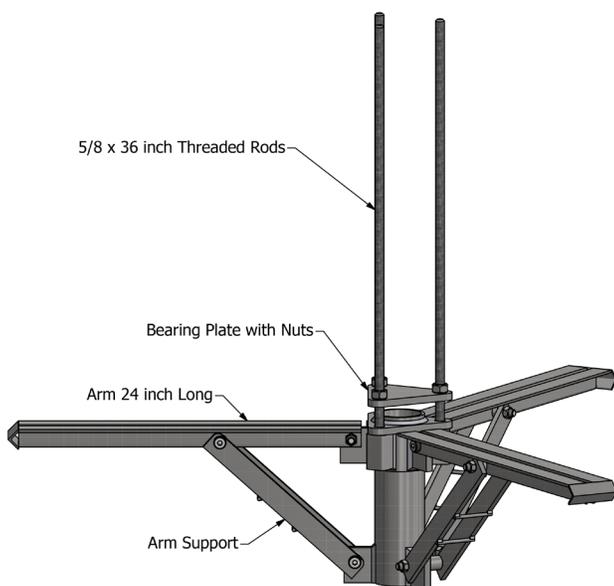
Installation Procedures

THIS PRODUCT MUST BE INSTALLED BY A CERTIFIED CHANCE INSTALLER TRAINED TO CORRECTLY INSTALL THE CHANCE® HELICAL PILE SYSTEM

1. Bracket C1501339 is used with 2-7/8 inch (73 mm) RS2875.203 & RS2875.276 Round Shaft helical piles.

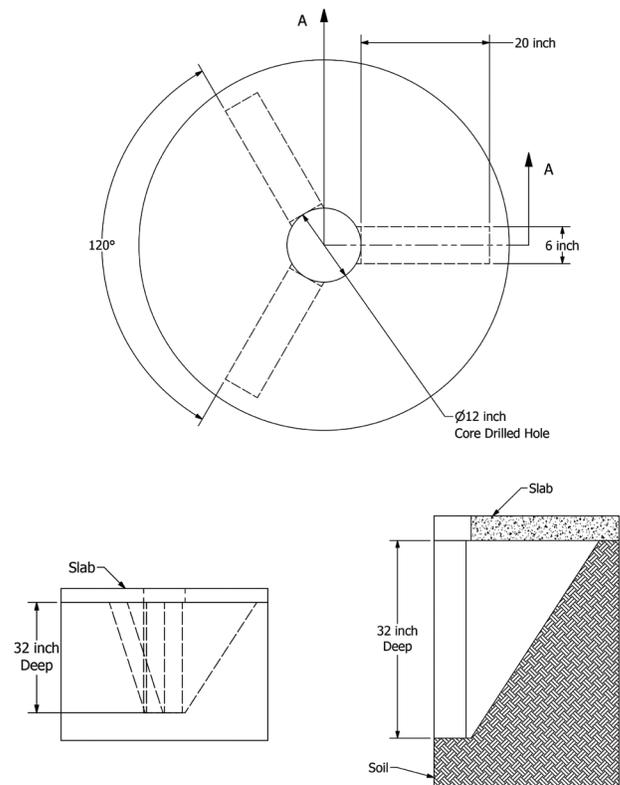
2. Core drill a 10-12 inch diameter hole through the concrete slab and excavate at each location where the bracket and its arms are to be installed. Marking the slab with the outline of an expanded bracket's three arms has proven beneficial during the excavation process. See diagrams for minimum excavation required. For excavation tools and helpful procedures reference the "Interior Slab Bracket - Excavation Tooling Evaluation" test report (R15-04-02).

Bracket Assembly



3. Clean off soil attached to the bottom of the slab. Prepare the slab by chipping away irregularities from the bottom. Grout or fill irregular surfaces so that the bracket mounts flush with the bottom of the slab. Test fit the bracket to ensure proper expansion and fit prior to helical pile installation.

Excavation Profile



4. Place the helical pile in the excavated hole. The pile should be vertical and centered in the cored hole. Secure the top of the helical pile to the installing tool/hydraulic torque motor. Always use the bent arm pin and coil lock provided for secure attachment of the helical pile to the installing equipment.



WARNING

Incorrect slab preparation will prevent proper seating of the bracket against the slab and can result in damage to the bracket, pile, ram equipment, slab or entire structure. Provide a flat, smooth surface for the bracket to mount against.



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

Misuse of helical pile 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 helical pile installation.

CHANCE® INTERIOR SLAB BRACKET C1501339

Installation Procedures

5. Combo pile systems are recommended. The lead Square Shafts reduces the possibility of shifting the pile central axis away from that of the cored hole. Multi-helix leads are recommended with the core diameter greater than the maximum helix diameter. The pile must be installed vertical and in the center of the cored hole. If the pile is not vertical it must be removed and reinstalled. If the pile is not centered in the cored hole the bracket may not fit, consequently it must be removed and reinstalled.



WARNING

Helical piles are electrically conductive. Avoid contact with underground utilities. Contact between helical pile and underground objects may result in serious injury, death and/or property damage.

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

6. With the helical pile vertical and centered in the cored hole, begin the helical pile installation by applying both down pressure and rotational torque to the pile. Continue to drive the helical pile vertically. As extensions are added, shaft coupling bolts should be tightened 1/4 turn past hand tight. Add extension shafts as necessary until the predetermined torque has been obtained. This predetermined torque should be maintained for at least the final three feet (1m) of penetration before stopping the installation. Couplings must be below the minimum excavation area otherwise the bracket will not fit.*

7. The helical pile shaft should be terminated or cut off at a minimum of 1 inch above the bottom of the cleaned and prepared slab. Cut-off heights greater than 1 inch will allow for lifting or stabilizing the slab as necessary. A portable band saw may be used to cut the shaft at the required elevation above the slab surface otherwise a straight grinder equipped with a cut off wheel is suggested. The cut-off surface must be perpendicular to the pile shaft.

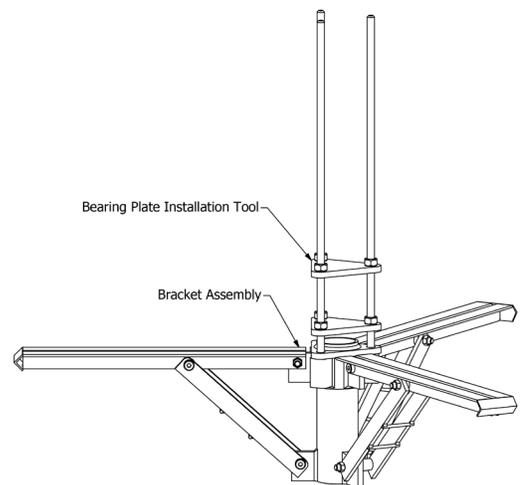
8. Before installing the bracket ensure that all of its bolts are tight. Move the bearing plate and its 3 nuts near the top of the all-thread rods. With the bracket's arms still tied, slide the bracket over the pile shaft and through the cored hole. The bearing plate should rest on the top of the pile. Ensure the pointed tips of the arms are oriented to the previously excavated triangular cavities and below

the slab. Remove the tie holding the arms together and push the arms out. Lift the bracket using the threaded rods allowing the bracket to expand, making sure the bracket is seated flush with the bottom of the slab. Lower the bearing plate and tighten the nuts.

9. Check to see that the bearing plate is level and centered on the pile.

10. Attach the Bearing Plate Installation Tool. Insert the hydraulic ram between the tool and the bracket's bearing plate and adjust the spacing between the plates as necessary.

11. Apply a small amount of pressure to the ram, just enough to take up the "slack" in the assembly. Once again, check to see if the bracket is flush with the slab and the bracket's bearing plate is centered on the helical pile shaft.



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 must be determined by qualified personnel before lifting or stabilizing. A plan of repair must be made and followed to prevent overloading of the structure, helical pile or bracket.

12. More pressure can now be applied to the ram to lift or stabilize the structure. Always use hydraulic rams with a pressure gauge in order to monitor the lifting force. A manifold system can allow control of the hydraulic pressure on multiple rams/ cylinders simultaneously and greatly assist during a lifting procedure.

CHANCE® INTERIOR SLAB BRACKET C1501339

Installation Procedures

The nuts on the threaded rods that tighten against the bracket's bearing plate should be tightened frequently during the lifting process. This transfers the load to the bracket body. Set up reference points on the foundation to monitor movement as necessary.

13. Once lifting or stabilizing the structure is complete, tighten the nuts against the bracket's bearing plate.

14. When the nuts on the bracket's bearing plate are tight, release the pressure from the ram. Remove the ram and bearing plate installation tool. Cut threaded rod as necessary leaving at a minimum of 1/4 inch above the nuts. Back fill the excavation below the slab and cap the cored hole.

**If coupling is located within minimum excavation area then either the extension second from the top can be replaced with a longer or shorter extension effectively lowering the coupling or C1501473 can be used in place of the top extension.*

SUGGESTED CHANCE® INTERIOR SLAB BRACKET DESIGN GUIDE

Step 1: A Ground Penetrating Radar (GPR) survey is recommended prior to start of work to determine locations of utilities to avoid surprises during structure remediation.

Step 2: Determine independent variables: Slab Thickness (use GPR results or as-built drawings) and the design Live Loads.

Step 3: Referencing the independent variables use Table 1 to determine Maximum Lifting Load and Maximum Pile Spacing.

Slab Thickness (inch)	Maximum Lifting Load	Maximum Pile Spacing					
		Live Load (psf)					
		10	20	30	40	50	60
3	5 kip	9.9 ft	9.5 ft	9.1 ft	8.8 ft	8.6 ft	8.4 ft
4	7 kip	10.7 ft	10.3 ft	9.9 ft	9.6 ft	9.3 ft	9.2 ft
5	10 kip	11.4 ft	10.9 ft	10.6 ft	10.3 ft	10.0 ft	9.8 ft
6	14 kip	11.9 ft	11.5 ft	11.2 ft	10.9 ft	10.6 ft	10.4 ft
7	18 kip	12.4 ft	12.1 ft	11.7 ft	11.4 ft	11.2 ft	10.9 ft
8	24 kip	12.9 ft	12.5 ft	12.2 ft	11.9 ft	11.6 ft	11.4 ft
9	30 kip	13.3 ft	12.9 ft	12.6 ft	12.3 ft	12.1 ft	11.8 ft
10	36 kip	13.6 ft	13.3 ft	13.0 ft	12.7 ft	12.5 ft	12.3 ft
11	44 kip	14.0 ft	13.6 ft	13.4 ft	13.1 ft	12.9 ft	12.7 ft
12	53 kip	14.3 ft	14.0 ft	13.7 ft	13.5 ft	13.3 ft	13.0 ft

Table 1. Inputs values are in red (independent variables): Slab Thickness (inches) and Live Load (psf). The outputs are in black with their units: Maximum lifting load and Maximum Pile Spacing. Values listed are for mildly reinforced concrete slab (welded wire mesh reinforced).

For helical pile capacities, application, and instructions refer to the most recent Technical Design Manual from Hubbell Power Systems, Inc.

For Example:

The as-built drawings show the floor slab is 4 inches thick. This is confirmed by the GPR survey. The design live load is 40 psf. From Table 1, select 4 inch Slab Thickness in the far left column. The next column gives the Maximum Lift Load of 7 kip. Locate the 40 psf Live Load column in the Max Pile Spacing section. Select the pile spacing for a 4 inch Slab Thickness and 40 psf Live Load, which is 9.6 feet.



CHANCE Civil Construction | Hubbell Power Systems, Inc. | hubbellpowersystems.com/abchance

©Copyright 2015 Hubbell Incorporated. Because Hubbell has a policy of continuous product improvement, we reserve the right to change design and specifications without notice.

