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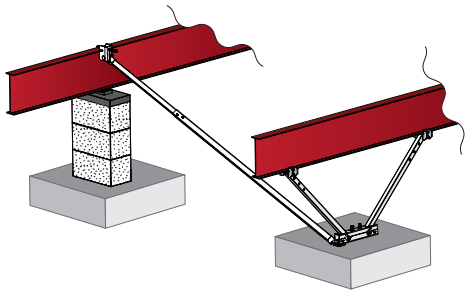
XVC Steel Pier Concrete System Installation Instructions for Wind Zone I, II & III Except Florida and California

Effective November 3, 2025 US Patent No.11,898,318

The XV Steel Pier System replaces the standard pier support and base pad. Installation instructions are for replacing normal lateral frame tie and longitudinal end tie anchorage and plates. In addition, the system requires a minimum amount of uplift anchors in Wind Zone I for enhanced wind protection. Check Anchor charts for details.



Installation Requirements

- Install in type 4B (175-275 lbs.) soil or better.
- Main Rail Spacing must be 75.5" – 99.5", 112" exception with proper strut.
- Maximum pier height must be 48" with 6" maximum rise from the location of the system to the end of the home. For all other piers, use the manufacturers set up instructions.
- Maximum vertical protection at sidewall is 9' wall and 12" eave at roof rim. Higher walls may be used when possible for design loads to be adjusted accordingly. For 10' walls, check with Tie Down.
- Longitudinal strut angles need to be no more than 60 degrees and no less than 40 degrees.
- The XV System is installed on one of the pier footers required by the home manufacturer set up instructions. No other base pad required.
- Two systems designed to work with each other must be placed as evenly as possible. Measuring from the center of the block/pier, systems are to be placed a minimum of 2' and a recommended maximum of 10' (when needed may be a maximum of 1/4 the length of the home) from each end of the home as shown on pier placement chart.
- For roof slopes greater than 20 degrees (4.37" in 12" Pitch), see page 3.
- This system only replaces normal lateral frame tie and or longitudinal end tie anchorage, with minimum uplift anchorage added for Wind Zone I. Wind zones II & III (100+ mph) require additional vertical sidewall anchorage for high wind areas. The home manufacturer may require additional vertical anchor ties that are unique to the homes design. These locations may include shear walls, marriage line ridge beam supports, and rim plates. Check manufacturers installation instructions for set up requirements.

Concrete Installation Requirements

- Poured concrete must be must be 2,500 PSI minimum at 28 days. Bottom of footers must be below the frost line or a minimum of 4" below finished grade. Check with authorities for local requirements (LAHJ).
- **Footer Requirement:** Must to be large enough for the pier load at that location and be a minimum of 22" wide by 6" deep with anchor wedge bolts a minimum of 4" from any edge or 18" wide by 12" deep with anchor wedge bolts a minimum of 1-1/2" from edge. Strip footings minimum of 18" wide by 14' long by 6" deep or 27" wide by 14' long by 4"deep.

XV components exceed HUD code 3280.306 g "Anchoring equipment exposed to weathering shall have a resistance to weather deterioration at least equivalent to that provided by a coating of zinc on steel of not less than 0.30 ounces per square foot of surface coated. The XV Foundation System by Tie Down complies with 24CFR Part 3280 & 3285 when installed in accordance with the instructions provided by Tie Down.

MADE IN THE USA

Online Concrete Installation Manual

WARNING: This product can expose you to chemicals including Nickel, which is known to the State of California to cause cancer. For more information go to: www.P65Warnings.ca.gov

Instruction #08460 (D2041 - Rev. 9/23/25)

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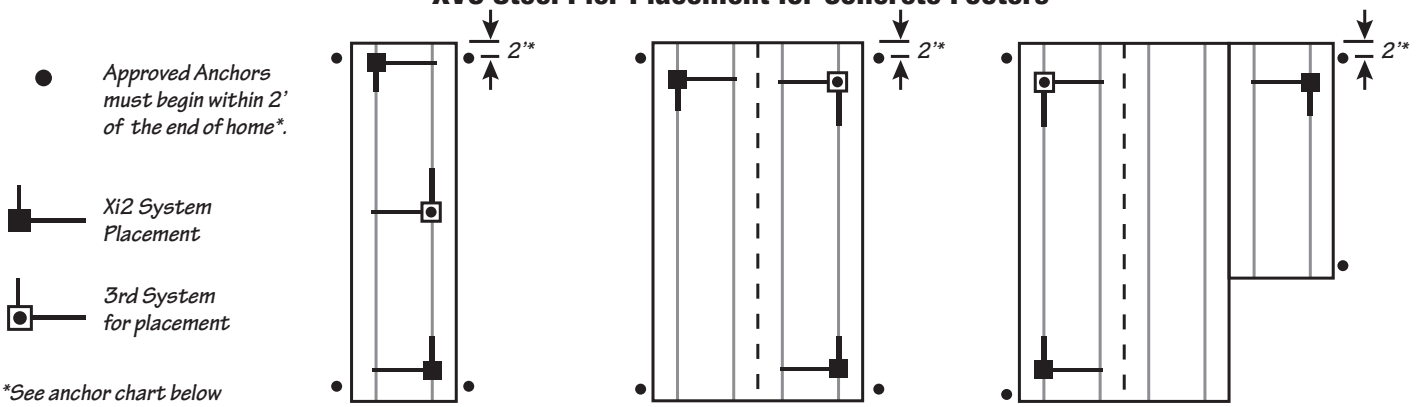
XVC Steel Pier Placement for Concrete Footers



	Single Section Home	Double Section Home	Triple Section Home
Wind Zones I & II	0 - 76' Box 2 Xi2 Systems Over 76' Box 3 Xi2 Systems	0 - 76' Box 2 Xi2 Systems Over 76' Box 3 Xi2 Systems	0 - 76' Box 2 Xi2 Systems Over 76' Box 3 Xi2 Systems
Wind Zones III	0 - 64' Box 2 Xi2 Systems Over 64' Box 3 Xi2 Systems	0 - 64' Box 2 Xi2 Systems Over 64' Box 3 Xi2 Systems	0 - 64' Box 2 Xi2 Systems Over 64' Box 3 Xi2 Systems

Wind Zone I Uplift Anchors Chart

Home Section	Home Width	4:12 Home Length	4:12 Anchors Per Side	5:12 Home Length	5:12 Anchors Per Side	6:12-7:12 Home Length	6:12-7:12 Anchors Per Side
Single	12 ft. up to 140 in.	up to 63 ft.	3	up to 55 ft.	4	up to 45 ft.	4
		64 ft. to 90 ft.	4	56 ft. to 74 ft.	5	46 ft. to 62 ft.	5
				75 ft. to 90 ft.	6	63 ft. to 78 ft.	6
						79 ft. to 90 ft.	7
	14 ft.-18 ft. 156 in. to 210 in.	up to 73 ft.	3	up to 58 ft.	4	up to 47 ft.	4
		74 ft. to 90 ft.	4	59 ft. to 78 ft.	5	48 ft. to 64 ft.	5
				79 ft. to 90 ft.	6	65 ft. to 81 ft.	6
						82 ft. to 90'	7
Double	20 ft. to 32 ft. 2 x 118 in. to 2 x 186 in.	up to 90 ft.	2				
		up to 90 ft.	2				
	20' (2 x 118 in.)			up to 90 ft.	3	up to 90 ft.	4
	24 ft. to 32 ft. 2 x 140 in. to 2 x 186 in			up to 90 ft.	2	up to 90 ft.	3
Triple	36 ft. to 48 ft. 3 x 140 in. to 3 x 186 in.	up to 90 ft.	2	up to 90 ft.	2	up to 90 ft.	2

IMPORTANT: System Uplift Anchors are to be installed to the bottom of the rim joist with 3150lb. bracket and lag bolts, not I-beam. The corner anchors should be installed within 2' of the end of the home and any additional anchors installed as evenly as possible per side.

Note: In the event that the home has a solid foundation wall at the sidewall, instead of a bracket at the sidewall as described previously, the bracket can be relocated to a floor joist a maximum of 10" from the sidewall and connected with a vertical strap to a ground anchor, as long as the following limitations to the regular anchor spacings are observed.

Single Sections: 5/12 Max roof slope -add one bracket and anchor, evenly spaced per side.
7/12 Max roof slope -add two brackets/anchors evenly spaced per side.

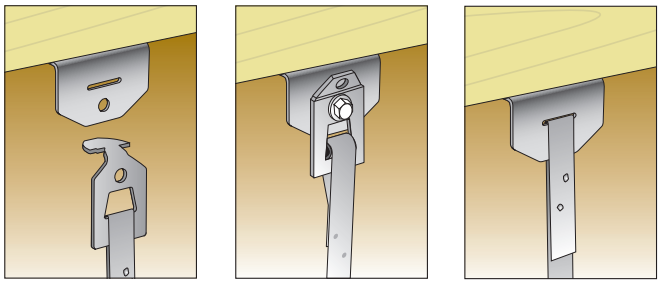
Doubles and Triple sections – no additional anchors required.

Alternative Concrete Footing Anchor method:
Anchors can be installed in the poured footings a minimum of 18"x18"x48" or 24"x24"x36" deep. Required uplift anchors would be installed in the footings with straps installed vertically to the I beam.

Uplift Rim Joist Bracket

Bracket attaches to the bottom of rim joist with (2) 1/2"-3.25" lag bolts with minimum 3" threads. Bracket can face inward or outward. **Install lag bolts into 2 pre drilled 5/16" holes.**

Strap can either be bolted with swivel to end of bracket, slid through swivel connector or through the slot in the bracket and crimped to fit. Strap angle must be 75 deg. to 90 deg.



Xi2-24 System Requirements for Roof Pitches Higher than 20 degrees

Additional Systems:
On a single section home, the 3rd system is placed in the middle of the home. When using 3 or 4 systems (double and triple sections), install on opposite corners. If needed, a 5th system would be in the center of the unit on either side.

Xi2 Longitudinal Stabilization for Wind Zones II & III

When using longitudinal stabilization only, in higher wind zones, Systems must be spaced as evenly as possible, no more than 10' from the end of the home. Longitudinal Struts DO NOT replace anchors on single section homes.

NOTE: On triple section homes in Wind Zones II & III an additional longitudinal system is required. It should be installed on the center section.

Length (Feet)	Wind Zone I				Wind Zone II				Wind Zone III			
	5:12	6:12	7:12	9:12	5:12	6:12	7:12	9:12	5:12	6:12	7:12	9:12
34	2	2	2	2	2	2	2	2	2	2	3	3
36	2	2	2	2	2	2	2	3	2	2	3	3
38	2	2	2	3	2	2	2	3	2	3	3	3
40	2	2	2	3	2	2	2	3	3	3	3	3
42	2	2	3	3	2	2	3	3	3	3	3	3
44	2	2	3	3	2	2	3	3	3	3	3	3
46	2	3	3	3	2	3	3	3	3	3	3	4
48	2	3	3	3	3	3	3	3	3	3	3	4
50	3	3	3	3	3	3	3	3	3	3	3	4
52	3	3	3	3	3	3	3	3	3	3	4	4
54	3	3	3	3	3	3	3	3	3	3	4	4
56	3	3	3	3	3	3	3	3	3	3	4	4
58	3	3	3	3	3	3	3	3	3	3	4	4
60	3	3	3	3	3	3	3	3	3	3	4	5
62	3	3	3	3	3	3	3	3	4	4	4	5
64	3	3	4	4	3	3	4	4	4	4	4	5
66	3	3	4	4	3	3	4	4	4	4	4	5
68	3	4	4	4	3	4	4	4	4	4	5	5
70	3	4	4	4	3	4	4	4	4	4	5	5
72	3	4	4	4	4	4	4	5	4	4	5	5
74	4	4	4	5	4	4	4	5	4	5	5	5
76	4	4	4	5	4	4	4	5	4	5	5	6
78	4	4	4	5	4	4	4	5	4	5	5	6
80	4	4	4	5	4	4	4	5	4	5	5	6

Fig. 3-1

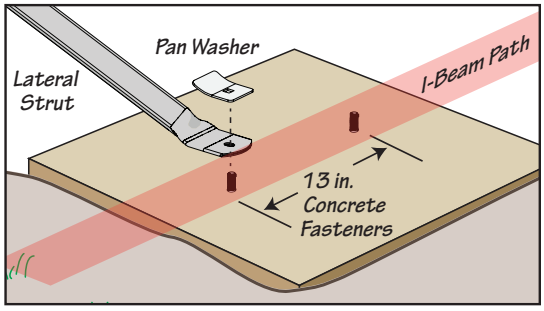


Fig. 3-2

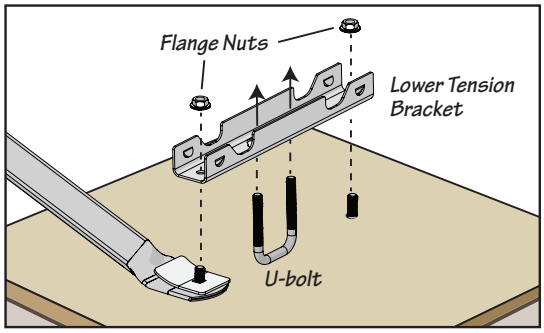


Fig. 3-3

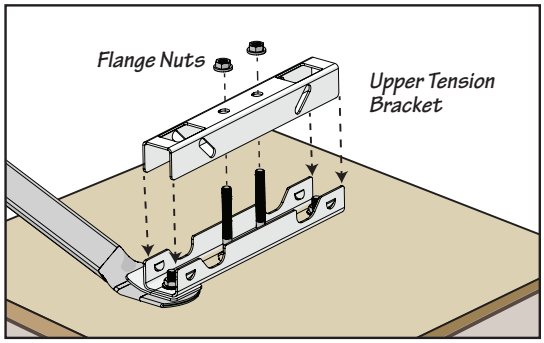


Fig. 3-4

Step 1
- Build footer according to State, Local, or Home Manufacturers guidelines.
- For Dry Set: drill two 1/2"x 3" deep holes in the concrete using holes in the lower tension bracket as a guide (13" apart) . Place nut & washer on anchor, leave enough room for 1 to 2 threads showing on top of bolt. Using a hammer, tap the wedge bolts into hole through bracket, leaving nut & washer flush with bracket. Using a 9/16" socket wrench, tighten wedge/anchor bolt, securing bracket to the concrete.

Step 2
- Slide the end of the lateral strut over the outer most concrete anchor.
- Slide the pan washer over the concrete anchor and on top of the lateral strut as shown in Fig. 3-2.

Step 3
- Insert a u-bolt though the lower tension bracket.
- Slide both tension bracket/u-bolt over the two concrete anchors.
- Attach two flange nuts over the lower tension bracket and onto the two concrete anchors as shown right in Fig. 3-2

Step 4
- Position the upper tension bracket just over the u-bolt aligning with the two hole in the center of the bracket.
- Slide the upper bracket over the u-bolt and in between the lower bracket as shown right in Fig. 3-4.
- Lightly attach two flange nuts over the u-bolt, do not tighten flange nuts.

Step 5 - Longitudinal Struts
- Insert the black end caps into the bottom end of two longitudinal struts.

Step 6

- Insert longitudinal struts into the ends of the assembled tension bracket as shown in Fig. 4-1. The struts will hang loose.
- Insert a carriage bolt through one side of the tension bracket,passing the longitudinal strut out the opposite side of the tension bracket.
- Secure the carriage bolt in place with a flange nut. Firmly tighten the flange nut, do not over tighten.
- Repeat for opposite side longitudinal strut as shown in Fig. 4-1.

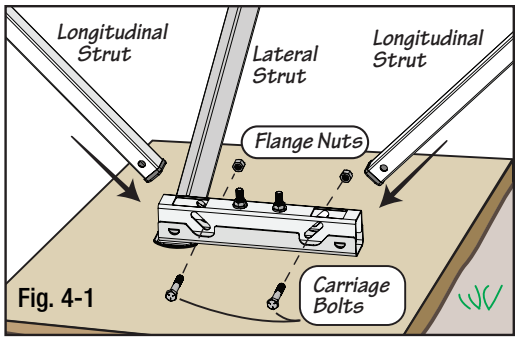


Fig. 4-1

Step 7 - Longitudinal Beam Clamp

- Position two longitudinal beam clamps on both sides of the I-beam. The I-beam frame will slide into the slots on the clamps.
- Raise the longitudinal strut upward and position it between the two beam brackets as shown right in Fig. 4-2.
- Insert a 4" carriage bolt through the clamp, strut, and opposite clamp as shown right.
- Attach a flange nut to the carriage bolt.

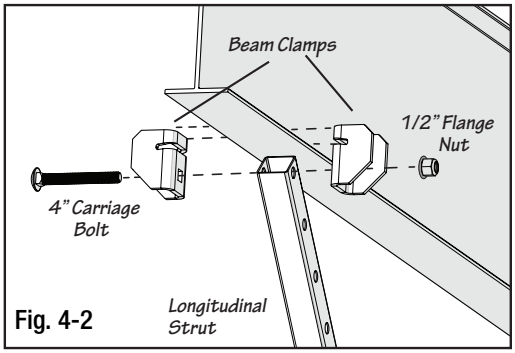


Fig. 4-2

Step 8 - Longitudinal Strut

- Pull the beam bracket assembly outward removing any loose slack between the beam clamp and base.
- Using a 3/4" deep socket/impact driver, tighten the flange nut on the beam clamp assembly. Note: As the bolt/nut tighten, the two beam clamps will begin to crimp the I-beam frame.

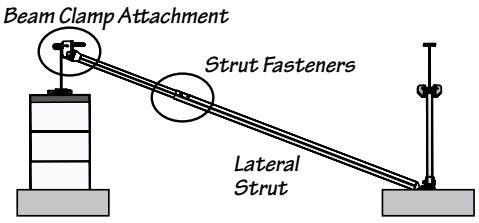


Fig. 4-3

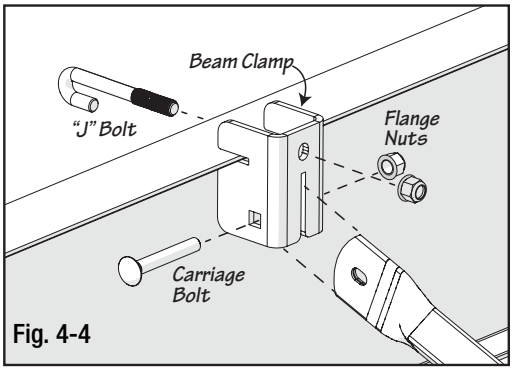


Fig. 4-4

Step 9 - Beam Clamp

- Extend the lateral strut outward to the opposite side I-beam as shown above. **NOTE: The fully extended strut must maintain a minimum 6" to 8" overlap between inner and outer tubes.**
- Slide the "J" bolt over the I-beam and between the home frame.
- Slide the beam clamp over the "J" bolt end passing through the top of the beam clamp and slide the clamp over the I-beam frame as shown in Fig. 4-4. Attach flange nut over the "J" bolt and loosely tighten nut.
- Align/insert the lateral strut end in the mounting slot on the bottom of the beam clamp. As shown right in Fig. 4-4.
- Pass a carriage bolt through the beam clamp and lateral strut coming out the opposite side beam clamp. Loosely tighten flange nut. Do not fully tighten nut.
- Slide the assembled beam clamp with the mounted lateral strut left or right aligning the strut perpendicular to the XV pan/hardware.
- Once the beam clamp/strut attachment is in its final location, tighten the two flange nuts.

Step 10 - XV Base Final Tensioning

- Using a 3/4" deep socket/ impact driver, tighten the two flange nuts on top of the tension bracket, alternating between the two legs.
- As the flange nuts tighten, the upper tension bracket will compress downward into the lower tension bracket as shown in Fig 4-5 "A".
- Continue tightening while alternating the flange nuts until the upper bracket fully compresses into the lower tension bracket as shown in Fig. 4-5 "B"

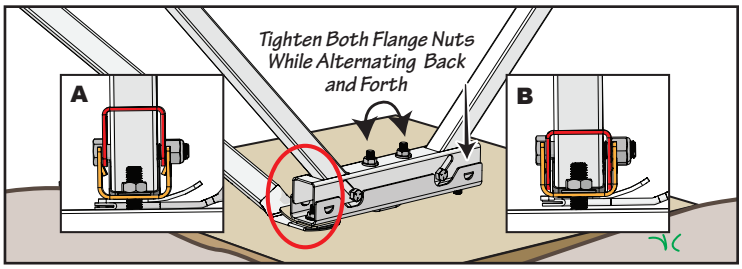


Fig. 4-5

Step 11 - Strut Fasteners

- Secure the extended lateral strut by mounting 4 self tapping screws in the 4 holes in the outer lateral tube as shown in Fig. 4-3. Attach two screws per side.

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Instruction #08461 (D2041 Rev. 9/23/25)