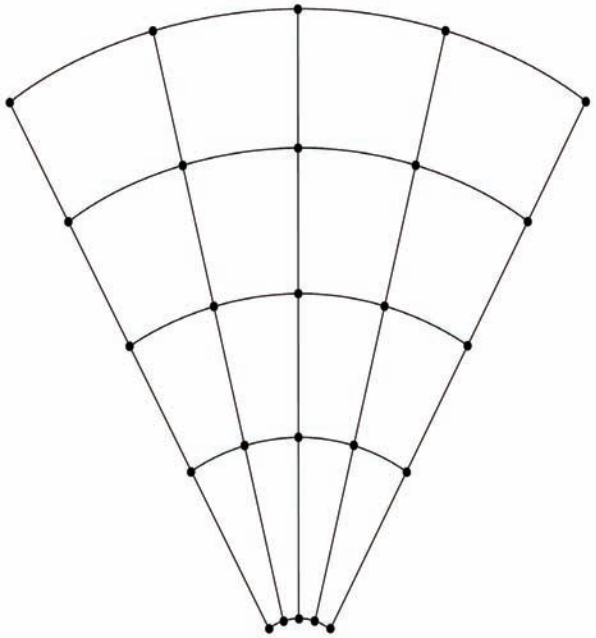
Installation Instructions for Fan Design

Materials:
9 qty 48" rods
2 qty 48" rods cut to make 6 pieces @ 12" and 1 piece @ 14"
5 qty Rod Connector Tubes
12 qty Stand-Off Fittings with Hanger Bolts, nuts, and setscrews
13 qty Cross-Clamp Fittings with setscrews
12 qty plastic anchor inserts (if attaching to concrete/masonry)



Tools:
safety glasses
step ladder
chalk, chalk-line, or other washable marker
plumb bob
measuring tape
level
masking tape or similar
paper layout template (included in kit)
pencil, awl, or nail (to mark drill hole locations)
½"electric drill
drill bits (3/16" for wood or 3/8" masonry bit for concrete/masonry)
hammer (for tapping-in plastic anchors)
hanger bolt installation tool (included in kit)
3/8" socket wrench
7/16" open-end or Crescent wrench
exterior grade sealant & caulking gun
Sharpie felt pen (to mark rods for cutting or positioning)
1/8" hex key (included in kit)
electric grinder or Dremel tool with cutting disk
metal file or electric grinder/Dremel tool with grinding disk
5-gallon bucket or other approximate 10" diameter object
electric extension cord

Please refer to the *Measurement Diagram* and *Installation Diagram* during installation.

****Important: Never attach trellises to vinyl siding, stucco, Dryvit® or other synthetic or natural construction material walls where the structural integrity is uncertain or where possible penetration of a moisture barrier membrane may create a potential for water leakage or damage or may violate and void any product warranties. Be sure to carefully seal any wall penetrations with the proper sealant materials. Consult a construction expert for advice on your specific conditions.**

Gathering Tools and Materials (refer to the *Tools* and *Materials* lists above):

1. Gather all of the necessary items, and cut the rods to the lengths indicated on the materials list; be sure to file off any sharp edges on the rod ends after they're cut. Also, loosely attach the setscrews to all of the Cross-Clamp and Stand-Off Fittings *(setscrews should spin-on easily—do not force them otherwise you may damage the threads).*

Preparing The Layout (refer to paper Layout Template included in the kit as well as the *Fan Design Measurement Diagram*):

2. Using chalk or a chalk-line, draw or snap a vertical center line {Line V} on your wall. This line will be the center of your trellis. Be sure that the line is plumb and at least 6 feet in height. Make a mark on the vertical center line {Line V} where you want to position the bottom of the trellis; this will be referred to as {Line H}. If you are using the paper Layout Template (included in the kit), follow the instructions located on the template, and then proceed to Step 3. If you are not using the Layout Template, then continue by using a level to extend the horizontal line {Line H} at least 2-1/2 feet on both sides of the vertical center line {Line V}. With the vertical and horizontal lines {Line V and Line H} as reference, use the coordinates on the *Fan Design Measurement Diagram* to locate and mark the positions of all the Stand-Off Fittings (A through E, U through Y, and F & P).

Attaching the Stand-Off Fittings:

3. Carefully drill holes for all Stand-Off Fitting Hanger Bolts. Be sure that the holes are drilled perpendicular to the wall face so that the installed Stand-Off Fittings will stand straight. For wood walls, drill 3/16" diameter pilot holes to depth of 1". For concrete/masonry walls, drill 3/8" diameter holes to a depth of 2" and insert plastic anchors, tapping them gently with a hammer until they are flush with the wall face.

4. Lock the Hanger Bolt Installation Tool (included in kit) into the chuck of a ½" electric drill (or use 3/8" socket wrench). Spin the machine thread end of a Hanger Bolt all the way into the Hanger Bolt Installation Tool.

5. Using a low speed, drive the Hanger Bolt straight into the pilot holes (or plastic anchors) until the end of the machine threads are approximately 1/16" below the wall face *(We recommend sealing all penetrations in the wall with exterior grade sealant; check with your local hardware/paint store for the proper material to use)*. Reverse the spin direction of the electric drill to free the Hanger Bolt from the Installation Tool. Install all of the Hanger Bolts in the same manner.

6. After securely attaching all Hanger Bolts, spin one hex nut onto each exposed Hanger Bolt until the nut rests against the wall face, and loosely tighten by hand. Spin the Stand-Off Fittings onto each Hanger Bolt until they gently rest against the hex nut *(the Stand-Off Fittings should spin-on freely—do not force them otherwise you may damage threads)*.

Installing the Rods (Refer to the *Fan Design Installation Diagram*):

7. Lace both of the outside vertical rods [1 & 2] through the Low-Position holes in the Stand-Off Fittings (A through E and U through Y). Back-spin the Stand-Off Fittings just enough to properly align the holes for easy lacing. Each rod will consist of a 48" piece and 12" piece spliced together with a Connector Tube *(Connector Tubes do not require any glue or crimping, simply insert the rods all the way into the tube and the final tightened grid will hold the rods in place. Small pieces of tape can be used to temporarily hold the tube during installation)*. Align the top end of the rods flush with the top edge of the top Stand-Off Fittings (A & U), and use the hex key to lightly tighten one of the Stand-Off set screws and temporarily hold the rods in position *(any excess protruding rod on the bottom Stand-Off Fittings (E & Y) will be trimmed at the end of the installation)*. Lock all ten of the Stand-Off Fittings (A through E and U through Y) into position by tightening the hex nut against the bottom of the Stand-Off Fitting.

8. Lace the horizontal rod [3] through the High-Position holes in the Stand-Off Fittings (A, F, P, U). Remember to slide on one Cross-Clamp Fitting <K> in the middle of the rod between Stand-Off Fittings (F & P); use the High-Position hole on the Cross-Clamps. The rod will consist of a 48" piece and 12" piece spliced together with a Connector Tube *(any excess rod will be trimmed at the end of the installation)*.

9. Align the left end of rod [3] so that it's flush with the outside face of the left Stand-Off Fitting (A), and tighten the setscrews on both the left and right side Stand-Off Fittings (A & U) to lock the rod in position. Lock the intermediate Stand-Off Fittings (F & P) into position by tightening the hex nut against the bottom of the Stand-Off Fitting.

10. Slide three Cross-Clamp Fittings onto horizontal rod [4] using the High-Position holes on the Cross-Clamps, and then lace the rod through the High-Position holes in the Stand-Off Fittings (B & V). Align the left end of rod [4] so that it's flush with the outside face of the left Stand-Off Fitting (B), and tighten the setscrew on (B). Lift the middle of the rod [4] to create a curve that's parallel with the rod [3] above it *(the two rods should be 13-1/2 inches apart)*. Tighten the setscrew on the right Stand-Off Fitting (V) to lock the rod in place.

11. Attach horizontal rods [5 & 6] in the same manner as rod [4] using their corresponding Stand-Off Fittings (C & W and D & X). Each rod should finish with a curve that's parallel to rod above it.

12. Prepare the 14-inch bottom rod [7] by carefully bending it, so as not to kink it, around a 5 gallon bucket or other round object having approximately a 10" diameter. Slide three Cross-Clamp Fittings onto the curved rod [7] using the High-Position holes on the Cross-Clamps, and then lace the rod through the High-Position holes in the Stand-Off Fittings (E & Y). Align the left end of rod [7] so that it's flush with the outside face of the left Stand-Off Fitting (E), and then tighten the setscrew (E). Check to see that rods [7 & 6] are 17-3/4 inched apart, adjust the curve of the rod if necessary, and then tighten the setscrew on Stand-Off Fitting (Y) to lock the rod in position.

13. Lace the middle vertical rod [8] through the Low-Position holes in the Cross-Clamp Fittings <K, L, M, N, O> and position it vertically directly over the center line {Line V}. The rod will consist of a 48" piece and 12" piece spliced together with a Connector Tube. Align the top of the rod [8] flush with the top edge of the Cross-Clamp Fitting <K> and tighten the setscrews on all of the Cross-Clamp Fittings <K, L, M, N, O> to lock the rod in position.

14. Lace the vertical rod [9] through the Low-Position holes in the Stand-Off Fitting (F) and the Cross-Clamp Fittings <G, H, I, J>, and align it so that it's straight and centered between rods [1 & 8]. The rod will consist of a 48" rod piece and 12" piece spliced together with a Connector Tube. Align the top of the rod [9] flush with the top edge of the Stand-Off Fitting (F) and tighten the setscrews on the Stand-Off Fitting (F) and all of the Cross-Clamp Fittings <G, H, I, J> to lock the rod in position.

15. Attach vertical rod [10] in the same manner as rod [9] using its corresponding Stand-Off Fitting (P) and Cross-Clamp Fittings <Q, R, S, T>.

Final Adjusting and Trimming:

16. If necessary, make any final fine-tune position adjustments to the Cross-Clamp Fittings, and then check and securely tighten the setscrews in all the fittings.

17. Trim any excess protruding rods with a grinder or Dremel tool with a cut-off disk and file or grind smooth any sharp edges. Your Fan Design DIY Trellis is now ready to go.

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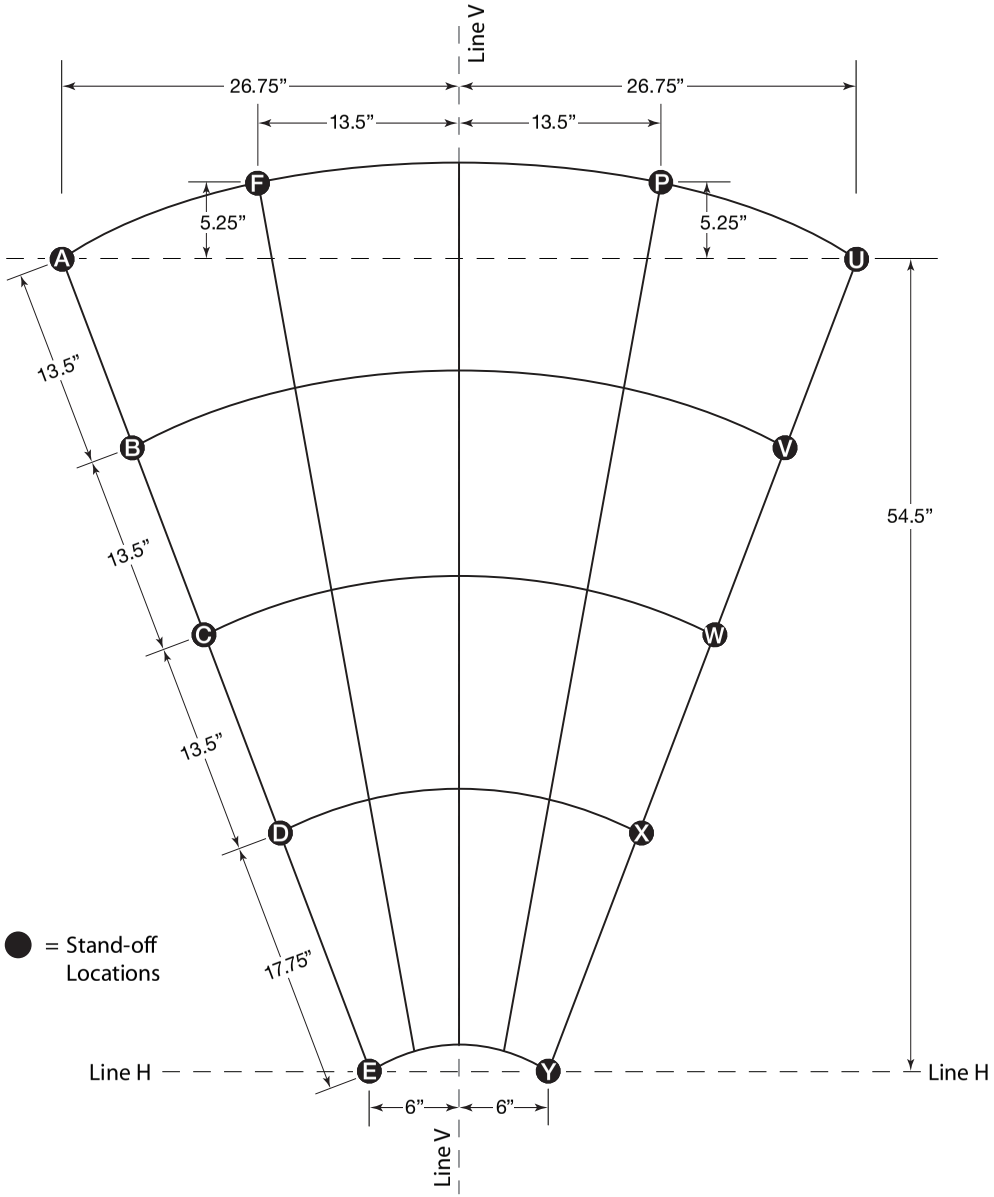
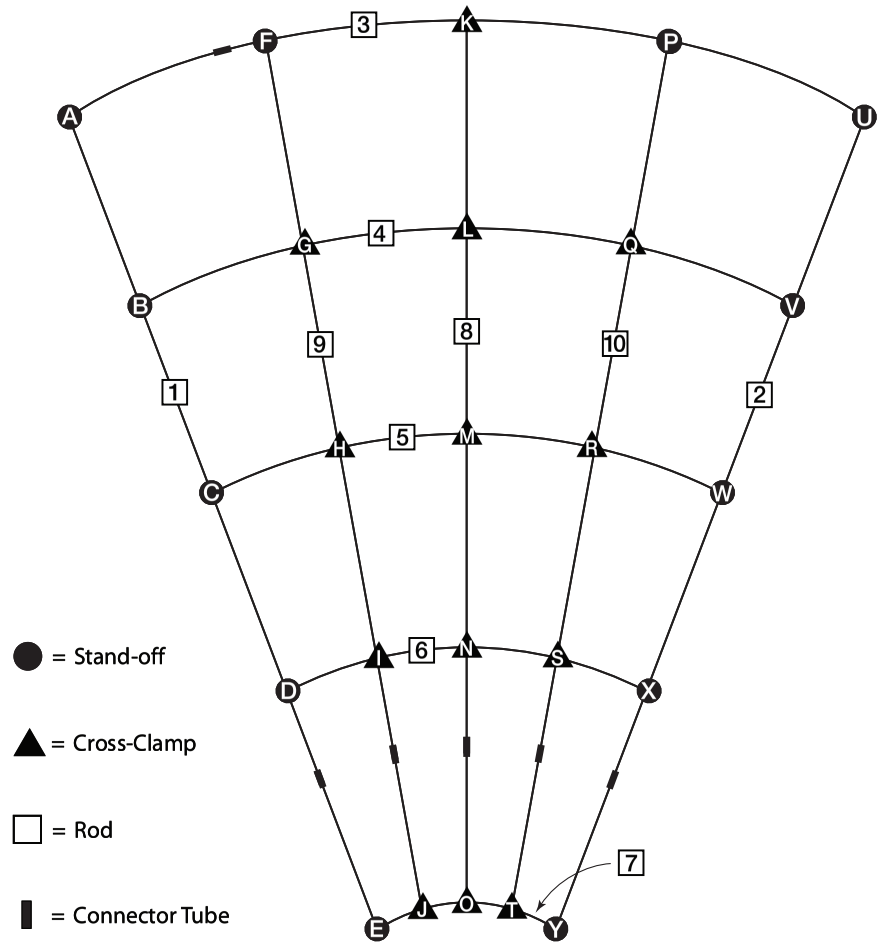
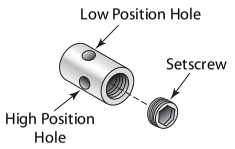
Fan Design Measurements Diagram



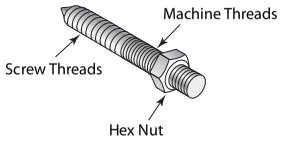
Fan Design Installation Diagram



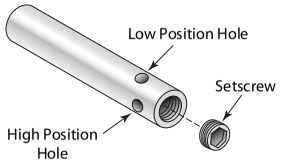
Cross-Clamp Fitting



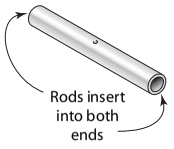
Hanger Bolt



Stand-Off Fitting

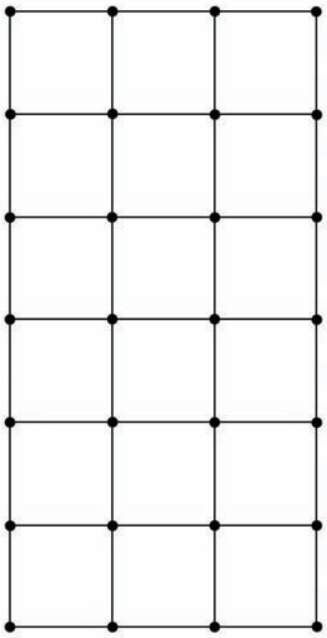


Connector Tube



Installation Instructions for Grid Design

Materials:
11 qty 48" rods
2 qty 48" rods cut to make 4 pieces @ 24"
4 qty Rod Connector Tubes
12 qty Stand-Off Fittings with Hanger Bolts, nuts, and setscrews
16 qty Cross-Clamp Fittings with setscrews
12 qty plastic anchor inserts (if attaching to concrete/masonry)



Tools:
safety glasses
step ladder
chalk, chalk-line, or other washable marker
plumb bob
measuring tape
level
masking tape or similar
paper layout template (included in kit)
pencil, awl, or nail (to mark drill hole locations)
½"electric drill
drill bits (3/16" for wood or 3/8" masonry bit for concrete/masonry)
hammer (for tapping-in plastic anchors)
hanger bolt installation tool (included in kit)
3/8" socket wrench
7/16" open-end or Crescent wrench
exterior grade sealant & caulking gun
Sharpie felt pen (to mark rods for cutting or positioning)
1/8" hex key (included in kit)
electric grinder or Dremel tool with cutting disk
metal file or electric grinder/Dremel tool with grinding disk
electric extension cord

Please refer to the *Measurement Diagram* and *Installation Diagram* during installation.

****Important: Never attach trellises to vinyl siding, stucco, Dryvit® or other synthetic or natural construction material walls where the structural integrity is uncertain or where possible penetration of a moisture barrier membrane may create a potential for water leakage or damage or may violate and void any product warranties. Be sure to carefully seal any wall penetrations with the proper sealant materials. Consult a construction expert for advice on your specific conditions.**

Gathering Tools and Materials (refer to the *Tools* and *Materials* lists above):

1. Gather all of the necessary items, and be sure to cut the rods to the lengths indicated on the materials list; be sure to file off any sharp edges on the rod ends after they're cut. Also loosely attach the setscrews to all of the Cross-Clamp and Stand-Off Fittings *(setscrews should spin-on easily—do not force them otherwise you may damage the threads).*

Preparing The Layout (refer to paper Layout Template included in the kit as well as the *Grid Design Measurement Diagram*):

2. Using chalk or a chalk-line, draw or snap a vertical center line {Line V} on your wall. This line will be the center of your trellis. Be sure that the line is plumb and at least 7 feet in height. Make a mark on the vertical center line {Line V} where you want to position the bottom of the trellis; this will be referred to as {Line H}. If you are using the paper Layout Template (included in the kit), follow the instructions located on the template, and then proceed to Step 3. If you are not using the Layout Template, then continue by using a level to extend the horizontal line {Line H} at least 2 feet on both sides of the vertical center line {Line V}. With the vertical and horizontal lines {Line V and Line H} as reference, use the coordinates on the *Grid Design Measurement Diagram* to locate and mark the positions of all the Stand-Off Fittings (A through L).

Attaching the Stand-Off Fittings:

3. Carefully drill holes for all Stand-Off Fitting Hanger Bolts. Be sure that the holes are drilled perpendicular to the wall face so that the installed Stand-Off Fittings will stand straight. For wood walls, drill 3/16" diameter pilot holes to depth of 1". For concrete/masonry walls, drill 3/8" diameter holes to a depth of 2" and insert plastic anchors, tapping them gently with a hammer until they are flush with the wall face.

4. Lock the Hanger Bolt Installation Tool (included in kit) into the chuck of a ½" electric drill (or use 3/8" socket wrench). Spin the machine thread end of a Hanger Bolt all the way into the Hanger Bolt Installation Tool.

5. Using a low speed, drive the Hanger Bolt straight into the pilot holes (or plastic anchors) until the end of the machine threads are approximately 1/16" below the wall face *(We recommend sealing all penetrations in the wall with exterior grade sealant; check with your local hardware/paint store for the proper material to use)*. Reverse the spin direction of the electric drill to free the Hanger Bolt from the Installation Tool. Install all of the Hanger Bolts in the same manner.

6. After securely attaching all Hanger Bolts, spin one hex nut onto each exposed Hanger Bolt until the nut rests against the wall face, and loosely tighten by hand. Spin the Stand-Off Fittings onto each Hanger Bolt until they gently rest against the hex nut *(the Stand-Off Fittings should spin-on freely—do not force them otherwise you may damage threads)*.

Installing the Rods (Refer to the *Grid Design Installation Diagram*):

7. Lace horizontal rod [1] through the High-Position holes on the Stand-Off Fittings (C-F-I-L); back-spin the Stand-Off Fittings just enough to properly align the holes for easy lacing. Align the left end of the rod so that it's flush with the outside face of the left Stand-Off Fitting (C) (*any excess rod protruding beyond any of the Stand-Off or Cross-Clamp Fittings will be trimmed at the end of the installation)*.

8. Attach horizontal rods [2 & 3] in the same manner as rod [1] using their corresponding Stand-Off Fittings (B-E-H-K and A-D-G-J).

9. Lace the four vertical rods [4, 5, 6, 7] through the Low-Position holes in their corresponding Stand-Off Fittings (A-B-C/D-E-F /G-H-I/ J-K-L). Remember to slide four Cross-Clamp Fittings onto each rod and position them as shown in the diagram; use the Low-Position holes on the Cross-Clamp Fittings. Each rod will consist of a 48" rod piece and 24" piece spliced together with a Connector Tube *(Connector Tubes do not require any glue or crimping, simply insert the rods all the way into the tube and the final tightened grid will hold the rods in place. Small pieces of tape can be used to temporarily hold the tube during installation)*. Align the bottom of each rod flush with the bottom edge of the Stand-Off Fittings (C, F, I, L) and use the hex key to securely tighten the setscrews on all twelve of the Stand-Off Fittings (A through L) to lock the rods into position.

10. On each vertical rod, measure down 11-1/2" from horizontal rod [3], and use a felt pen to mark the mounting positions for horizontal rod [8]. Lace horizontal rod [8] though the High-Position holes on its four supporting Cross-Clamp Fittings, and then lift the entire rod into position with the Cross-Clamp Fittings centered over each of the felt pen marks. Align the left end of the rod so that it's flush with the outside face of the left Cross-Clamp Fitting and tighten the setscrews on all four of the Cross-Clamp Fittings to lock the rod in position.

11. Measure, mark, and attach the remaining horizontal rods [9, 10, 11] in the same manner as rod [8] using their corresponding Cross-Clamp Fittings. All of the rods should be evenly positioned 11-1/2" apart both vertically and horizontally.

Final Adjusting and Trimming:

12. Lock all twelve of the rod Stand-Off fittings (A through L) into position by tightening the hex nut against the bottom of the Stand-Off Fitting.

13. If necessary, make any final fine-tune position adjustments to the Cross-Clamp Fittings, and then check and securely tighten the setscrews in all the fittings.

14. Trim any excess protruding rods with a grinder or Dremel tool cut-off disk and file or grind smooth any sharp edges. Your Grid Design DIY Trellis is now ready to go.

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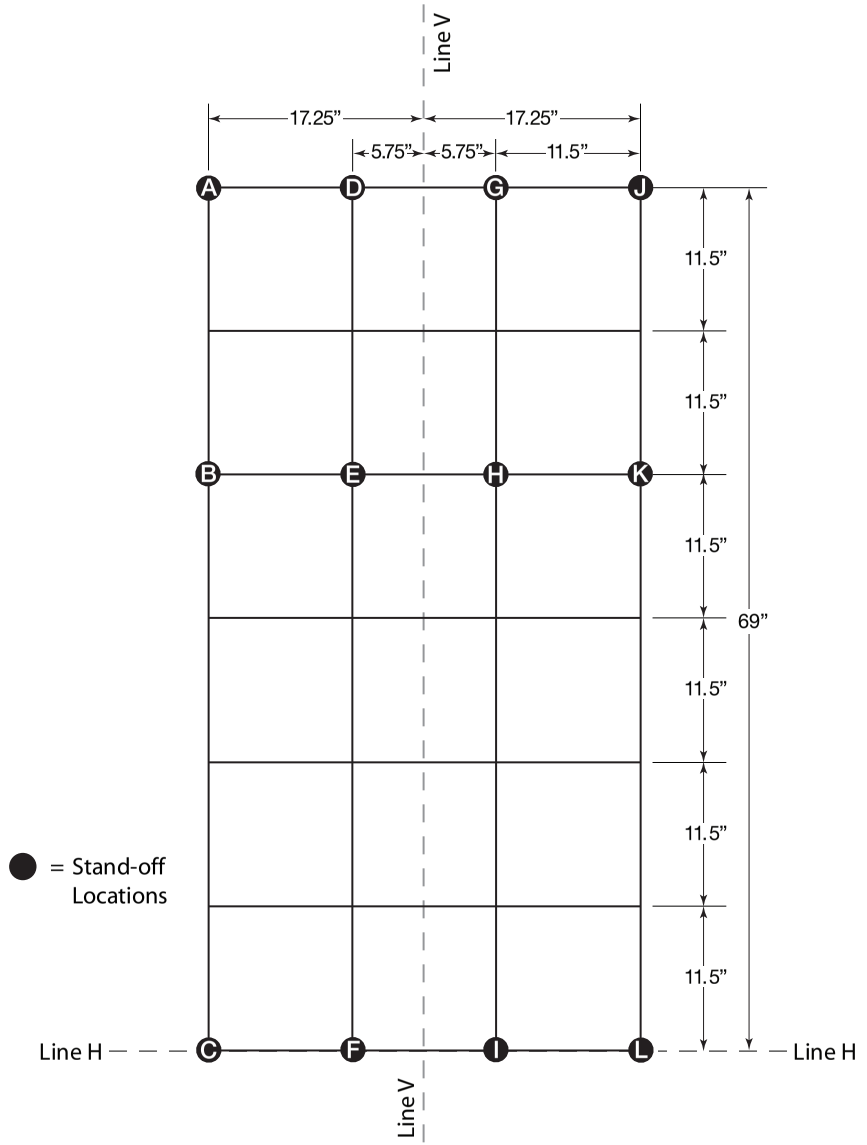
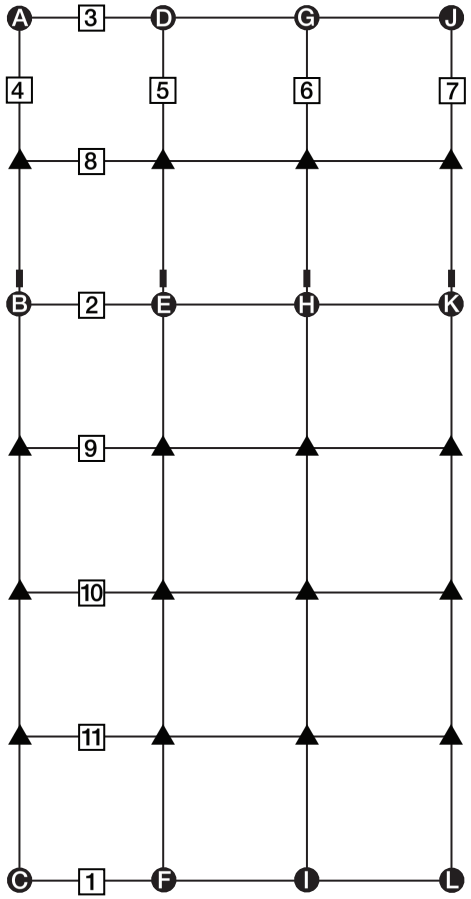
Grid Design Measurement Diagram



Grid Design Installation Diagram



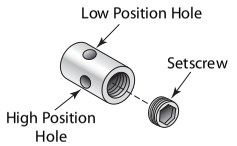
= Stand-off

= Cross-Clamp

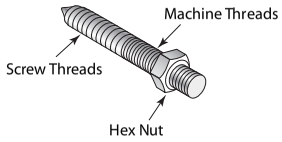
= Rod

= Connector Tube

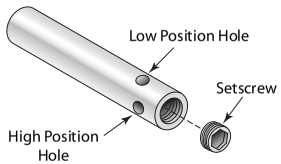
Cross-Clamp Fitting



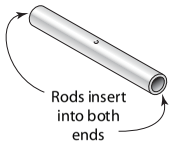
Hanger Bolt



Stand-Off Fitting

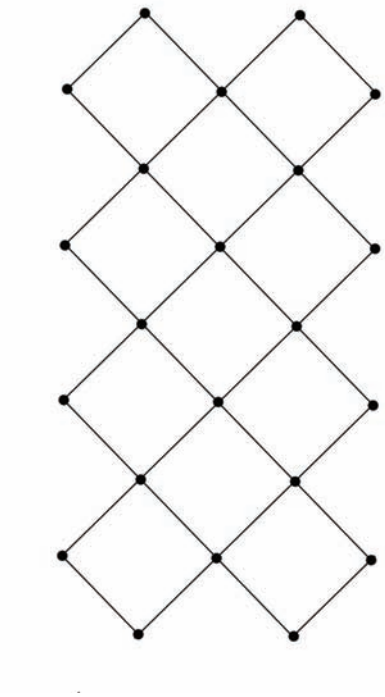


Connector Tube



Installation Instructions for Diamond Design

Materials:
4 qty 48" rods
4 qty 48" rods cut to make 4 pieces @ 36" and 4 pieces @ 12"
12 qty Stand-Off Fittings with Hanger Bolts, nuts, and setscrews
10 qty Cross-Clamp Fittings with setscrews
12 qty plastic anchor inserts (if attaching to concrete/masonry)



Tools:
safety glasses
step ladder
chalk, chalk-line, or other washable marker
plumb bob
measuring tape
level
masking tape or similar
paper layout template (included in kit)
pencil, awl, or nail (to mark drill hole locations)
½"electric drill
drill bits (3/16" for wood or 3/8" masonry bit for concrete/masonry)
hammer (for tapping-in plastic anchors)
hanger bolt installation tool (included in kit)
3/8" socket wrench
7/16" open-end or Crescent wrench
exterior grade sealant & caulking gun
Sharpie felt pen (to mark rods for cutting or positioning)
1/8" hex key (included in kit)
electric grinder or Dremel tool with cutting disk
metal file or electric grinder/Dremel tool with grinding disk
electric extension cord

Please refer to the *Measurement Diagram* and *Installation Diagram* during installation.

****Important: Never attach trellises to vinyl siding, stucco, Dryvit® or other synthetic or natural construction material walls where the structural integrity is uncertain or where possible penetration of a moisture barrier membrane may create a potential for water leakage or damage or may violate and void any product warranties. Be sure to carefully seal any wall penetrations with the proper sealant materials. Consult a construction expert for advice on your specific conditions.**

Gathering Tools and Materials (refer to the *Tools* and *Materials* lists above):

1. Gather all of the necessary items, and be sure to cut the rods to the lengths indicated on the materials list; be sure to file off any sharp edges on the rod ends after they're cut. Also loosely attach the setscrews to all of the Cross-Clamp and Stand-Off fittings *(setscrews should spin-on easily—do not force them otherwise you may damage the threads).*

Preparing The Layout (refer to paper Layout Template included in the kit as well as the *Diamond Design Measurement Diagram*):

2. Using chalk or a chalk-line, draw or snap a vertical center line {Line V} on your wall. This line will be the center of your trellis. Be sure that the line is plumb and at least 7 feet in height. Make a mark on the vertical center line {Line V} where you want to position the bottom of the trellis; this will be referred to as {Line H}. If you are using the paper Layout Template (included in the kit), follow the instructions located on the template, and then proceed to Step 3. If you are not using the Layout Template, then continue by using a level to extend the horizontal line {Line H} at least 2 feet on both sides of the vertical center line {Line V}. With the vertical and horizontal lines {Line V and Line H} as reference, use the coordinates on the *Diamond Design Measurement Diagram* to locate and mark the positions of all the Stand-Off Fittings (A through L).

Attaching the Stand-Off Fittings:

3. Carefully drill holes for all Stand-Off Fitting Hanger Bolts. Be sure that the holes are drilled perpendicular to the wall face so that the installed Stand-Off Fittings will stand straight. For wood walls, drill 3/16" diameter pilot holes to depth of 1". For concrete/masonry walls, drill 3/8" diameter holes to a depth of 2" and insert plastic anchors, tapping them gently with a hammer until they are flush with the wall face.

4. Lock the Hanger Bolt Installation Tool (included in kit) into the chuck of a ½" electric drill (or use 3/8" socket wrench). Spin the machine thread end of a Hanger Bolt all the way into the Hanger Bolt Installation Tool.

5. Using a low speed, drive the Hanger Bolt straight into the pilot holes (or plastic anchors) until the end of the machine threads are approximately 1/16" below the wall face *(We recommend sealing all penetrations in the wall with exterior grade sealant; check with your local hardware/paint store for the proper material to use)*. Reverse the spin direction of the electric drill to free the Hanger Bolt from the Installation Tool. Install all of the Hanger Bolts in the same manner.

6. After securely attaching all Hanger Bolts, spin one hex nut onto each exposed Hanger Bolt until the nut rests against the wall face, and loosely tighten by hand. Spin the Stand-Off Fittings onto each Hanger Bolt until they gently rest against the hex nut *(the Stand-Off Fittings should spin-on freely—do not force them otherwise you may damage threads)*.

Installing the Rods (Refer to the *Diamond Design Installation Diagram*):

7. Lace 12-inch rod [1] through the Low-Position holes in the Stand-Off Fittings (E & F). Back-spin the Stand-Off Fittings just enough to properly align the holes for easy lacing. Align the bottom end of the rod flush with the bottom edge of the Stand-Off Fitting (F) and use the hex key to lightly tighten the setscrews and temporarily hold the rod in position *(any excess protruding rod will be trimmed at the end of the installation)*.

8. Attach 12-inch rod [2] in the same manner as rod [1] using the Stand-Off Fittings (L & K).

9. Slide two Cross-Clamp Fittings onto 36-inch rod [3] using the Low-Position holes on the Cross-Clamps, and then lace the rod through the Low-Position holes in the Stand-Off Fittings (D & G). Align the bottom end of the rod flush with the bottom edge of the Stand-Off Fitting (G) and lightly tighten the setscrews to temporarily hold the rod in position.

10. Attach 36-inch rod [4] in the same manner as rod [3] using the Stand-Off Fittings (A & J).

11. Slide three Cross-Clamp Fittings onto 48-inch rod [5] using the Low-Position holes on the Cross-Clamps, and then lace the rod through the Low-Position holes in the Stand-Off Fittings (C & H). Align the bottom end of the rod flush with the bottom edge of the Stand-Off Fitting (H) and lightly tighten the setscrews to temporarily hold the rod in position.

12. Attach 48-inch rod [6] in the same manner as rod [5] using the Stand-Off Fittings (B & I).

13. Lace 12-inch rod [7] through the High-Position holes in the Stand-Off Fittings (G & H). Align the bottom end of the rod flush with the bottom edge of the Stand-Off Fitting (G) and securely tighten the setscrews to lock the rod in position.

14. Attach 12-inch rod [8] in the same manner as rod [7] using the Stand-Off Fittings (A & B).

15. Lace 36-inch rod [9] through the High-Position holes in the Stand-Off Fittings (F & I) and through the two intermediate Cross-Clamp Fittings intersecting rods [3 & 5]. Align the bottom end of the rod flush with the bottom edge of the Stand-Off Fitting (F) and securely tighten the setscrews to lock the rod in position.

16. Attach 36-inch rod [10] in the same manner as rod [7] using the Stand-Off Fittings (C & L) and Cross-Clamp Fittings intersecting rods [4 & 6].

17. Lace 48-inch rod [11] through the High-Position holes in the Stand-Off Fittings (E & J) and through the three intermediate Cross-Clamp Fittings intersecting rods [3, 5 & 6]. Align the bottom end of the rod flush with the bottom edge of the Stand-Off Fitting (E) and securely tighten the setscrews to lock the rod in position.

18. Attach 48-inch rod [12] in the same manner as rod [11] using the Stand-Off Fittings (D & K) and Cross-Clamp Fittings intersecting rods [4, 6 & 5].

Final Adjusting and Trimming:

19. Lock all twelve of the Stand-Off Fittings (A through L) into position by tightening the hex nut again the bottom of the Stand-Off Fitting.

20. If necessary, make any final fine-tune position adjustments to the Cross-Clamp Fittings, and then check and securely tighten the setscrews in all the fittings.

21. Trim any excess protruding rods with a grinder or Dremel tool cut-off disk and file or grind smooth any sharp edges. Your Diamond Design DIY Trellis is now ready to go.

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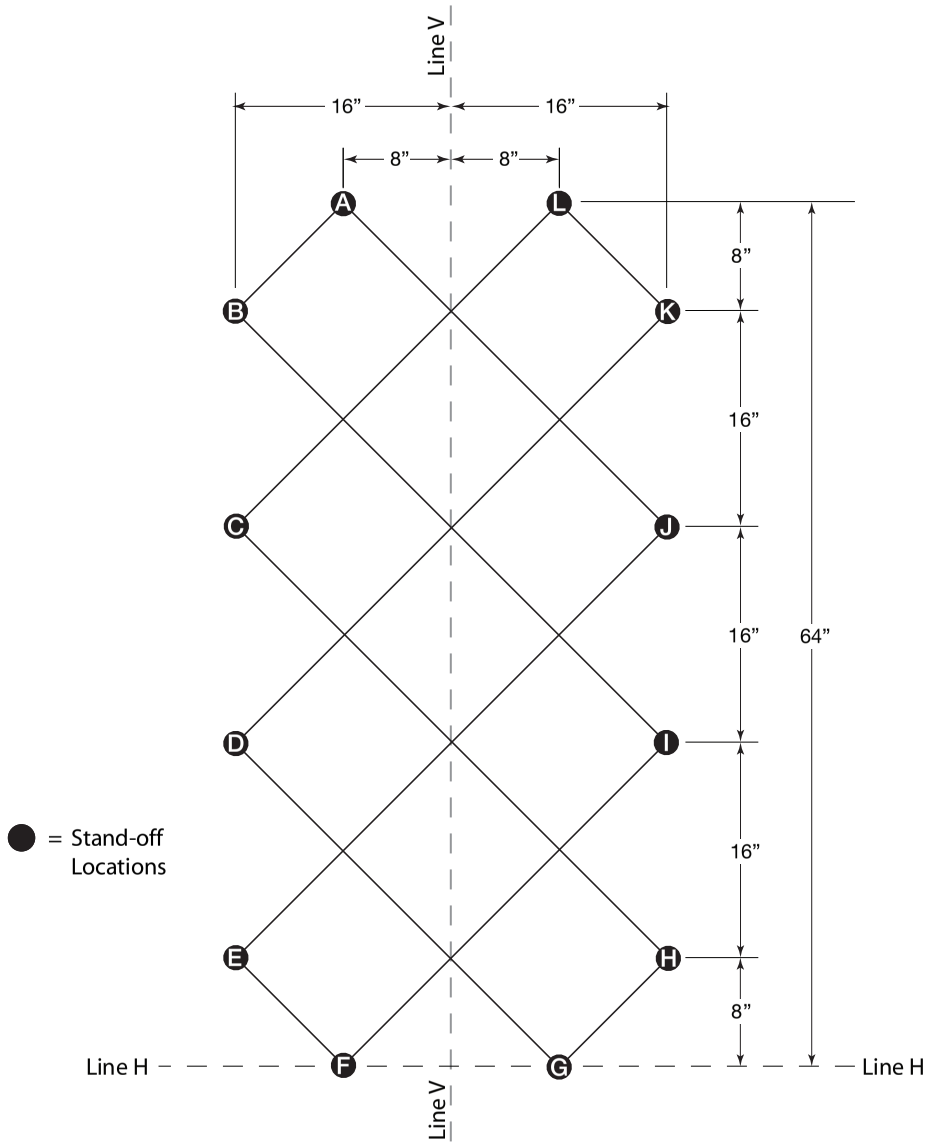
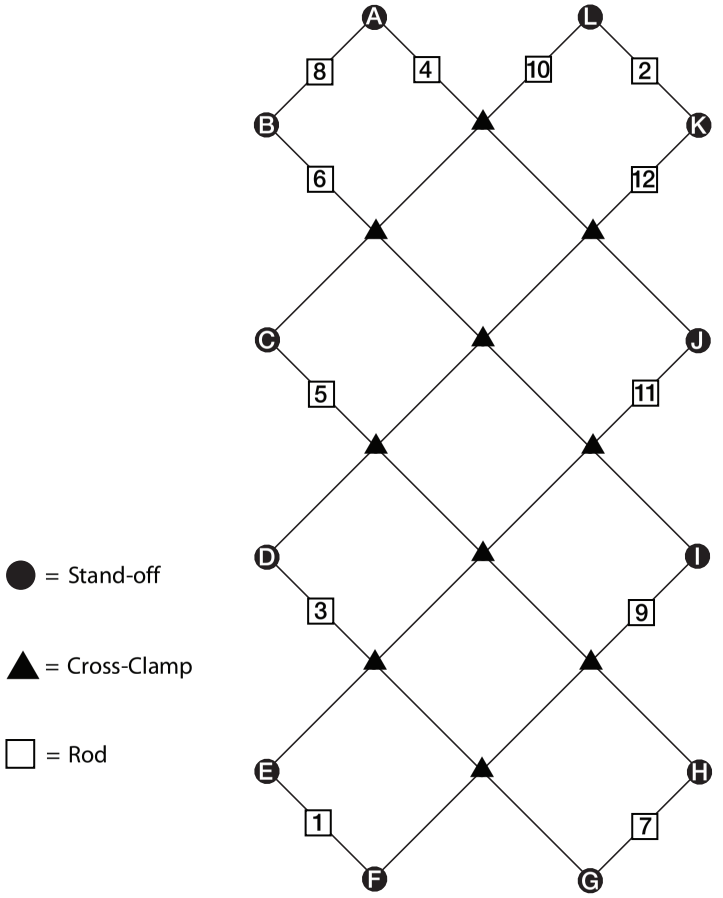
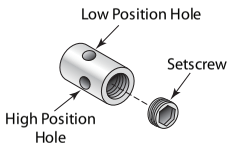
Diamond Design Measurement Diagram



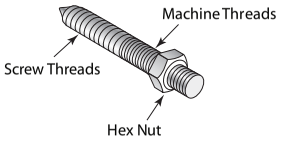
Diamond Design Installation Diagram



Cross-Clamp Fitting



Hanger Bolt



Stand-Off Fitting