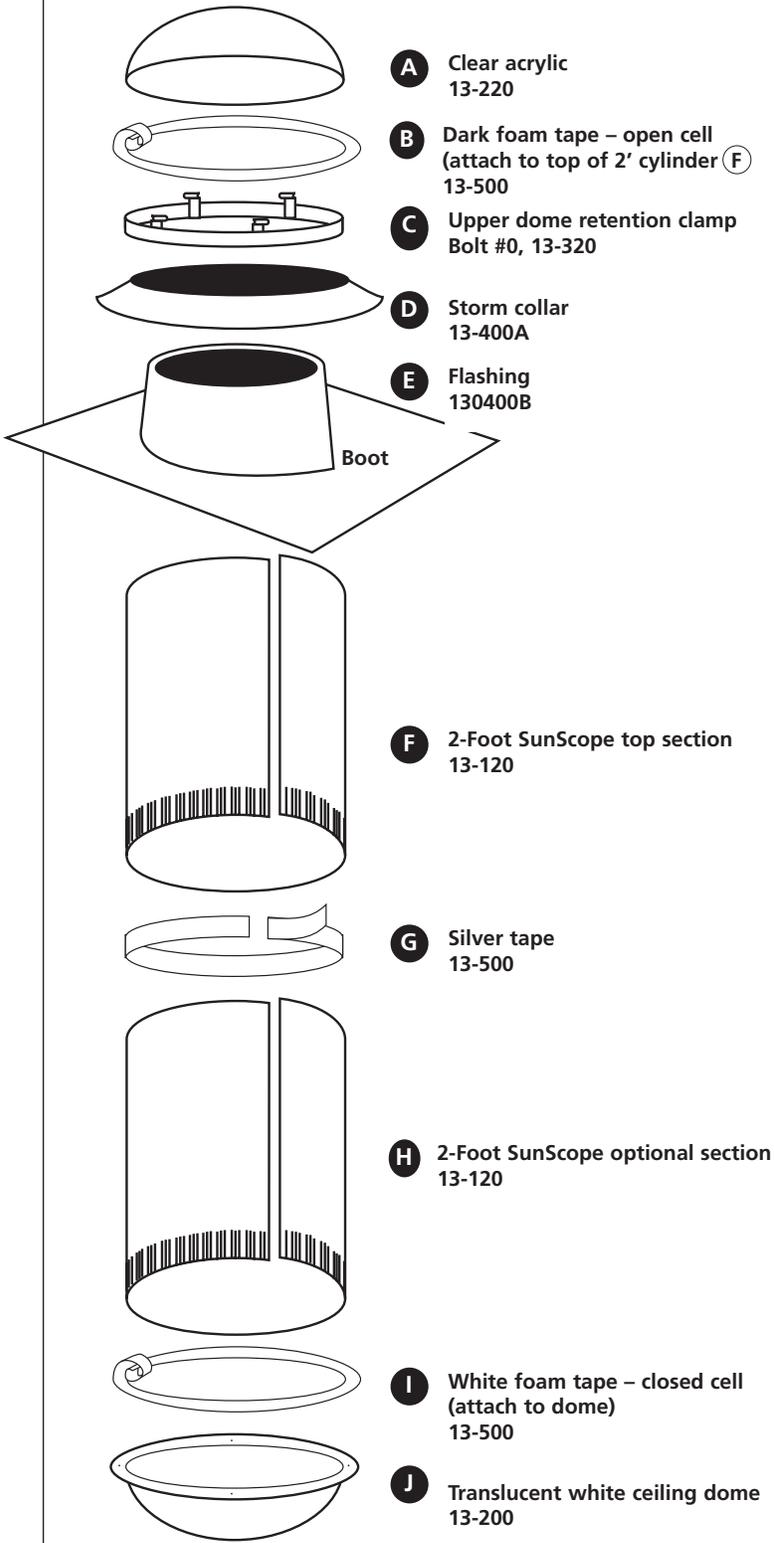


Installation Guide

13" Components

PARTS LIST

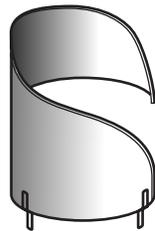
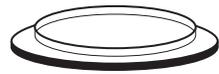


Hardware 13-500

- K** 4 – 1" screws for securing bottom dome
- L** 4 – 1 1/2" metal screw anchors
- M** 4 white plastic screw caps
- N** 1 – 1/2" short broadhead screw for securing cylinder to joist
- O** 1 – 2" nut and bolt for securing retention clamp

Plus tape and gaskets (left)

OPTIONAL PARTS

<p>SunScoop 13-350</p> 	<p>Flange Ring 13-340</p> 	<p>Elbow joint 13-360</p>  <p>45°</p>
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Additional 2' SunScope sections, elbows and SunScoops are available separately from the dealer. Elbow joints may be necessary if the roof rafters are not aligned evenly with the ceiling joists. (SEE FIGURE 3).

Oval Domes

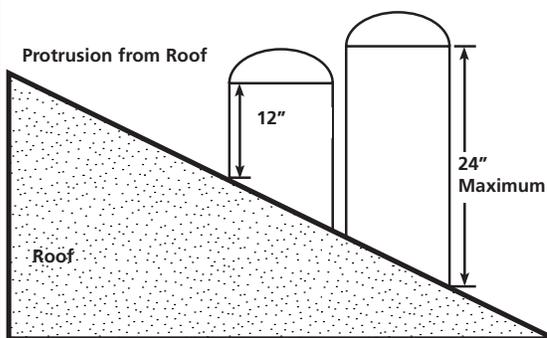
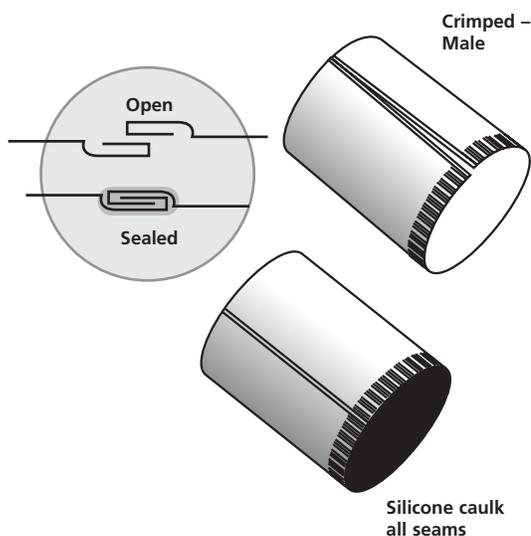
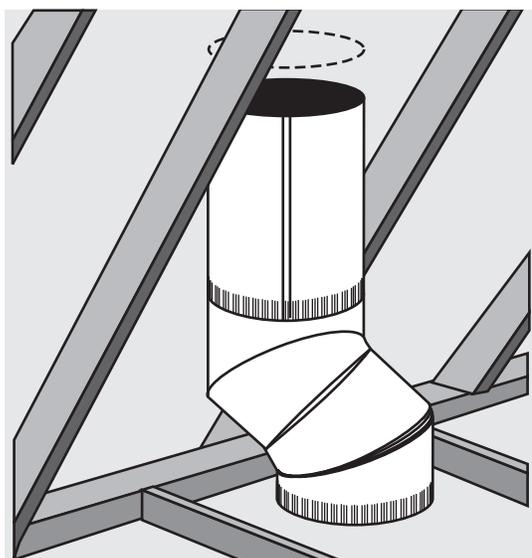
- Up to 6/12 slope (13-206)
- Up to 9/12 slope (13-209)
- Up to 12/12 slope (13-212)

Not included, but recommended:

100% silicone caulking (300 mL)

CAUTION:

Ensure that electrical wires, water and gas cylinders and other hazards are clear of both the ceiling and roof areas intended to be removed. Always wear protective safety glasses and wear leather work gloves.

FIGURE 1**FIGURE 2****FIGURE 3**

INSTALLATION INSTRUCTIONS

Please read all instructions carefully before installing your SunScope.

Before you begin installation, confirm the length of SunScope you require by measuring the distance from the ceiling to the bottom of the roof boards and adding a minimum of 12" but not exceeding 24" depending on the height necessary to attain maximum exposure to the sun during the low winter zenith. (SEE FIGURE 1).

Note: When the SunScope is mounted on the northern roof slope it may become shaded by the roof ridge during the winter. To avoid this situation, the length of the SunScope may be increased. Additional 2' SunScope sections are available from the dealer. Only extend the SunScope a maximum of 24" above the low side of the roof hole. (SEE FIGURE 1).

CAUTION: Ensure that electrical wires, water and gas cylinders and other hazards are clear of both the ceiling and roof areas intended to be removed. Always wear protective safety glasses – avoid looking up the cylinder on a bright, sunny day, and wear leather work gloves.

Preparing the SunScope™

STEP 1 The SunScope is lined with a clear protective film. **Do not remove the film** until near the completion of installation (STEP 19). Dirt or dust particles may become attached to the inner surface of the SunScope and decrease its efficiency.

STEP 2 To assemble the SunScope sections (F) and (H), carefully **pull back the film along the seams**, lie the cylinder down and fit the seam together at one end. Start at that end of the cylinder and work toward the opposite end until both seams are locked into place. (SEE FIGURE 2).

Note: If you are joining more than two cylinders, remove the protective film from the middle sections). Silicone caulk all the seams.

Ceiling Location

STEP 3 Determine the desired location of the SunScope's dome on the ceiling. Hammer a thin nail through the ceiling at the desired location, remove the nail, insert a straightened length of coat hanger to a depth of approximately 12". Enter the attic space (if there is an attic) and ensure that no electrical wires, water or gas lines will be in the way of the SunScope installation.

WARNING: **Never cut the roof ridge!** When installing a SunScope under the roof ridge, or with off-center rafters, use the optional elbows to redirect the SunScope to a more convenient position. SunScope elbows are available from the dealer. (SEE FIGURE 3).

STEP 4 Confirm that the joists are 16" or 24" centers and determine on which side of the joists the rafters overlap. The SunScope will be secured by screwing it directly to the joist. Make a second hole that is 6 5/8" from the joist. For trusses on 24" centers, the center of the SunScope can be 6 5/8" from either truss because there are no overlapping rafters. Also, the SunScope can also be installed anywhere between the trusses with the addition of a two-by-four truss header. The SunScope will then be attached to the truss header. (SEE FIGURE 4).

STEP 5 To locate the same centre hole position on the roof boards, plumb a straight line up from the centre hole on the ceiling. Ensure that the hole on the roof boards is 6 5/8" from the adjacent rafter. Using a 4" long bit, drill vertically up through the centre hole on the roof boards. Leave the drill bit in the hole to assist in finding the location on top of the roof.

Cutting the Holes

STEP 6 CEILING HOLE: Draw a 13 1/8" diameter circle on the ceiling and cut out the hole. A drywall saw is all that is necessary. The hole should be directly adjacent or flush with a joist. (SEE FIGURE 5).

STEP 7 ROOF HOLE: Using a flat bar, loosen the shingles around the centre hole. Be careful not to damage them. Asphalt shingles may be too brittle to remove in cold weather. The bottom few inches of the flashing base E should lie over top of the lower shingles. Do not

cut the adjacent rafter. Lay flashing on roof, ensuring that flashing is centered above the hole. Trace a line on the roof around the inside of the flashing and remove flashing. Cut hold. (SEE FIGURE 6).

Installing Roof Flashing

The SunScope kit includes roof flashing base (E) and storm collar (D). While this type of flashing works on many different roofs, tile roofs and tar and gravel roofs (flat) require custom flashing which most roofers fabricate on-site. The flashing boot E will require trimming on roofs which have a slope either greater or less than 3/12 pitch. (SEE FIGURES 5 and 6).

STEP 8 Place the flashing on top of the SunScope so the base of the flashing is parallel to your roof. Using the top rim of the SunScope as a guide, draw a cut-line on the inside of the flashing boot (E). Remove and trim the boot with tin snips. (SEE FIGURE 6).

STEP 9 Replace the flashing around the SunScope and confirm that the lower 3 or 4" lie on top of the shingles. If it does not, remove the flashing and add a row of shingles. Seal the flashing to the shingles with roof caulking compound. (SEE FIGURE 6).

STEP 10 With the flashing in place and squared, replace the shingles around the flashing. Three or four galvanized roof nails will secure the lower flashing base to the shingles. Be sure to caulk the heads of these nails with silicone. (SEE FIGURE 6).

Inserting the Cylinder

The bottom of the SunScope is crimped for use with extension cylinders.

STEP 11 Cylinder Installation

- Fit cylinders together by inserting crimped end (male) (F) into straight end female (H). Remove the film only after completing the installation. (SEE FIGURES 2 & 3).
- Wrap the joining points of the two cylinders with the supplied silver tape (G) to prevent separation. Silicone caulking is also recommended to further seal cylinders.
- Insert the cylinder through the ceiling and roof holes until 1/4" protrudes down from the ceiling. The 1/4" overhang makes it easier to apply the caulking around the edge of the hole.
- Secure the SunScope by screwing the 1/2" short broadhead screw (N) through the cylinder and into the adjacent joist.
- Apply caulking around the Sunscope and ceiling on both sides of the drywall ceiling. Keep the silicone away from the inside edge of the SunScope. Silicone will damage the silver film.
- If the SunScope is being suspended from the roof it is necessary to screw and tape the two joining cylinders together. Multi-sectioned cylinders are sometimes easier to insert from the roof. Be careful not to damage the ceiling or cylinder when using this insertion method.

STEP 12 Apply a generous amount of silicone (about the thickness of a pencil) around the top of the boot where it meets the SunScope. (SEE FIGURE 6).

STEP 13 Attach and tighten the storm collar (D) to the SunScope directly above the boot. Leave at least 3 1/2" of SunScope exposed for the top dome (A) and clamp (C). Apply generous amounts of silicone to the storm collar and seam of the SunScope as these are the main water seals. (SEE FIGURE 6).

Mounting the Top (Clear) Dome

STEP 14 If any trimming of the SunScope is needed, do it now. Be sure to leave a minimum of 3 1/2" of SunScope exposed above the storm collar. (SEE FIGURE 6).

STEP 15 Apply the dark foam tape (B) around the top outside perimeter of the SunScope. If the temperature is below 60°F or 16°C the foam will not adhere properly.

FIGURE 4

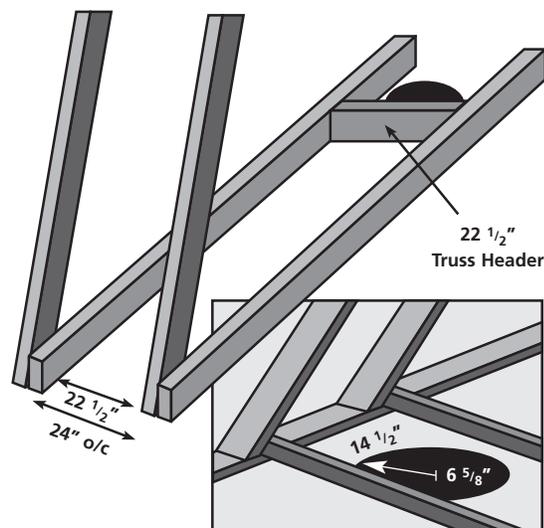


FIGURE 5

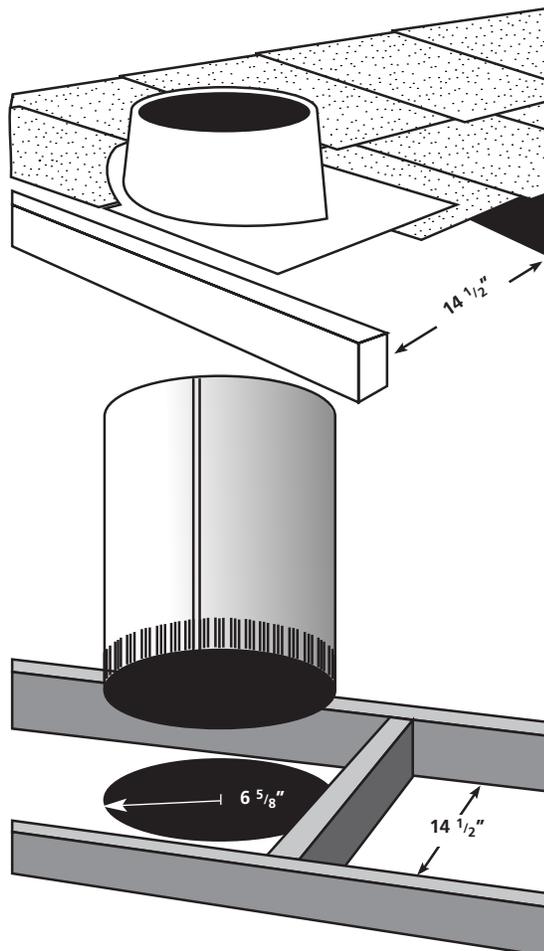
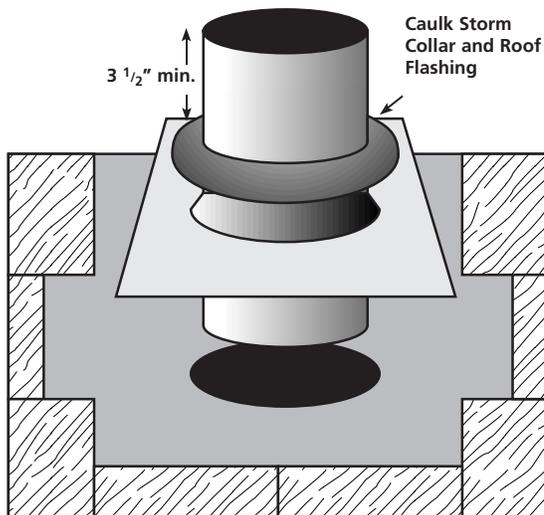
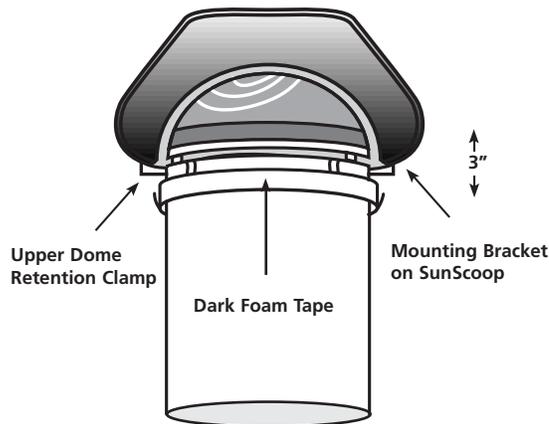


FIGURE 6**FIGURE 7**

STEP 16 Peel the clear protective film from the inside top half of the SunScope. Stuff the film down the SunScope so it can be removed from inside.

STEP 17 Secure the retention clamp ③ 3" from the top of the SunScope. Cap the cylinder with the clear dome A and attach the clips from the retention clamp to the dome flange. The top dome assembly is designed to breathe. Do not seal the top xxx or condensation may occur during cold periods.

Note: The top dome (UV protected) is made from $\frac{3}{16}$ " acrylic and will not yellow or become brittle for a minimum of 10 years. It is then easy to replace. The top dome foam seal should be inspected every 3 to 5 years for sun and weather deterioration and replaced if necessary.

Mounting the Bottom (White) Dome

STEP 18 Apply the white foam tape ① around the top outer perimeter of the ceiling dome's flange ① and set aside. Ensure that the ceiling surface is smooth where the foam contacts it. Fill in any irregularities or gaps that the foam can't seal on its own. If acoustic or absorbent tile is on the ceiling, remove it from around the dome's footprint in order to seal the dome directly to the true ceiling.

This seal is critical. If household humidity enters the SunScope during the cold weather, condensation will occur. This seal also allows the SunScope to be very energy efficient.

STEP 19 Remove the remaining protective film inside the SunScope. Dust inside of cylinder with a dust-free cloth to remove static dust.

STEP 20 Evenly position the dome centered over the SunScope and mark the screw holes with a pencil.

STEP 21 Remove the dome and insert the screw anchors ① into the ceiling.

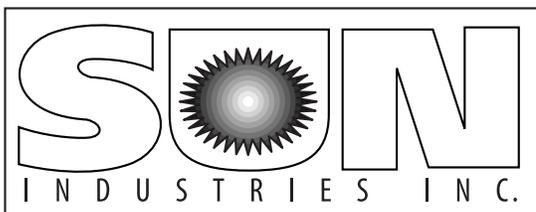
STEP 22 Screw the lower dome ① to the ceiling compressing the foam to half its thickness. Cap the screws with the white plastic screw caps ⑤. Remove and clean the dome once or twice a year.

STEP 23 Installing the optional SunScope. Loosen retention clamp ③ and push SunScope mounting brackets down. Position SunScope (east, west, south, depending on preferred lighting needs) and securely tighten retention clamp.

Check List Review

- To avoid leaks, caulk around SunScope.
- To avoid leaks, caulk around SunScope flashing boot.
- Caulk around SunScope at storm collar.
- Caulk SunScope seam above storm collar to foam tape.
- Secure top dome with clamps.
- Tighten bottom dome screws to compress white foam to half its thickness.
- Replace any insulation moved during the installation process.

SunScope™ is the trademark property of Sun Industries Inc.



WARRANTY:

Sun Industries Inc. warrants the SunScope to be free from defects in material and workmanship for a period of ten years from the date of original purchase, provided such defects do not arise from other than normal and ordinary use of the product. The installation is subject to the warranty provided by the installer.