

# ABC's Radius Corner Fabrication

ABC's "Easy Sheet" series on building extruded aluminum sign frames - 4/04

# 3

**ABC's 8" Radius Corner Kits provide an inexpensive method for providing radius corners for Large or Small A/Flexframes. They are designed for use with our single or double face Access Frames.**

To determine the net length of the straight frame members for the top and bottom and the two ends of the frame, simply deduct 6 1/4 inches from the overall size. For example, for 10' long sign, the top and bottom members would be cut 9' 5 3/4" long.

The frame is cut differently than for a square cornered sign. It is cut with the drain-channels face down and the saw set at 31°, (Fig. 1). When cut this way, the corner is



removed, and replaced by the radius corner. Before welding, insert the provided aluminum angle corner brackets into the slots on the outside of the frame at each corner. Weld the corner across the inside part of the frame. (Fig. 2)

Also included in each double-face kit is a pair of 1/4" thick aluminum gussets, two pre-shaped Channel Closure pieces and two pre-fabricated Radius Corner Retainers.

The single-face kit is similar, but includes only one Radius Corner retainer plus a pre-fabricated Radius Back Closure piece.

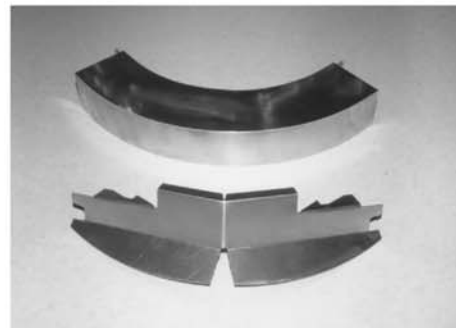
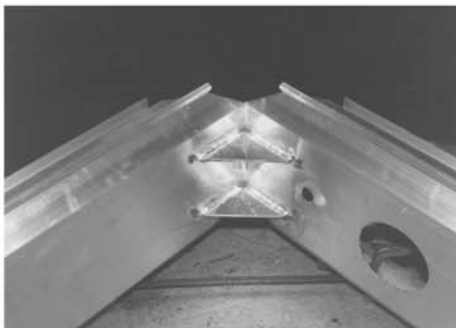
The Gussets are to be welded to the inside of the frame; just inside the 45° beveled sides to strengthen the corners. (Fig. 3)

The Channel Closure pieces come pre-shaped to approximately fit the cutaway frame. They must be further shaped to fit, then riveted to the frame as illustrated. (Fig's. 4 & 5) They provide a continuous drain channel to allow water to drain from the top of the sign, down the ends of the sign, and out the bottom. (See illustration

on other side)

ABC can supply a standard roll tool for rolling the C-Covers. The tool simply clamps in a vise, and will accept either the Large or Small C-Cover. Place the Cover in the tool, and by pulling the handle, the Cover is formed into an 8" radius and is easily attached to the frame. (Fig's. 6-8)

Finally, attach the Watertight Flashing at the top Cover joint, and the pre-fabricated Radius Corner Retainers as illustrated. (Fig. 8) They match the 2 1/2" Flat Retainers, and must be used when radius corners are required.



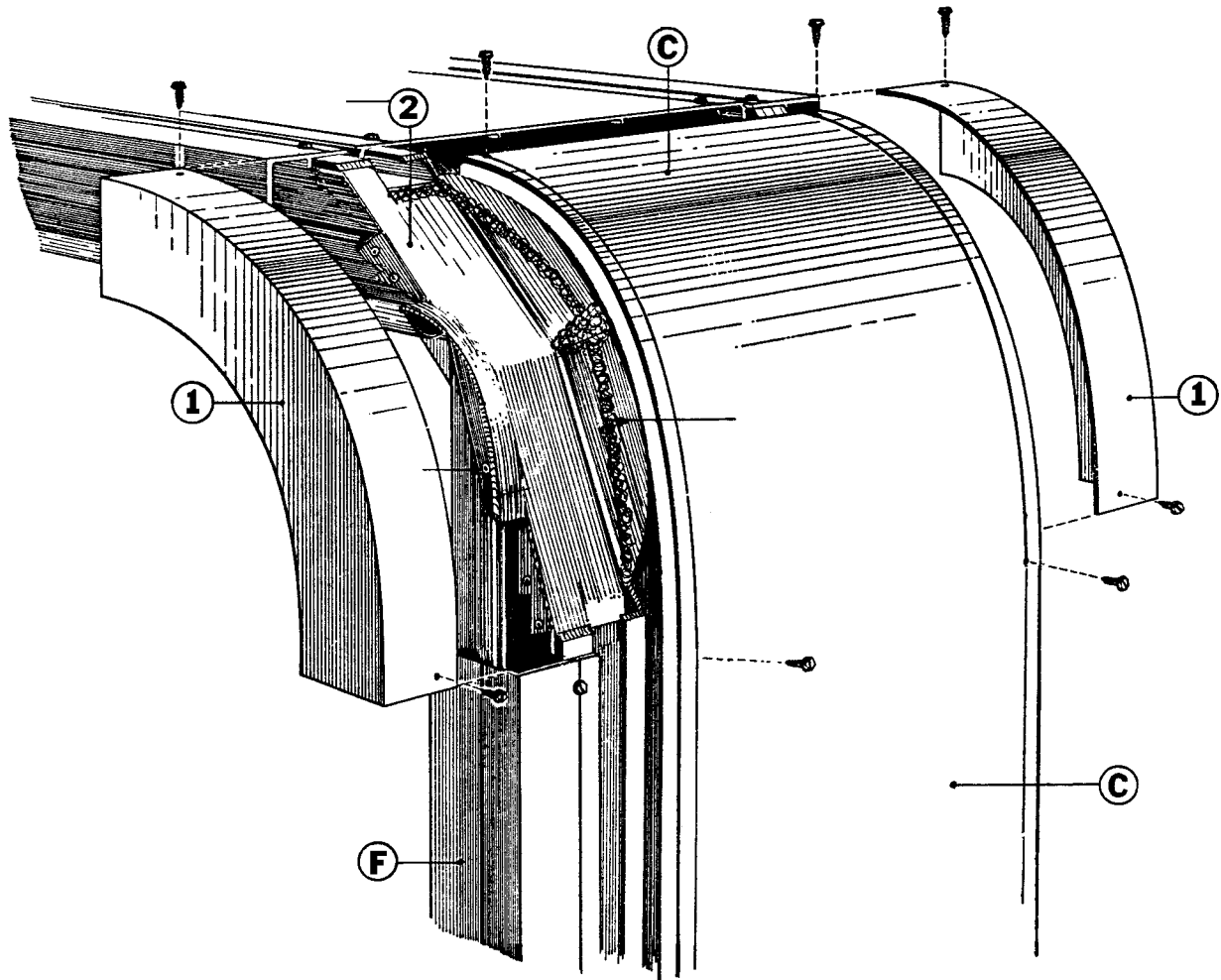
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The parts described on this page are covered by one or more of the following patents:  
U.S. 4,007,552 4,265,039  
CANADIAN 1,021,565 1,149,159 1,170,048 1,170,049 1,170,050

**ABC**<sup>®</sup>  
**Sign Products**

# ABC's 8" D/F Radius Corner Kit Assembly

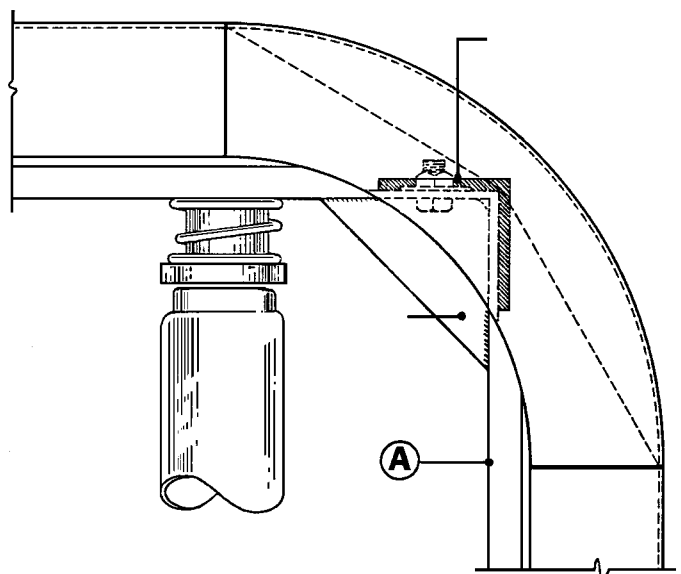
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**IMPORTANT!** When forming and fitting the Channel Closure pieces, be sure to tuck the flanges under the top Drain Channels of the frame, so that water will flow from the top of the sign, over the Channel Closure pieces, and into the end frame drain channels, and out the bottom of the sign.

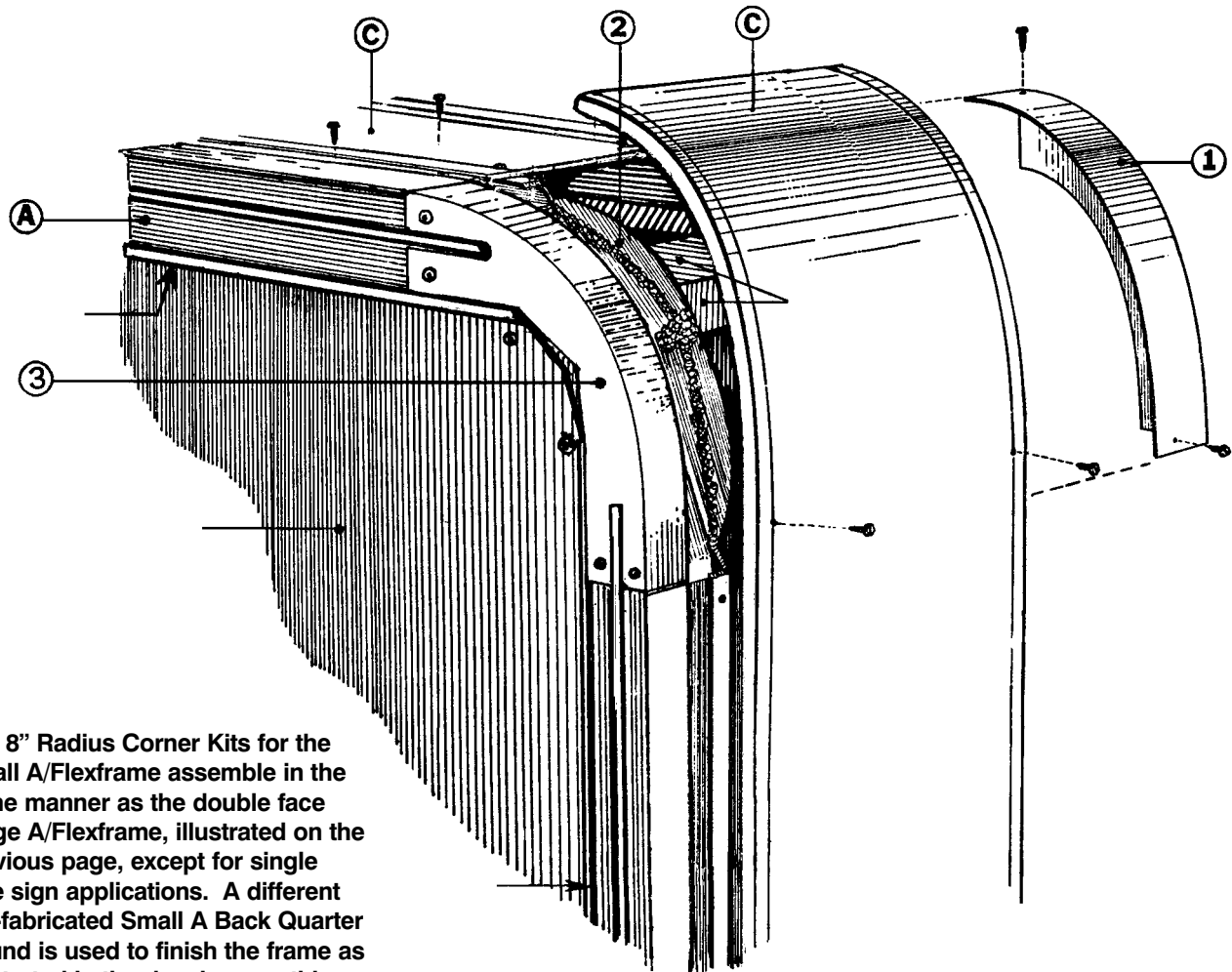
Silicone the joints where the Channel Closure pieces meet the drain channels of the frame, and place a bead of silicone on the up-turned flanges to control the water flow. Silicone the V-notch opening as illustrated. When finished, pour water into the top drain channels to insure there are no leaks into the wireway portion of the frame.

Usually, the entire end C-Cover is formed to fit the 8" radius at the top and bottom of the sign in one piece, to prevent a splice in the end Covers. Mount a watertight flashing piece at the top joint of the C-Covers. (See Easy Sheet in Access Frame section of the ABC Catalog and also Easy Sheet #17)

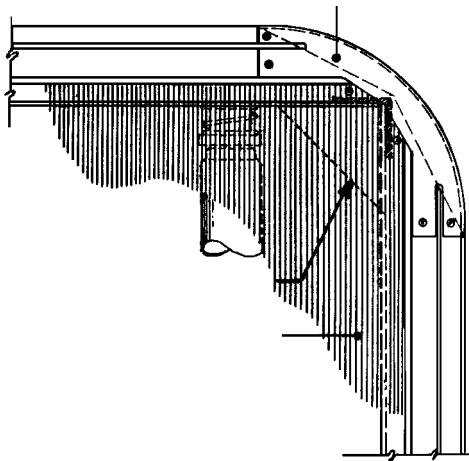


# ABC's 8" S/F Radius Corner Kit Assembly

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The 8" Radius Corner Kits for the Small A/Flexframe assemble in the same manner as the double face Large A/Flexframe, illustrated on the previous page, except for single face sign applications. A different pre-fabricated Small A Back Quarter Round is used to finish the frame as illustrated in the drawings on this page.



## BACK OF SIGN PERSPECTIVE VIEW

The pre-cut aluminum angle corner bracket, two 1/4" thick aluminum gussets, two drain-channel closure pieces, one pre-fabricated 8" radius retainer and the special pre-fabricated Small A Back Quarter round piece are all included in each kit.

Follow the instructions given previously for miter cutting and assembly of the frame. Install the aluminum or sheet metal back into the slots as for any SF Small A/Flexframe sign, but trim the corners to fit the Small A Back Quarter Round part where they meet. Use silicone or white latex outdoor caulking to seal the trimmed corners to ensure against water entry at the back.

# Radius Corners for Conventional Frames

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ABC sells inexpensive radius corners for five of its Conventional Frame systems. They are precision fabricated aluminum, NOT castings. They fit precisely, assemble easily with a minimum of labor. They are offered in a wide variety of radii.

All these radius corners have been made with heavy gauge aluminum cut on our CAD/CAM Routing machine, then clamped over steel jugs and welded. The retainers are made the same way, and fit perfectly to the Flat Retainers for our respective frames.

To build radius-cornered signs with the parts, simply determine the height and length of the sign. (See Easy Sheet #4 for oversize in the lamp direction for any

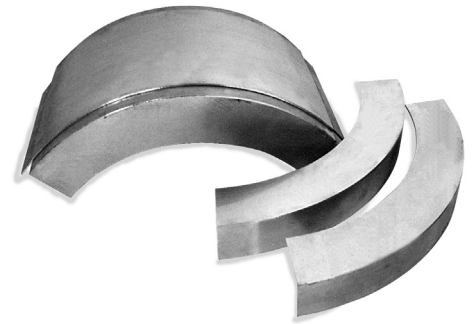
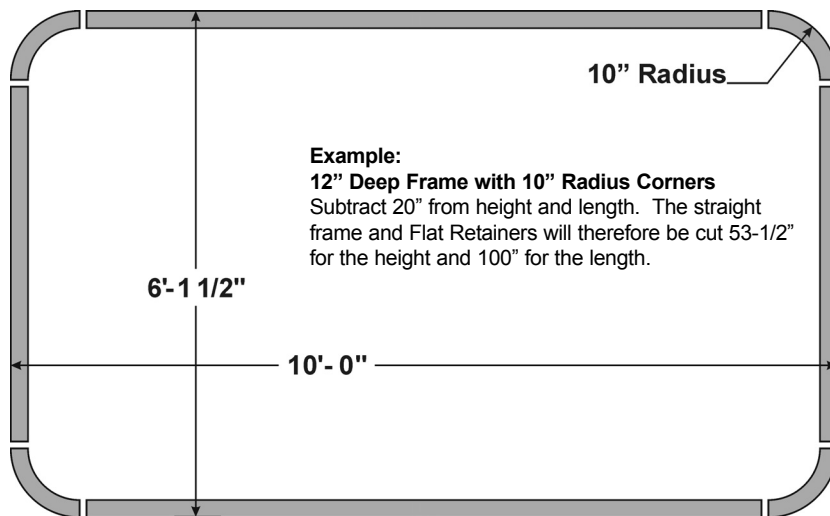
of our frames.) Subtract the radius of the corners, TIMES 2, then square-cut two pieces of frame with Flat Retainers for the length and two pieces for the height. Clamp the prefabricated corners to the square-cut ends of the four frame sides, and weld on the underside. These corners can be bolted or riveted, but welding eliminates any visible hardware.

The prefabricated retainers fasten with screws, just as the regular Flat Retainers do.

For example, if we want a nominal 6' x 10' sign to be made of our 12" frame, and it is to have vertical 72" lamps, the overall size (from the chart on Easy Sheet #4) will be 73 1/2" high by 120" long.

10" Radius corners for this frame will subtract 20" in height and length. The straight frame and Flat Retainers will therefore be cut 53 1/2" for the height, and 100" for the length.

For every large sign built of the Large or Small A/Flexframes, kerf-cut radii are recommended. This technique is used to build large corners of any size, or random curved sign frames. See Easy Sheet # 8 for a complete description and photographs of this technique.



**CONVENTIONAL FRAME RADIUS CORNER CHART**

FRAME TYPE	FRAME WIDTH	RETAINER	RADIUS CORNER SIZES
12" Frame	12"	2" Wide	10" Radius
Type I Frame	10"	2" Wide	10" - 9" - 8" Radius
Type II Frame	8"	1.5" Wide	8" - 6" Radius
Type III Frame	6.5"	1.5" Wide	6" Radius
Type IV Frame	5"	1" Wide	6" Radius

Please contact ABC if you have any questions:  
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