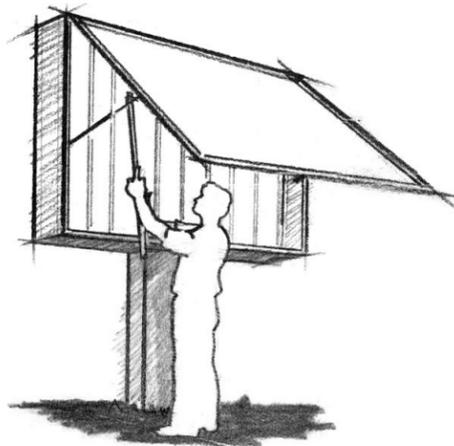


# Double-Hinge & Single-Hinge Frame



## FOR DESIGNERS AND SPECIFIERS

The **Double-Hinge** and **Single-Hinge** Frames, together with several options of interchangeable parts and accessories, offer a system with which a number of design solutions can be made where hinged faces are desired for easy internal access. These frames allow the designer to use either **flexible faces** or **rigid plastic faces**, for medium size signs, up to approximately 80 square feet or more, depending upon their aspect ratio. The Double-Hinge Frame is wide enough to allow up to 4-1/2" pipes to pass through with little or no shadow. (see Easy Sheet 4)

The flexible face system is especially good for building continuous fascia signs. The **Hinge Frame Flex Joint** can be used for hinging sections of the fascia, with no visible frame between face sections and very little shadowing when careful attention is given to lamp placement near the joints and corners as illustrated.

NOTE: The *Small Flex Joint* can also be used for abutting flexible faces, and also to turn corners with no visible frame. These parts are illustrated in Easy Sheet #12, or call for detail drawings for their proper use.

### CENTERFOLD ILLUSTRATIONS:

**Illustration 1** shows the **F-Saddle** on the **Single** or **Double Hinge Frame** as used for flexible faces. The **Bleed Trim** is illustrated on the left side, and the alternative **Reveal Trim** is shown on the right side of the top illustration. Any brand of flexible substrate may be used with ABC's time-proven **tensioning hardware**, normally used on 12" centers. (See Easy Sheet #1)

The **Single Hinge** illustration also shows how **Strut Gussets** are used to attach vertical tube or angle struts to support the tension and wind-load on the flexible faces. Struts are used approx. four feet on center. (See Easy Sheet 9)

A sidebar illustrates how the **Hinge Frame Flex Joints** are used and properly lighted to minimize shadowing. (See Easy Sheet 12)

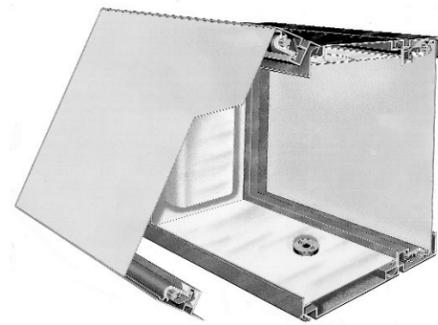
**Illustration 2** shows the **Heavy Duty R-Saddle** and **2" E-Z Retainer** as used on the **Hinge Frames** for rigid plastic faces up to 80 square feet. The **Heavy Duty R-Saddle** is designed for using ABC's **gas-cylinder struts**, which holds the face open for hands-free service work. (See side-bar illustration).

### BACK PAGE ILLUSTRATIONS:

**Illustration 3** shows the **Outside R-Hinge** and **Outside R-Saddle** as they are used for signs which must have an outer security face and an inner face, with semi-permanent copy, yet with provision for change, by removing an end piece of R-Saddle to slide the faces out.

The **Outside R-Hinge** is a "self-hinge", used only on the top of the sign, with the **Outside R-Saddle** used on the sides and bottom, secured with metal screws. The **Outside R-Saddle** can also be used with a piano hinge if that method is preferred.

**Illustration 4** shows the **R-Saddle** and the **Reveal Trim**, used with the **Single Hinge Frame** or **Double Hinge Frame** for building small to medium size signs with formed or flat rigid plastic faces up to 5' X 12' maximum. A piano hinge is used at the top of the sign. Metal screws are used on the sides and bottom.



Cutaway of flexible face application



Gordon Sign Co., Denver, CO



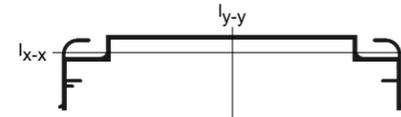
Continuous Panaflex\* with shadow-free corner



R-Saddle with Rigid Plastic face

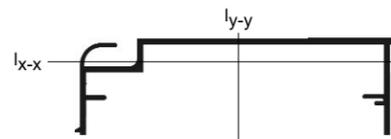
## 1/2 size sectional views

### Engineering



The neutral axes for the Double-Hinge Frame are shown above.

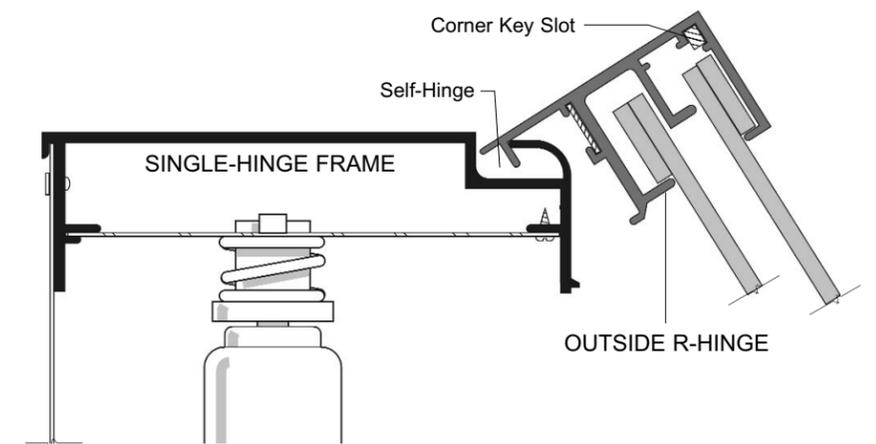
Cross sectional area (A) is 1.229 in<sup>2</sup>. Moments of inertia about the neutral axes are  $I_{x-x} = .277$  in<sup>4</sup> and  $I_{y-y} = 8.944$  in<sup>4</sup>.



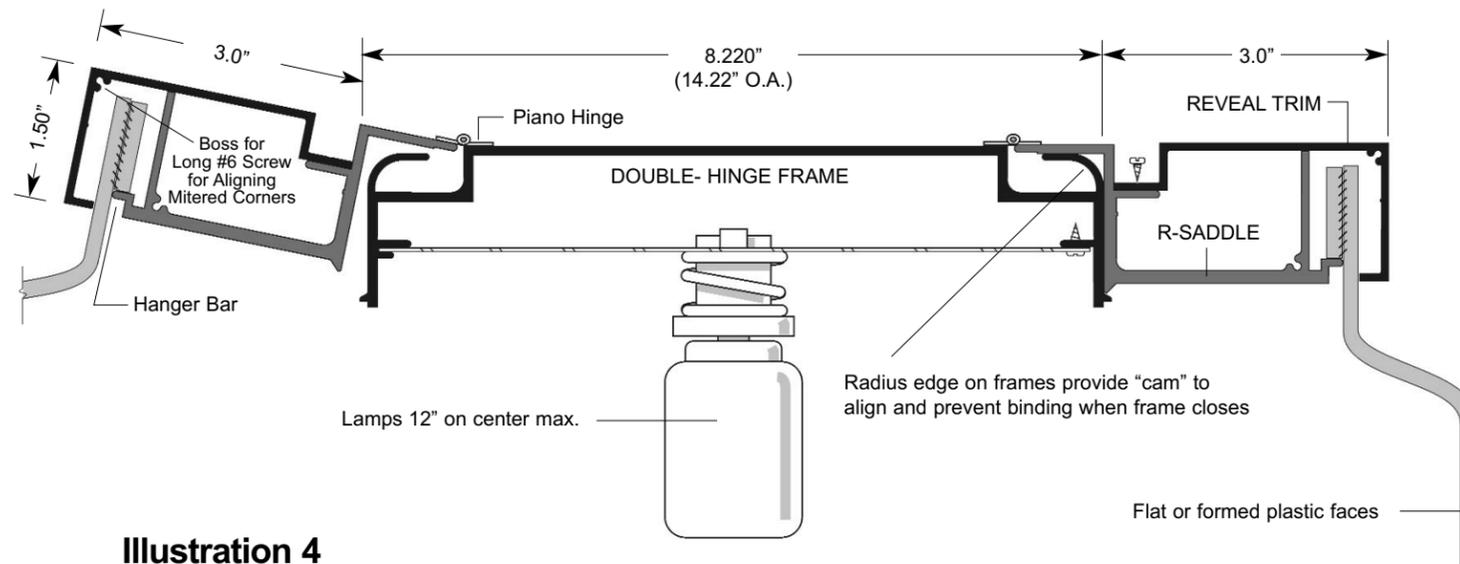
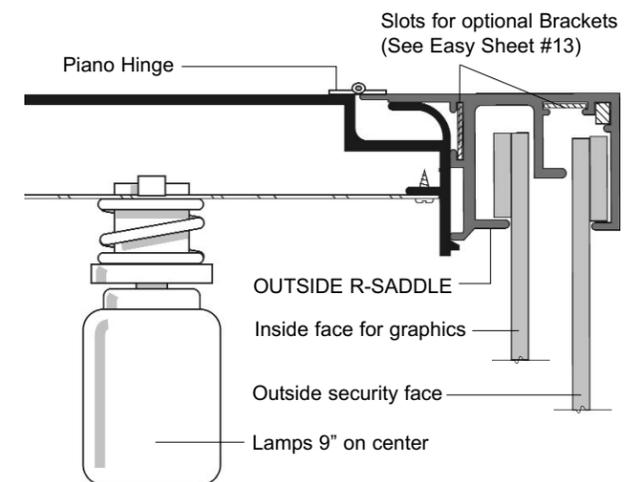
The neutral axes for the Single-Hinge Frame are shown above.

Cross sectional area (A) is .976 in<sup>2</sup>. Moments of inertia about the neutral axes are  $I_{x-x} = .250$  in<sup>4</sup> and  $I_{y-y} = 4.323$  in<sup>4</sup>.

All ABC extrusions are produced in 6063 alloy, T6 temper, in standard 26' length.



### Illustration 3



### Illustration 4



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## 1/2 size sectional views

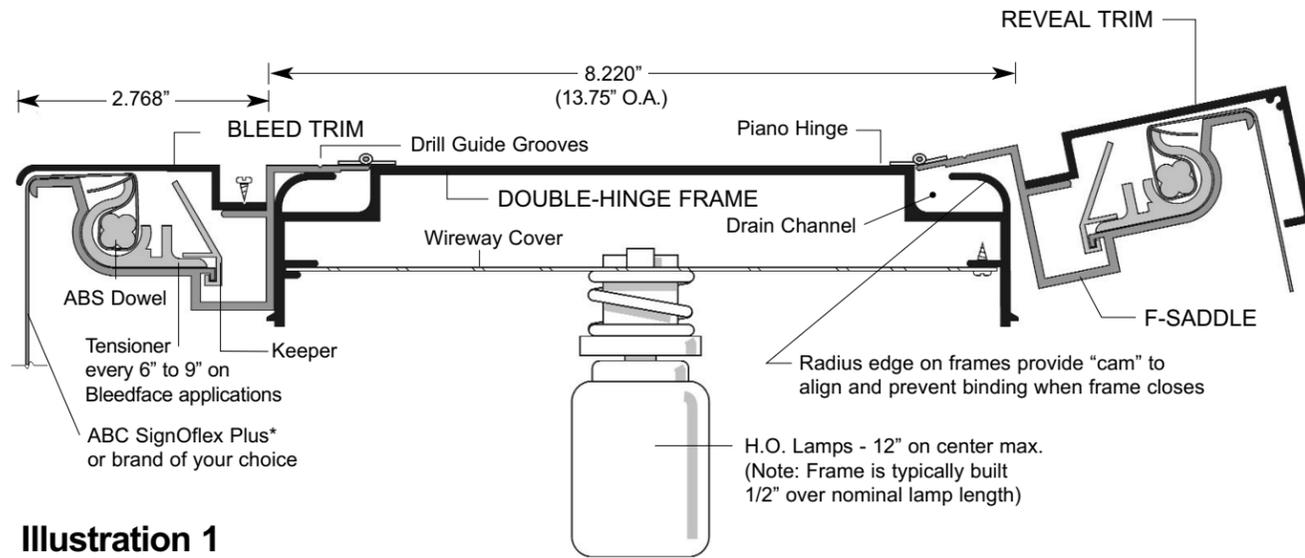
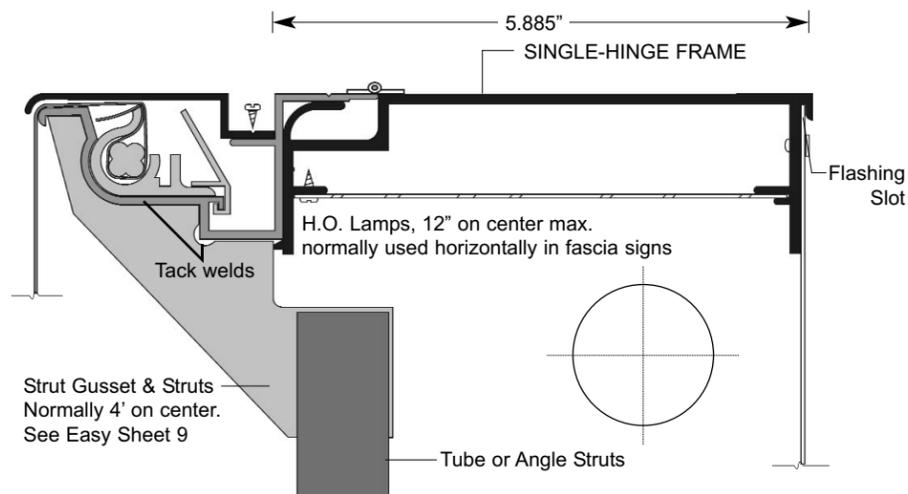


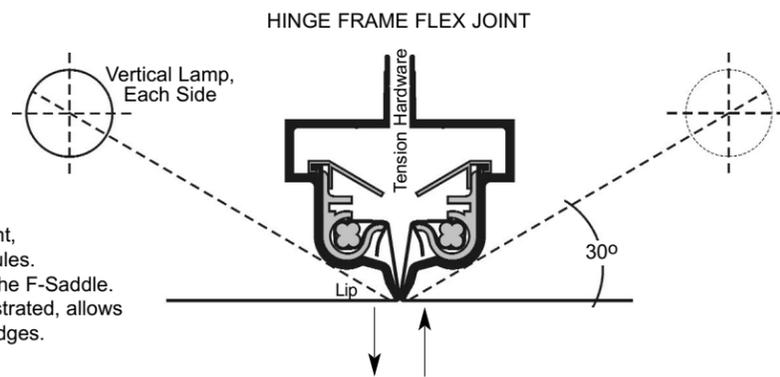
Illustration 1



## Hinge Frame Flex-Joint

ABC's Hinge Frame Flex-Joint is unique. It forms a butt-joint for separate sections of flexible faces with independently hinged frames. Very little shadow occurs when special attention is given to lamp placements, as shown at right.

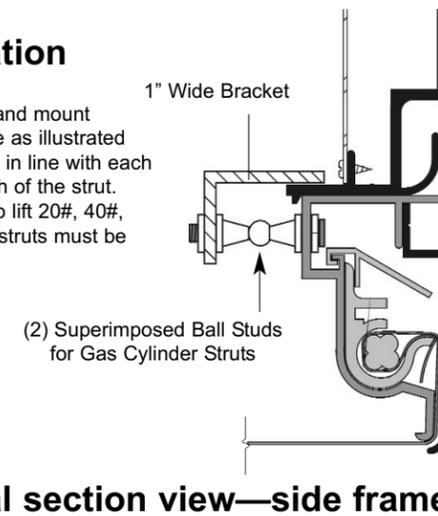
Normally, continuous fascia signs are built in long sections. By using the Hinge Frame Flex Joint, no custom fabrication is required on ends of modules. Simply substitute the Hinge Frame Flex Joint for the F-Saddle. The vertical lamp on each side of the joint, as illustrated, allows the light to "spill" out to the edge of the abutting edges. (See Easy Sheet #12)



1/2 size vertical sectional view

## Gas Strut Application

Attach 1" wide bracket to frame and mount Ball Studs to F-Saddle and frame as illustrated (right). Studs should be mounted in line with each other to fit the compressed length of the strut. The struts come in three sizes, to lift 20#, 40#, and 60# each, respectively. The struts must be mounted with the rod down.



Vertical section view—side frame

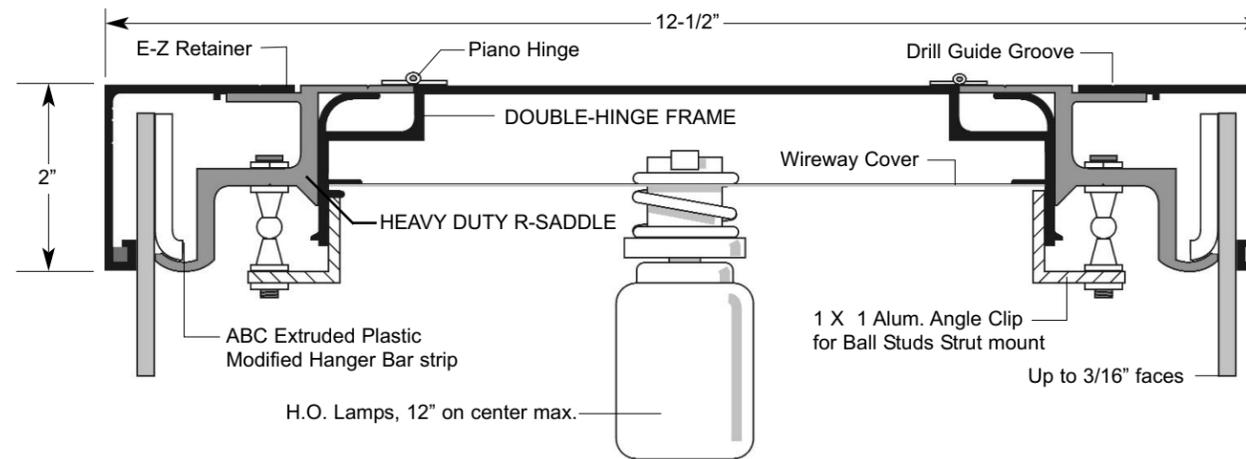
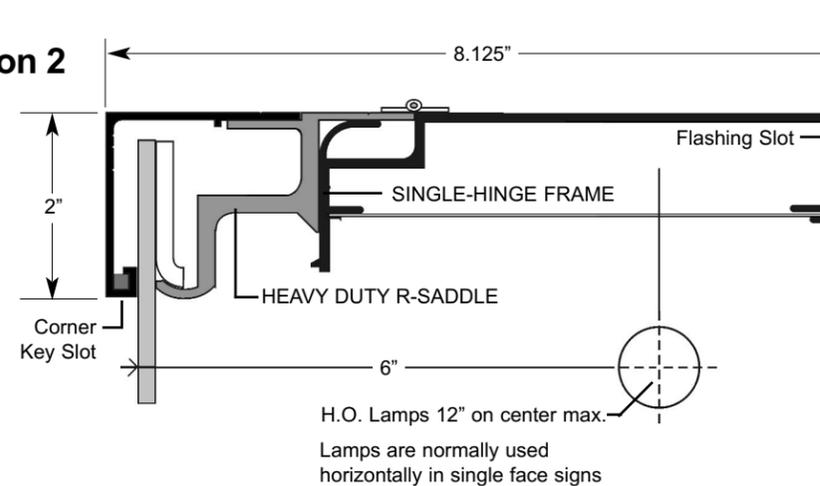


Illustration 2



## Retainers

**BLEED TRIM:** Used with the F-Saddle, it allows the face to be illuminated to the very edge of the sign face, with no visible retainer or frame.

**REVEAL TRIM:** Used with R-Saddle and also with the F-Saddle as an alternative to the Bleed Trim. A screw boss is provided for aligning the mitered corners with a long # 6 metal screw.

**2" E-Z RETAINER:** Used with the Heavy-Duty R-Saddle. It features a Corner Key slot for perfect miter-cut corner alignment.

## Outer Frame Parts

**F-SADDLE:** Used with piano hinge on top, and with Metal screws on the sides and bottom of the sign frame. Remove screws to open outer frame.

**STRUT GUSSET:** Tack-welded to F-Saddle to attach Struts on approximate 4' centers, to support tension and wind-load on flexible faces.

**HINGE FRAME FLEX-JOINT:** Used with Single Hinge Frame. Will miter to F-Saddle at corners to provide abutting hinged flexible faces on continuous fascia signs. (See Easy Sheet #12)

**HEAVY DUTY R-SADDLE:** Used with piano hinge on top, and with metal screws at sides and bottom. Remove screws to open outer frame. Designed to use Gas Cylinder Struts.

**R-SADDLE:** Used with a piano hinge at top, and screws on side and bottom of frame. Features a hanger bar to properly support face, screw boss for alignment at corners. Remove screws to open face.

**OUTSIDE R-HINGE:** A one-piece outer frame part, with built-in hanger bars for inside and outside faces. Used only on top of the sign for those who want a self-hinge instead of a piano hinge. The Outside R-Saddle is used on the sides and bottom.

**OUTSIDE R-SADDLE:** Can be used without the Outside R-Hinge, with piano hinge on top of sign, and with metal screws on sides and bottom of the sign frame. Remove screws to open outer frame.

**GAS CYLINDER STRUTS:** ABC's high quality pressurized gas cylinder struts attach to ball studs which can be adapted to several ABC Extrusions made for hinged faces. These struts open the faces when locks or fasteners are released, and hold the face open firmly, for hands-free work.



All ABC Sign Products parts described on these pages are included by one or more of the following patents:

U.S. 6,088,942 4,817,656 4,265,039 4,007,522  
Canadian 1,170,048-049-050 1,149,159 1,021,565