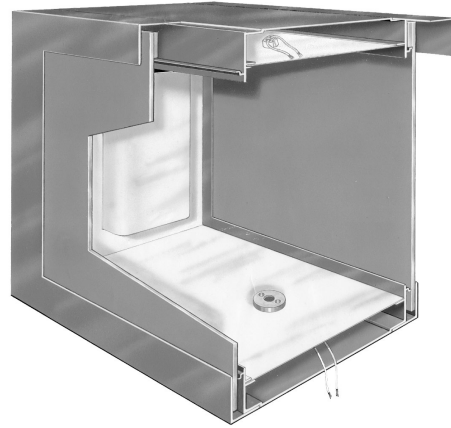


12" Conventional Frame

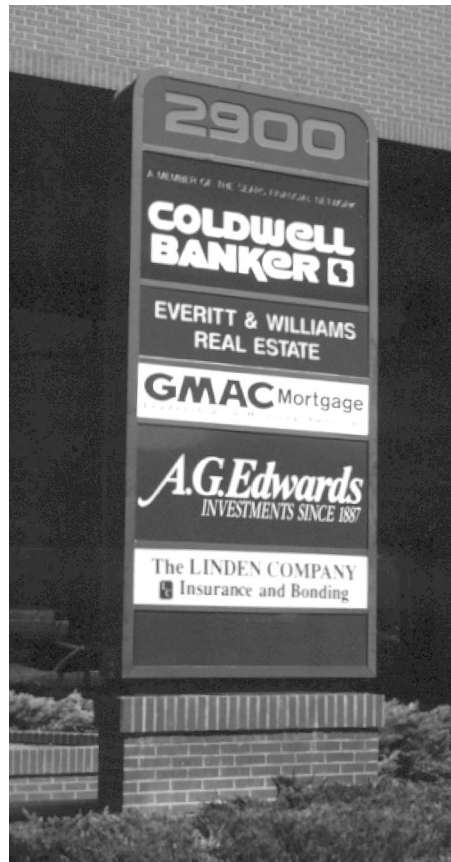


FOR DESIGNERS AND SPECIFIERS

Because we were the first to introduce extruded aluminum sign frame systems, we also had to coin new names for parts, features and different types of frame systems. Prior to the introduction of ABC's Access Frames, all plastic faced signs required the faces to be hinged or made to slide the faces left and right, by moving one or both end Retainers. The latter method was the most common, especially for signs of moderate size. For our frames designed to slide the faces we named them **Conventional Frames**.

Since 1972 we have introduced new Conventional Frames from time-to-time to be more economical for certain size ranges. We now have seven Conventional Frames, for the most economical construction of signs ranging from the smallest up to 100 square feet. For larger signs, we recommend our **Access Frames** and for huge signs, we have our **Wide-Fab Frames**.

The **12" Conventional Frame** is the largest of our Conventional Frame series. It is engineered for building signs up to approximately 100 square feet in size. The illustration shows important features such as the unique Hanger Bar to suspend the faces from the top, which is essential to allow for expansion and contraction and to prevent buckling, which occurs when the faces simply rest on the bottom retainer. The plastic hanger bar on the face can also be made to "lock" the face onto the frame Hanger Bar to prevent the face from coming off if all the retainers are removed.



The **E-Z Retainer** is a full 2" wide to ensure adequate face engagement when the face is contracted in cold weather and it is designed to hold the faces in any wind-load, up to hurricane velocity, when properly attached to the frame.

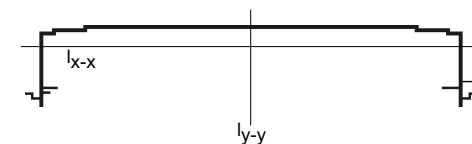
The 12" Frame can accommodate a 6.625" diameter pipe to pass through the sign with lamp centers up to 12" with flat faces, or up to 15" with pan-formed faces. Lamp centers should never exceed the face-to-face dimension. (See Easy Sheet # 4)

Internal frame struts, 60" on center, are recommended for large center-pole mounted signs. (See Easy Sheet # 11). Diagonal Truss Cables should be added for signs that cantilever five feet or more. (See Easy Sheet # 18).

ABC offers 8" and 10" precision pre-fabricated radius corners for the 12" Conventional Frame. (See Easy Sheet # 3).

The 12" Conventional Frame is very versatile and offers economical solutions when your customer's budget is limited and competition is fierce. Sell this frame's superior quality and value for much less cost than sheet metal and angle iron construction, and it will never rust!

Engineering



The neutral axes for the 12" Conventional Frame are shown above.

Cross sectional area (A) is 1.629 in². Moments of inertia about the neutral axes are: $I_{x-x} = 0.672 \text{ in}^4$ and $I_{y-y} = 26.568 \text{ in}^4$.

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

Type I Conventional Frame



The 10" wide **Type I Conventional Frame** is the second largest frame system of this type. Internal service access is gained by removing one or more retainers and sliding the face left and right.

The **Type I Flat Retainer** has a full 2" depth. This allows for 1/16" per foot expansion and contraction, plus and minus, and still provides adequate face retention in cold weather or prevents buckling from expansion in hot weather. It is engineered to withstand wind-loads up to hurricane velocity to prevent face blowouts.

The **Type I Frame** will allow a 5-1/2" pipe to pass through the frame with no shadow when proper lamp spacing is followed. Lamps should never exceed 10" on center with flat faces or the face-to-face width dimension.

The **Type I Frame** is used for double face signs of medium size, up to approximately 90 square feet, and may be column or wall mounted. The **Back Adapter**, shown in the Accessory column on the foldout illustrations, is used to build single face signs.

Internal struts are recommended on 60" centers, maximum spacing, to prevent frame deflection and properly support the faces. (See Easy Sheet #11).

The **Type I Frame** also features an integral hanger bar to suspend the faces from the top. This controls contraction and expansion, and allows the face to otherwise move freely. The face should never rest in the bottom retainer, which tends to deform and buckle the face.

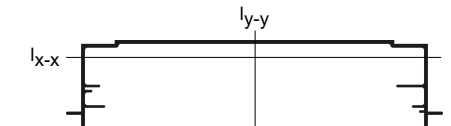
The **Type I Frame** provides a choice of wireway cover placement; either 1" depth or 1-1/2" depth, as illustrated.

Both the 12" and 10" frames can use the alternate Retainers as illustrated in the foldout. The **Radius Retainer** is especially attractive and unique, to produce a frame shape which cannot be done by competitors who use sheet metal fabrication.

The **Type I Frame** is the easy and economical way to build a sign with radius corners. ABC offers 8"- 9" and 10" precision pre-fabricated radius corners for very low and reasonable cost. (See Easy Sheet # 3).

The **Type I Frame** can be kerf-cut to form large curved sections, with fabricated flat retainers. (See Easy Sheet # 8). This is a simple, cost-effective way of building better quality, rust-free signs of most any shape more economically than with angle iron and sheet metal.

Engineering



The neutral axes for the Type I Frame are shown above.

Cross sectional area (A) is 1.311 in². Moments of inertia about the neutral axes are $I_{x-x} = 0.662 \text{ in}^4$ and $I_{y-y} = 13.29 \text{ in}^4$.

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



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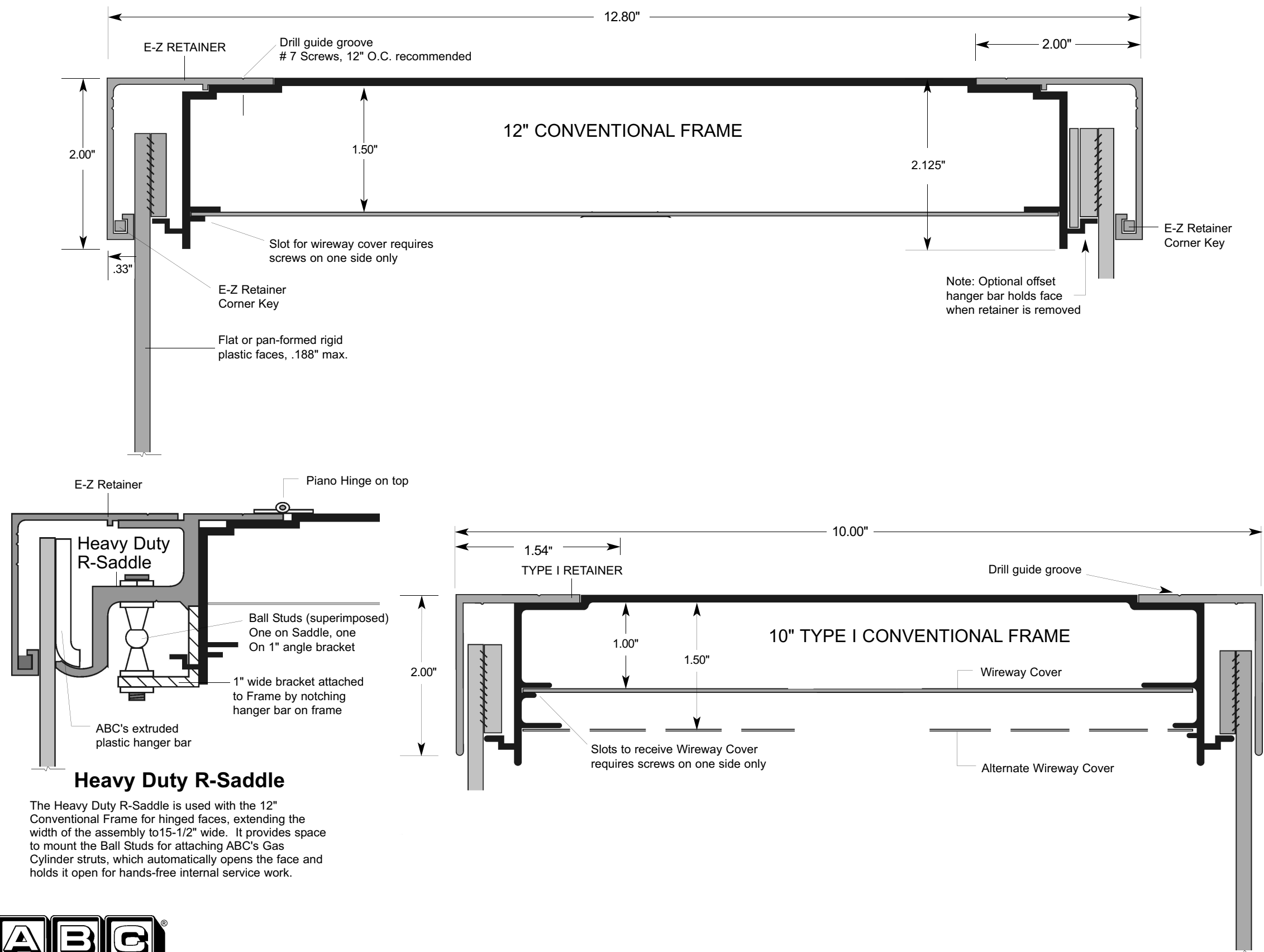
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12" & 10" CONVENTIONAL FRAMES

3/4 actual size section views



Retainers

E-Z RETAINER: (2.007") Used with the 12" Frame, and also the Heavy Duty R Saddle. It provides for using ABC Corner Keys to perfectly align the mitered corners.

TYPE I FLAT RETAINER: (2") Used with the 10" Frame. It may also be used with the 12" frame by moving it out ward where it is attached to the frame, to suit any thickness of face material. This also creates an interesting recessed reveal on the frame.

BEVELED RETAINER: (2.500") Used for a "picture frame" effect. It is especially attractive when used with flat faces to add dimensional interest. Because this retainer is deeper than the frame, drain holes are required in the bottom Retainers.

RADIUS RETAINER: (2.00") Used with the 10" Frame, it provides a smooth monolithic radius shape to the sign frame, which is unique and very attractive.

Accessories

RADIUS CORNER KITS: ABC's fabricated radius corner kits are the most practical and economical of any offered system in the sign industry. They are not castings, and are precision cut and fabricated to perfectly fit straight sections of frame. 8" or 10" radius corner kits are offered for the 12" Frame, and your choice of 8", 9" or 10" radius kits are available for the 10" Frame. (See Easy Sheet #3)

DIVIDER BARS: Used to divide rigid faces into smaller panels, which can be changed individually, ABC has four Divider Bars: The 3-1/8" - 2-1/2" and 1-3/4" sizes work with the E-Z Retainer or the Beveled Retainer. The 1-1/2" Divider Bar works with the 10" frame or any frame system with a flat retainer. (See Easy Sheet # 14)

BACK ADAPTER: This part attaches like a retainer, but is used to receive a sheet metal back for single face sign applications.

HEAVY DUTY R-SADDLE: By using a piano hinge at the top, this part can be used with the 12" Frame when hinged faces are desired. It also extends the frame width to 15-1/2" width. It is designed to use ABC's gas cylinder struts to automatically open the face and hold it open when the side and bottom screws are removed. This provides safe, hands-free internal service access.

E-Z RETAINER CORNER KEY: The E-Z Retainer Coner Keys are designed to perfectly align the mitered corners. The spring steel clip on each end press in but will not come out. By eliminating the spring steel clip on one side of a Key, an end retainer can be removed for sliding the faces in and out.



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