



HARDWARE SELECTION FOR HOLLOW METAL DOORS AND FRAMES



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HARDWARE SELECTION FOR HOLLOW METAL DOORS AND FRAMES

PART 1 - INTRODUCTION

The hardware used not only determines how well a door functions, but is also an important factor in the working life of the opening. Among the many benefits of custom hollow metal is the virtually unlimited choice of hardware that can be used. The architect is free to select those items which will provide the operational features, aesthetics, and quality desired, such as the use of electrical hardware, pivots or anchor hinges, concealed closers, concealed vertical rod devices, separate deadlocks, pre-assembled locks, and other architectural hardware.

For any hardware item to function properly, the door and/or frame must be properly prepared. The durability of the hardware and its attachment depends on the strength of the preparation. For example, preassembled ("unit") locks cannot be properly installed by simply making a rectangular cutout in the door edge. The type of lock to be used must be known in advance by the door manufacturer so the appropriate reinforcement and preparation can be built into the door. The same is true of all other architectural hardware items.

Field applied hardware preparations cannot compare in strength or quality with factory-made preparations. Since the custom manufacture of hollow metal is designed for a specific purpose, its reinforcing and preparation are within the tolerances specified for the hardware and provide the strength for secure fasteners.

This publication is intended to acquaint the reader with commonly used door hardware that provide both aesthetic appeal and durable function. This summary is not intended as a reference catalog or a comprehensive source of hardware information, but only as an indication of the variety of hardware choices available.

In order to properly prepare each opening for the specified hardware items, a hardware schedule, corresponding templates, and catalog cuts, if appropriate, are required. The hardware schedule must be understandable and accurately relate the specific hardware to the specific opening in a logical manner. Although there are alternate schedule formats, the vertical hardware schedule is most commonly used and preferred.

The vertical schedule lists the exterior openings first, followed by the interior openings, and miscellaneous items last.

The following information is required at the beginning of a hardware schedule:

- A. Job: Name, location, and telephone number.
- B. Architect: Name, location, and telephone number.
- C. Contractor: Name, location, and telephone number.
- D. Hardware Supplier: Name, location, and telephone number.
- E. Door and Frame manufacturer: (if known) Name, location, and telephone number.
- F. Hardware manufacturers' names for all listed items.
- G. Template numbers.
- H. Abbreviations.

WITHIN THE HARDWARE SCHEDULE, ONLY OPENINGS WITH IDENTICAL HARDWARE SHOULD BE LISTED UNDER THE SAME HARDWARE SET.

Each hardware set must include all information required to properly prepare the opening for the hardware.

This includes:

- A. Hardware set number
- B. Opening identification and location
- C. Door and frame material
- D. Door and frame dimensions
- E. Hand of door
- F. Special door or frame conditions
 - 1. Degree of opening and hold open
- G. Label requirements
- H. Each hardware item, including;
 - 1. Product description
 - 2. Finish
 - 3. Hand
 - 4. Size
 - 5. Template number
 - 6. Special requirements

The sequence for listing each hardware item is as follows:

- A. Hanging Devices
- B. Securing Devices
- C. Operating Trim
- D. Accessories for Pair of Doors Only
- E. Closing and Controlling Devices
- F. Protective Plates and Trim
- G. Stops and Holders
- H. Accessories
- I. Miscellaneous

THE LOCATION OF HARDWARE ON DOORS AND FRAMES SHALL BE AS SPECIFIED IN THE HOLLOW METAL DOOR AND FRAME SPECIFICATION.

PART 2 - HANGING DEVICES

A. BUTT HINGE

Butt hinges are the most common type of hinge. They are available in two thicknesses, commonly referred to as weights, (regular or heavy) and with or without ball bearings. When provided with ball bearings, regular weight hinges will have two bearings as shown and heavy weight hinges will have four bearings.

Sizes and weight of hinge should be determined by published industry standards.

Standard Height: 4-1/2 in. (114 mm); 5 in. (127 mm) for doors over 36 in. (914 mm) wide.

Standard Width: 4-1/2 in. (114 mm) for 1-3/4 in. (44 mm) door; with 1-1/2 in. (38 mm) trim clearance (see dimension A below); 5 in. (127 mm)(or more) for thicker doors or larger clearances.

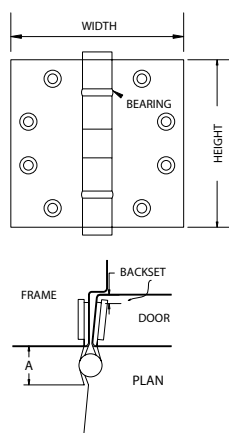


FIGURE 1a
FULL MORTISE

1. The Full Mortise Butt Hinge, Figure 1a, has two equal leaves, one mortised into the door edge and the other mortised into the frame rabbet.

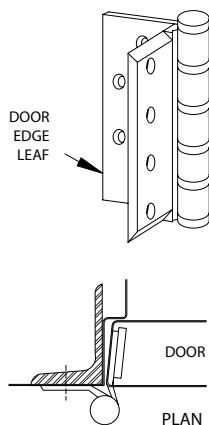


FIGURE 1b
HALF MORTISE

2. The Half Mortise Butt Hinge, Figure 1b, has one leaf mortised into the door edge and one leaf surface mounted on the face of the frame.

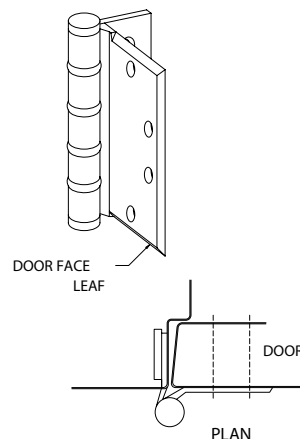


FIGURE 1c
HALF SURFACE

3. The Half Surface Butt Hinge, Figure 1c, has one leaf surface mounted on the face of the door and one leaf mortised into the frame rabbet.

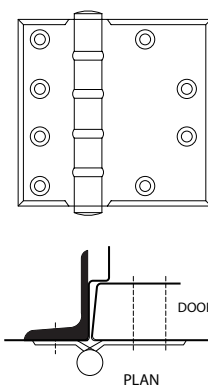


FIGURE 1d
FULL SURFACE

4. The Full Surface Butt Hinge, Figure 1d, has two leaves of differing widths, one surface-mounted on the door face, the other surface mounted on the frame face.

B. CONTINUOUS HINGE

Continuous hinges are surface mounted to both the door/frame edge or face and distribute the load of the door over the entire length of the hinge. They are used where door impact resistance, safety, cleanliness, and adjustability are frequent and necessary requirements. Such places include hospitals and schools.



FIGURE 2a
BARREL and GEAR

Continuous hinges, Figure 2a, are available in two styles, Barrel and Gear Hinge. For illustration purposes only, Figures 2b through 2e are shown with Barrel type hinge.

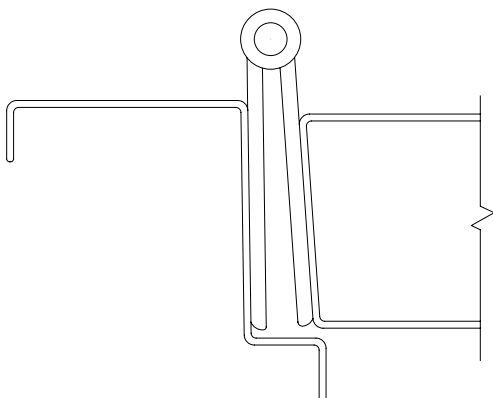


FIGURE 2b
EDGE MOUNTED

1. The Edge Mounted Continuous Hinge, Figure 2b, has two equal leaves; one leaf mounted to the frame rabbet and the other leaf mounted to the door edge.

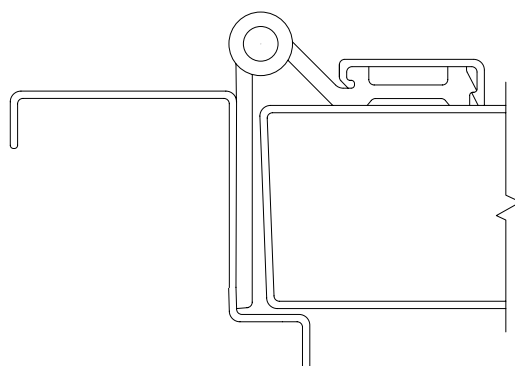


FIGURE 2c
HALF SURFACE

2. The Half Surface Continuous Hinge, Figure 2c, has one leaf mounted to the frame rabbet and the other leaf mounted to the door face.

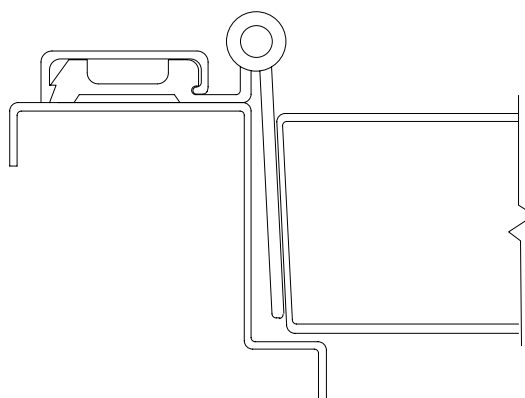


FIGURE 2d
HALF EDGE MOUNTED

3. The Half Edge Mounted Continuous Hinge, Figure 2d, has one leaf mounted to the frame face and the other leaf mounted to the door edge.

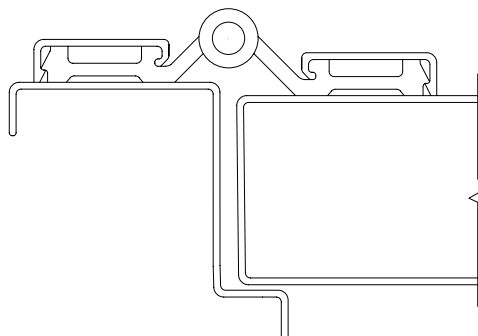


FIGURE 2e
FULL SURFACE

4. The Full Surface Continuous Hinge, Figure 2e, has one leaf mounted to the frame face and the other leaf mounted to the door face.