

Guidelines to Measure for Replacement Doors in Existing Frame Openings



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1 Introduction

This document is intended to provide guidance for measurement and recording of existing opening and/or door dimensions required to fully detail a replacement door(s). The included figures identify the basic dimensions of frame openings and doors with standard hardware applications. Separate illustrations are provided for detailing single and paired frame openings as well as detailing individual doors.

1.1 Referenced Documents

Related SDI Technical Series documents provide additional technical guidance on this topic:

SDI-108 *Recommended Selection and Usage Guide for Standard Steel Doors*

SDI-111 *Recommended Details for Standard Steel Doors, Frames, Accessories and Related Components*

SDI-122 *Installation Troubleshooting Guide for Standard Steel Doors and Frames*

SDI-129 *Hinge & Strike Spacing*

SDI-134 *Glossary of Terms for Hollow Metal Doors and Frames*

1.2 Other Reference Materials

ANSI/BHMA A156.1-2016 *Butts and Hinges*

ANSI/BHMA A156.7-2014 *Template Hinge Dimensions*

ANSI/BHMA A156.115-2014 *Hardware Preparation in Steel Doors or Steel Frames*

1.3 Notes

1.3.1 Tolerances

All values which do not carry specific tolerances or are not marked maximum or minimum shall have the following tolerances: Linear dimensions shall be $\pm 1/16$ in. (1.6 mm). Weight or force shall be $\pm 2\%$. Angles shall be ± 2 degrees. Where only minus tolerances are given, the dimensions are permitted to be exceeded at the option of the manufacturers.

1.3.2 Gauge vs. Thickness

While the term 'gauge' is no longer common for defining material thickness it is still used to specify doors and frames for ordering purposes. The term 'thickness' is used when defining the actual dimension of an item,

and the term 'gauge' is used in the context of specifying a particular door or frame.

2 Preparation

Installation conditions and issues will affect door operation and should be considered beforehand. Door and hardware in an improperly installed frame may function poorly. Check the floor clearance and the frame opening to verify acceptable square and level conditions. Reference SDI-122 to check for frame installation issues. Slight adjustment may be possible without removal.

Note: Frame may need to be replaced for proper function of the opening.

Basic door and frame terminology used in instructions and illustrations is explained in more detail below and in SDI-134.

The term "nominal dimensions" refers to the width and height dimensions of the frame opening. When applied to a door size, it is implicit that the door is undersized to properly fit into the nominal frame opening with proper clearances. The term "net dimension" refers to the door's width and height dimensions. To illustrate, the door width and height dimensions in (Fig 3) are actual or "net" dimensions.

Technical Data Series SDI-129, "Hinge and Strike Spacing," provides standard locations for hinge and strike preparations in SDI member doors and frames. Manufacturers' locations may change so it is imperative that the hinge and strike locations be measured for replacement doors and frames.

Hardware preparations of the replacement door must be sized and located to coincide with those on the existing frame to ensure proper fit, positioning and clearances for door operation.

For hardware applications not covered below, contact the replacement door or hardware manufacturer.

3 Measurements

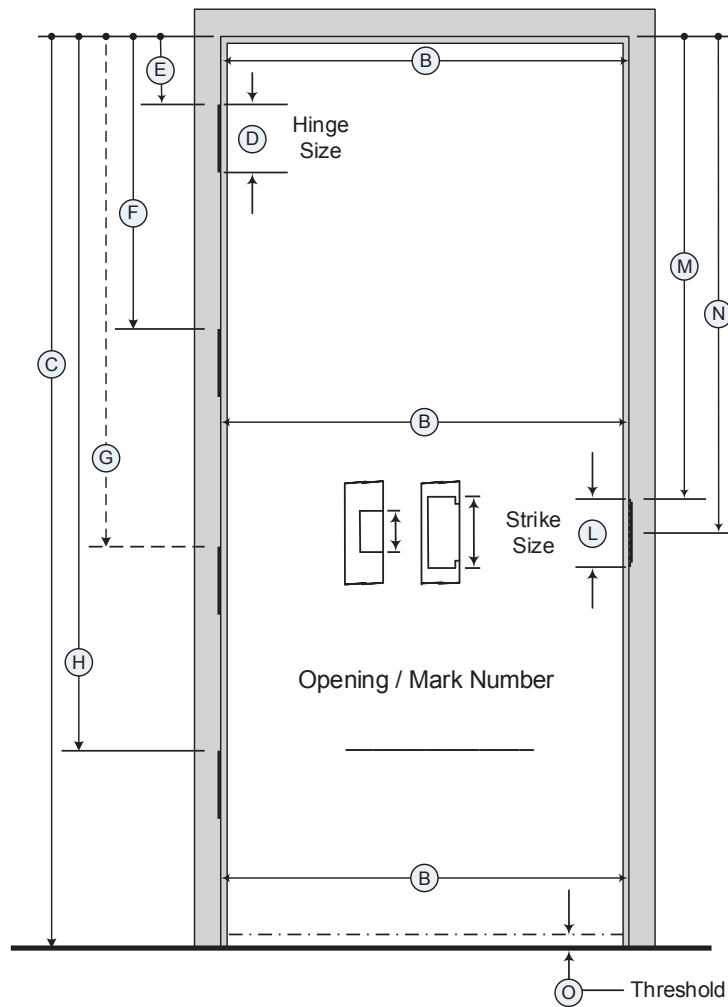
3.1 Tools

- Tape measure
- Steel rule
- Calipers (optional)
- Framing square and small square
- Level (24" minimum)
- Plumb bob (optional)



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–	Opening #	
A	Handing	
B	Opening Width (Min)	
C	Opening Height (Min)	
D	Hinge Size	
E	First Hinge	
F	Second Hinge	
G	Third Hinge (if 4)	
H	Fourth Hinge	
J	Hinge Backset	
K	Hinge Weight	
L	Strike Size	
M	Top of Strike	
N	C/L Strike Hole	
O	Threshold Height	
P/Q	Sill Condition	
R	Door Thickness	
S	Door Rabbet	
T	Stop Height	
U	Label Requirements	

All Measurements $\pm \frac{1}{32}$ "
All Measurements are of Existing Frame

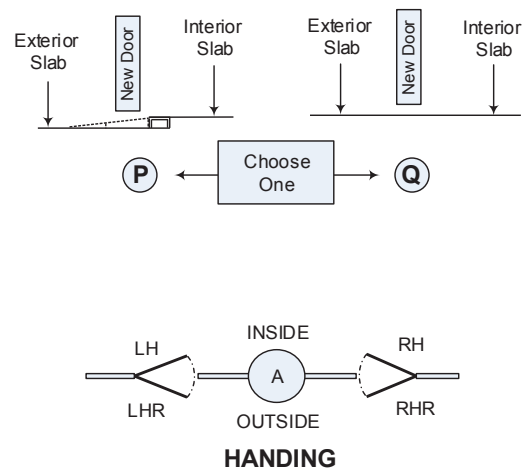
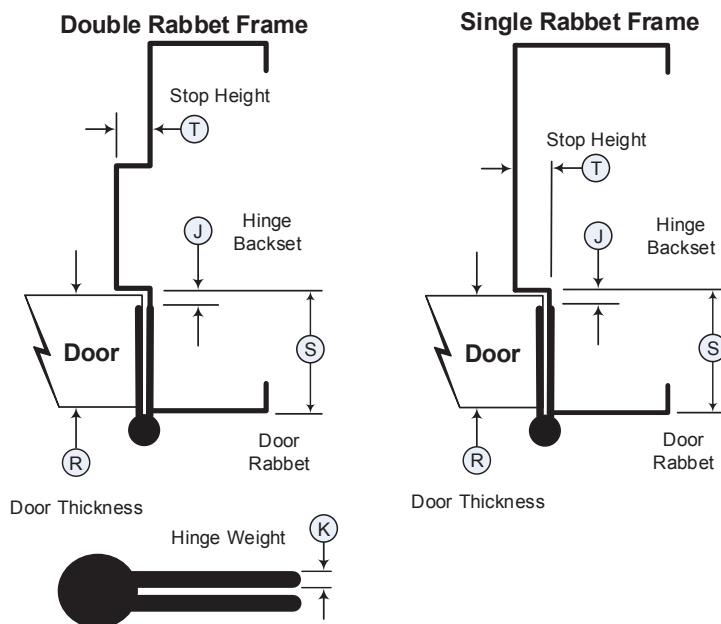


Figure 1 – Existing Frame Opening – Single Door