SECTION 11 - FRAMES, GENERAL

Technical Information:
Prime Paint Data ...................................................... 11-002
Colorstyle Paint Data .................................................. 11-003

Frame, Door Opening Sizes and Hardware Provisions:
1-3/8" Door - Single and Double .................................. 11-101
Hardware Locations - Standard 1-3/8" Door ...................... 11-102
1-3/4" Door - Single and Double .................................. 11-103
Hardware Locations - Standard 1-3/4" Door
6-8, 7-0, 7-2 High, 4-1/2" or 5" High Hinge .................... 11-104
7-10, 8-0, 9-0, 10-0 High, 4-1/2" or 5" High Hinge .......... 11-104A
5-0 Thru 10-0 .............................................................. 11-104B, 11-104C
6-8, 7-0, 7-2, 8-0 High, Dutch, 4-1/2" or 5" High Hinge .... 11-104D
Hardware Locations - Optional (NAAMM), 1-3/4" Door
6-8, 7-0, 7-2 High, 4-1/2" High Hinge ......................... 11-105
7-10, 8-0, 9-0 High, 4-1/2" High Hinge ....................... 11-105A
6-8, 7-0, 7-2 High, 5" High Hinge ............................. 11-106
7-10, 8-0, 9-0 High, 5" High Hinge .......................... 11-106A
1-3/8" Door Frames, Hinge and Strike Preparations .......... 11-201
1-3/4" Door Frames, 4-1/2" and 5" Hinge Preparations ....... 11-202
1-3/4" Door Frames, ANSI (4-7/8") Strike Preparations .... 11-203
1-3/4" Cylindrical Strike Preparation ........................... 11-204
Series SQW Weatherstrip Kerf Frame Hinge Preparation ...
Series SQW Weatherstrip Kerf Frame Strike Preparation ... 11-205
Full Depth Hinge Reinforcement ................................. 11-207
High Frequency Hinge Preparation .............................. 11-208
1-3/8" and 1-3/4" Door Frame Mute Application .............. 11-209
Reversible Flush Bolt Preparation .............................. 11-210

Frame Construction:
Double Rabbet Frames, Die-cut, Welded Corner
Assembly T-1 ........................................................... 11-301
Double Rabbet Frames, Die-cut, Welded Corner
Assembly T-2, T-3 ...................................................... 11-302
Double Rabbet Frames, Die-cut, Welded Corner
Assembly V-1, V-2 ...................................................... 11-303
Double Rabbet Frames, Die-cut, Welded Corner
Assembly V-3 ........................................................... 11-304
Double Rabbet Frames, Miter-sawed, Welded Corner
Assembly V-4, V-5 ...................................................... 11-305
Double Rabbet Frames, Coped, Butted, Welded Corner
Assembly V-7 ........................................................... 11-306
Double Rabbet Frames, Welded Junctions
Assembly V-8, V-9 ...................................................... 11-307
SECTION 11 - FRAMES, GENERAL

Hardware Reinforcements:
Closer Reinforcements, Plate Type ......................................................... 11-401, 11-402
Miscellaneous Hardware Reinforcements, Plate Type ............................. 11-403

Frame Anchors:
Anchor Quantity ....................................................................................... 11-500
Floor Anchors .......................................................................................... 11-501 thru 11-503
Masonry Anchors ...................................................................................... 11-504, 11-505
Existing Opening Anchors ...................................................................... 11-505 thru 11-507
Wood Stud Anchors .................................................................................. 11-508, 11-509
Metal Stud Anchors .................................................................................. 11-510, 11-511
Before Drywall Stud Anchor ................................................................. 11-511
Closure Clip ............................................................................................. 11-512
Frame Splines ............................................................................................ 11-513

Special Information:
Standard Frame Installation ................................................................. 11-901, 11-902
Frame Spreader Bars ................................................................................ 11-903
Process Data

Steel door frame pieces are processed through a washer to clean and pre-treat the steel. This treatment removes mill-contaminants and provides excellent primer adhesion and under film corrosion protection.

After the wash, the frame pieces are dried and then painted with a neutral-color primer. Application is by means of spray or by immersion in a dip-tank. The frame pieces are then oven dried.

The primer coating provides protection against rust and exhibits excellent adhesion characteristics. This primer is an environmentally friendly water-base paint that contains no heavy metal pigments and meets air quality guidelines. The primer coating is intended as a preparatory base for necessary field painting.

Standard primer color: Gray

Performance Data

Primer-painted steel surfaces have been subjected to the following tests:
  - Salt Spray
  - Humidity
  - Impact
  - Film Adhesion

Primer paint meets the requirements for acceptance stated in the current version of ANSI Standard A250.10, "Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces".

Field Painting

A finish coat of paint is to be applied to prime painted units by the painting contractor. The topcoat of paint used over the primer plays a very important role in extending the life of a steel frame. Any paint used must be compatible with steel. Solvent base finish paints are recommended for application over the factory applied primer. If solvent base finish paints cannot be used, it is important that a water-base primer formulated for steel be applied over the factory primer. This should be done before applying water-base top coats, to prevent flash rusting.

Gloss

Show-through characteristics of finish increase as the paint gloss increases. To minimize this, a maximum paint gloss rating of 20% reflectance, measured using a 60° gloss meter is recommended. This should be suitable for most applications. Translucent paints may emphasize show-through and their use is not recommended.
Process Data

Factory-applied Colorstyle finish is a two-part, urethane top-coat that is electrostatically applied over the standard primer. The paint is then oven cured.

The chemically reactive cure provides a top quality, abrasion resistant finish with excellent weathering characteristics. This finish is environmentally friendly in that it does not contain heavy metal pigments.

60˚ Gardner Gloss: 15 to 20.
Colors: Standard color selectors available upon request.

Performance Data

Colorstyle, factory applied finish paint process has been subjected to the following tests:
- Salt Spray
- Humidity
- Accelerated Weathering
- Impact
- Film Adhesion
- Abrasion

Factory applied Colorstyle finish paint meets the performance requirements and acceptance criteria as stated in ANSI Standard A250.3, “Test Procedure and Acceptance Criteria for Factory Applied Finish Painted Steel Surfaces...”.

11-003
Distributor Tech Data

1-3/8” DOOR FRAME

STANDARD DOOR OPENING SIZES

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FRAMES ON THIS PAGE ARE FOR USE WITH 1-3/8” THICK DOORS.
1-3/8" DOOR FRAMES HINGE AND STRIKE LOCATIONS

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* Labeled 6-8 frames require 3 hinges.

**STANDARD FRAME**

**FRAME HEIGHTS**

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**DUTCH DOOR FRAME**

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* Labeled 6-8 frames require 3 hinges.

2 hinges standard for non-labeled 6-8 frames

3 hinges optional for non-labeled 6-8 frames
Distributor Tech Data

1-3/4” DOOR FRAME SIZES

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STANDARD DOOR OPENING SIZES

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STANDARD HARDWARE LOCATIONS 1-3/4"
DOOR FRAMES: 6-8, 7-0 & 7-2 HEIGHTS
4-1/2" OR 5" HIGH HINGES

These hardware locations are Ceco Door Products standard and will be furnished unless otherwise agreed to.
STANDARD HARDWARE LOCATIONS FOR
1-3/4" DOOR FRAMES:
7-10, 8-0, 9-0, AND 10-0 Heights

DOOR OPENING HEIGHTS

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<td>26&quot;</td>
<td>25.33&quot;</td>
</tr>
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</table>

*21/64" represents a measurable approximation to .33".

These hardware locations are Ceco Door Products standard and will be furnished unless otherwise agreed to.
Distributor Tech Data

FACTORY STANDARD HARDWARE
LOCATIONS: HEIGHTS 5'-0" THRU 10'-0"

DOOR OPENINGS UP TO AND INCLUDING 5'-0" IN HEIGHT ARE PREPARED FOR (2) MORTISE HINGES.

STRIKE LOCATION FOR DOORS UNDER 5'-0" MUST BE SPECIFIED ON CUSTOMER ORDER.

DOOR OPENINGS OVER 5'-0" THRU 7'-6" IN HEIGHT ARE PREPARED FOR (3) MORTISED HINGES.

STRIKE HEIGHT

DOOR OPENINGS OVER 7'-6" THRU 10'-0" WILL BE PREPARED FOR (4) MORTISED HINGES.

STRIKE HEIGHT

Note: This standard applies to all door opening sizes. The charts on page 11-104C depict standard hardware locations for sizes listed in one inch increments.
## NOMINAL SIZES

**FACTORY STANDARD HARDWARE LOCATIONS: HEIGHTS 5’-0” THRU 10’-0”**

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<tr>
<td>9'-10”</td>
<td>4</td>
<td>3 @ 33.33”</td>
</tr>
<tr>
<td>9'-11”</td>
<td>4</td>
<td>3 @ 33.66”</td>
</tr>
<tr>
<td>10'-0”</td>
<td>4</td>
<td>3 @ 34”</td>
</tr>
</tbody>
</table>
STANDARD HARDWARE LOCATIONS, 1-3/4”

DUTCH FRAMES: 6-8, 7-0, 7-2 & 8-0

HEIGHTS - 4-1/2” OR 5” HIGH HINGES

These hardware locations are Ceco Door Products standard and will be furnished unless otherwise agreed to.
HARDWARE LOCATIONS SHOWN BELOW ARE BASED ON THE FOLLOWING:

5" from head to top of upper hinge.
10" from bottom of jamb to bottom of lower hinge.
Equal spacing between intermediate hinges.

DOOR OPENING HEIGHTS

7-2 7-0 6-8

7.25" (7 1/4"

(33 1/4"

33.25" 32.25" 30.25"

HINGE SPACING

12.25" (12 1/4"

The above hardware locations will be furnished only when agreed to.

Strike Height On Frame Is Dependent On Knob Or Crossbar Height. Refer To Door Hardware Locations (p. 01-403) And Manufacturer's Lock Template To Determine Relationship Between Lock And Strike.
The above hardware locations will be furnished only when agreed to.

HARDWARE LOCATIONS SHOWN BELOW ARE BASED ON THE FOLLOWING:

5" from head to top of upper hinge.
10" from bottom of jamb to bottom of lower hinge.
Equal spacing between intermediate hinges.

DOOR OPENING HEIGHTS

10-0  9-0  8-0  7-10

Strike Height On Frame Is Dependent On Knob Or Crossbar Height. Refer To Door Hardware Locations (p. 01-403a) And Manufacturer's Lock Template To Determine Relationship Between Lock And Strike.

* 53/64" represents a measurable approximation to .83".

The above hardware locations will be furnished only when agreed to.
The above hardware locations will be furnished only when agreed to.

DISTRIBUTOR TECH DATA

NAAMM ALTERNATE HDWE LOCATIONS, 1-3/4”
DOOR FRAMES: 6-8, 7-0 & 7-2 HEIGHTS
5” HIGH HINGES

HARDWARE LOCATIONS SHOWN BELOW ARE BASED ON THE FOLLOWING:

5” from head to top of upper hinge.
10” from bottom of jamb to bottom of lower hinge.
Equal spacing between intermediate hinges.

DOOR OPENING HEIGHTS

<table>
<thead>
<tr>
<th>Height</th>
<th>7-2</th>
<th>7-0</th>
<th>6-8</th>
</tr>
</thead>
<tbody>
<tr>
<td>33”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32”</td>
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<td></td>
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<tr>
<td>30”</td>
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<td>25”</td>
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<td>20”</td>
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<td></td>
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</tr>
<tr>
<td>Strike Height</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Strike Height On Frame Is Dependent On Knob Or Crossbar Height. Refer To Door Hardware Locations (p. 01-404) And Manufacturer’s Lock Template To Determine Relationship Between Lock And Strike.
The above hardware locations will be furnished only when agreed to.

Distributor Tech Data

NAAMM ALTERNATE HDWE LOCATIONS
1-3/4" DOOR FRAMES: 7-10, 8-0, 9-0
AND 10-0 HEIGHTS - 5" HIGH HINGES

HARDWARE LOCATIONS SHOWN BELOW ARE BASED ON THE FOLLOWING:

5" from head to top of upper hinge.
10" from bottom of jamb to bottom of lower hinge.
Equal spacing between intermediate hinges.

Door Opening Heights

10-0 9-0 8-0 7-10

7.5" (7 1/4"

33.33" (33 21/64"

29.33" (29 21/64"

25.33" (25 21/64"

24.66" (24 21/64"

Hinge Spacing

12.5" (12 1/2"

Strike Height On Frame Is Dependent On Knob Or Crossbar Height. Refer To Door Hardware Locations (p. 01-404a) And Manufacturer's Lock Template To Determine Relationship Between Lock And Strike.

* 21/64" represents a measurable approximation to .33".
* 21/32" represents a measurable approximation to .66".

The above hardware locations will be furnished only when agreed to.
1-3/8" DOOR FRAME
STRIKE AND HINGE PREPS

STRIKE REINFORCEMENT

USE WITH CYLINDRICAL LOCKS ONLY
(1-1/8" x 2-3/4" "T" STRIKE)

PIERCE, DRAW AND TAP FOR #8-32 MS TO PROVIDE A MIN. 1/8" THREAD DEPTH

16 GAGE FORMED STEEL STRIKE REINF. PROJECTION WELDED (2) PLACES EACH END

1-1/4"

5/16" (NOM.) BACKSET

1-1/4" (NOM.)

1-1/4"

16 GAGE STRIKE REINFORCEMENT

PLASTER GUARD FORMED AS PART OF STRIKE REINF.

1-25/64"

1-9/16"

TAPPED HOLES FOR #10-24 MS (3) PLACES

1-17/32"

2-1/8"

2-25/32"

12 GA. HINGE REINF. PROJECTION WELDED TO FRAME (3) PLACES EACH END

FACE NOTCH VARIES PER FRAME GAGE

1-25/64"

2-1/8"

23/64"

3/16" (NOM.)

7/32"

2-25/32"

5/16" (NOM.) BACKSET

FACE NOTCH VARIES PER FRAME GAGE

3/8"

21/64"

12 GA. HINGE REINF. PROJECTION WELDED TO FRAME (3) PLACES EACH END

26 GAGE STEEL PLASTER GUARD IS SNAPED-IN PLACE AFTER HINGE REINF. IS WELDED TO JAMB

21/64"

1-25/64"

2-1/8"

23/64"

1-9/16"

FOR USE WITH 3-1/2" HIGH TEMPLATE HINGES (ANSI A156.7)
Distributor Tech Data

1-3/4" DOOR FRAME
4-1/2" & 5" HINGE PREPS

4-1/2" HINGE PREP
FOR USE WITH 4-1/2" HIGH
TEMPLATE HINGES (ANSI A156.7)

5" HINGE PREP
FOR USE WITH 5" HIGH
TEMPLATE HINGES (ANSI A156.7)
Plaster Guard is installed (snapped in place) after reinforcement is welded to jamb. Snap-in design effectively prevents removal from the outside. Standard plaster guard shown will accept bolt throws of up to one inch long and is suitable for labeled fire-door frames.

ANSI (ASA) A115.1 and A115.2
"UNIVERSAL" STRIKE PREP
16 GAGE FORMED STEEL STRIKE REINFORCEMENT PROJECTION WELDED (2) PLACES EACH END PIERCE, DRAW AND TAP FOR #8-32 MS TO PROVIDE A MINIMUM 1/8” THREAD DEPTH

PLASTER GUARD FORMED AS PART OF STRIKE REINFORCEMENT

3” (NOM.) 8" BACKSET

1 5/32 CUTOUT

1 17/32

13/32

2 21/64

1 15/16
SERIES SQW WEATHERSTRIP
KERF FRAME HINGE PREPARATION

FIT FOAM FILLED WEATHERSTRIP TO FRAME AFTER FINISH PAINTING

26 GAGE STEEL PLASTER GUARD IS SNAPPED-IN PLACE. HINGE REINFORCEMENT IS WELDED TO JAMB.

PLASTER GUARD

ELEVATED PIPS REMAIN INTACT FOR .134 HINGES BUT MUST BE REMOVED FOR .180 HINGES (4 PLACES)

7 GAGE HINGE REINFORCEMENT PROJECTION WELDED TO FRAME (4 PLACES EACH END)

4-1/2" HINGE PREP
FOR USE WITH 4-1/2" HIGH TEMPLATE HINGES (ANSI A156.7)

26 GAGE STEEL PLASTER GUARD IS SNAPPED-IN PLACE. HINGE REINFORCEMENT IS WELDED TO JAMB.

7 GAGE HINGE REINFORCEMENT PROJECTION WELDED TO FRAME (4 PLACES EACH END)

5" HINGE PREP
FOR USE WITH 5" HIGH TEMPLATE HINGES (ANSI A156.7)
Distributor Tech Data

SERIES CF PROFILE WK
WEATHERSTRIP - KERF FRAME STRIKE PREPARATION

12 GAGE STEEL STRIKE REINF. PLATE - PROJECTION WELDED TO FRAME (6) PLACES

26 GAGE STEEL SNAP-IN PLASTER GUARD

FACE NOTCH VARIES PER FRAME GAGE

PIERCED, DRAW AND TAP FOR #8-32 MS TO PROVIDE A MIN. 1/8" THREAD DEPTH

FIT FOAM FILLED WEATHERSTRIP TO FRAME AFTER FINISH PAINTING

16 GAGE STRIKE REINFORCEMENT

PLASTER GUARD FORMED AS PART OF STRIKE REINF.
Distributor Tech Data

1-3/4” DOOR FRAME, FULL DEPTH HINGE REINFORCEMENT

TAPPED HOLE FOR #12-24 MS (4) PLACES

7 GAGE HINGE REINFORCEMENT WELDED TO FRAME

AVAILABLE FOR FRAME DEPTHS 5-1/2” THRU 10-5/8”

4-1/2” HIGH HINGE APPLICATION SHOWN
DOOR FRAME HIGH FREQUENCY
HINGE REINFORCEMENT STRAP

STEEL STRAP

1/4" LONG ARC WELDS
(3) PLACES PER STRAP

HINGE REINFORCEMENT AND
PLASTER GUARD APPLIED
PER PAGE #11-202
DOOR MUTES (SILENCERS) MAINTAIN PROPER SPACE (1/16") BETWEEN DOOR AND FRAME STOP AND CUSHION DOOR CLOSING. INSERT MUTES INTO FRAME BEFORE FRAME IS INSTALLED INTO WALL TO PREVENT GROUT, PLASTER, ETC. FROM FILLING HOLES.

1. INSERT BLUNT END OF 3/32" DIAMETER WIRE OR TOOL IN HOLE IN CENTER OF MUTE.

2. MOISTEN CONE PORTION AND INSERT IN HOLE IN STOP OF FRAME, PUSHING SLOWLY WITH CIRCULAR MOTION TO ELONGATE MUTE SUFFICIENTLY TO SET IN PLACE.

3. REMOVE WIRE

Fed. Spec. Type 1337A
RFB Assembly
Parts A, B, and D as listed below:

A. (12 ga. galv. steel)
B. (16 ga. galv. steel, prime paint)
C. (16 ga. galv. steel, prime paint)
D. #8-32 x 1/2" UCFHMS (2)
E. Plaster guard (Included on SU and SQ frames only)

Note 1
Pips are provided for projection welding. If other welding is used, flip Part A over.

Tackweld Part E on back of reinforcement as necessary.
1. Assemble frame: Bend tabs after assuring that face-miter seam is "closed" and "tight". Bend corner reinforcement tabs toward inside (toward throat) of frame. Bend rabbet tabs toward outside (toward jamb backbends).

2. Place weld bead as required at the joint of the head and jamb soffits from the backside.

2a. If weld penetration occurs, file smooth.

2b. Spot paint

Narrow Stop
One 1/2" (minimum) length stitch weld, located in the center of the soffit.

Wide Stop:
Two 1/2" long stitch welds located at each end of the head and jamb soffit seam.
1. Assemble frame: Bend tabs after assuring that face-miter seam is "closed" and "tight". Bend corner reinforcement tabs toward inside (toward throat) of frame. Bend rabbet tabs toward outside (toward jamb backbends) of frame.

2. Weld the entire face-miter seam, between head and jamb, from the outside (both faces).

3. Grind and dress smooth both face-miter seams after welding.

3a. Spot paint

FACE-MITER SEAM IS COMPLETELY INVISIBLE

4. Weld the entire web seam (including the seams between head and jamb rabbets, stops and soffits) from the backside, with a continuous weld bead.

4a. If weld penetration occurs, file smooth.

5. Spot paint

T-2

WELDING TYPE T-2  "OUTSIDE FACE WELD ONLY"

Standard KD frame components from stock with corner reinforcements. NO SAW CUTTING REQUIRED.

Reference: This corner has a full and continuous backbend at the head and jambs. It can be used on frames that cap the wall.

T-3

WELDING TYPE T-2  "OUTSIDE FACE WELD and FULL WEB WELD"

Standard KD frame components from stock with corner reinforcements. NO SAW CUTTING REQUIRED.
Reference: This corner has a full and continuous backbend at the head and jambs. It can be used on frames that cap the wall.

1. Assemble frame: Bend tabs after assuring that face-miter seam is "closed" and "tight". Bend rabbet tabs toward outside (toward jamb backbends) of frame.

2. Weld the entire face-miter seam from the inside. Weld is to penetrate to exterior.

2a. Grind the exterior face and fill as necessary.

V-2

WELDING TYPE V-2 "INSIDE FACE WELD ONLY"
Die-cut frame components - VOID OF CORNER REINFORCEMENTS
NO SAW CUTTING REQUIRED
1. Assemble frame: Bend tabs after assuring that face-miter seam is "closed" and tight. Bend rabbet tabs toward outside (toward jamb backbends) of frame.

2. Weld the entire face-miter seam from the inside. Weld is to penetrate to exterior.

2a. Grind the exterior face and fill as necessary.

3. Dress reworked areas.

4. Weld the entire web seam (including the seams between head and jamb rabbets, stops, and soffits) from the backside with a continuous weld bead.

4a. If weld penetration occurs, file smooth.

5. Spot weld.

Reference: This corner has a full and continuous backbend at the head and jambs. It can be used on frames that cap the wall.

V-3

WELDING TYPE V-3 "INSIDE FACE WELD and FULL WEB WELD"

Die-cut frame components - VOID OF CORNER REINFORCEMENTS
NO SAW CUTTING REQUIRED.
**MITER - SAWED FRAME WELDED CORNER ASSEMBLY**

Reference: This corner has a full and continuous backbend at the head and jambs. It can be used on frames that cap the wall.

1a. Clamp the head and jamb at 90°.

2. Weld the entire face-miter seam from the inside. Weld is to penetrate to exterior.

2a. Grind the exterior face and fill as necessary.

3. Dress reworked areas and spot paint.

**FACE-MITER SEAM IS COMPLETELY INVISIBLE**

Double rabbet shown
Other profiles similar

**WELDING TYPE V-4 **INSIDE FACE WELD ONLY**
Miter-sawed frames

Reference: This corner has a full and continuous backbend at the head and jambs. It can be used on frames that cap the wall.

1. Miter-saw the ends of the head and jambs at 45°.
   (Note: The face dimensions of the head and jamb have to be equal.)

1a. Clamp the head and jamb at 90°.

2. Weld the entire face-miter seam from the inside. Weld is to penetrate to exterior.

2a. Grind the exterior face and fill as necessary.

3. Dress the face-miter seam (exterior) and spot paint.

4. Weld the entire web seam (including the seams between head and jamb rabbets, stops, and soffits) from the backside, with a continuous weld bead.

4a. If weld penetration occurs, file smooth.

5. Spot paint

**FACE-MITER SEAM IS COMPLETELY INVISIBLE**

Double rabbet shown
Other profiles similar

**WELDING TYPE V-5 **INSIDE FACE WELD and FULL WEB WELD**
Miter-sawed frames
Reference: The area on each end of the head is void of backbends. This assembly is normally specified for butted-frame applications only.

1. Cut on this line. (Remove miter)
   1a. Cut off soffit tab/s if present.
2. Clamp head and jamb at 90°.
3. Weld the entire face seam between head and jamb from the outside.
4. Grind and dress-smooth both face seams.
5. Place weld bead as required at the joint of the head and jamb soffits from the backside
   5a. If weld penetration occurs, file smooth.
6. Spot paint

**FACE SEAM IS COMPLETELY INVISIBLE**

**V-7**

WELDING TYPE V-7. *COPED JAMB -- OUTSIDE FACE WELD and SOFFIT WEB WELD*  
Re-work standard KD jamb -- stock bar head

**Narrow Stop**

One 1/2" (minimum) length stitch weld, located in the center of the soffit.

**Wide Stop:**

Two 1/2" long stitch welds located at each end of the head and jamb soffit seam.
DOUBLE RABBET FRAMES
WELDED JUNCTIONS

Reference: This condition can be specified for horizontal mullions and transom bars (as shown), or for vertical imposts. Reinforcements for surface applied hardware must be installed before unit is assembled.

1. Square cut closed frame section and cope to receive jamb stop.
2. Insure that angle formed by junction of the open and closed frame section is 90°.
3. Check the alignment of faces at seams between the open and closed frame sections.
4. Weld the entire face seam between open and closed frame sections from the outside.
4a. Grind and dress smooth both face seams after welding.
5. Spot paint all exposed metal.

WELDING TYPE V-8, BUTTED CORNER - JUNCTION OF CLOSED FRAME SECTION WITH OPEN FRAME SECTION - OUTSIDE FACE WELD ONLY.*

Reference: This condition can be specified for the junction between mullion or transom bar with vertical impost: i.e., two closed frame sections. Reinforcement for surface applied hardware must be installed before unit is assembled.

1. Square cut mullion or transom and cope to receive jamb stop.
2. Insure that angle formed by junction of both the vertical and horizontal frame sections is 90°.
3. Check the alignment of faces at seams between both the vertical and horizontal frame sections.
4. Weld the entire face seam between both the vertical and horizontal frame sections from the outside.
4a. Grind and dress smooth both face seams after welding.
5. Spot paint all exposed metal.

WELDING TYPE V-9, "BUTTED CORNER - JUNCTION OF CLOSED FRAME SECTION WITH CLOSED FRAME SECTION - OUTSIDE FACE WELD ONLY."
Application and Purpose: Frames with hospital stops are primarily used in health care facilities where a clean environment is desired. This condition is for any jamb component where there’s a desire for easier cleaning and minimizing the build-up of dirt, germs, and bacteria at the floor level of the door opening.

**AVAILABLE IN ALL SERIES WITH A SOFFIT**
(Not recommended for thermal break or weatherkerf)

FIRE RATING NOTE: The hospital stop option is available on positive pressure fire rated frames. Stop termination height cannot exceed 6” from bottom of jamb to termination point. Check with AHJ regarding smoke and draft control conditions as terminated stop leaves no place for smoke seals to be adhered.

DOUBLE & SINGLE RABBET:
1. A horizontal & vertical slot is made in the jamb,
2. The jamb is formed as such that the vertical slot closes together.
3. A backing plate is welded to the sill end behind the vertical and horizontal slots.
4. All seams are welded completely. Putty or bondo may be used to finish the seams smooth.

DOUBLE EGRESS:
1. A 45° cut is made to the upper soffit and the material is removed.

2. A cased open piece, of proper length, is welded at the bottom of the jamb.

3. The 45° cut and the open area at the lower soffit is closed with the same gauge & finish material as the jamb.

4. All seams are welded completely. Putty or bondo may be used to finish the seams smooth.

MULLION:
1. Slots are cut along the stops, to the proper length, ending in a 45° angle.

2. The flap that is left is bent down flush with rabbets & supported by a backing plate.

3. All seams are welded, ground smooth, and finished with putty or bondo before prime paint is applied.

NOTE: The hospital stop is available on one or both sides of a "D", "T", or "B" mullion.

(D-Mullion shown)
CLOSER REINFORCEMENT PLATE TYPE

**REGULAR ARM CLOSER MOUNTING**

REINFORCEMENT PLATE:
14 GAGE MIN. STEEL x 1/3/4" x 14" (1)

Note: If 1-3/4" dimension is too big to fit face...decrease size to suit.

PLACE FLAT AGAINST INSIDE OF FACE AND BUTT AGAINST INSIDE OF DOOR RABBET.

(1) 1" LONG (APPROX) STITCH WELD AT EACH END OF PLATE

**PARALLEL ARM CLOSER MOUNTING**

REINFORCEMENT PLATE:
14 GAGE MIN. STEEL x 1/3/4" x 14" (1)

Note: If 1-3/4" dimension is too big to fit stop...decrease size to suit.

PLACE FLAT AGAINST INSIDE OF DOOR SOFFIT AND BUTT AGAINST INSIDE OF DOOR STOP.

(1) 1" LONG (APPROX) STITCH WELD AT EACH END OF PLATE

**CORNER BRACKET CLOSER MOUNTING**

REINFORCEMENT PLATE:
14 GAGE MIN. STEEL x 1/3/4" x 14" (2)

Note: If 1-3/4" dimension is too big to fit stop...decrease size to suit.

PLACE FLAT AGAINST INSIDE OF DOOR SOFFIT AND BUTT AGAINST INSIDE OF DOOR STOP.

(1) 1" LONG (APPROX) STITCH WELD AT EACH END OF EACH PLATE

Note: Do not use with standard DW plumb anchor. Not recommended when door opening height is less than 7'-0".

**TOP JAMB CLOSER MOUNTING**

REINFORCEMENT PLATE:
14 GAGE MIN. STEEL x 1/3/4" x 14" (1)

Note: If 1-3/4" dimension is too big to fit face...decrease size to suit.

PLACE FLAT AGAINST INSIDE OF FACE AND BUTT AGAINST INSIDE OF HEAD BACKBEND.

(1) 1" LONG (APPROX) STITCH WELD AT EACH END OF PLATE
**CLOSER REINFORCEMENT PLATE TYPE**

**INSWING DOOR: SURFACE BOLTS**

### REINFORCEMENT PLATE:
14 GAGE MIN. STEEL x 1/3/4" x 14" (1)

- Note: If 1-3/4" dimension is too big to fit face, decrease size to suit.

- Place flat against inside of rabbet opposite door and butt against inside of door face.

- Location of optional plate, see 11-401

- Note: Verify against manufacturer's template that size and position of plate satisfy hardware needs.

**OUTSWING DOOR: SURFACE BOLTS AND REMOVABLE MULLIONS**

### REINFORCEMENT PLATE:
14 GAGE MIN. STEEL x 1/3/4" x 14" (1)

- Note: If 1-3/4" dimension is too big to fit stop, decrease size to suit.

- Place flat against inside of door soffit and butt against inside of door stop.

- Note: Verify against manufacturer's template that size and position of plate satisfy hardware needs.

**RIM TYPE PANIC DEVICE MOUNTING**

### REINFORCEMENT PLATE:
14 GAGE MIN. STEEL x 1/3/4" x 14" (1)

- Note: If 1-3/4" dimension is too big to fit stop, decrease size to suit.

- Place flat against inside of door soffit and butt against inside of door stop.

- Note: Verify against manufacturer's template that size and position of plate satisfy hardware needs.
1-15/16" RABBET

(2) WELDS PER END

14GA. GALV. STL.

1-5/8"
5/8"
1-1/2"

FRAME HEAD
SECTION

CR/HALF

1-31/32"

13-7/8"

13-7/8"

REGULAR & PARALLEL ARM CLOSER MOUNTING

HEAD

HINGE JAMB

2" MIN. FACE

1-15/16" RABBET
## JAMB ANCHOR QUANTITIES FOR STANDARD HEIGHT FRAMES

<table>
<thead>
<tr>
<th>ANCHOR TYPE</th>
<th>QUANTITY</th>
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</tr>
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<tbody>
<tr>
<td></td>
<td>JAMB ANCHORS PER FRAME</td>
<td>FLOOR ANCHORS PER FRAME</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6-8 THRU 7-2</td>
<td>7-10 THRU 10-0</td>
<td></td>
</tr>
<tr>
<td>NEW MASONRY</td>
<td>6</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>EXISTING OPENING</td>
<td>8</td>
<td>10</td>
<td>OMIT</td>
</tr>
<tr>
<td>WOOD STUD</td>
<td>6</td>
<td>8</td>
<td>2 *</td>
</tr>
<tr>
<td>METAL STUD</td>
<td>6</td>
<td>8</td>
<td>2 *</td>
</tr>
<tr>
<td>SOLID PLASTER</td>
<td>6</td>
<td>8</td>
<td>2 *</td>
</tr>
<tr>
<td>LAMINATED DRYWALL</td>
<td>6</td>
<td>8</td>
<td>2 *</td>
</tr>
</tbody>
</table>

* Floor anchors may be omitted and replaced with two additional jamb anchors.

Unless otherwise indicated, jamb anchors are normally located on the same center line as the hinge preparations except where interference would occur with hardware reinforcements. Where interference would occur, anchors should be positioned above or below hinge reinforcements and directly opposite on the strike jamb.

For sizes other than listed above, the following guidelines are followed (unless otherwise indicated)...For heights to 6-0: Two jamb anchors per jamb; For heights greater than 6-0 thru 7-6: Three jamb anchors per jamb; For heights greater than 7-6 thru 10-0: Four jamb anchors per jamb; and for each additional 2 feet of height or fraction thereof: One additional jamb anchor per jamb.
**ONE PIECE ANCHOR SELECTION CHART**

<table>
<thead>
<tr>
<th>DIM A</th>
<th>FRAME DEPTH</th>
<th>HOLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-1/2</td>
<td>4-1/2 to 5-1/4</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>5-3/8 to 6-3/4</td>
<td>5</td>
</tr>
<tr>
<td>6-1/2</td>
<td>6-7/8 to 8-1/4</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>8-3/4 to 9-3/4</td>
<td>8</td>
</tr>
</tbody>
</table>

All dimensions are in inches. For SI conversion: 1" = 25.4 mm.

Anchors for depths outside the above range are made to order.
ADJUSTABLE FLOOR ANCHOR

HAT:
4-1/4" WIDE x 3/4" LEGS x 5/8" OFFSET @ 3-1/4" LONG

ANGLE:
1-1/2" x 6-3/4" @ 2-3/4" LONG

SCREW:
#10 x 3/4" THSMS

FLUSH WITH JAMB BOTTOM

4" TRAVEL
2-1/8"
5/16" DIA.
2-1/8" O.A.
Distributor Tech Data

SIDELITE FLOOR ANCHOR

Note: Anchor is attached to floor at two places. Mullion or sill is slipped over anchor (fastening is optional).

Note: Position sill anchor to avoid possible interference with sill bracing strap if present.

Dim A = Depth (-) 1-3/16" (assuming 1/2" backbends)

Dim A = Depth (-) 3/16"
ANCHORS FOR NEW MASONRY

<table>
<thead>
<tr>
<th>MFG DEPTH</th>
<th>FIELD MODIFIED DEPTH</th>
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<tbody>
<tr>
<td>5-3/4</td>
<td>5-1/4 4-3/4 4-1/4 3-3/4</td>
</tr>
<tr>
<td>4-3/4</td>
<td>- - 4-1/4 3-3/4</td>
</tr>
</tbody>
</table>

7 GAGE GALV. STEEL WIRE

WIRE MASONRY ANCHOR

THROAT RANGE
2 THRU 8-3/4

MASONRY "T" ANCHOR

16 GAGE GALV STEEL

All dimensions are in inches; for SI conversion, 1" = 25.4 mm.
Distributor Tech Data

MASONRY ANCHORS CONT.
EXISTING OPENING ANCHOR

YOEK AND STRAP MASONRY ANCHOR

Existing Opening Anchor
Available on special order only

WELDED
FOR ALL FRAME DEPTHS

Existing Opening Anchor
Available on special order only

EXISTING OPENING ANCHOR
Distributor Tech Data

EXISTING OPENING

STANDARD JAMB ANCHOR

A. Existing opening (EO) "butterfly" anchors are available as an option. They are normally shipped unattached. Jamb punching (3/8" dia. dimpled hole) and FH Dynabolt or wood screws are provided upon request.

B. An existing opening anchor is used at the sill instead of a floor anchor.

C. As an option, existing opening anchors are available shop attached. When this option is called for, the anchor is installed and welded to the jamb at the factory. For jamb depths over 8-3/4", the EO anchor is always installed and tack welded to the jamb.

D. Punching for 5/16", 1/4" or #10 FH fasteners are also available as an option. (These fasteners are not included unless covered by contract agreement).

<table>
<thead>
<tr>
<th>FRAME DEPTH</th>
<th>EXISTING OPENING ANCHOR NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-1/2&quot; thru 6-3/4&quot;</td>
<td>EO/S6</td>
</tr>
<tr>
<td>6-7/8&quot; thru 9-3/4&quot;</td>
<td>EO/S8</td>
</tr>
</tbody>
</table>

The existing opening anchors shown on this page are for double rabbet frames in sizes listed above only.

STANDARD LOCATION OF DIMPLED HOLES IN JAMB STOPS

<table>
<thead>
<tr>
<th>JAMB HEIGHT</th>
<th>DIMPLED HOLE SPACING</th>
<th>FASTENER QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-8 thru 7-2</td>
<td>4&quot; - 3 equal spaces - 4&quot;</td>
<td>FOUR</td>
</tr>
<tr>
<td>7-2 thru 9-4</td>
<td>4&quot; - 4 equal spaces - 4&quot;</td>
<td>FIVE</td>
</tr>
<tr>
<td>9-4 thru 11-4</td>
<td>4&quot; - 5 equal spaces - 4&quot;</td>
<td>SIX</td>
</tr>
</tbody>
</table>

SUGGESTED CLEARANCE AT HEAD AND JAMBS FOR INSTALLATION

To install EO "butterfly" anchor, depress wings as necessary to suit depth (dim A). Hold one wing horizontal and position this wing under one of the back-bends while placing tube over dimpled hole. Rotate anchor and snap remaining wing under opposite backbend.

DIM A: Dimension across wings should be approximately equal to jamb depth minus 1/4".

CECO can purchase and provide fasteners as a service to our customers.

SEE BELOW

*Fasteners are flat head zinc plated carbon steel dynabolt for masonry. Fastener lengths are shown below:

- 3/8" x 4" Dynabolt
- 3/8" x 5" Dynabolt
- 3/8" x 6" Dynabolt

*Fastener is flat head wood screw for wood buck

#24 x 4-1/2 FHWS
(screw detail not shown)
EXISTING OPENING ANCHOR FOR SPECIAL FACES

All dimensions are in inches. For SI conversion: 1" = 25.4mm.
Dimension A assumes a 5/8 frame stop height.
Suggested Rough-opening clearance: 1/4" @ head and jambs.
See page 11-506 for jamb punching, spacing, fastener, and floor anchor notes.
The wood stud anchor depicted below is shop attached. Unless otherwise designated, a stud anchor will be attached at each sill in lieu of a floor anchor.

* Or to suit other stud sizes. For stud sizes other than shown below: actual stud dimension should be noted. Also, wall board thicknesses should be shown so that straps can be properly positioned.

WOOD STUD ANCHOR SELECTION CHART

<table>
<thead>
<tr>
<th>STUD SIZE</th>
<th>DIM &quot;X&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 x 4</td>
<td>3-1/2</td>
</tr>
<tr>
<td>2 x 6</td>
<td>5-1/2</td>
</tr>
</tbody>
</table>

INSTALLATION SEQUENCE
1. WALL FRAMING
2. DOOR FRAME
3. WALL SURFACE MATERIAL

All dimensions are in inches, for SI conversion, 1" = 25.4 mm.
Anchors are adjustable in 1/8" increments within given ranges.

FRAME DEPTH: 3-3/4" thru 6-1/4"
FRAME DEPTH: 6-1/4" thru 8-3/4"
The metal stud anchor depicted below is shop attached. Unless otherwise designated, a stud anchor will be provided for each sill.

<table>
<thead>
<tr>
<th>DIM &quot;A&quot;</th>
<th>FRAME DEPTH RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-1/2</td>
<td>4-1/2 THRU 5-1/4</td>
</tr>
<tr>
<td>5</td>
<td>5-3/8 THRU 6-3/4</td>
</tr>
<tr>
<td>6-1/2</td>
<td>6-7/8 THRU 8-1/4</td>
</tr>
<tr>
<td>8</td>
<td>8-3/8 THRU 9-3/4</td>
</tr>
</tbody>
</table>

All dimensions are in inches, for SI conversion, 1" = 25.4 mm.
The metal stud anchor depicted below is shop attached at sill.

Anchor is normally positioned in the center of throat to accommodate equal thicknesses of wallboard at each side of stud. If wall is not symmetrical, drawings showing condition should be provided.

**INSTALLATION SEQUENCE**

1. WALL FRAMING
2. DOOR FRAME
3. WALL SURFACE MATERIAL

All dimensions are in inches, for SI conversion, 1" = 25.4 mm.
BEFORE DRYWALL STUD ANCHOR
AND CLOSURE CLIP

NOTE FRAME IS SET-UP
AND JAMBS ANCHORED
BEFORE WALLBOARD IS
INSTALLED.

ANCHORS ARE BENT IN
FIELD TO THICKNESS
OF WALLBOARD. IF
WALL FRAME WORK IS
SET UP BEFORE DOOR
FRAME, USE AN
ADDITIONAL JAMB ANCHOR
AT SILL INSTEAD OF
SILL ANCHOR.

Contractor
snaps closure
into place
after frame is
installed.

CLOSURE CLIP
Frame components should have open ends. Mitered corners prevent spline installation without modification of backbend. Allot one spline for every 2 feet of impost height. Drive spline in from ends, locate approx. equal distance from one another.

For shipping via common carrier, frame size should not exceed 8'-0" in more than one dimension.

<table>
<thead>
<tr>
<th>DEPTH</th>
<th>REWORK FSPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-7/8&quot; or OVER</td>
<td>334</td>
</tr>
<tr>
<td>4-3/4&quot; or OVER</td>
<td>434</td>
</tr>
<tr>
<td>5-3/4&quot; or OVER</td>
<td>534</td>
</tr>
<tr>
<td>6-3/4&quot; or OVER</td>
<td>634</td>
</tr>
</tbody>
</table>
JOBSITE STORAGE: Store frames off the ground on wood runners or skids. Do not store directly on the ground. Cover frames with tarpaulin or plastic but do insure that adequate ventilation is provided to eliminate moisture condensation.

When frames are to be fully grouted and when plaster or mortar contain "anti-freeze" agents, the inside of the frames should be coated with a bituminous, water-resistant paint by the installation contractor.

**ASSEMBLY of FRAME**

![Diagram showing frame assembly](Image)

**PLUMBING FRAME**

**SQUARING THE FRAME**
The installer should use wood spreaders (as described at right), a carpenters level (the longer the better), and a carpenters square (the bigger the better). Set the frame in the desired location. Level head and plumb jambs. Shim under jambs if necessary.

**SPREADER**
Typical wood spreader must be square and made from lumber at least 1” thick. Length of spreader equals door opening width at the head. Cut clearance notches for frame stops as shown. Spreader must be nearly as wide as frame depth for proper installation.
## MASONRY WALL CONSTRUCTION

**Floor anchor is attached to jamb at sill with (4) welds.**

### BRACING THE FRAME

**NOTE:** If frame is received setup and welded, remove and discard the temporary metal supports that are tack welded to jambs at sill before starting installation.

Brace the frame as shown or shore to ceiling. Do not brace in the direction of intended wall. Plumb and square jambs. Set spreader. Attach jambs to floor through floor anchor.

**INSTALLING THE FRAME**

Set and plumb frame. Install jamb anchors at hinge levels as wall is laid up. (3 anchors for heights to 7'2" -- one more anchor per jamb for each additional 2 feet of height or fraction thereof.) Grout frame in the area of the anchors. A second spreader should be used at mid-point of opening to maintain the door opening dimension. Continually check plumb and square as wall progresses. CHECK: The difference between diagonals measured from opposite corners should not exceed 1/16".

## WOOD or METAL STUD WALL CONSTRUCTION

### ROUGH STUD OPENING

**ADD 3/16" TO OVERALL FRAME WIDTH**

**ADD 1/8" TO OVERALL FRAME HEIGHT**

1. **Build the rough opening in wall allowing 3/16" clearance between upright stud and frame jamb and 1/8" clearance between header and top of door frame.**

2. **Insert jamb anchors in frame throat and tap into place with a hammer. Place at hinge location and directly opposite on strike jamb. Position anchors also at sill.**

3. **Place frame in rough opening.**

4. **Set spreader and level frame. Shim jambs if necessary.**

5. **Square and fasten top anchors to stud on ONE JAMB ONLY. Check plumb and square of door frame and continue to fasten balance of anchors to studs. Repeat on opposite jamb.**

6A. **If your anchor looks like Det. A, fasten anchor to metal stud thru web of channel using suitable fastener for sheet metal.**

6B. **If your anchor looks like Det. B, bend anchor tabs around stud and fasten tabs with suitable fastener.**

7. **Maintain necessary clearance between frame returns and stud for inserting wall board. Do not install wall board until you are sure that frame is plumb and square.**

---

*If you choose to erect door frame before wall framing, brace frame and anchor at sill per masonry procedure above, then butt studs to door frame.*
This bar is not to be used for installation. A wood spreader is to be used for maintaining proper spacing between jambs. (See the DHI publication "The Installation of Commercial Steel Doors and Steel Frames", "Insulated Steel Doors in Wood Frames", and "Builder's Hardware").

3. SPREADER BAR QUANTITY AND LOCATION

A. All single rabbet frames and double rabbet, single swing frames with depth not exceeding 6 inches: attach (1) spreader bar to the door rabbet. (See Fig. #1)

B. All double rabbet, double swing frames or double rabbet, single swing frames with depth exceeding 6 inches: attach one (1) spreader bar to each frame rabbet (two total). (see Fig. #2)

4. SPREADER BAR ATTACHMENT

Verify spreader bar length by checking to see that said length is equivalent to the door opening width dimension at head. Place the spreader bar at the bottom of the door opening and tack weld in place. Strength of welds should be such that spreader bar remains in place during transit and also be such that the spreader bar can be removed when required (by means of a sharp hammer blow) without incurring frame damage.