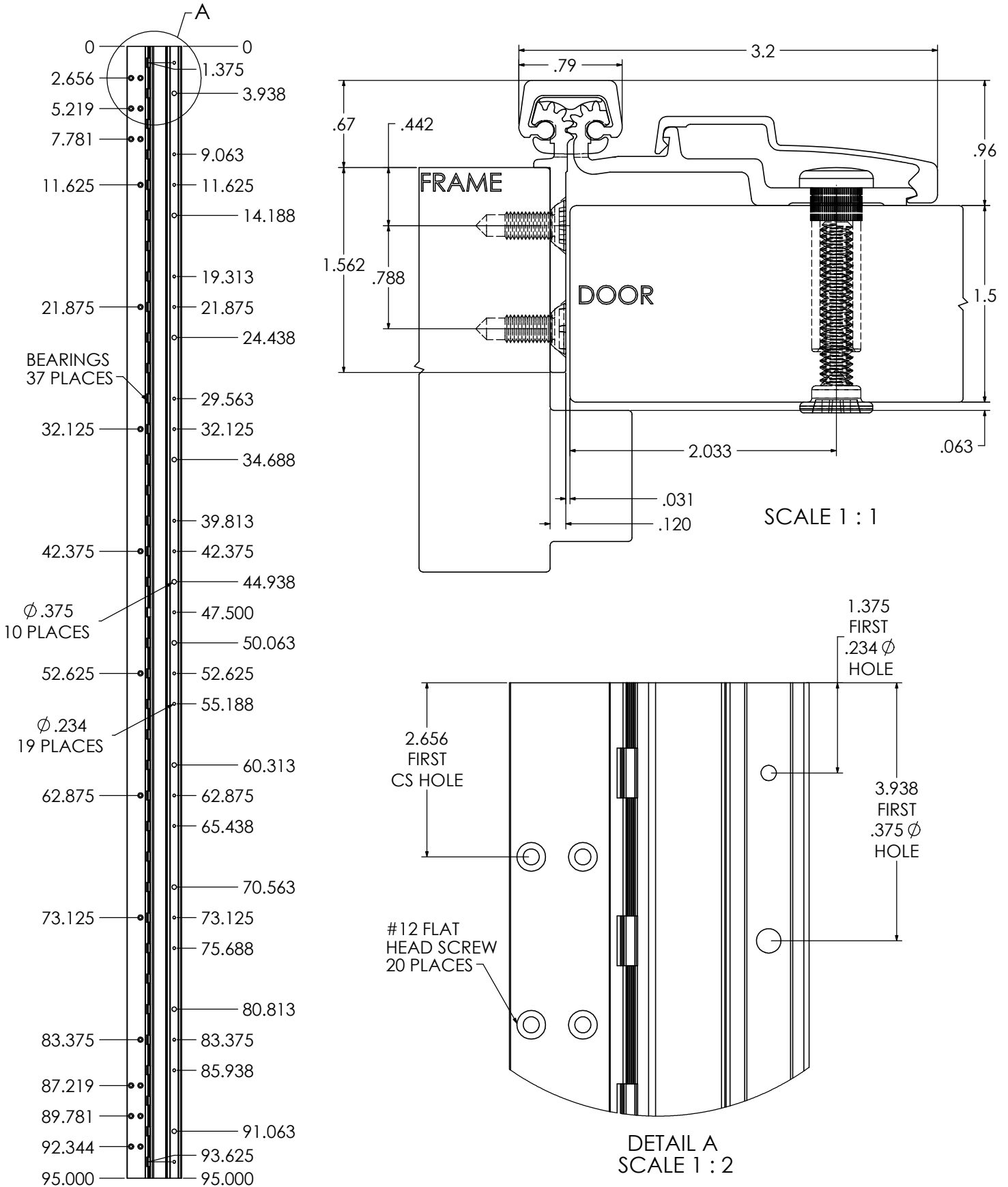
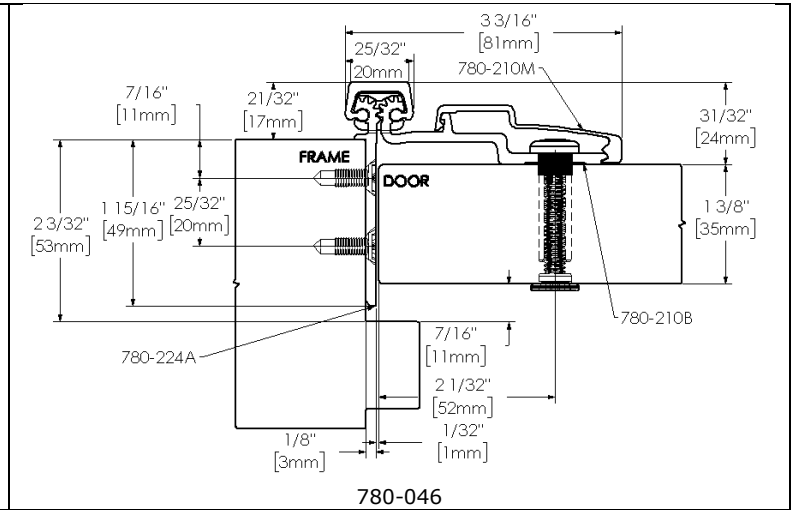
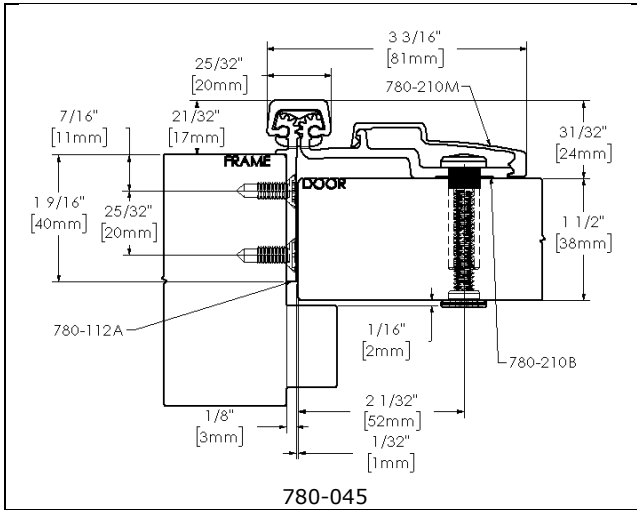


TEMPLATE FOR HALF SURFACE CONTINUOUS GEARED ALUMINUM HINGE





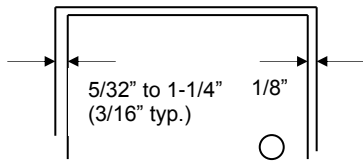
ROTON Model 780-045 and 780-046 are Aluminum Continuous Geared Half Surface Hinges that provides 9/32" door inset. These can be used for custom applications with thinner doors and/or non-standard frames. Minimum clearance between the hinge edge of the door and the frame is 5/32" (4mm). "HD" models have additional bearings for heavy-duty application.

Hinge Length

All ROTON Hinges are supplied approximately 1" shorter than the nominal door height to avoid threshold or carpet clearance problems. If the hinge must be trimmed shorter, first determine the correct hand of the door and orientation of the hinge. Then mark and trim from the *bottom* of the hinge only – do not cut from the top end.

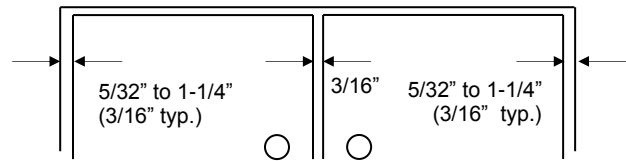
NOM. DOOR HEIGHT	NOM. HINGE LENGTH	NUMBER OF FASTENERS (Frame/Door/)
6'-8"	79" (2006mm)	15 / 25
7'-0"	83" (2108mm)	19 / 27
7'-2"	85" (2159mm)	19 / 27
8'-0"	95" (2413mm)	20 / 29
10'-0"	119" (3022mm)	23 / 35

Total Clearance Between Door And Frame Width



SINGLE DOOR

Hinge side clearance (typical)	3/16" (4.7mm)
Latch side clearance (typical)	1/8" (3.2mm)
TOTAL	5/16" (7.9mm)



PAIR OF DOORS

First hinge side clearance (typical)	3/16" (4.7mm)
Clearance between doors (typical)	3/16" (4.7mm)
Second hinge side clearance (typical)	3/16" (4.7mm)
TOTAL	9/16" (14.1mm)

General Fitting Procedure

- **For new construction with metal doors/frames:** To accommodate the proper clearance between the door and frame, order the door undersized or the frame header oversized. See the clearance information above to attain the proper size. A minimum clearance of 5/32" (4.0mm) is required between the hinge edge of the door and the frame rabbet. Mortar guards, either Styrofoam or wood, are recommended for frames to prevent grout from interfering with the installation of the hinge fasteners.
- **For new site-hung wood doors:** If necessary, scribe and cut from the *latch edge* of the door to leave sufficient hinge stile thickness for proper fastening. See the clearance information above to attain the proper finished width of the door. A minimum clearance of 5/32" (4.0mm) is required between the hinge edge of the door and the frame rabbet.
- **For remodeling with existing wood or laminate doors:** If necessary, scribe and cut from the *hinge edge* of the door and plane smooth. See the clearance information above to attain the proper finished width of the door. A minimum clearance of 5/32" (4.0mm) is required between the hinge edge of the door and the frame.

Installation Procedure

Frame Preparation

1. With the hinge open, place the hinge frame leaf against the frame rabbet making certain that the alignment rib is flush against the frame face along its entire length. (See Fig. 1) Position the top of the hinge 1/16" (1/8" maximum) below the header.
Note: A 1/16" shim is recommended due to initial settling of the bearings.
2. Mark and center punch the screw hole locations. *Accurate location is important for proper installation.*
3. For metal frames 12 gage or less ($\leq .110"$ /2.8mm), it is not necessary to pre-drill pilot holes if using the self-drilling screws provided. For metal frames thicker than 12 gage ($>.110"$ /2.8mm), drill and tap all mounting holes for #12-24 threads prior to installing the screws. For wood frames, pre-drill pilot holes using a #18 (.170"/4.3mm) bit for optional #12 wood screws.
4. Attach the hinge to the frame rabbet. For metal frames, use the #12 self-drilling screws provided (recommended driver speed 1,900-2,500 RPM). For wood frames, use optional #12 wood screws.

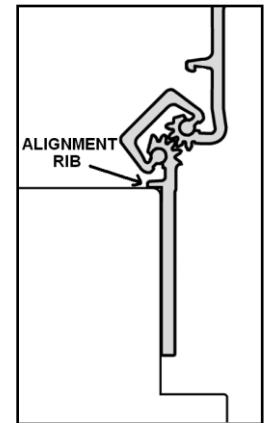


Fig. 1

Door Preparation

1. Rotate the hinge leaf out of the way and set the door into the frame, using shims or wedges to adjust for the desired clearance on all sides.
2. Allow an additional 1/32" of clearance on the latch edge of the door at the top only. This will allow for any settling or twisting of the frame that may occur after the shims are removed and the weight of the door is transferred entirely to the frame.
3. Allow 1/16" clearance between the top of the door and the frame header rabbet. A good method for this is to use a 1/16" thick shim placed over the top edge of the door.
4. With the door held securely in place, rotate the hinge leaf into position on the face of the door.
5. (Standard sexbolt mounting) - Mark and center punch the locations of the larger 3/8" diameter holes. *Accurate location is important for proper installation.* Rotate the hinge leaf back out of the way. At each mark, drill a hole completely through the door using a 3/8" (9.5mm) bit.
 (Optional mounting without sexbolts) - Mark and center punch the locations of the smaller 15/64" diameter holes. For metal doors, use optional #12 self-drilling screws. For wood doors, pre-drill pilot holes using a #18 (.170"/4.5mm) bit for optional #12 wood screws.

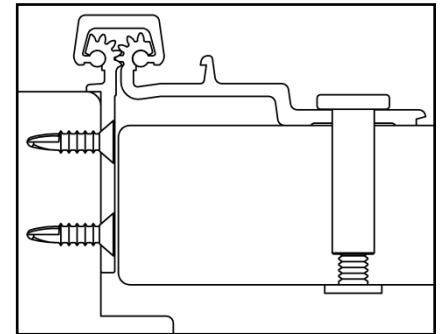


Fig. 2

Hanging the Door (See Fig. 2)

1. Attach the hinge to the door as shown. Sexbolts may be reversed if additional security is needed on the push face of the door, but once the molding is in place reversed sexbolts cannot be accessed for maintenance or removal.
2. Remove all shims and wedges and make a gentle trial swing. Carefully check the door for proper swing and clearance.

Install the Snap-On Molding (See Fig. 3)

1. For the door leaf - Locate and loosen the retaining setscrew on the edge of the molding with the 5/64" hex key provided. Hook the thicker leg of the molding under the outside edge of the door leaf along the full length of the hinge. Starting at the top and working downward, press or gently tap the opposite leg of the molding in place (if necessary use a rubber mallet or wood block under a hammer, taking care not to damage the molding). Tighten the retaining setscrew.

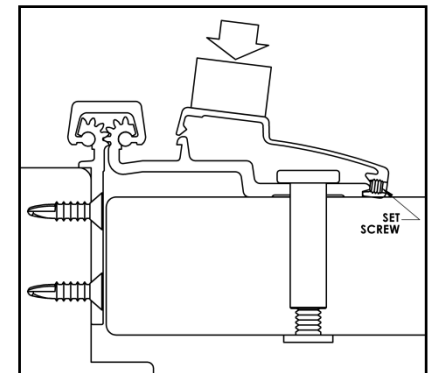
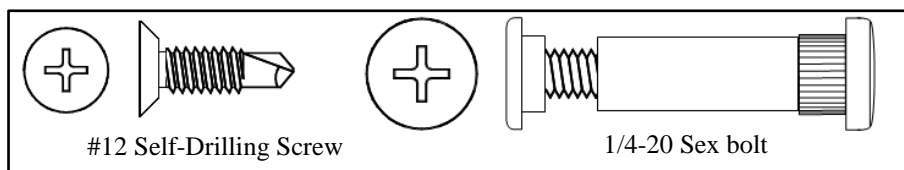
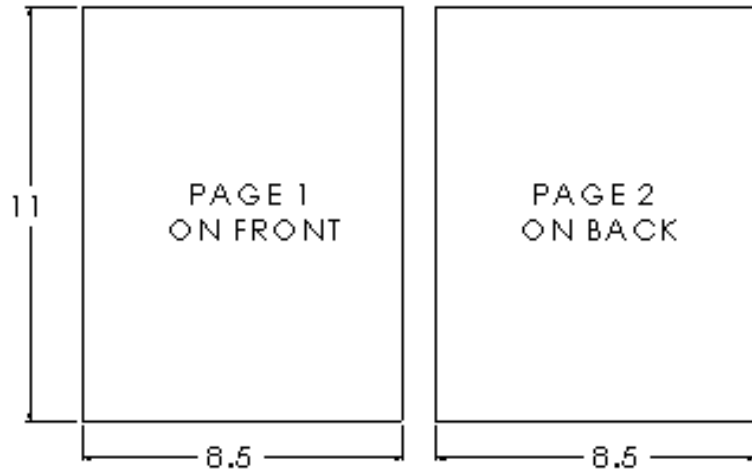


Fig. 3



FOLDING INSTRUCTIONS

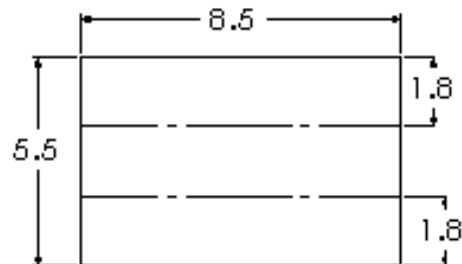
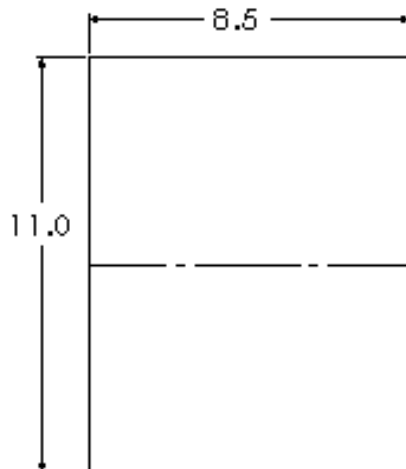
1. **DO NOT USE THIS DRAWING FOR PRINTING** - USE INSTRUCTION FILE.
2. SINGLE SHEET (20# WEIGHT), DOUBLE-SIDED PRINTING ON 8-1/2" X 11"
3. FOLD SHEET AS SHOWN IN DETAIL "A", FOLDING INSTRUCTIONS



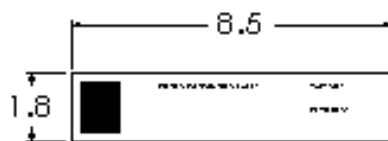
DETAIL "A" FOLDING INSTRUCTIONS

1. FOLD SHEET IN HALF ALONG WIDTH

2. FOLD INTO THIRDS

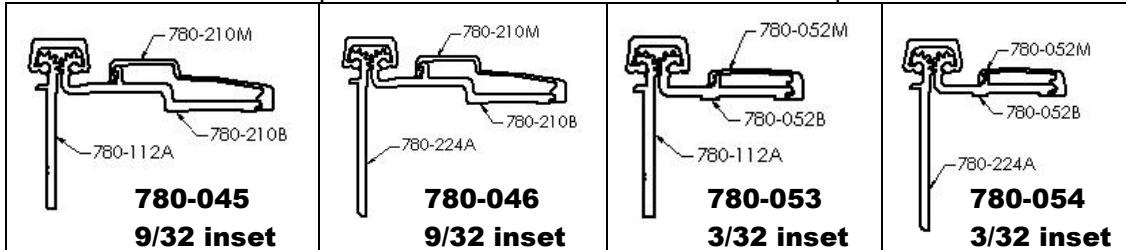


3. FOLDED SHEET WITH HAGER LOGO & REVISION DATE ON OUTSIDE



ROTON Hinge U.L. Fire-Rated Studs – 780-045, -046, -053, -054

These instructions outline how to install the optional stainless steel studs (4) for ROTON Hinge models 780-045, 780-046, 780-053 and 780-054. All four studs must be used in order to comply with U.L. requirements for composite wood fire doors rated up to 90 minutes and metal fire doors rated up to 3 hours.



Materials Needed

- Stainless steel studs (4).
- Drill, 7/8" diameter bit, #16 (.177") bit, 12-24 thread tap.
- #10 spanner screwdriver.

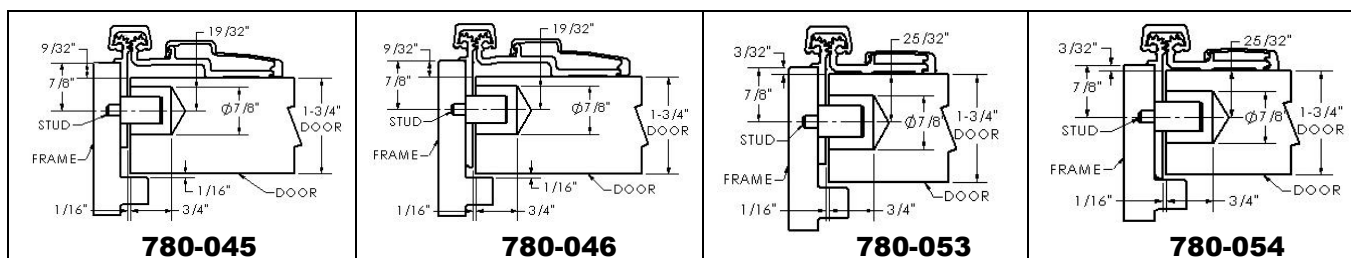
Installation

1. Install the hinge in accordance with the standard installation instructions furnished with the hinge.
2. On the frame leaf, drill tap 12-24 in the center of the four 3/4" diameter holes.
3. On the door leaf, drill a 7/8" diameter by 3/4" deep in the horizontal location from the edge of the door. The horizontal location is the center line of the door minus the inset. The Vertical location is on the chart listed below. The first measurement is from the top of the hinge to the centerline of hole #1. The second, third and fourth holes are measured from centerline to centerline.

Horizontal location	Location (for 1.75 door)
780-045 and 046	19/32"
780-053 and 054	25/32"

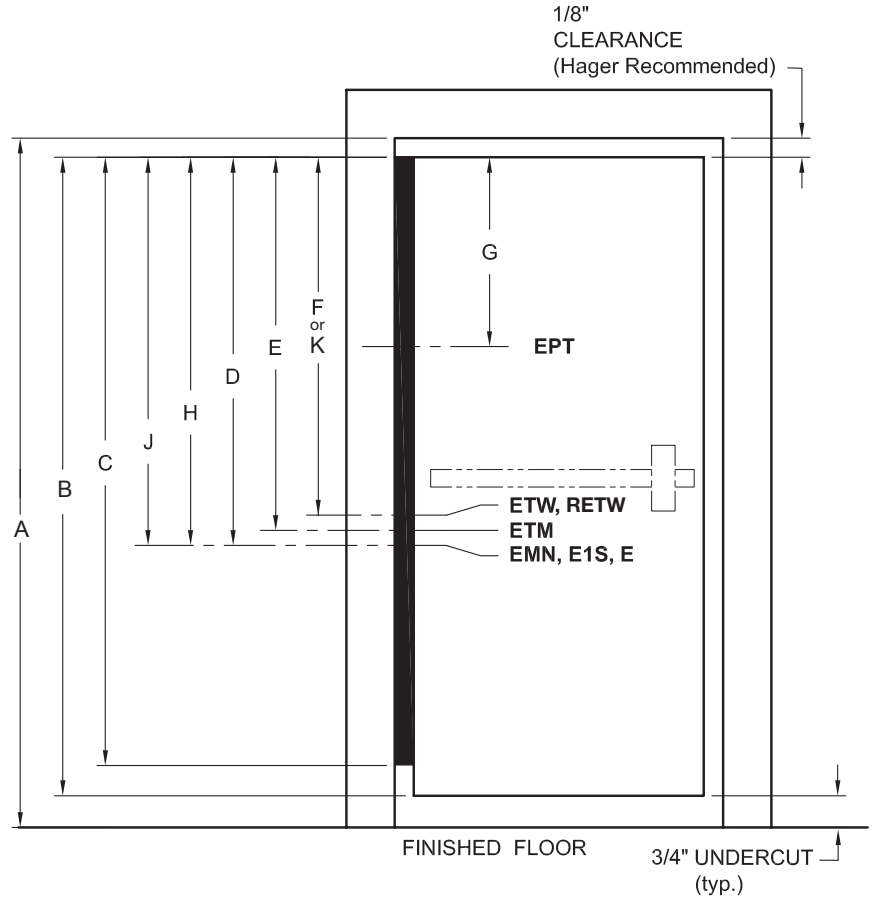
Vertical Location	79"	83"	85"	95"	119"
Hole #1	13-7/8"	15-7/8"	16-7/8"	16-3/4"	13-3/8"
Hole #2	10-1/4"	10-1/4"	10-1/4"	20-1/2"	30-3/4"
Hole #3	30-3/4"	30-3/4"	30-3/4"	20-1/2"	30-3/4"
Hole #4	10-1/4"	10-1/4"	10-1/4"	20-1/2"	30-3/4"

4. Insert a stud into each of the four #12-24 threaded holes on the frame and tighten securely using a #10 spanner screwdriver.
5. Close the door slowly to assure that the studs are properly aligned. Any minor interference can be corrected using a rat-tail file.



ROTON ELECTRICAL MODIFICATIONS

- A = Opening
- B = Door height
- C = Actual hinge length
- D = C.L. of EMN (electric monitor)
- E = C.L. of ETM (electric through-wires & monitor)
- F = C.L. of ETW (electric through-wires)
- G = C.L. of EPT (electric power transfer)
- H = C.L. of E1S (exposed switch)
- J = C.L. of E (exposed contact)
- K = C.L. of RETW (removable electric through-wires)



For ease of ordering, Hager Companies has established standard locations for power transfer cutouts. All standard location dimensions are referenced from the top edge of the door to the centerline of the power transfer cutout. Please specify handing.

NOTE: These locations are for concealed hinges only.

	Opening	Door Height	Actual Hinge Length	EMN	ETM	ETW	EPT	E1S	E	RETW
79 SD	80"	79-1/8"	79"	40-3/4"	42-3/4"	40-3/4"	34-3/8"	42-1/2"	42-1/2"	-
79 HD	80"	79-1/8"	79"	40-3/4"	43-3/8"	40-3/4"	34-3/8"	42-1/2"	42-1/2"	43-3/8"
83 SD	84"	83-1/8"	83"	45-5/16"	44-3/4"	45-5/16"	36-3/8"	46-1/2"	46-1/2"	-
83 HD	84"	83-1/8"	83"	45-5/16"	45-3/8"	45-5/16"	36-3/8"	46-1/2"	46-1/2"	45-3/8"
85 SD	86"	85-1/8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
85 HD	86"	85-1/8"	85"	46-5/16"	46-3/8"	46-5/16"	37-3/8"	48-1/2"	48-1/2"	46-3/8"
95 SD	96"	95-1/8"	95"	56-3/8"	55-13/16"	56-3/8"	47-1/2"	59-3/4"	59-3/4"	-
95 HD	96"	95-1/8"	95"	56-3/8"	56-1/2"	56-3/8"	47-1/2"	59-3/4"	59-3/4"	56-1/2"
119 SD	120"	119-1/8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
119 HD	120"	119-1/8"	119"	81-1/4"	81-5/16"	81-1/4"	72-5/16"	83-3/4"	83-3/4"	81-5/16"

SD = Standard Duty

HD = Heavy Duty



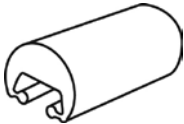
ROTON ELECTRICAL MODIFICATIONS

	Von Duprin EPT 2 or EPT 10 Power Transfer Preparation	Exposed Electric Contacts	Exposed Electric Switches	Concealed Electric Through-Wire	Concealed Electric Monitoring	Concealed Electric Through-Wire and Monitoring	Removable Electric Through-Wire
Part Number	EPT	E	E1S	ETW	EMN	ETM	RETW
780-045HD	•						
780-046HD	•						
780-053	•						
780-053HD	•						
780-054HD	•						
780-110HD			•				
780-057				•			•
780-111	•	•	•	•	•	•	
780-111HD	•	•	•	•	•	•	•
780-111LL	•	•	•	•	•	•	
780-112	•	•	•	•	•	•	
780-112HD	•	•	•	•	•	•	•
780-112LL	•	•	•	•	•	•	
780-124HD	•	•	•	•	•	•	•
780-124LL	•	•	•	•	•	•	
780-157				•			•
780-224	•	•	•	•	•	•	
780-224HD	•	•	•	•	•	•	•
780-224LL	•	•	•	•	•	•	
780-226HD	•	•	•	•	•	•	•
780-226LL	•	•	•	•	•	•	
780-235HD				•			
1200-600	•			•			
1200-650	•			•			

MODIFICATIONS & ADDITIONS

Special Cover Channels

Rounded back cover channels may be ordered. Availability for hinges with electrical modifications vary. Please consult the St. Louis sales office for confirmation.



Round Back

Round Back Cover Channels

Clear Anodized

Sizes: 79", 83", 85", 95", 119"

Bronze Anodized

Sizes: 79", 83", 85", 95", 119"

Black Anodized

Sizes: 79", 83", 85", 95", 119"

Note:

Special cover channels available in clear, dark bronze and black finish.

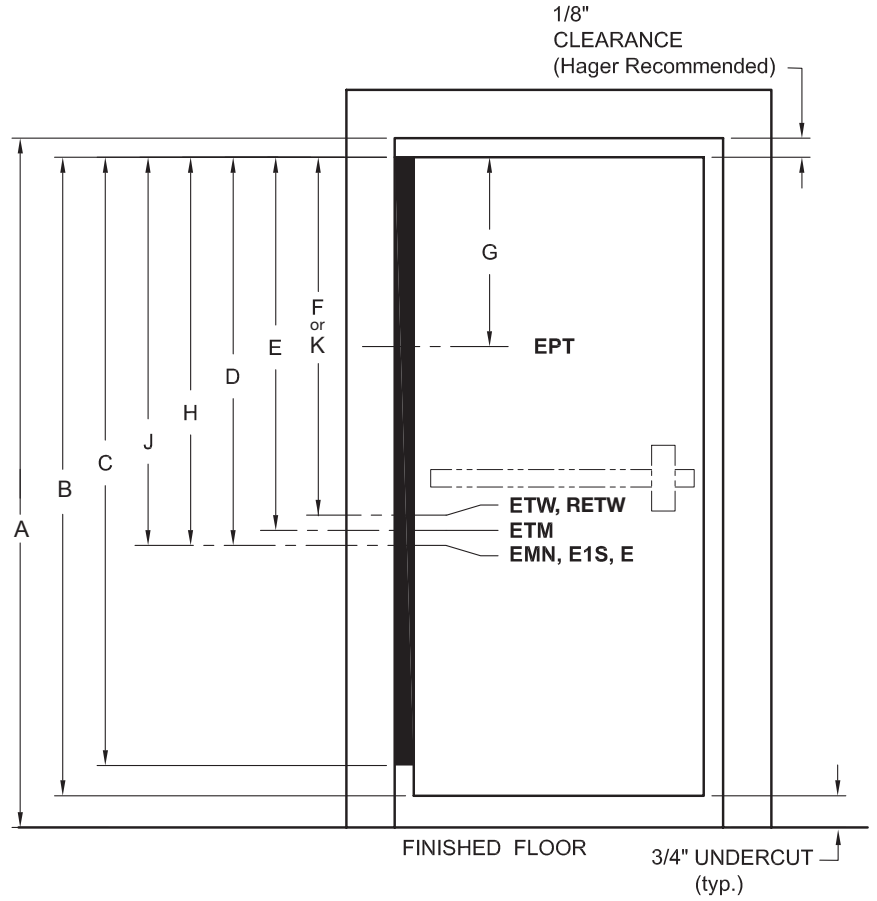
Roton Cover Channel Compatibility		
Hinge Model	Flat FBCC	Round RBCC
750-134	•	•
750-138	•	•
780-041	•	•
780-045	•	•
780-046	•	•
780-053	•	•
780-054	•	•
780-057	•	•
780-110	•	•
780-111	•	•
780-112	•	•
780-113	•	•
780-124	•	•
780-155	•	•
780-157	•	
780-210	•	•
780-211	•	•
780-213	•	•
780-224	•	•
780-226	•	•
780-235	•	•
780-257	•	
780-300	•	

* Round back (RBCC) is not compatible with molded Hospital Tip option.



ROTON ELECTRICAL MODIFICATIONS

- A = Opening
- B = Door height
- C = Actual hinge length
- D = C.L. of EMN (electric monitor)
- E = C.L. of ETM (electric through-wires & monitor)
- F = C.L. of ETW (electric through-wires)
- G = C.L. of EPT (electric power transfer)
- H = C.L. of E1S (exposed switch)
- J = C.L. of E (exposed contact)
- K = C.L. of RETW (removable electric through-wires)



For ease of ordering, Hager Companies has established standard locations for power transfer cutouts. All standard location dimensions are referenced from the top edge of the door to the centerline of the power transfer cutout. Please specify handing.

NOTE: These locations are for concealed hinges only.

	Opening	Door Height	Actual Hinge Length	EMN	ETM	ETW	EPT	E1S	E	RETW
79 SD	80"	79-1/8"	79"	40-3/4"	42-3/4"	40-3/4"	34-3/8"	42-1/2"	42-1/2"	-
79 HD	80"	79-1/8"	79"	40-3/4"	43-3/8"	40-3/4"	34-3/8"	42-1/2"	42-1/2"	43-3/8"
83 SD	84"	83-1/8"	83"	45-5/16"	44-3/4"	45-5/16"	36-3/8"	46-1/2"	46-1/2"	-
83 HD	84"	83-1/8"	83"	45-5/16"	45-3/8"	45-5/16"	36-3/8"	46-1/2"	46-1/2"	45-3/8"
85 SD	86"	85-1/8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
85 HD	86"	85-1/8"	85"	46-5/16"	46-3/8"	46-5/16"	37-3/8"	48-1/2"	48-1/2"	46-3/8"
95 SD	96"	95-1/8"	95"	56-3/8"	55-13/16"	56-3/8"	47-1/2"	59-3/4"	59-3/4"	-
95 HD	96"	95-1/8"	95"	56-3/8"	56-1/2"	56-3/8"	47-1/2"	59-3/4"	59-3/4"	56-1/2"
119 SD	120"	119-1/8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
119 HD	120"	119-1/8"	119"	81-1/4"	81-5/16"	81-1/4"	72-5/16"	83-3/4"	83-3/4"	81-5/16"

SD = Standard Duty

HD = Heavy Duty



ROTON ELECTRICAL MODIFICATIONS

	Von Duprin EPT 2 or EPT 10 Power Transfer Preparation	Exposed Electric Contacts	Exposed Electric Switches	Concealed Electric Through-Wire	Concealed Electric Monitoring	Concealed Electric Through-Wire and Monitoring	Removable Electric Through-Wire
Part Number	EPT	E	E1S	ETW	EMN	ETM	RETW
780-045HD	•						
780-046HD	•						
780-053	•						
780-053HD	•						
780-054HD	•						
780-110HD			•				
780-057				•			•
780-111	•	•	•	•	•	•	
780-111HD	•	•	•	•	•	•	•
780-111LL	•	•	•	•	•	•	
780-112	•	•	•	•	•	•	
780-112HD	•	•	•	•	•	•	•
780-112LL	•	•	•	•	•	•	
780-124HD	•	•	•	•	•	•	•
780-124LL	•	•	•	•	•	•	
780-157				•			•
780-224	•	•	•	•	•	•	
780-224HD	•	•	•	•	•	•	•
780-224LL	•	•	•	•	•	•	
780-226HD	•	•	•	•	•	•	•
780-226LL	•	•	•	•	•	•	
780-235HD				•			
1200-600	•			•			
1200-650	•			•			

STANDARD LOCATIONS FOR ALL STAINLESS STEEL CONTINUOUS ELECTRICAL MODIFICATIONS

	79"	83"	85"	95"	119"
Opening	80"	84"	86"	96"	120"
Door Height	79-1/8"	83-1/8"	85-1/8"	95-1/8"	119-1/8"
Hinge Length	79-3/16"	83-1/8"	85-1/8"	95"	118-3/4"
ETW	41-1/2"	43-1/2"	45-1/2"	55-3/8"	79-1/8"
EPT	24-1/2"	28-7/16"	30-7/16"	40-1/2"	64-7/16"
E1S	41-1/2"	43-1/2"	45-1/2"	55-3/8"	79-1/8"

