

A280HD

Aluminum Continuous Geared Hinge

Designed for Use with Aluminum
Frames with Snap-On Trim



Features:

- Full Concealed, Heavy Duty
- For use on 1-3/4" Thick Doors
- Used on Frames with Snap-On Trim
No Reveal
- 450 lbs. Door Weight Maximum
- Continuous Frame
Reinforcement Required -
Provided by frame manufacturer

Fasteners:

- 12-24 x 3/4" Undercut Self-Drilling,
Thread-Forming Tek Machine Screws

Standard Lengths:

- 79", 83", 85", 95" and 120"

Finishes:

- Clear Anodized - Stocked
- Dark Bronze Anodized - Stocked
- Black Anodized - Stocked
- Champagne
- Light Bronze
- Medium Bronze

* Custom Powder Coating Available

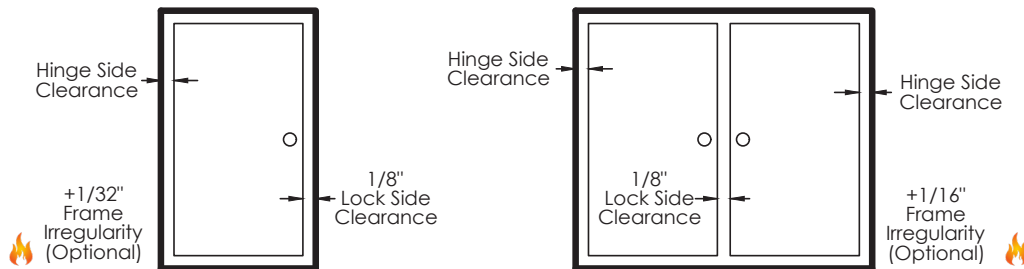
BHMA GRADE 1
CERTIFIED

Door Clearance Chart Squared Edge

Single Door - Squared Edged							
Hinge Model		Hinge Thickness	+	Lock Side Clearance	+	*Frame Irregularity (OPTIONAL)	= Square Edged Door Undersized (Single)
Full Concealed	A110, A110WT, A111 A111WT, A120, A140, A150, A160, A240, A260, A270, A410	5/16"	+	1/8"	+	1/32"	= 15/32"
	A130, A135	13/16"	+	1/8"	+	1/32"	= 3 1/32"
Half Surface	A211, A213, A450, A460, A520, A530, A540, A550	3/16"	+	1/8"	+	1/32"	= 1 1/32"
Full Surface	A210, A570, A571, A575	1/16"	+	1/8"	+	1/32"	= 7/32"

Single Door

Pair of Doors



Pair of Doors - Squared Edged							
Hinge Model		Hinge Thickness (Pair)	+	Lock Side Clearance	+	*Frame Irregularity (OPTIONAL)	= Square Edged Door Undersized (Pair)
Full Concealed	A110, A110WT, A111 A111WT, A120, A140, A150, A160, A240, A260, A270, A410	5/8"	+	1/8"	+	1/16"	= 13/16"
	A130, A135	1-5/8"	+	1/8"	+	1/16"	= 1-13/16"
Half Surface	A211, A213, A450, A460, A520, A530, A540, A550	1/4"	+	1/8"	+	1/16"	= 7/16"
Full Surface	A210, A570, A571, A575	1/8"	+	1/8"	+	1/16"	= 5/16"

* 1/16" Frame Irregularity Allowance, Optional and included in all Total Door Undersize for single and pairs of doors

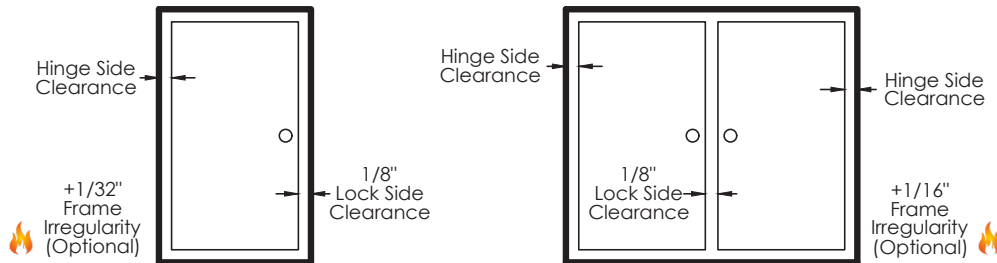
Frame irregularity not permitted by NFPA80

Door Clearance Chart Beveled Edge

Single Door - Beveled Edged										
Hinge Model		Hinge Thickness	+	Lock Side Clearance	+	* Frame Irregularity (OPTIONAL)	+	Beveled Door Clearance	=	Beveled Edged Door Undersized (Single)
Full Concealed	A110, A110WT, A111 A111WT, A120, A140, A150, A160, A240, A260, A270, A410	5/16"	+	1/8"	+	1/32"	+	1/32"	=	1/2"
	A130, A135	13/16"	+	1/8"	+	1/32"	+	1/32"	=	1"
Half Surface	A211, A213, A450, A460, A520, A530, A540, A550	3/16"	+	1/8"	+	1/32"	+	1/32"	=	3/8"
Full Surface	A210, A570, A571, A575	1/16"	+	1/8"	+	1/32"	+	N/A	=	7/32"

Single Door

Pair of Doors



Pair of Doors - Beveled Edged										
Hinge Model		Hinge Thickness (Pair)	+	Lock Side Clearance	+	* Frame Irregularity (OPTIONAL)	+	Beveled Door Clearance	=	Beveled Edged Door Undersized (Pair)
Full Concealed	A110, A110WT, A111 A111WT, A120, A140, A150, A160, A240, A260, A270, A410	5/8"	+	1/8"	+	1/16"	+	1/16"	=	7/8"
	A130, A135	1-5/8"	+	1/8"	+	1/16"	+	1/16"	=	1-7/8"
Half Surface	A211, A213, A450, A460, A520, A530, A540, A550	1/4"	+	1/8"	+	1/16"	+	N/A	=	7/16"
Full Surface	A210, A570, A571, A575	1/8"	+	1/8"	+	1/16"	+	N/A	=	5/16"

* 1/16" Frame Irregularity Allowance, Optional and included in all Total Door Undersize for single and pairs of doors

Frame irregularity not permitted by NFPA80

INSTALLATION INSTRUCTIONS FOR FULL CONCEALED HINGES

A110HD/LL, A111HD/LL, A130HD, A135HD, A140HD/LL, A150HD/LL, A160HD/LL
A240HD/LL, A260HD/LL, A270HD/LL, A280HD/LL & A410HD/LL

- A. All uncut standard length hinges are non-handed and can be used for right or left hand doors.
- B. Standard length hinges are supplied slightly shorter than nominal door height to accommodate threshold and carpeting clearances.

CUTTING THE HINGE TO FIT

- Keep hinge in the closed position
- Determine **HANDING** if required. Not all hinges will become handed after cutting.
- Cut one end of the hinge only. Cut end will be installed at the bottom (Six-hole pattern remains at the top)
- Use a Metal Cutting Saw cut through the gear cap first.

Note: If cut length interferes with a set screw bearing remove it and switch it with a plain bearing above the cut location.

FRAME PREP

With the hinge in the open position

1. Locate the top of the hinge 1/8" below the header

With the frame leaf flange tight against the frame

2. Mark or Center Punch hole locations

Note: If using wood screws drill a 5/32" pilot hole

DO NOT ATTACH HINGE TO FRAME AT THIS TIME

ATTACH THE HINGE TO THE DOOR

4. Position Door Leaf on door. Door leaf alignment flange or door leaf lip must be seated against door edge.
5. Align the top end of the hinge to be absolutely flush with the top of the door.
6. Mark or Center Punch hole locations
7. Using the provided Self Drilling/Thread Forming Screws and the proper drive bit please proceed to attach the hinge to the door

Note: If using wood screws drill a 5/32" pilot hole.

ATTACHING DOOR TO FRAME

8. Position door 90 degrees to frame
9. Shim door to the proper height to line up the screw holes in hinge frame leaf with the marks at the top of the frame.
10. Install two screws at the top of the hinge to hold in place
11. Remove shim and align the remaining holes. Install two additional screws in the middle and at the bottom.
12. Check door for proper swing and clearance before installing remaining screws, making necessary adjustments.
13. Install the remaining fasteners after any adjustments are made.

REINFORCING AND RIVNUTS

- No reinforcing is necessary except on extremely high-frequency, extremely heavy or extra-wide doors.
- Rivnuts are recommended for use in the frame when the door exceeds 450lbs.

Note: RIVNUTS are **not** to be used with Fire Rated Hinges

PAIRS OF DOORS WITH MULLIONS

- If the mullion is between the doors, install as single doors.
- If the mullion is behind the doors, install as a double doors.

GROUT/SLUSHED-IN FRAMES

It is recommended that a mudguard be installed behind the frame for ease of installation. Do not use self-drill screws with grouted steel frames without a mudguard. If no mudguard has been used, drill holes through frame and remove grout for screw clearances. Do not oversize hole.

SCREW DETAIL	
FRAME	12-24 x 3/4" PHILLIPS FLAT HEAD, UNDERCUT, SELF DRILLING, THREAD FORMING TEK MACHINE SCREW
DOOR	12-24 x 3/4" PHILLIPS FLAT HEAD, UNDERCUT, SELF DRILLING, THREAD FORMING TEK MACHINE SCREW

Note: #12 x 1-1/2" FLAT HEAD UNDERCUT WOOD SCREWS AVAILABLE UPON REQUEST

The following actions will void any warranty, expressed or implied.

- Failure to Install the hinge according to ABH's specifications and requirements
- Use of Fasteners other than those supplied with the hinge.
- Unauthorized field modifications including removing any of the bearings, altering the original finish or painting the hinge.

ABH
MANUFACTURING INC.

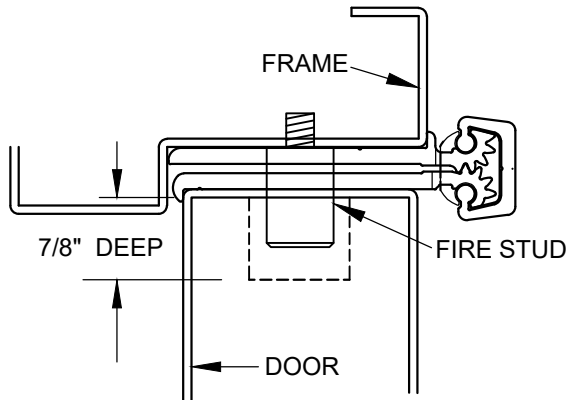
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FM INSTALLATION-05.DWG
FULL CONCEALED
INSTALLATION
INSTRUCTIONS
PAGE 1 OF 1
REVISED 9-17-20

UL FIRE RATED STUDS FOR INSTALLATION FULL CONCEALED ALUMINUM GEARED HINGES

MODELS A110HD/LL, A111HD/LL, A140HD/LL, A150HD/LL, A160HD/LL, A240HD/LL, A260HD/LL
A270HD/LL, A280HD/LL & A410HD/LL

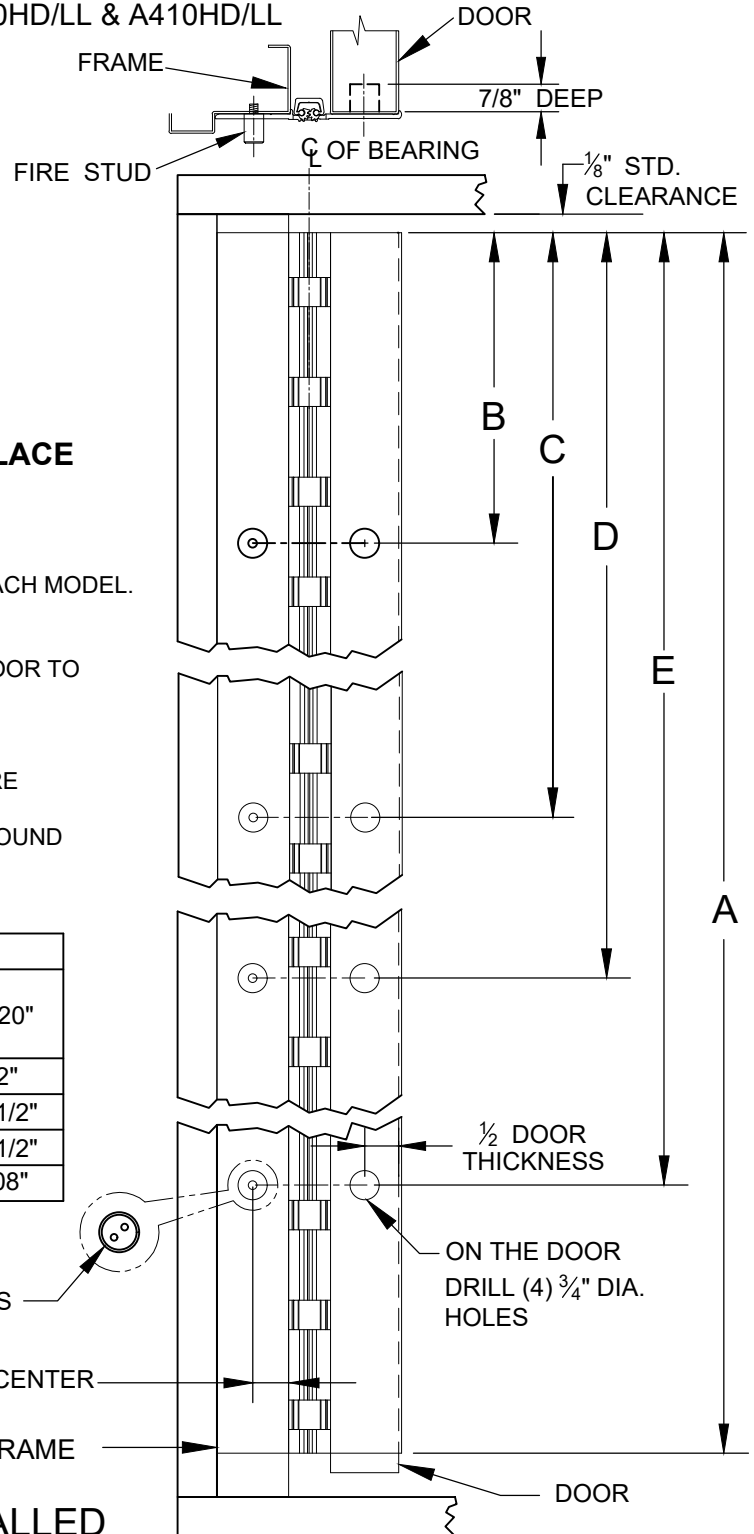


**DOOR SHOWN CLOSED WITH FIRE STUD IN PLACE
USING MODEL A240HD HINGE**

NOTES:

1. INSTALL HINGE PER INSTALLATION INSTRUCTIONS FOR EACH MODEL.
2. FOR THE FRAME SIDE - DRILL AND TAP (4) 12-24 HOLES FOR FIRE STUDS.
3. FOR THE DOOR SIDE - DRILL (4) 3/4" DIA. HOLES IN THE DOOR TO CORRESPOND TO THE STUD HOLES IN THE FRAME SIDE.
4. INSERT STUDS IN THE FOUR (4) TAPPED FRAME HOLES, TIGHTEN SECURELY.
5. SLOWLY CLOSE DOOR MAKING SURE THAT THE STUDS ARE PROPERLY ALIGNED.
6. MINOR INTERFERENCE CAN BE TAKEN CARE OF WITH A ROUND METAL FILE.

DIMENSION					
"A" HINGE LENGTH	79"	83"	85"	95"	120"
"B"	12"	12"	12"	12"	12"
"C"	25-3/8"	27-3/8"	28-3/8"	32-3/8"	42-1/2"
"D"	53-5/8"	55-5/8"	56-5/8"	62-5/8"	77-1/2"
"E"	67"	71"	73"	83"	108"



DOOR SHOWN OPEN 180°

ON THE FRAME, DRILL AND TAP (4) 12-24 HOLES

1/2 THE DOOR THICKNESS + 1/32" FROM CENTER OF HOLE TO EDGE OF FRAME

1/2 DOOR THICKNESS

ON THE DOOR DRILL (4) 3/4" DIA. HOLES

**ALL FOUR (4) STUDS MUST BE INSTALLED
TO COMPLY WITH U.L. RATING**

FIRE STUD - FULL CONCEALED-03.DWG



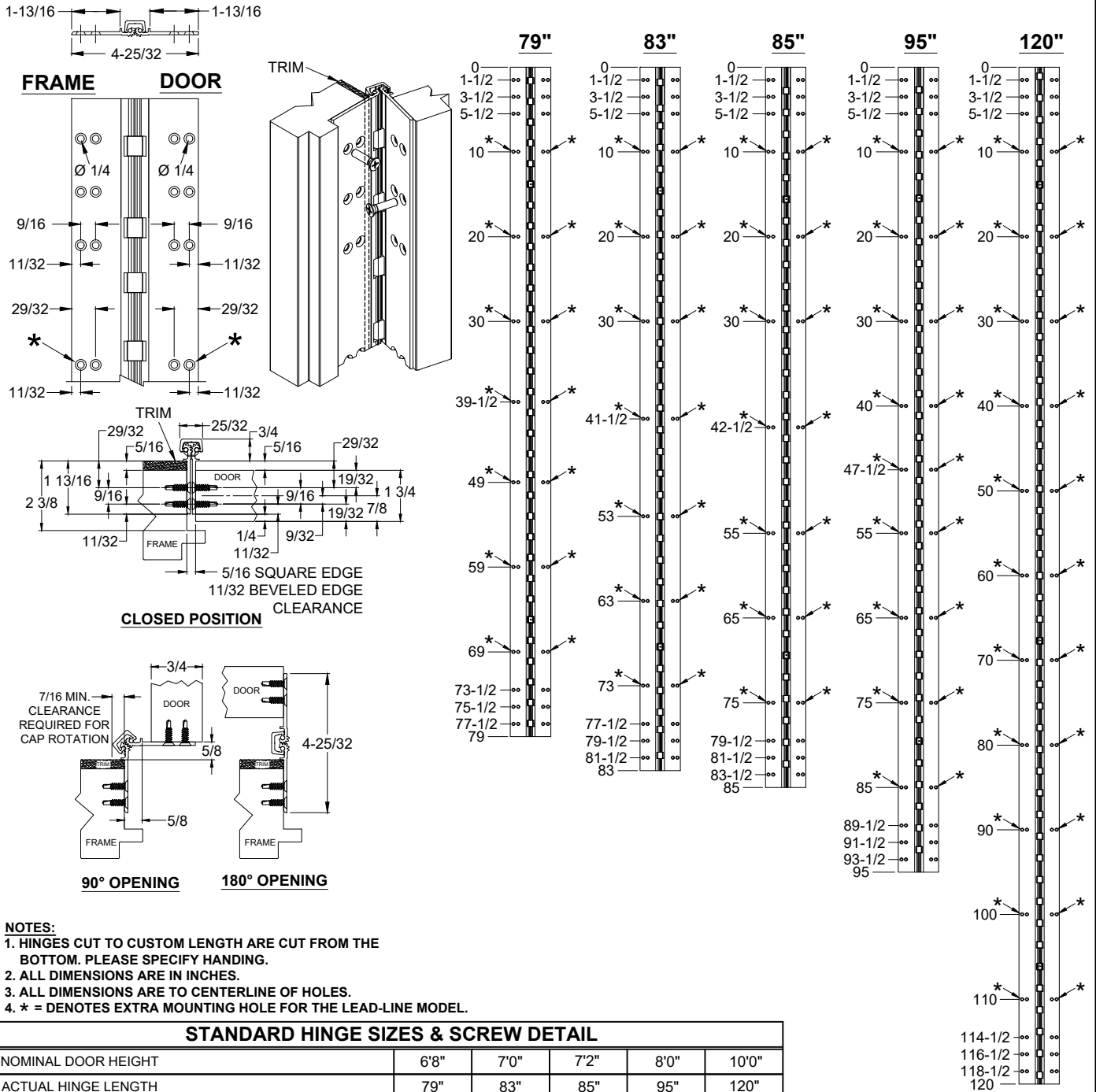
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**FIRE STUD -
FULL CONCEALED**

PAGE 1 OF 1
REVISED 11-22-21

A280HD / A280LL - ALUMINUM GEARED HINGE, FOR 1-3/4" DOOR WITH ALUMINUM FRAME & SNAP ON TRIM, FULL CONCEALED



A280-ALUMINUM GEARED HINGE-1-04.DWG



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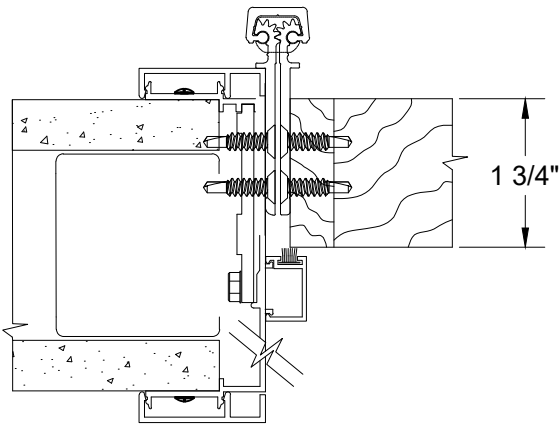
A280
 ALUMINUM GEARED HINGE

PAGE 1 OF 2
 REVISED 9-10-20

A280HD / A280LL - ALUMINUM GEARED HINGE, FOR 1-3/4" DOOR WITH ALUMINUM FRAME & SNAP ON TRIM, FULL CONCEALED

A280 WITH VERSATRAC

ABH A280

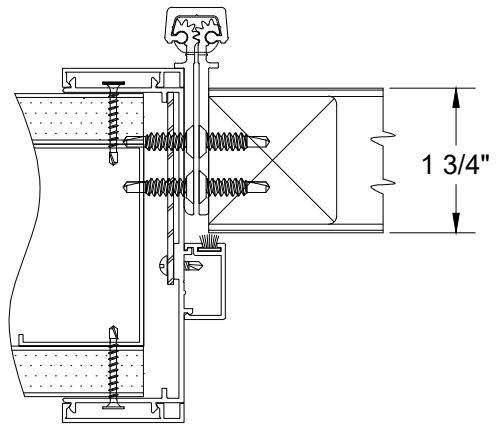


VT-2 HINGE JAMB

300, 400, 725, 90 MIN.
VERSATRIM FRAME SECTIONS

A280 WITH FRAMEWORKS

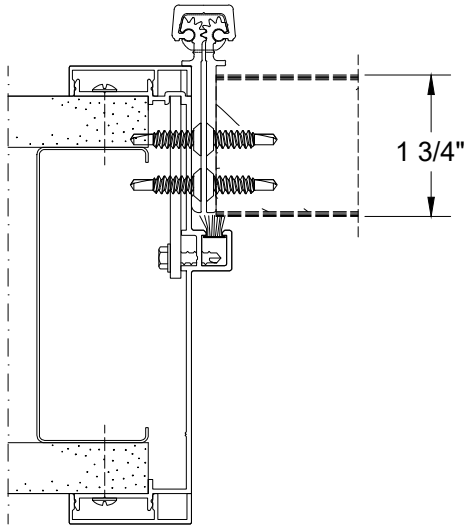
ABH A280



FRAMEWORKS TYPE 2 HINGE JAMB

A280 WITH RACO

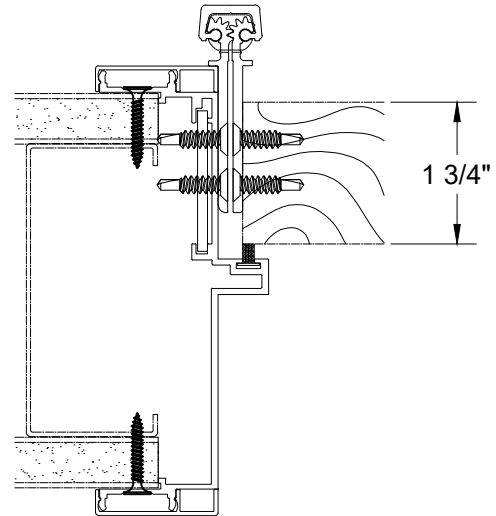
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RACO TYPE 2, SOLUTIONS II HINGE JAMB

A280 WITH WILSON PARTITIONS

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WILSON PARTITION - 487 Series (TYPE 2)



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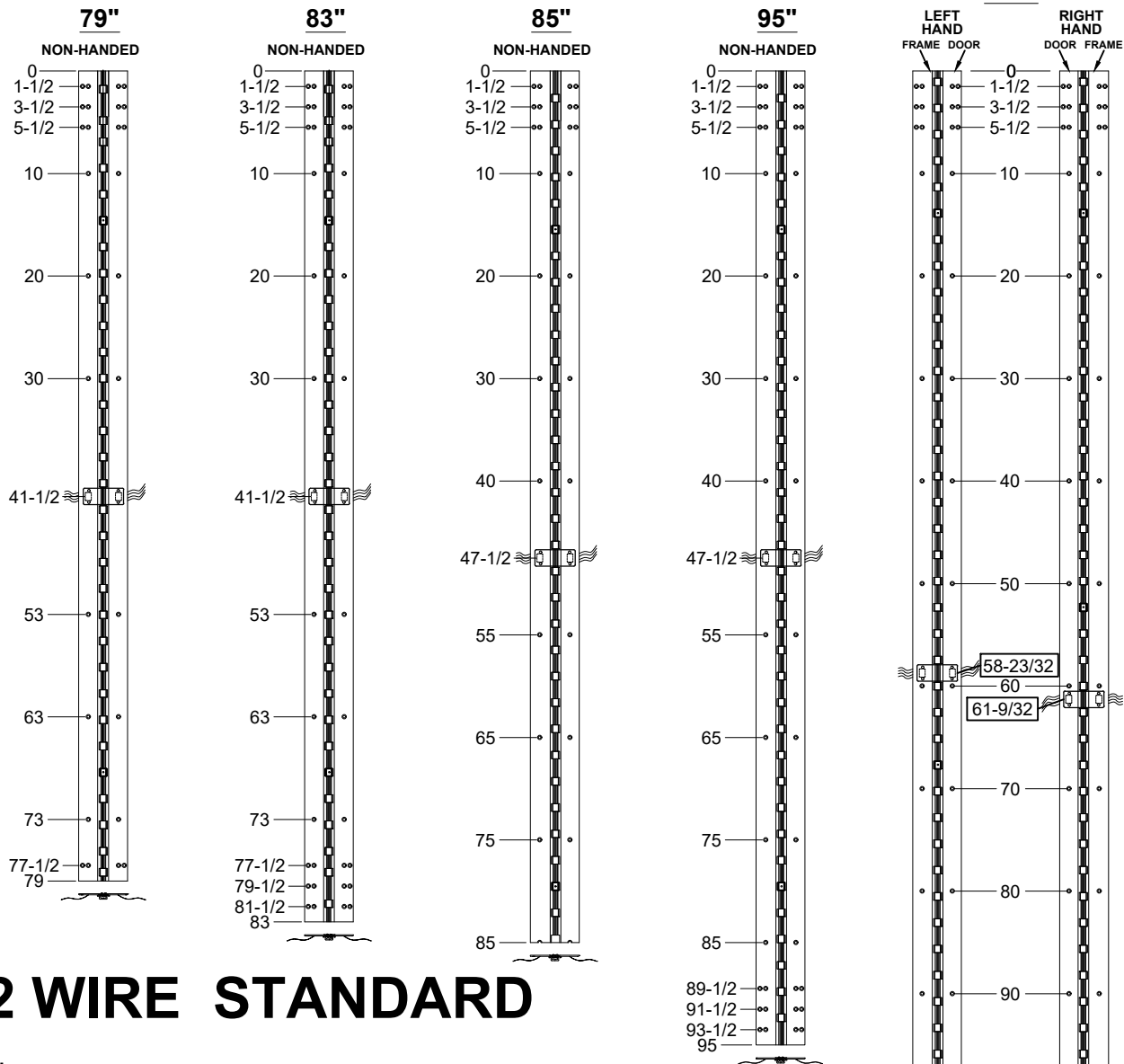
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A280-ALUMINUM GEARED HINGE-2-04.DWG

A280
ALUMINUM GEARED HINGE

PAGE 2 OF 2
ISSUED 09-10-20

**A280HD - "EA" OPTION, EASY ACCESS CONCEALED ELECTRIFICATION,
ALUMINUM GEARED HINGE FOR 1-3/4" ALUMINUM DOORS & FRAMES WITH SNAP ON TRIM,
FULL CONCEALED**



12 WIRE STANDARD

NOTES:

- HINGES CUT TO CUSTOM LENGTH ARE CUT FROM BOTTOM OF HINGE. CUSTOM CUT HINGE REQUIRES HANDING.



STANDARD HINGE SIZES & SCREW DETAIL

NOMINAL DOOR HEIGHT	6'8"	7'0"	7'2"	8'0"	10'0"
ACTUAL HINGE LENGTH	79"	83"	85"	95"	120"
FRAME	12-24 x 3/4" PHILLIPS FLAT HEAD, UNDERCUT, SELF DRILLING, THREAD FORMING TEK MACHINE SCREW				
DOOR	12-24 x 3/4" PHILLIPS FLAT HEAD, UNDERCUT, SELF DRILLING, THREAD FORMING TEK MACHINE SCREW				
	14	18	13	20	23

A280HD- "EA" OPTION, EASY ACCESS CONCEALED ELECTRIFICATION-1-02



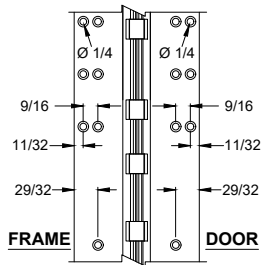
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**A280HD - "EA" OPTION, EASY ACCESS
CONCEALED ELECTRIFICATION**

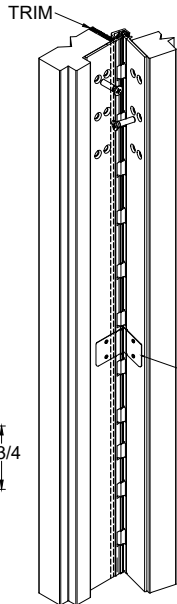
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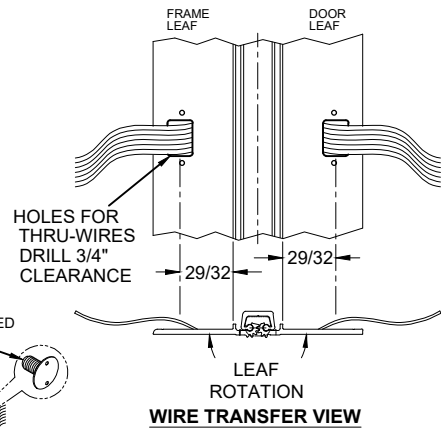
**A280HD - "EA" OPTION, EASY ACCESS CONCEALED ELECTRIFICATION,
ALUMINUM GEARED HINGE FOR 1-3/4" ALUMINUM DOORS & FRAMES WITH SNAP ON TRIM,
FULL CONCEALED**



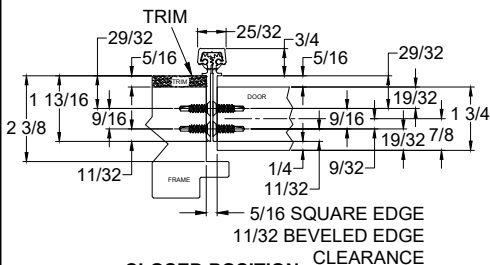
CLOSED POSITION



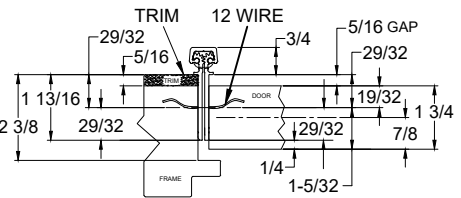
**ISOMETRIC VIEW
-90° OPENING**



**LEAF ROTATION
WIRE TRANSFER VIEW**

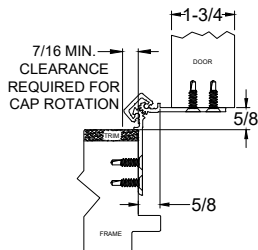


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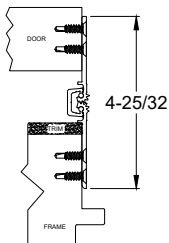


WIRE TRANSFER VIEW

**ISOMETRIC VIEW
180° OPENING**



90° OPENING

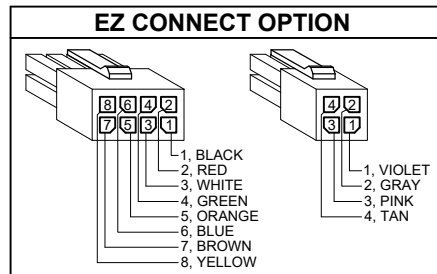


180° OPENING

NOTES:

1. MOLEX CONNECTOR OPTION AVAILABLE - SUFFIX "EZ".

* SPECIFY ELECTRIFIED HARDWARE MANUFACTURER FOR CONNECTOR COMPABILITY



SPECIFICATION:

DESCRIPTION: SINGLE CONDUCTOR #22 AWG MINIATURE HOOK-UP WIRE FOR APPLICATIONS REQUIRING EXTREME FLEXIBILITY.

CONDUCTOR: #22 AWG 168/44 (0.002") SOFT BARE COPPER LHL.

INSULATION: PROPRIETARY FORMULATION PVC 0.010" NOM. WALL MEETS VW-1 FLAME REQUIREMENT.

DIAMETER: 0.053" ± 0.003".

RESISTANCE: 16.7 OHMS MAX. @ 20°C, PER 1000 FT.

VOLTAGE RATING: 600 VOLTS RMS, DEPENDING ON SPECIFICATION.

AVAILABLE AS RoHS COMPLIANT.



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A280HD- "EA" OPTION, EASY ACCESS CONCEALED ELECTRIFICATION-2-02

**A280HD - "EA" OPTION, EASY ACCESS
CONCEALED ELECTRIFICATION**

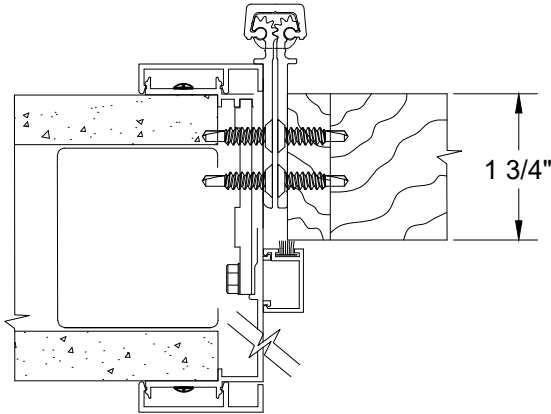
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FULL CONCEALED**

A280 WITH VERSATRAC

ABH A280

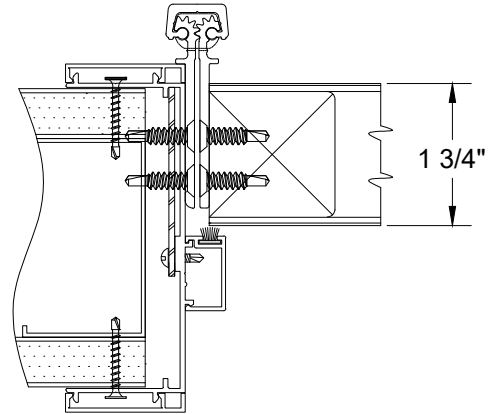


VT-2 HINGE JAMB

300, 400, 725, 90 MIN.
VERSATRIM FRAME SECTIONS

A280 WITH FRAMEWORKS

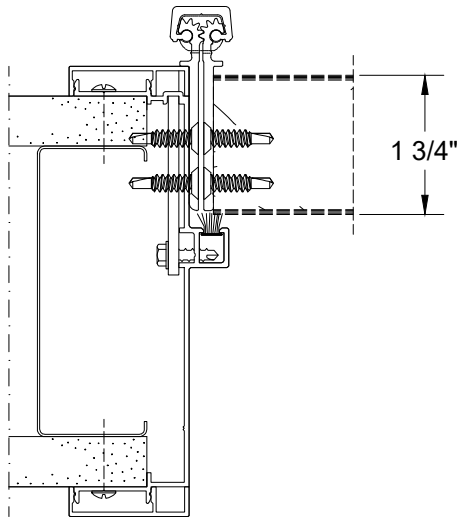
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FRAMEWORKS TYPE 2 HINGE JAMB

A280 WITH RACO

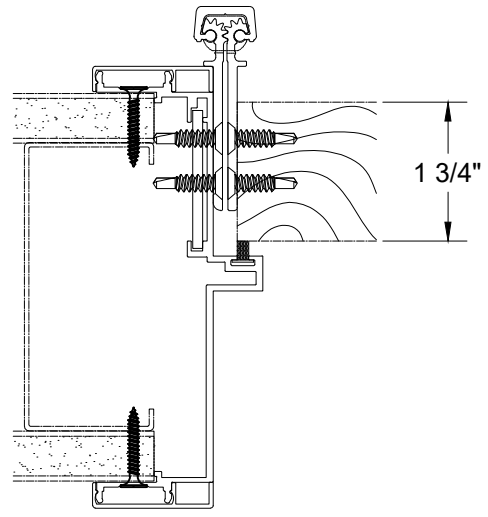
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RACO TYPE 2, SOLUTIONS II HINGE JAMB

A280 WITH WILSON PARTITIONS

ABH A280



WILSON PARTITION - 487 Series (TYPE 2)



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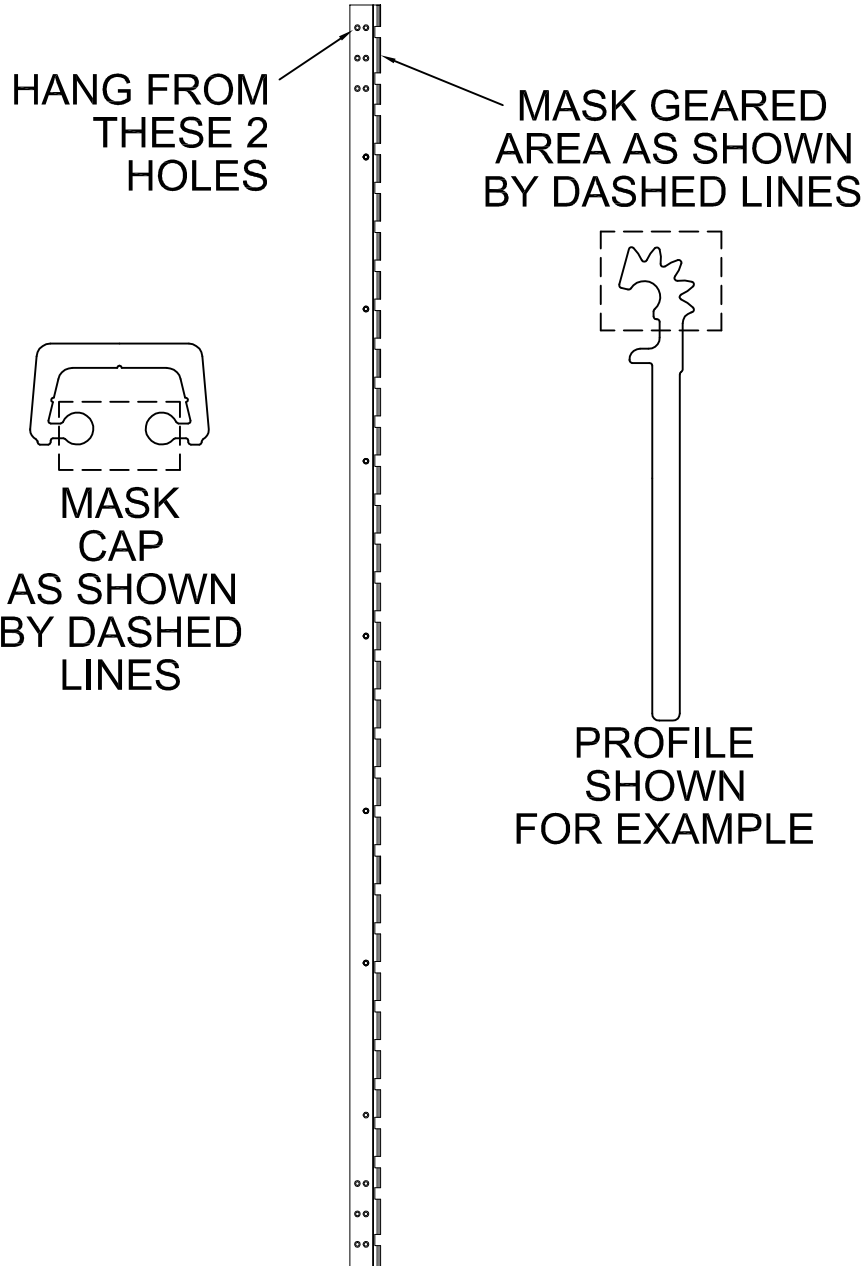
**A280HD - "EA" OPTION, EASY ACCESS
CONCEALED ELECTRIFICATION**

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POWDER COAT MASKING

**MUST HANG PART
AS SHOWN TO PREVENT
PART FROM BENDING
BY THE CUTOUT**



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POWDER COAT MASKING-00.DWG

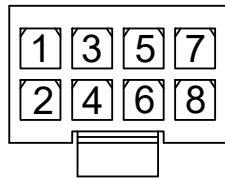
POWDER COAT MASKING

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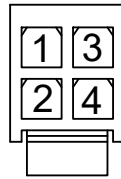
PAGE 1 OF 1
ISSUED 12-15-08

ABH EZ CONNECT WIRE COLOR & POSITION STANDARD FOR MOLEX™ MICRO-FIT 3.0 CONNECTOR

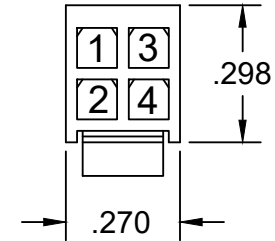
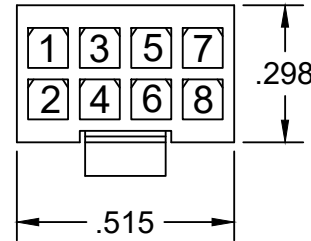
(TERMINAL INSERTION END SHOWN)



- 1: BLACK
- 2: RED
- 3: WHITE
- 4: GREEN
- 5: ORANGE
- 6: BLUE
- 7: BROWN
- 8: YELLOW



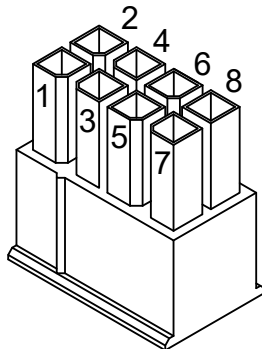
- 1: VIOLET
- 2: GREY
- 3: PINK
- 4: TAN



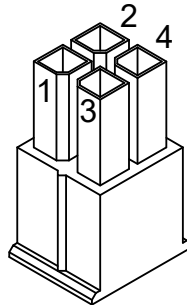
NOTE:
ABH CAN MATCH ANY MANUFACTURERS
WIRE COLOR POSITION

AVAILABLE ON

- STAINLESS STEEL CONTINUOUS HINGE
- ALUMINUM CONTINUOUS HINGES
- POWER TRANSFER UNITS
- PIVOTS
- ABH MORTISE LOCKS



8-PIN HOUSING
WIRE POSITION



4-PIN HOUSING
WIRE POSITION

CONNECTORS COMPATIBLE WITH CONNECTORS
ON ASSA ABLOY PRODUCTS*

* BRAND NAMES ARE TRADEMARKS OR REGISTERED TRADEMARKS OF THEIR RESPECTIVE COMPANIES

PT1000EZ WIRE COLOR-ASSA ABLOY-06.DWG



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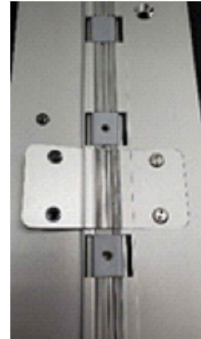
EZ CONNECT WIRE COLOR & POSITION
STANDARD FOR MOLEX™ CONNECTOR

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REVISED 03-15-22

EA THRU-WIRE REPLACEMENT INSTRUCTIONS

Removal of Old Wires

1. Turn off Power to avoid shock.
2. Remove (4) #6 Spanner Flat Head Screws from the covers on the face of each hinge leaf.
3. Remove (2) covers to expose the wires.
4. Pull wires through opening and disconnect from power source and electrified hardware.



EA THRU-WIRE REPLACEMENT INSTRUCTIONS

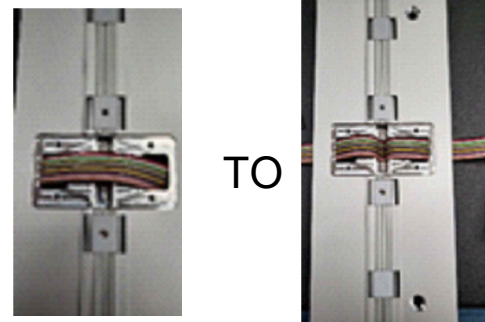
Installation of New Wire Ribbon

All wire connections must follow local codes and/or ABH Manufacturing's Minimum Requirements to ensure proper and lasting connections**

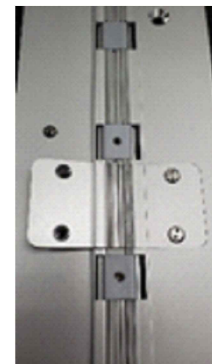
****ABH requires the use of wire nuts and electrical tape or Crimp Connectors when connecting wires to their source or supplied EZ Connectors**

1. Connect wire to the power source (FRAME SIDE) and pass wires back through hinge and frame opening.
2. Connect wires on DOOR side to electrified hardware and pass wires back through the hinge and door opening.

3. Excess Wire Ribbon should then be folded into the void of the cap.



4. Once wires are properly connected, line up the Thru-Wire Face plate gears and fasten with (4) #6 Spanner Flat Head Screws, making sure the plates sit flush to the face of the hinge leaves.



5. Turn Power back on