

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

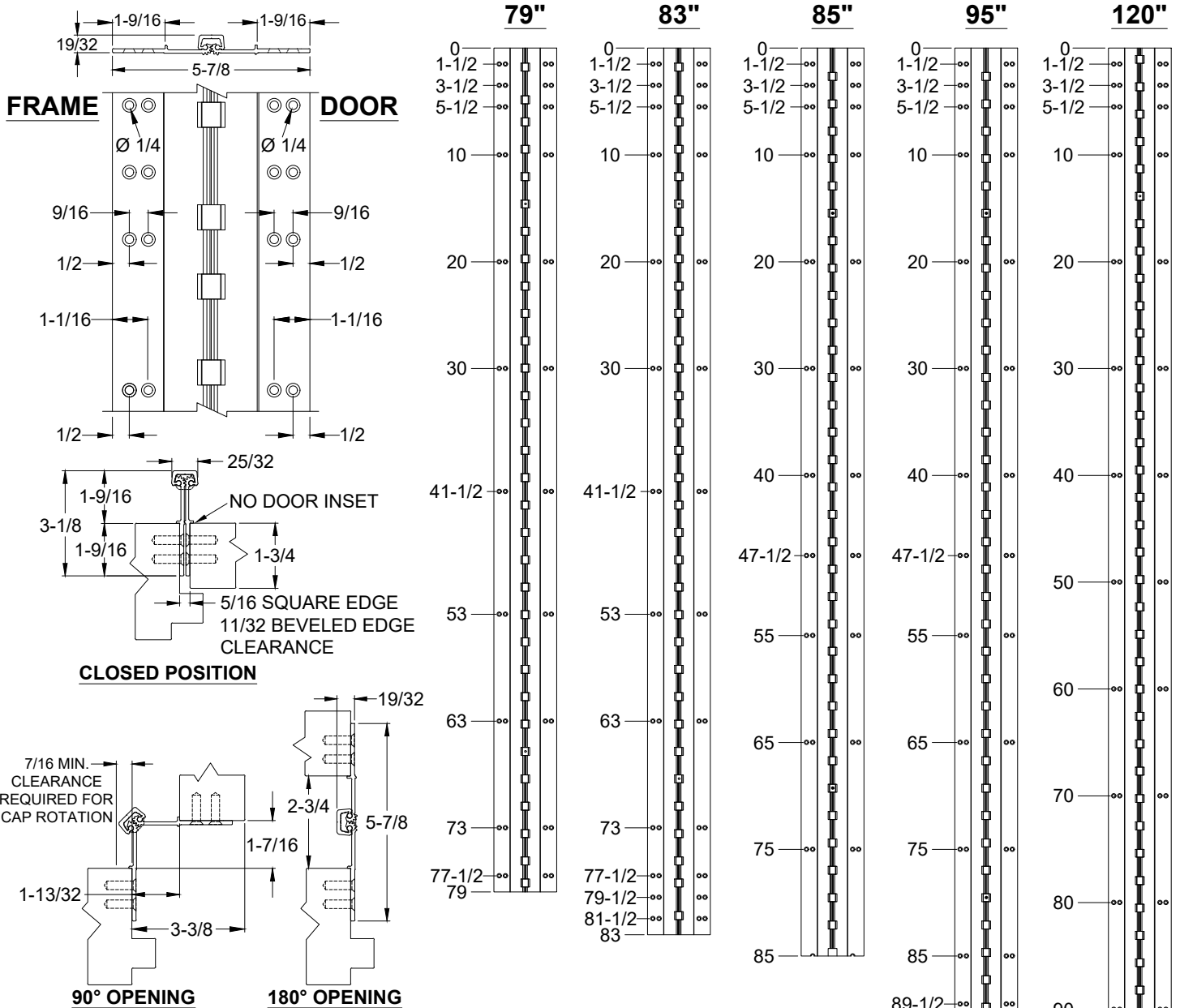
Note: #12 x 1-1/2" FLAT HEAD UNDERCUT WOOD SCREWS AVAILABLE UPON REQUEST

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.

A110WT HDLL - ALUMINUM GEARED HINGE, WIDE THROW, FLUSH MOUNT, FULL CONCEALED

- HINGES ARE SUPPLIED WITH LEAD-LINED MOUNTING HOLES FOR ADDITIONAL SUPPORT AS STANDARD



- NOTES:**
1. HINGES CUT TO CUSTOM LENGTH ARE CUT FROM THE BOTTOM.
 2. ALL DIMENSIONS ARE IN INCHES.
 3. ALL DIMENSIONS ARE TO CENTERLINE OF HOLES.



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"	
MODEL: HDLL = HEAVY DUTY (HD) LEAD-LINED (LL)	HDLL	HDLL	HDLL	HDLL	HDLL	
FRAME	12-24 x 3/4" PHILLIPS FLAT HEAD, UNDERCUT, SELF DRILLING, THREAD FORMING TEK MACHINE SCREW	22	26	22	30	34
DOOR	12-24 x 3/4" PHILLIPS FLAT HEAD, UNDERCUT, SELF DRILLING, THREAD FORMING TEK MACHINE SCREW	22	26	22	30	34

A110WT-ALUMINUM GEARED HINGE-03.DWG



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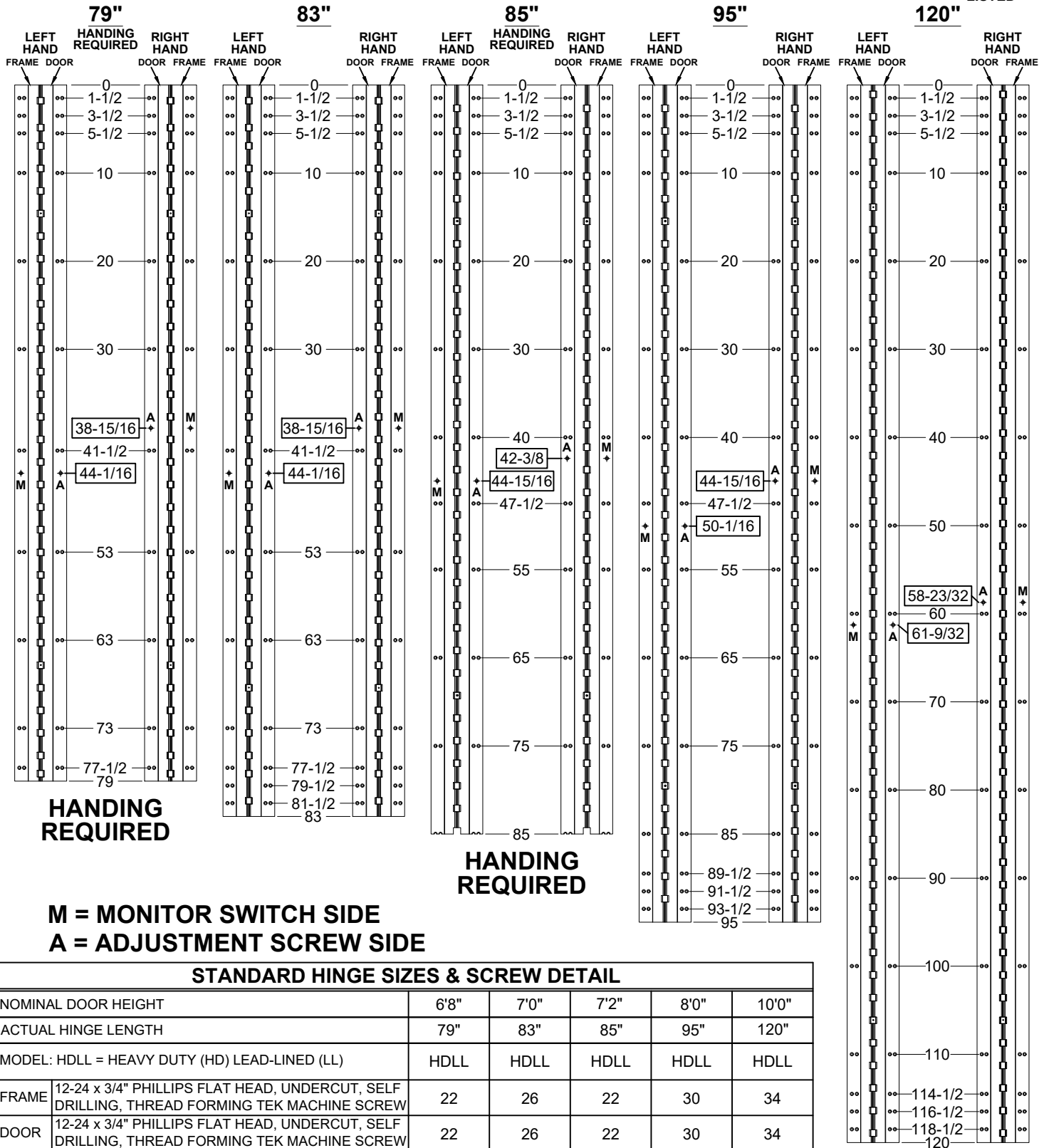
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A110WT
ALUMINUM GEARED HINGE

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 REVISED 8-21-20

A110WT HDLL - ALUMINUM GEARED HINGE, WIDE THROW, FLUSH MOUNT, FULL CONCEALED

- HINGES ARE SUPPLIED WITH LEAD-LINED MOUNTING HOLES FOR ADDITIONAL SUPPORT AS STANDARD
- "ES" OPTION, CONCEALED ELECTRIFICATION



HANDING REQUIRED

HANDING REQUIRED

**M = MONITOR SWITCH SIDE
A = ADJUSTMENT SCREW SIDE**

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"	
MODEL: HDLL = HEAVY DUTY (HD) LEAD-LINED (LL)	HDLL	HDLL	HDLL	HDLL	HDLL	
FRAME	12-24 x 3/4" PHILLIPS FLAT HEAD, UNDERCUT, SELF DRILLING, THREAD FORMING TEK MACHINE SCREW	22	26	22	30	34
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A110WT-ES OPTION, CONCEALED ELECTRIFICATION-1-03



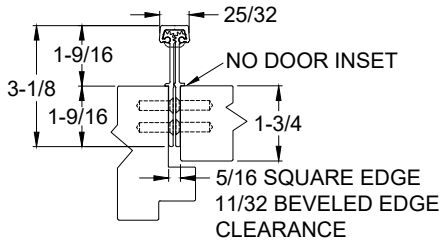
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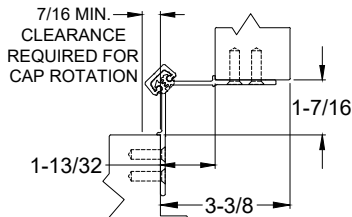
**A110WT - "ES" OPTION
CONCEALED ELECTRIFICATION**

A110WT HDLL - ALUMINUM GEARED HINGE, WIDE THROW, FLUSH MOUNT, FULL CONCEALED

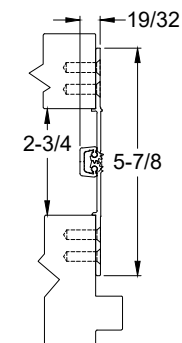
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- "ES" OPTION, CONCEALED ELECTRIFICATION



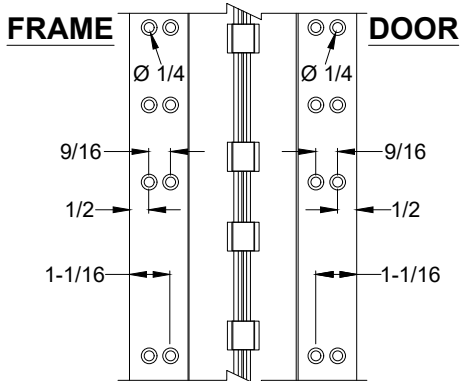
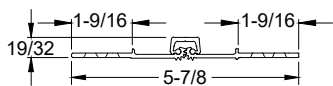
CLOSED POSITION



90° OPENING

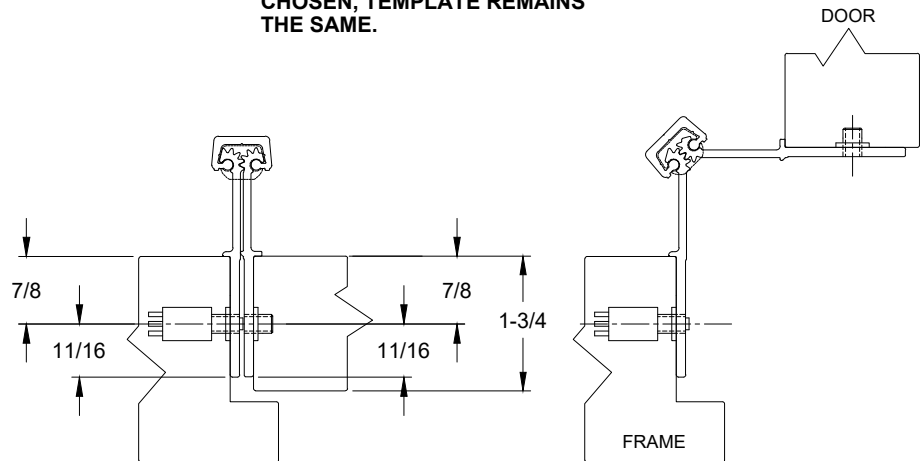


180° OPENING



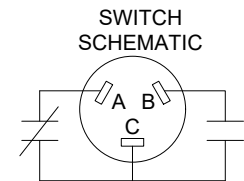
NOTES:

1. HINGES CUT TO CUSTOM LENGTH ARE CUT FROM BOTTOM OF HINGE.
2. SPECIFY HANDING WHEN ORDERING.
3. IF "M" OPTION (MOVEABLE PANEL) OR "R" OPTION (REMOVABLE PANEL) IS CHOSEN, TEMPLATE REMAINS THE SAME.

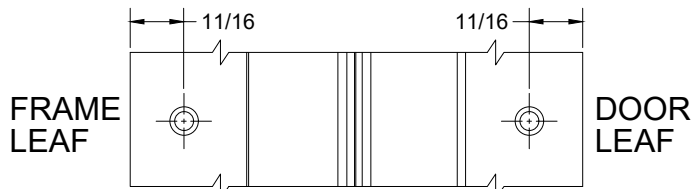
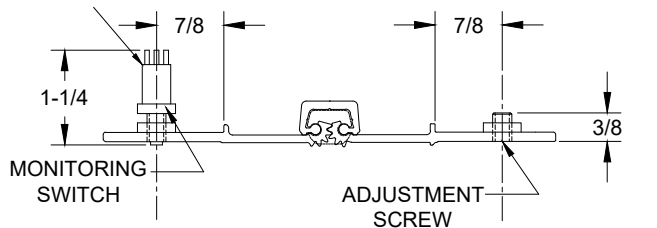


EXPOSED MONITOR SWITCH VIEW, LEFT HAND SHOWN

NOTE: 5/8" DIA. HOLE REQUIRED IN JAMB FOR MONITORING SWITCH AND A 7/16" DIA. HOLE FOR CLEARANCE OF ADJUSTMENT SCREW



A & C = NORMALLY CLOSED
B & C = NORMALLY OPEN



EXPOSED MONITOR SWITCH VIEW

A110WT-ES OPTION, CONCEALED ELECTRIFICATION-2-03



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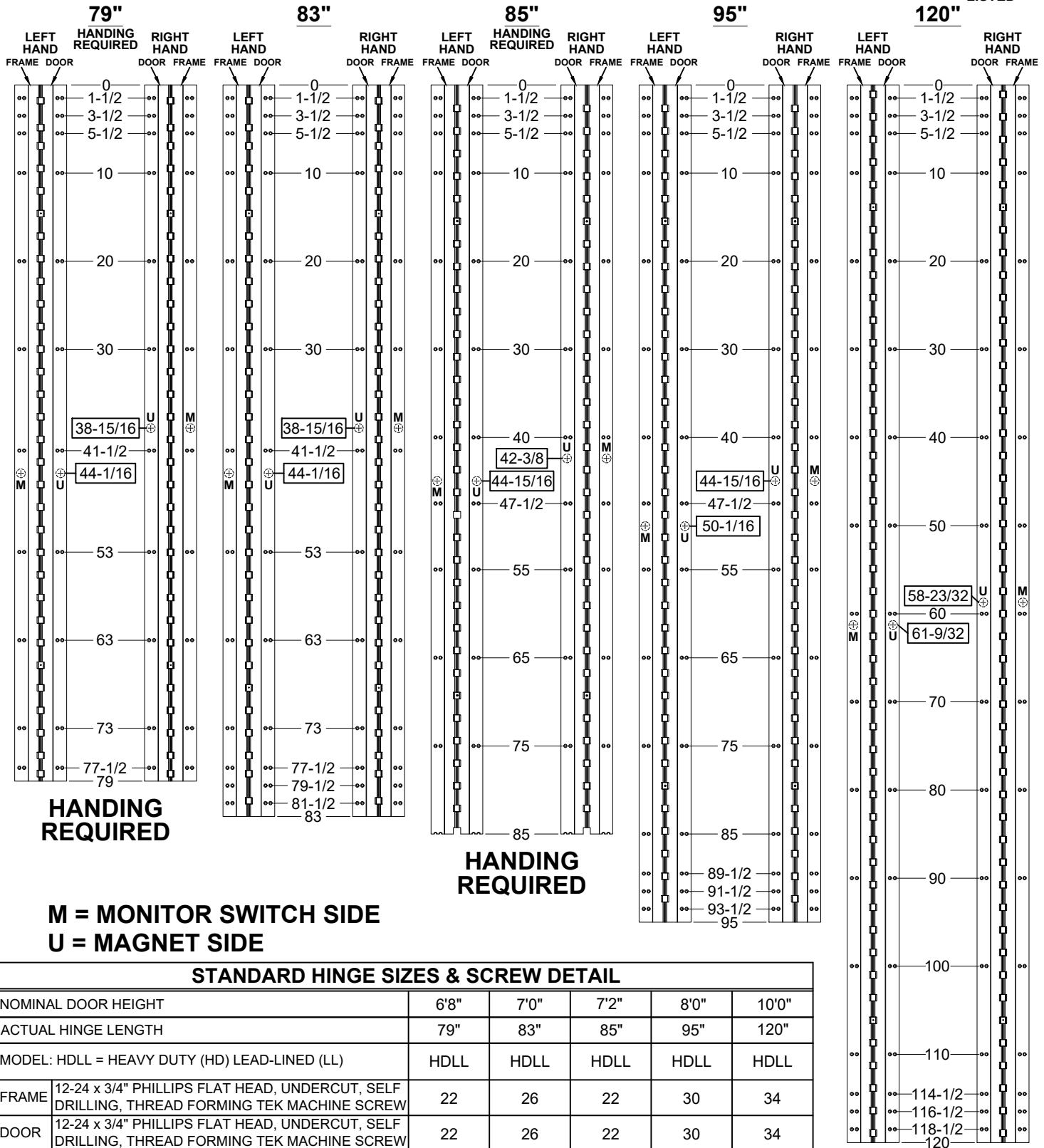
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A110WT - "ES" OPTION
CONCEALED ELECTRIFICATION

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A110WT HDLL - ALUMINUM GEARED HINGE, WIDE THROW, FLUSH MOUNT, FULL CONCEALED

- HINGES ARE SUPPLIED WITH LEAD-LINED MOUNTING HOLES FOR ADDITIONAL SUPPORT AS STANDARD
- "EM" OPTION, CONCEALED ELECTRIFICATION



**HANDING
REQUIRED**

**HANDING
REQUIRED**

**M = MONITOR SWITCH SIDE
U = MAGNET SIDE**

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"
MODEL: HDLL = HEAVY DUTY (HD) LEAD-LINED (LL)	HDLL	HDLL	HDLL	HDLL	HDLL
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				

A110WT-EM OPTION, CONCEALED ELECTRIFICATION-1-03.DWG



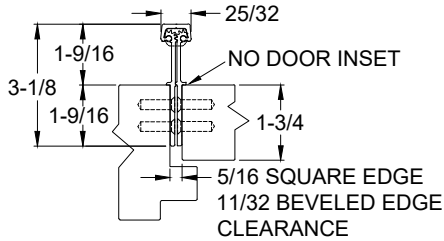
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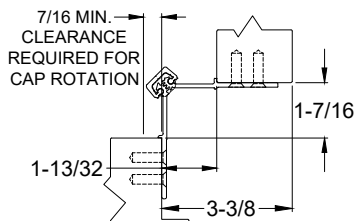
**A110WT - "EM" OPTION
 CONCEALED ELECTRIFICATION**

A110WT HDLL - ALUMINUM GEARED HINGE, WIDE THROW, FLUSH MOUNT, FULL CONCEALED

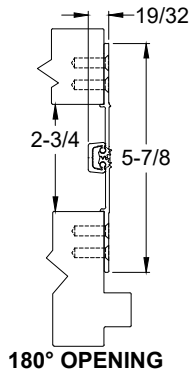
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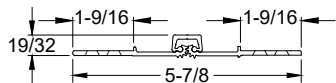
CLOSED POSITION



90° OPENING

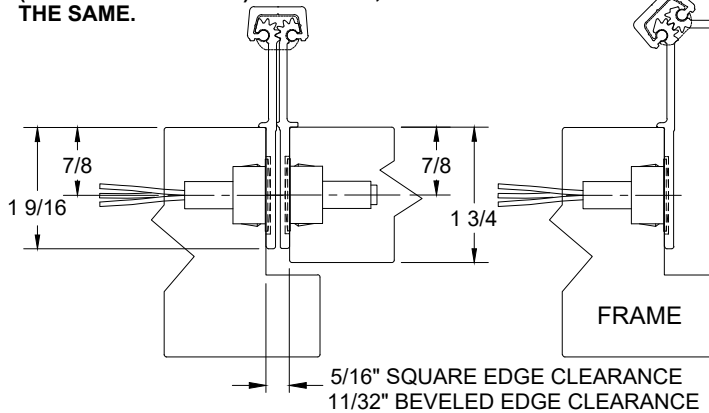


180° OPENING



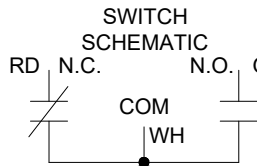
NOTES:

1. HINGES CUT TO CUSTOM LENGTH ARE CUT FROM BOTTOM OF HINGE.
2. SPECIFY HANDING WHEN ORDERING.
3. IF "M" OPTION (MOVEABLE PANEL) OR "R" OPTION (REMOVABLE PANEL) IS CHOSEN, TEMPLATE REMAINS THE SAME.

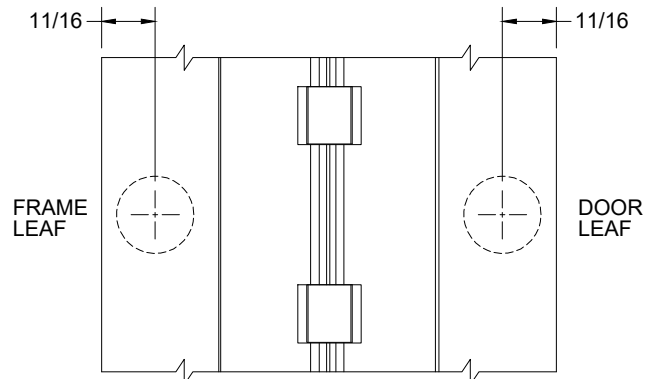
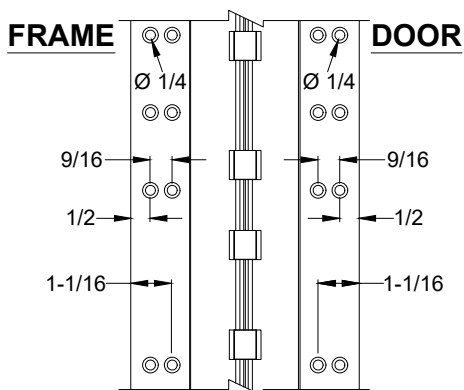
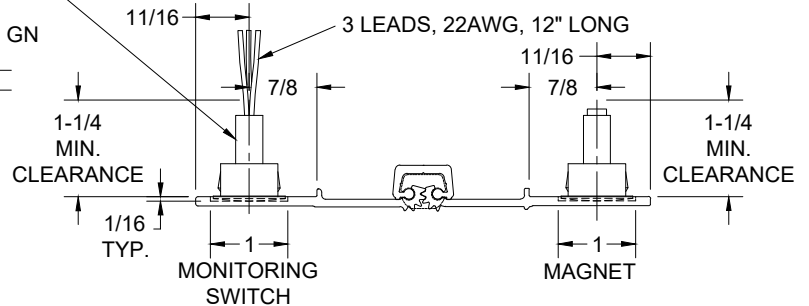


**MAGNETIC MONITOR SWITCH VIEW,
LEFT HAND SHOWN**

NOTE: 7/8" DIA. MIN. CLEARANCE HOLE REQUIRED IN DOOR & FRAME FOR MONITORING SWITCH AND MAGNET



ELECTRICAL CONFIG.: SPDT
 MAX. INITIAL CONTACT RESISTANCE : 0.140 OHM
 MAX. CONTACT RATING: 5 WATT
 MAX. SWITCHING VOLTAGE: 175 VDC
 MAX. SWITCHING CURRENT: 0.25 AMP



MAGNETIC MONITOR SWITCH VIEW

A110WT-EM OPTION, CONCEALED ELECTRIFICATION-2-03.DWG



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**A110WT - "EM" OPTION
 CONCEALED ELECTRIFICATION**

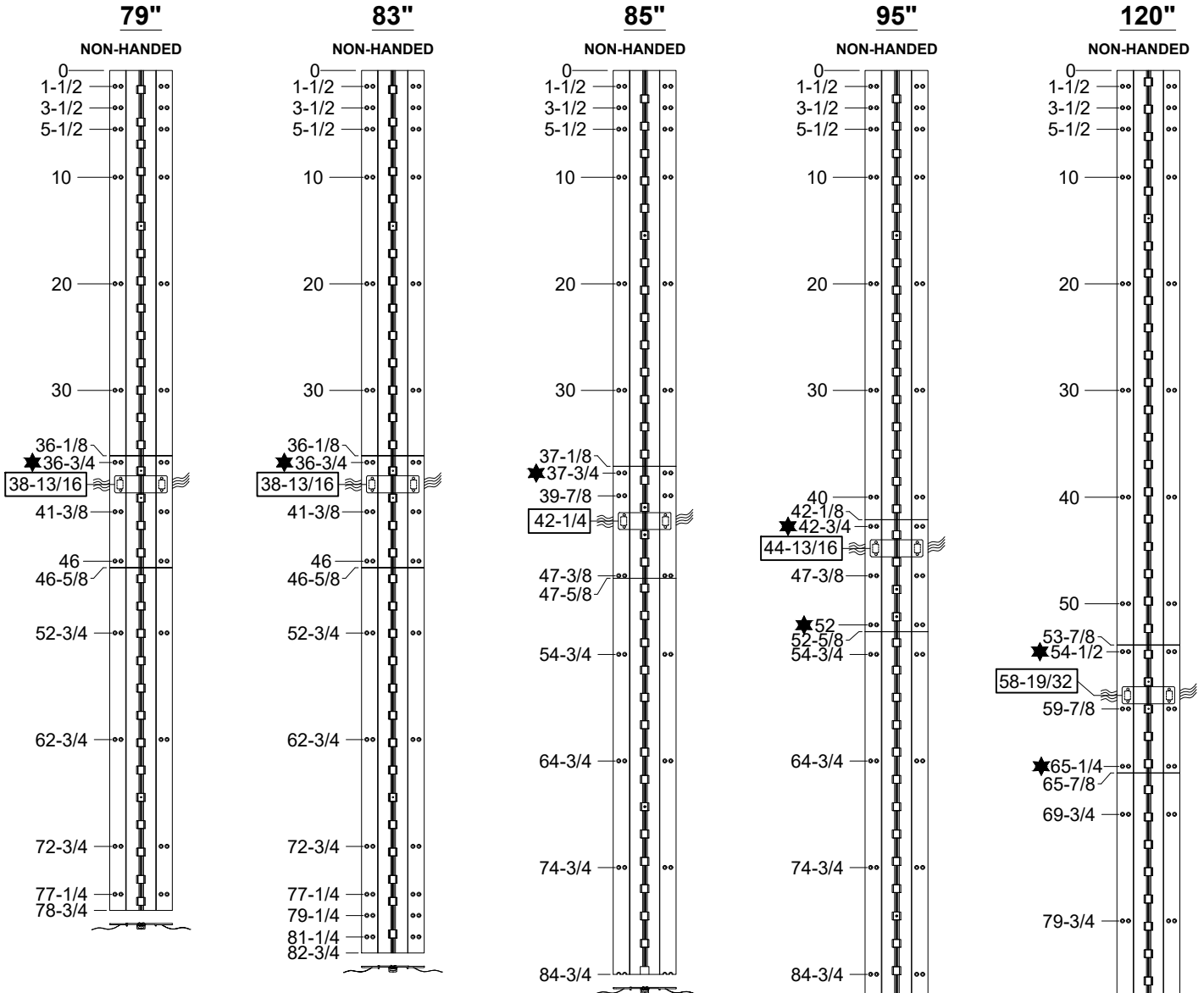
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**A110WT - EA OPTION, EASY ACCESS CONCEALED ELECTRIFICATION,
ALUMINUM GEARED HINGE, WIDE THROW, FLUSH MOUNT, FULL CONCEALED**



- "R" REMOVABLE OPTION, FOR ELECTRICAL MODIFICATION



12 WIRE STANDARD

R = REMOVABLE, (3) INDIVIDUAL HINGES, THRU WIRE
CAN BE REMOVED TO ACCESS WIRES.

★ = MANUFACTURING TO ADD (8) COUNTERSINK THRU HOLES FOR #12 FLAT HEAD SCREW.

STANDARD HINGE SIZES & SCREW DETAIL

NOMINAL DOOR HEIGHT	6'8"	7'0"	7'2"	8'0"	10'0"	
ACTUAL HINGE LENGTH	78-3/4"	82-3/4"	84-3/4"	94-3/4"	119-3/4"	
MODEL: HDLL = HEAVY DUTY (HD) LEAD-LINED (LL)	HDLL	HDLL	HDLL	HDLL	HDLL	
FRAME	12-24 x 7/8" PHILLIPS FLAT HEAD, UNDERCUT, SELF DRILLING, THREAD FORMING TEK MACHINE SCREW	26	30	24	34	38
DOOR	12-24 x 7/8" PHILLIPS FLAT HEAD, UNDERCUT, SELF DRILLING, THREAD FORMING TEK MACHINE SCREW	26	30	24	34	38

A110WT-EA & R, ELECTRICAL MODIFICATION WITH REMOVABLE OPTION-1-01.DWG



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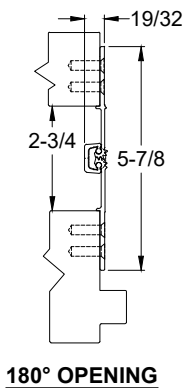
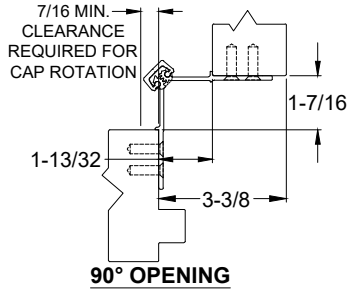
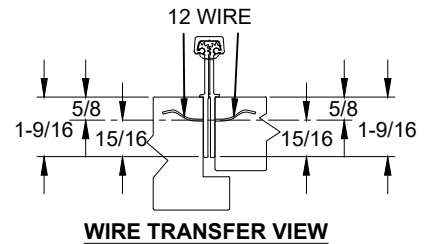
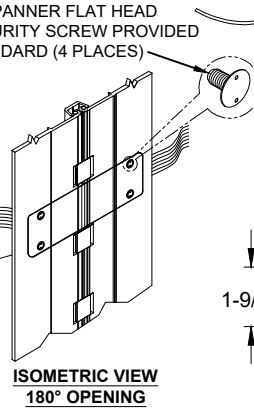
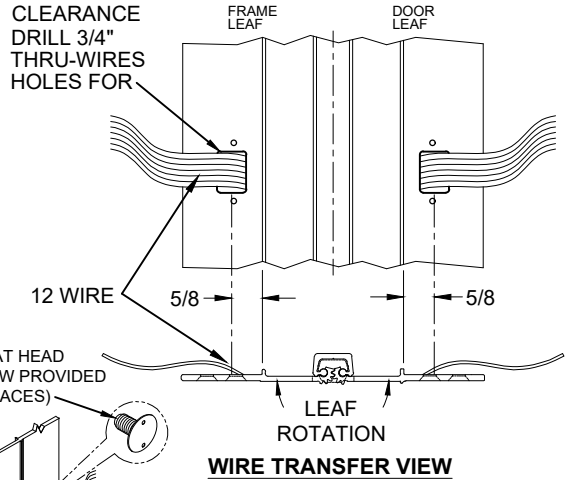
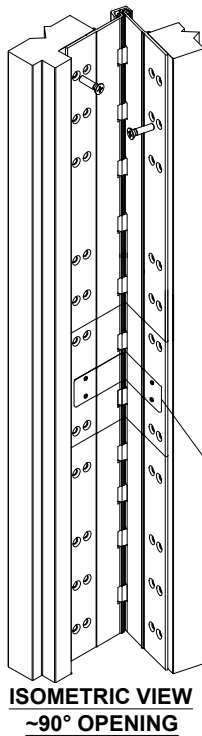
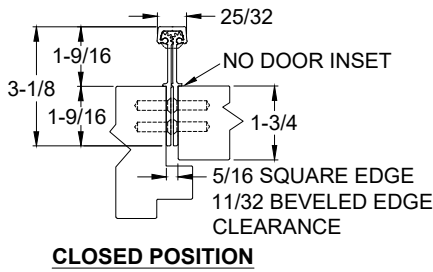
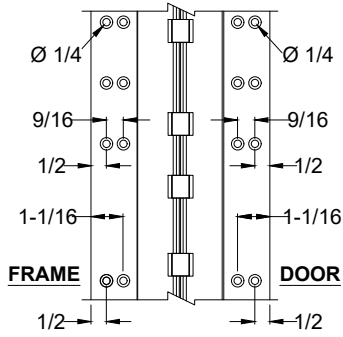
**A110WT - "EA" & "R" OPTION
FOR ELECTRICAL MODIFICATION**

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**A110WT - EA OPTION, EASY ACCESS CONCEALED ELECTRIFICATION,
ALUMINUM GEARED HINGE, WIDE THROW, FLUSH MOUNT, FULL CONCEALED**

- "R" REMOVABLE OPTION, FOR ELECTRICAL MODIFICATION



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.

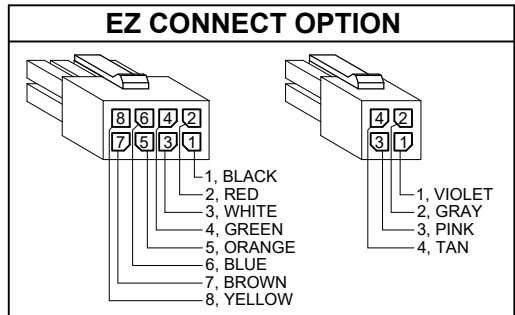
INSULATION: PROPRIETARY FORMULATION PVC 0.010" NOM. WALL MEETS VW-1 FLAME REQUIREMENT.

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.



A110WT-EA & R, ELECTRICAL MODIFICATION WITH REMOVABLE OPTION-2-01.DWG



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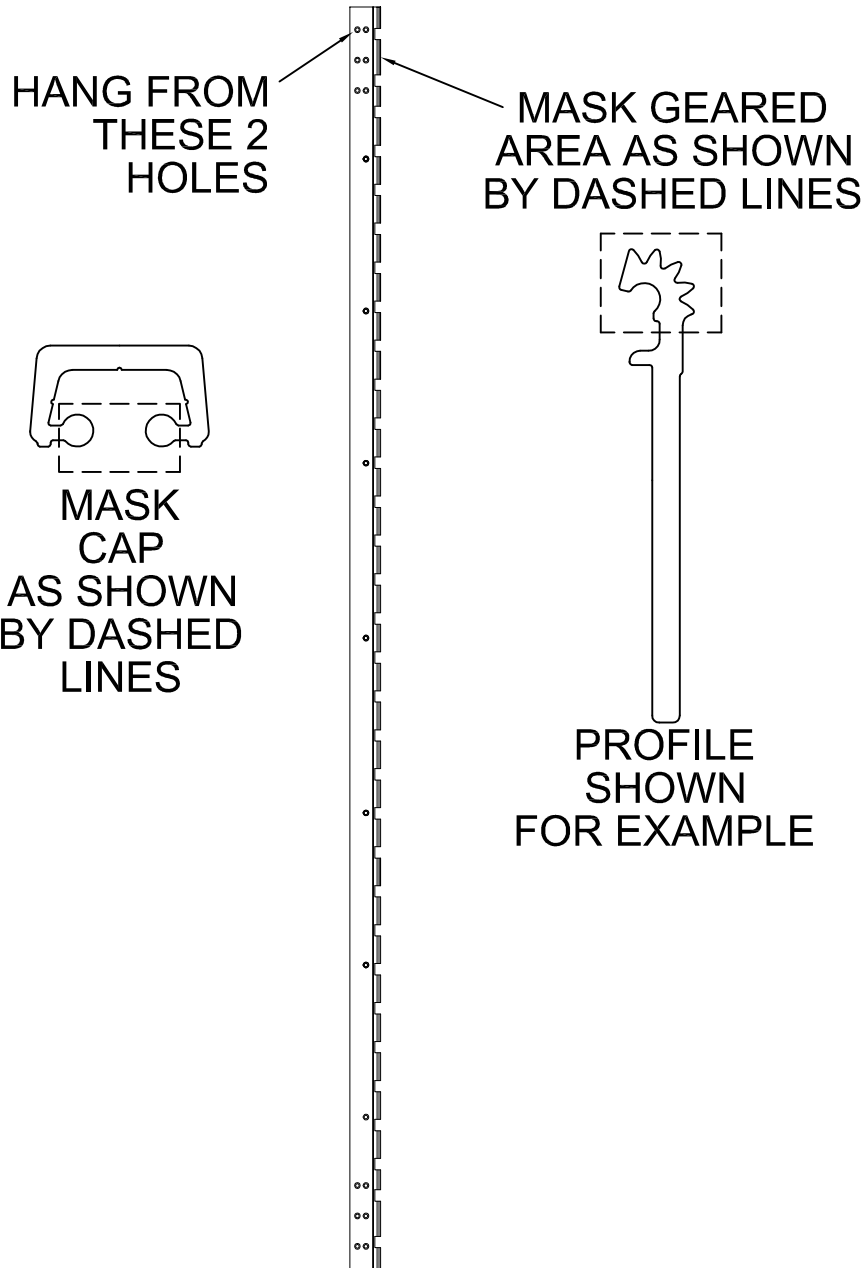
**A110WT - "EA" & "R" OPTION
FOR ELECTRICAL MODIFICATION**

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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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