

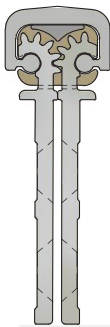


## INSTALLATION INSTRUCTIONS

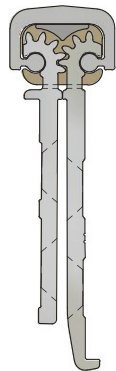
# HD1100, HD1400, HD1800, HD2400, HD2700, HD4100

## Concealed Continuous Geared Hinge

HD1100

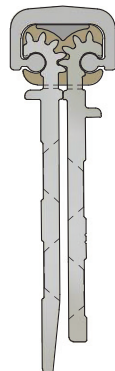


HD1400



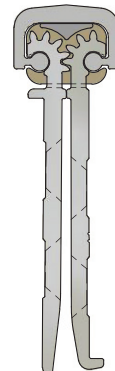
1/16"  
door inset

HD1800



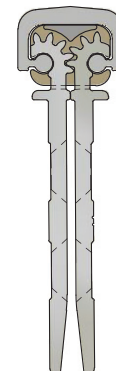
1/8"  
door inset

HD2400

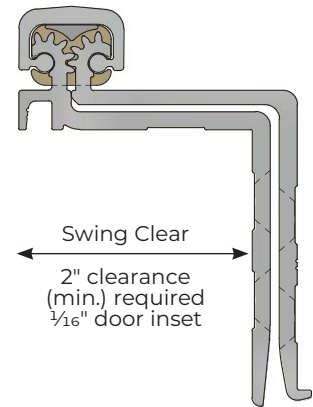


1/16"  
door inset

HD2700



HD4100



Swing Clear  
2" clearance  
(min.) required  
1/16" door inset



**DOOR  
HINGES**



Fire-rated 90 minute on hollow metal (except steel stiffened) or wood door leaves up to 4'0" x 7'2"

### IMPORTANT:

The following will void the product warranty and nullify the fire-rating:

- ❖ Failure to install according to the manufacturer's installation instructions.
- ❖ Use of any fasteners other than those supplied by the manufacturer.
- ❖ Painting, removal of factory applied lubricant, or unauthorized field modification.

### DOOR CLEARANCE REQUIREMENTS

- ❖ All standard length hinges are non-handed

and supplied 1" shorter than the nominal door height to accommodate head and sill clearances.

### GROUT-FILLED DOOR FRAMES

Install a mudguard behind the frame for easier installation. If mudguards have not been used, do not use the self-drilling TEK screws to drill into a grouted frame. Drill pilot holes through the frame and remove enough grout for screw clearance being careful not to oversize the holes.



10.25



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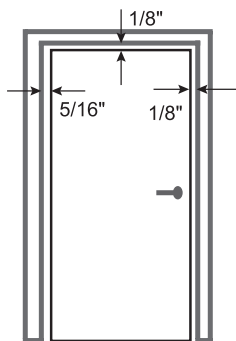
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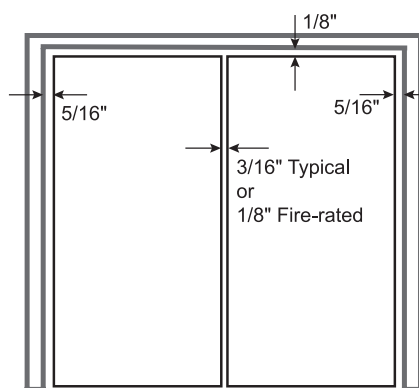
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## CONCEALED CONTINUOUS GEARED HINGE (CONTINUED)



| <b>SINGLE DOOR:</b>          | <b>Square Edge</b>                 | <b>Beveled Edge</b>              |
|------------------------------|------------------------------------|----------------------------------|
| Hinge side clearance         | $\frac{5}{16}$ "                   | $\frac{5}{16}$ "                 |
| Latch side clearance         | $\frac{1}{8}$ "                    | $\frac{1}{8}$ "                  |
| Frame tolerance clearance    | $\frac{1}{32}$ "                   | $\frac{1}{32}$ "                 |
| Beveled edge clearance       |                                    | $\frac{1}{32}$ "                 |
| <b>Total Width Clearance</b> | <b><math>\frac{15}{32}</math>"</b> | <b><math>\frac{1}{2}</math>"</b> |

To determine door width: Subtract the Total Width Clearance from the width of the frame opening.



| <b>PAIR OF DOORS: Typical</b> | <b>Square Edge</b>                       | <b>Beveled Edge</b>                      |
|-------------------------------|------------------------------------------|------------------------------------------|
| Hinge side clearance          | $\frac{5}{8}$ " ( $\frac{5}{16}$ " X 2)  | $\frac{5}{8}$ " ( $\frac{5}{16}$ " X 2)  |
| Latch side clearance          | $\frac{3}{16}$ "                         | $\frac{3}{16}$ "                         |
| Frame tolerance clearance     | $\frac{1}{16}$ " ( $\frac{1}{32}$ " X 2) | $\frac{1}{16}$ " ( $\frac{1}{32}$ " X 2) |
| Beveled edge clearance        |                                          | $\frac{1}{16}$ "                         |
| <b>Total Width Clearance</b>  | <b><math>\frac{7}{8}</math>"</b>         | <b><math>\frac{15}{16}</math>"</b>       |

| <b>PAIR OF DOORS: Fire-Rated</b> | <b>Square Edge</b>                       | <b>Beveled Edge</b>                      |
|----------------------------------|------------------------------------------|------------------------------------------|
| Hinge side clearance             | $\frac{5}{8}$ " ( $\frac{5}{16}$ " X 2)  | $\frac{5}{8}$ " ( $\frac{5}{16}$ " X 2)  |
| Latch side clearance             | $\frac{1}{8}$ "                          | $\frac{1}{8}$ "                          |
| Frame tolerance clearance        | $\frac{1}{16}$ " ( $\frac{1}{32}$ " X 2) | $\frac{1}{16}$ " ( $\frac{1}{32}$ " X 2) |
| Beveled edge clearance           |                                          | $\frac{1}{16}$ "                         |
| <b>Total Width Clearance</b>     | <b><math>\frac{13}{16}</math>"</b>       | <b><math>\frac{7}{8}</math>"</b>         |

To determine door width: Subtract the Total Width Clearance from the width of the frame opening; divide the result by 2.

**NOTE:** For pairs of doors with a mullion between the doors, calculate each door width using the single door clearances. For pairs of doors with a mullion behind the doors, calculate each door width using pair of doors clearances.

**Reinforcing:** No hinge reinforcement is necessary except on extremely heavy, extremely high frequency or extra wide doors.



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## CONCEALED CONTINUOUS GEARED HINGE (CONTINUED)

### FIELD CUTTING OF HINGE (NOTE: HINGES BECOME HANDED AFTER FIELD CUTTING; EXCEPT MODELS HD1100 AND HD2700)

If a hinge must be field cut, first determine the top and bottom based on door hand. Cut only from bottom of hinge; retaining the template six-hole pattern at the top. Close the hinge and position with cap upward or on its side with cap facing away. Cut through the gear cap first using a metal cutting type saw. Do not cut through a set screw bearing. Reinstall any set screw bearing that may have been cut off.

### FRAME PREPARATION

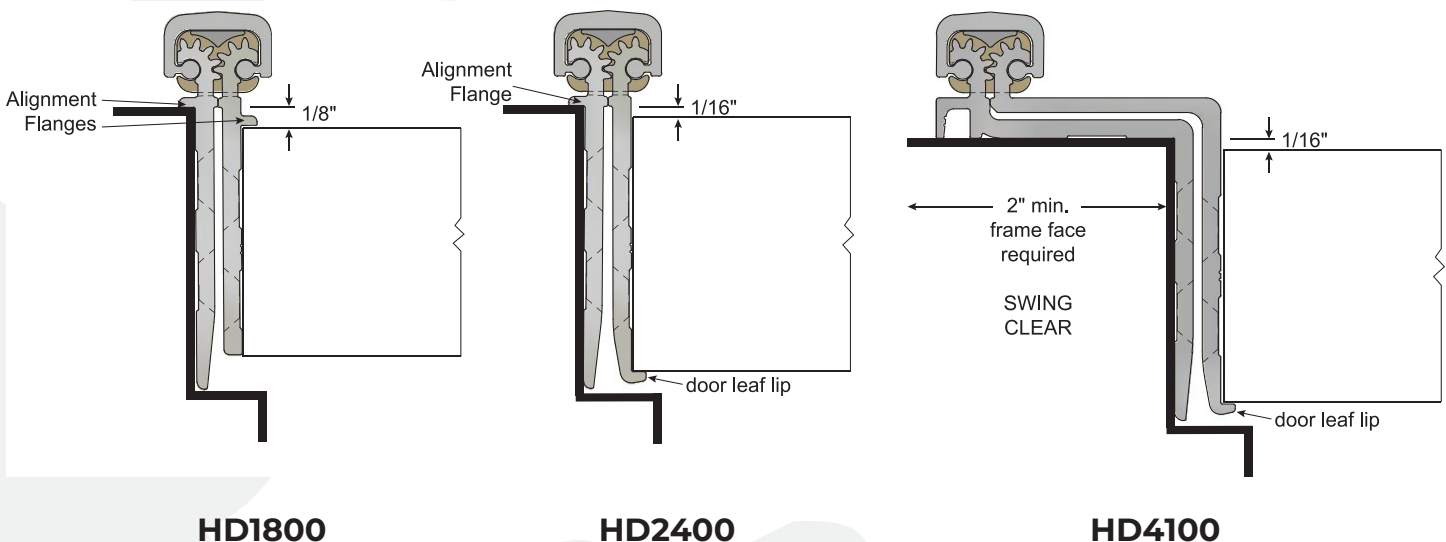
1. Using a shim locate the top of the hinge  $\frac{1}{8}$ " below the frame header to allow for door clearance.
2. With hinge open, making sure frame leaf alignment flange is tight against the frame face, mark or center punch hole locations.
3. Do not attach hinge at this time. Hollow metal frames require no additional prep. Wood frames require pilot holes be pre-drilled using a  $\frac{5}{32}$ " bit.

### ATTACH HINGE TO DOOR

1. Align the door leaf alignment flange or door leaf lip flush against the door face along the entire length of the door.
2. Top end of hinge MUST be flush with the top of the door. Mark or center punch holes.
3. If using Wood Screws pre-drill pilot holes using  $\frac{5}{32}$ " bit.
4. Fasten hinge to metal doors with #12 TEK screws provided or to wood doors with optional #12 wood screws using #3 Phillips drive.

### ATTACH DOOR TO FRAME

1. Position door at 90 degrees to the frame. Wedge or shim door to proper height to align top screw holes.
2. Install two screws at top of hinge. Remove wedge/shim and align remaining holes.
3. Install a screw in the middle and at bottom then check for proper swing and clearance before installing all remaining screws.



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