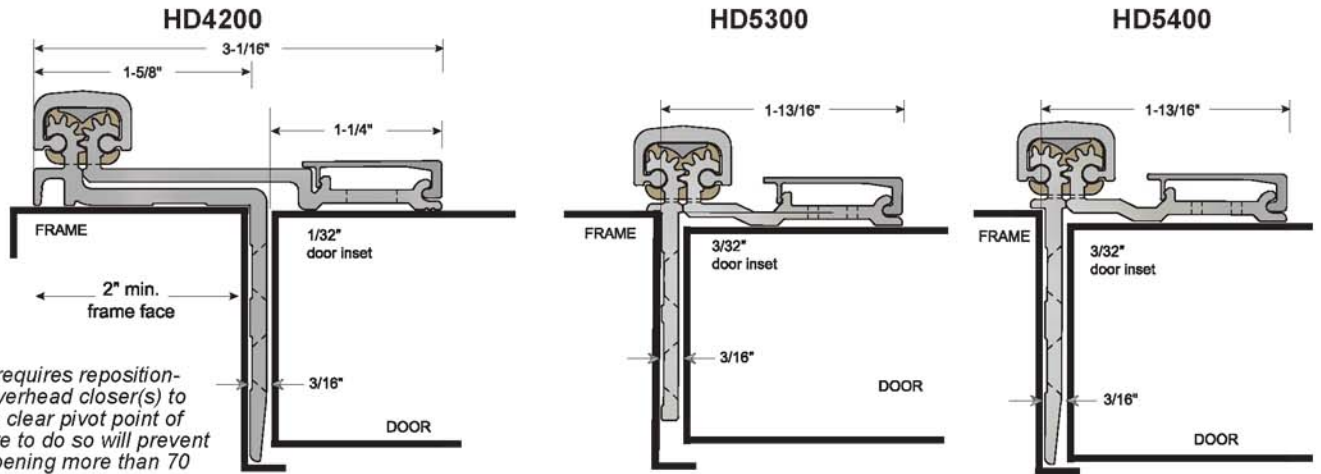


INSTALLATION INSTRUCTIONS

HALF SURFACE CONTINUOUS GEARED HINGES



Swing Clear:

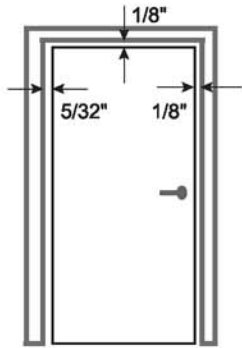
Model HD4200 requires repositioning of existing overhead closer(s) to match the swing clear pivot point of the hinge. Failure to do so will prevent the door from opening more than 70 degrees. Attach hinge leaf cover before reinstalling closer(s).

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.



SINGLE DOOR:	Square or Beveled Edge
Hinge side clearance	5/32"
Latch side clearance	1/8"
Frame tolerance clearance	1/32"
Total Width Clearance	5/16"

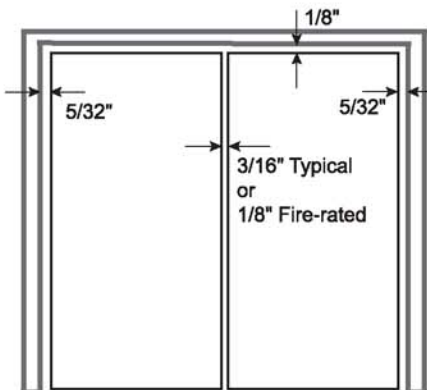
To determine door width: Subtract the Total Width Clearance from the width of the frame opening.



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



DOOR HINGES



PAIR OF DOORS: TYPICAL	Square or Beveled Edge
Hinge side clearance	5/16" (5/32" X 2)
Latch side clearance	3/16"
Frame tolerance clearance	1/16" (1/32" X 2)
Total Width Clearance	9/16"

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

PAIR OF DOORS: FIRE-RATED	Square or Beveled Edge
Hinge side clearance	5/16" (5/32" X 2)
Latch side clearance	1/8"
Frame tolerance clearance	1/16" (1/32" X 2)
Total Width Clearance	1/2"

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.



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.

Field Cutting of Hinge (Note: Hinges become handed after field cutting.)

Do not attach fastener covers, cut separately. 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. When trimming hinges for fire-rated door applications **DO NOT REMOVE** any fastener holes. 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.

Attach Hinge to Frame

1. Using a shim locate the top of the hinge 1/8" below the frame header to allow for door clearance.
2. With hinge open, position frame alignment flange tight against the frame face.
3. Mark or center punch two holes at top and two holes at bottom of frame leaf.
4. Wood frames require pilot holes be pre-drilled using a 5/32" bit.
5. Fasten frame leaf using two screws at the top and two screws at the bottom of metal door frame using #12 flathead TEK screws provided, or wood frame with optional #12 wood screws.

Attach Hinge to Door

1. Position door into the frame using shims or wedges to set the required clearances on all sides. Top end of hinge **MUST** be flush with top of door.
2. Mark locations using 7/32" center punch for the six #12 panhead Tek screws. If using wood screws pre-drill pilot holes using 5/32" bit.
3. Temporarily fasten hinge to door using #3 Phillips drive and the six #12 panhead TEK screws provided, or to wood doors with optional #12 wood screws.
4. Remove shims and carefully check door operation and clearances. Adjust as necessary.
5. Mark locations using 3/8" center punch for the Thru-Bolts.
6. Use 3/8" drill bit to drill holes squarely through the doors at the marked locations.
7. Install the Thru-Bolts. For in-swing applications thru-bolts should be reversed for additional security.
8. When door is properly aligned, finish installing remaining hinge leaf screws.

Install Fastener Cover

1. Align fastener cover with top edge of hinge.
2. Starting from the top and working downward, apply pressure and snap the cover on using a rubber mallet or block of wood being careful not to damage the cover.

