

MOUNTING DETAILS

NOTE: Heavy Duty (HD) mounting features hex drive for positive tightening and large overall size for superior strength. Recommended for high frequency and rough service openings.

Free End  
Thru Bolt

TYPE 1 - Thru Bolt  
Wood or Metal Door

Labels: Pull, Finish Washer, Flat Head Machine Screw, Outside, Inside

| Type | Bolt Size | Drill Size |
|------|-----------|------------|
| 1    | 1/4"-20   | 9/32       |
| 1HD  | 5/16"-18  | 11/32      |
| 1XHD | 3/8"-16   | 13/32      |

TYPE 12 - Decorative Thru Bolt  
Wood or Metal Door

Labels: Pull, Thru Bolt

| Type  | Bolt Size | Drill Size |
|-------|-----------|------------|
| 12    | 1/4"-20   | 9/32       |
| 12HD  | 5/16"-18  | 11/32      |
| 12XHD | 3/8"-16   | 13/32      |

TYPE 15 - Decorative Thru Bolt  
Glass Door

Labels: Plastic Washers, Pull, Thru Bolt, Neoprene Bushing 5/8" Dia. Hole

| Type  | Bolt Size | Drill Size |
|-------|-----------|------------|
| 15    | 1/4"-20   | 5/8        |
| 15HD  | 5/16"-18  | 5/8        |
| 15XHD | 3/8"-16   | 5/8        |

Free End  
Concealed

TYPE 6 - Surface Concealed  
Metal Door

Minimum diameter of pull is 5/8"

Labels: Cone Head Machine Screw, Pull, Set Screw, Reinforcement by others

For doors with rivnuts specify Type 6R

| Type | Bolt Size | Drill Size   |
|------|-----------|--------------|
| 6    | 1/4"-20   | 1/4"-20 Tap  |
| *6HD | 5/16"-18  | 5/16"-18 Tap |

TYPE 6R - Surface Concealed  
Metal Door

Minimum diameter of pull is 1"

Labels: Cone Head Machine Screw, Pull, Set Screw, Rivnut

| Type | Bolt Size | Drill Size |
|------|-----------|------------|
| 6    | 1/4"-20   | N/A        |
| *6HD | 5/16"-18  | N/A        |

TYPE 8 - Surface Concealed  
Wood Door

Labels: Cone Head Machine Screw, Pull, Knife Thread Insert, 1/4"-20 Set Screw

| Type | Bolt Size | Drill Size       |
|------|-----------|------------------|
| 8    | 1/4"-20   | 23/64 - 9/16 dp. |
| *8HD | 5/16"-18  | 7/16 - 9/16 dp.  |

Common End  
Back-to-Back

TYPE 5 - Back-to-Back  
Wood or Metal Door

Minimum diameter of pull is 5/8"

Labels: Cone Head Machine Screw, Pull, Set Screw, Inside, Outside

| Type | Bolt Size | Drill Size |
|------|-----------|------------|
| 5    | 1/4"-20   | 9/32       |
| 5HD  | 5/16"-18  | 11/32      |

TYPE 13 - Back-to-Back  
Glass Door

Labels: Cone Head Machine Screw, Pull, Plastic Washers, Set Screw, Washer, Neoprene Bushing 5/8" Dia. Hole, Inside, Outside

| Type  | Bolt Size | Drill Size |
|-------|-----------|------------|
| 13    | 1/4"-20   | 5/8        |
| *13HD | 5/16"-18  | 5/8        |

\*HD mountings feature 2 set screws 180° apart.

NOTE: Y base plates are recommended on wood or glass doors to make a stable and durable mounting (see page 40 for details).

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## Push and Pull Bar Mounting Details

### Sizing of Push Bars

#### Flush Doors

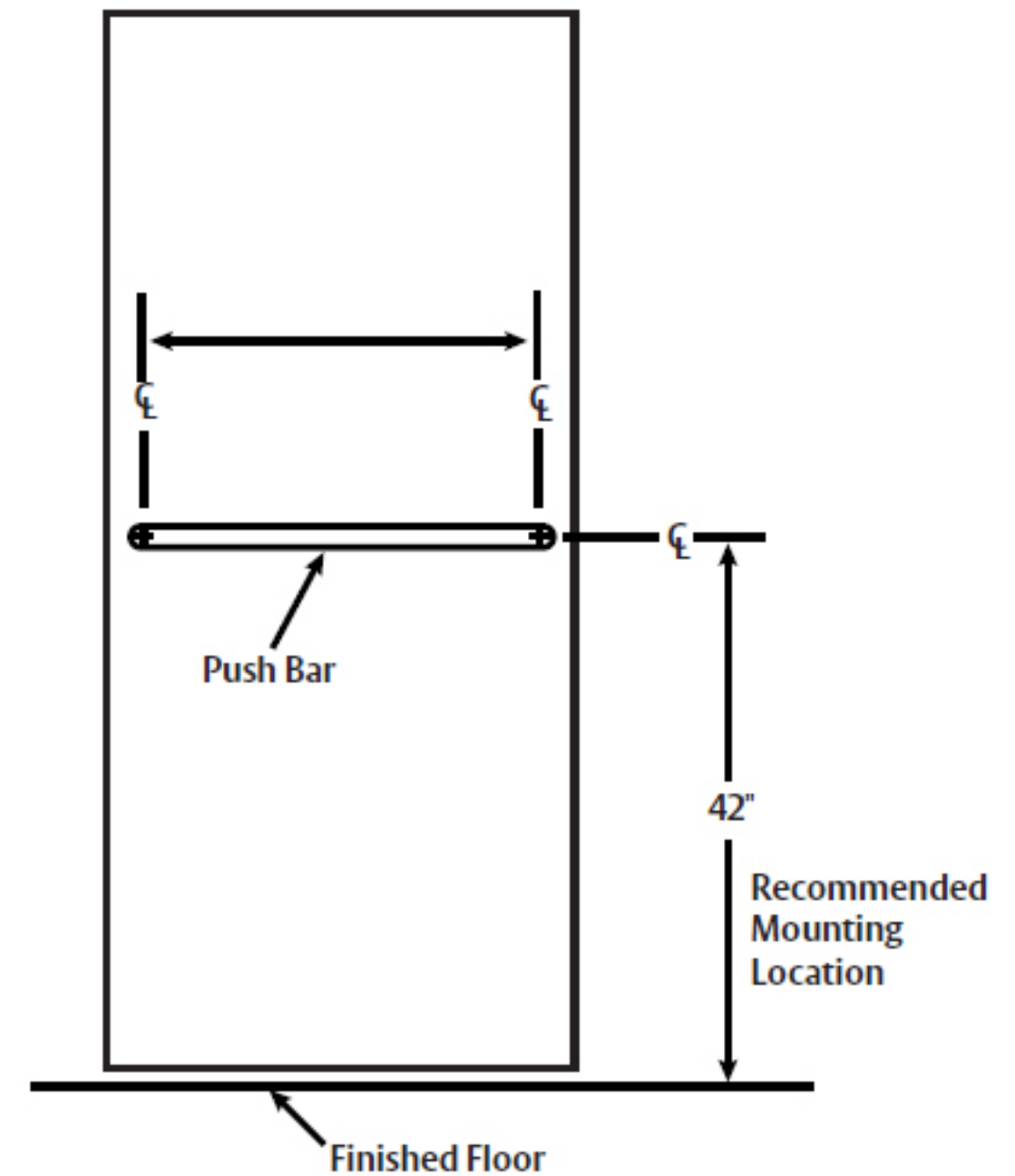
- Door width:
- minus 5" for bent end bars
  - minus 5" for square end post mount bars
  - minus 7" for round end post mount bars

#### Stile and Rail Doors or Doors with Lites

- Door width:
- minus width of one stile

**CAUTION:** Always confirm bars will not interfere with jamb or cause pinching hazard.

**CAUTION:** On narrow stile doors, be sure push bar base fits on the stile and bar does not interfere with the stop.

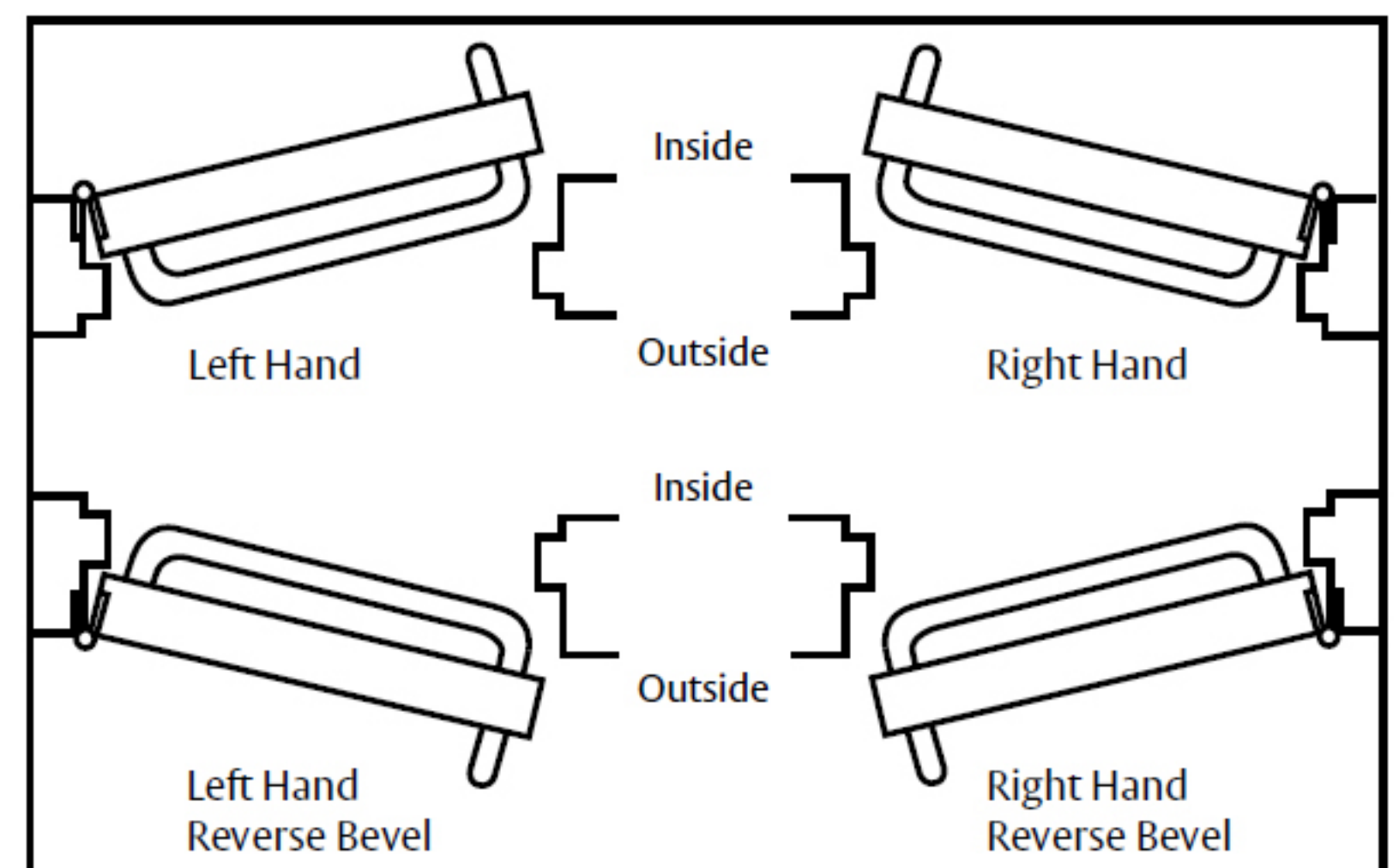


### Handing of Doors

The handing of a door is determined from the outside of the opening.

Standing outside the door:

- If the hinges are on the right, it is a right hand door.
- If the hinges are on the left, it is a left hand door.
- If the door opens away from you, it is a regular bevel door.
- If the door opens toward you, it is a reverse bevel door.



### Typical Mounting

