

Holdowns are used to transfer tension loads between floors, to tie purlins to masonry or concrete, etc. Use HDAs and HDs for overturn requirements and other applications to transfer tension loads. **All HDAs and the HD15 are self-jigging, ensuring code-required minimum 7 bolt diameter spacing from the end of the wood member to the center of the first bolt hole.**

HD6A, HD8A, HD10A and HD14A's seat design allows greater installation adjustability. An overall width of 3/4" for the HD6A, HD8A and HD10A, and 3/2" for the HD14A provides an easy fit in a standard 4x wall.

**HDA SPECIAL FEATURES:**

- Single piece non-welded design results in higher capacity.
- Load Transfer Plate eliminates the need for a seat washer.
- Fewer inspection problems.

**MATERIAL:** See table

**FINISH:** HD2A, 5A, 6A, 8A, 10A—galvanized. HD8A may be ordered HDG; check with factory. HD14A, HD15, HD20A—Simpson gray paint

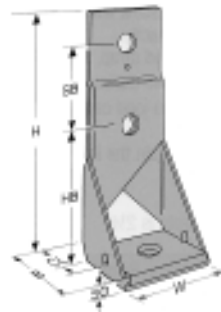
**INSTALLATION:** • Use all specified fasteners. See General Notes.

- For an improved connection, use a steel nylon locking nut or a thread adhesive on the anchor bolt.
- Bolt holes shall be a minimum of 1/2" to a maximum of 1/4" larger than the bolt diameter (per 1997 NDS, section 8.1.2.1.).
- Standard washers are required between the base plate and anchor nut (HD15 only), and on stud bolt nuts against the wood. The Load Transfer Plate is an integral part of the HDA Holddown and no washer is required. See page 34 for BP/LBP Bearing Plates.
- See SSTB Anchor Bolts, Simpson's Anchoring Systems and Additional Anchorage Designs for anchorage options. The design engineer may specify any alternate anchorage calculated to resist the tension load for a specific job.
- Locate on wood member to maintain a minimum distance of seven bolt diameters, distance is automatically maintained when end of wood member is flush with the bottom of the holddown.
- To tie double 2x members together, the designer must determine the fasteners required to bind members to act as one unit without splitting.
- For holdowns installed on the mudsill, anchor bolt nuts should be finger-tight plus 1/2 to 1/2 turn with a wrench, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut, which may lead to premature anchor bolt failure.
- Stud bolts should be snugly tightened (1997 NDS, section 8.1.2.4).

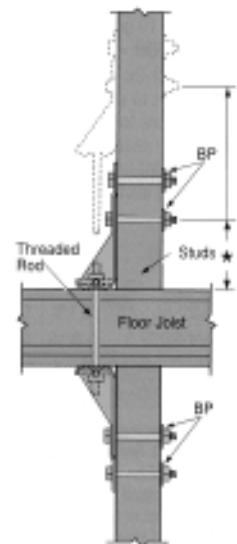
**CODES:** BOCA, ICBO, SBCCI NER-393, NER-469; City of L.A. RR 24818, RR 25158 and RR 25293. HD6A and HD14A are not NER listed.



**HD10A**  
(HD6A, HD8A  
HD14A and  
HD20A similar)

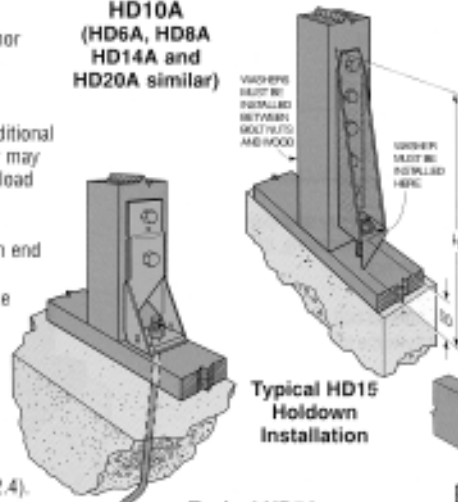


**HD5A**  
(HD2A similar)  
U.S. Patent 4,665,672  
Canada Patent 1,253,461

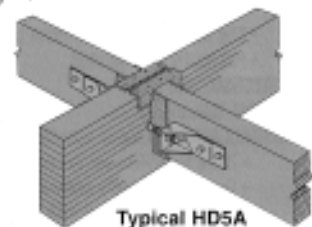


**Typical HD5A Tie between Floors**

To achieve table loads, the minimum bolt end distance is seven bolt diameters. This distance is designed into holdowns. Bolt end distance may be increased, provided the anchor nut is not over-torqued, which could split the stud. Deflection values may be higher.



**Typical HD15 Holddown Installation**  
**Typical HD5A Holddown Installation with SSTB anchor bolt. Washers are not required at the base.**



**Typical HD5A Purlin Anchor Installation**

| Model No. | Material |         | Dimensions      |       |       |        |       |     |       | Fasteners                  |            |     | Allowable Loads <sup>1,4,11</sup> (133) |   |      |       |      |       | Holdown <sup>11</sup> Deflection at Highest Allowable Design Load |       |
|-----------|----------|---------|-----------------|-------|-------|--------|-------|-----|-------|----------------------------|------------|-----|---|---|------|-------|------|-------|---|-------|
|           | Base Ga  | Body Ga | HB <sup>1</sup> | SB    | W     | H      | B     | SO  | CL    | Anchor Dia <sup>2,11</sup> | Stud Bolts |     | Avg Ull                                 | Length of Bolt <sup>2,3,4</sup> in Vertical Wood Member |      |       |      |       |   |       |
|           |          |         |                 |       |       |        |       |     |       |                            | Qty        | Dia |   | 1 1/2   | 2    | 2 1/2 | 3    | 3 1/2 |   | 5 1/2 |
| HD2A      | 7        | 12      | 4 3/8           | 2 1/2 | 2 1/2 | 8      | 2 3/8 | 3/4 | 1 1/8 | 3/4                        | 2          | 3/4 | 12150                                   | 1555  | 2055 | 2565  | 2775 | 2775  | 2760  | 0.058 |
| HD5A      | 3        | 10      | 5 1/2           | 3     | 3 1/2 | 9 3/8  | 3 3/8 | 1/2 | 2 3/8 | 3/4 or 1/2                 | 2          | 3/4 | 20767                                   | 1870  | 2485 | 3095  | 3705 | 4010  | 3980  | 0.067 |
| HD6A      | 3/4      | 7       | 6 3/8           | 3 1/2 | 3 1/2 | 11 1/8 | 3 3/8 | 1/2 | 2 3/8 | 3/4                        | 2          | 3/4 | 27333                                   | 2275  | 2960 | 3685  | 4405 | 5105  | 5510  | 0.041 |
| HD8A      | 3/4      | 7       | 6 3/8           | 3 1/2 | 3 1/2 | 14 3/8 | 3 3/8 | 1/2 | 2 3/8 | 3/4                        | 3          | 3/4 | 28667                                   | 3220  | 4350 | 5415  | 6485 | 7460  | 7910  | 0.111 |
| HD10A     | 3/4      | 7       | 6 3/8           | 3 1/2 | 3 1/2 | 18 3/8 | 3 3/8 | 1/2 | 2 3/8 | 3/4                        | 4          | 3/4 | 28667                                   | 3945  | 5540 | 6935  | 8310 | 9540  | 9900  | 0.269 |
| HD14A     | 3/4      | 3       | 7               | 4     | 3 1/2 | 20 3/8 | 3 3/8 | 1/2 | 2 3/8 | 1                          | 4          | 1   | 38167                                   | —   | —    | —     | —    | 11080 | 13380   | 0.215 |
| HD20A     | 3/4      | 3       | 7               | 4     | 4 1/2 | 20 3/8 | 4 3/8 | 1/2 | 2 3/8 | 1 1/2                      | 4          | 1   | 51333                                   | —   | —    | —     | —    | 11080 | 13380   | 0.250 |
| HD15      | 3/4      | 3       | 7               | 4     | 3 1/2 | 24 3/8 | 4 3/8 | 3/4 | 2 3/8 | 1 1/2                      | 5          | 1   | 55333                                   | —   | —    | —     | —    | —     | 15305   | 0.082 |

1. Allowable loads have been increased 33% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.  
 2. HD15 requires a minimum #6 nominal post.  
 3. Use a minimum #6 nominal post for the HD14A and the HD20A.  
 4. The wood member must be sized for the load-carrying capacity at the critical net section, reducing the gross section area for holes or other removed wood as specified in the code.

5. HB is the required minimum distance from the end of the stud to the center of the first stud bolt hole. End distance may be increased as necessary for installation.  
 6. The designer must specify anchor bolt type, length and embedment. See SSTB Anchor Bolts and Additional Anchor Designs.  
 7. See page 32 for anchor bolt retrofit.  
 8. Lag bolts will not develop the listed loads.  
 9. Holdowns installed raised off the mudsill may have larger deflection values. Use the PHD or HDQ for raised applications.

10. Full tension loads apply when HD5A is used with a 1/2" anchor bolt.  
 11. See pgs 6, 7 for testing and other important information.  
 12. Deflection at Highest Allowable Design Load: The deflection of a holddown measured between the anchor bolt and the strap portion of the holddown when loaded to the highest allowable load listed in the catalog table. This movement is strictly due to the holddown deformation under a static load test conducted on a steel jig.