

HDA/HD Holdowns

Holdowns are used to transfer tension loads between floors, to tie purlins to masonry or concrete, etc. Use HDAs and HDs for overturning requirements and other applications to transfer tension loads.

All HDAs and the HD15 are self-jigging, ensuring code-required minimum 7 bolt diameter distance from the end of the wood member to the centre of the first bolt hole. ($J_L=0.75$)

HD6A, HD8A, HD10A and HD14A's seat design allows greater installation adjustability. An overall width of 3 1/4" for the HD6A, HD8A and HD10A, and 3 1/2" for the HD14A provides an easy fit in a standard 2x4 wall.

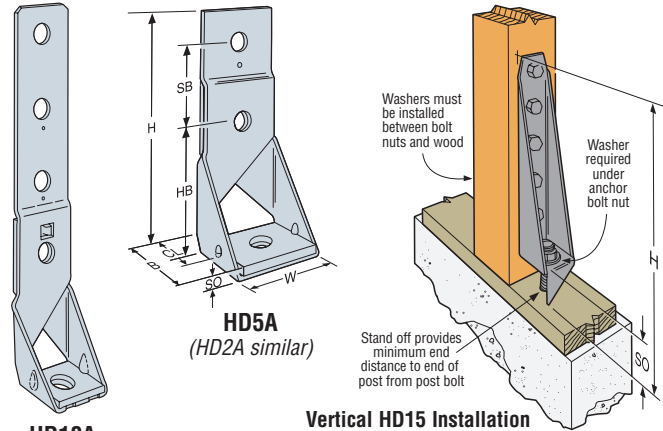
HDA SPECIAL FEATURES:

- 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

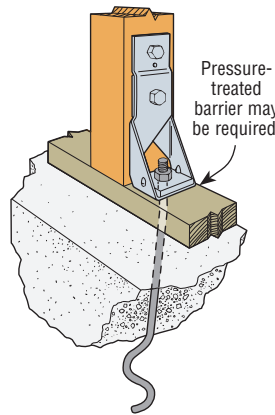
FINISH: HD2A, 5A, 6A, 8A, 10A, 14A—galvanized. HD8A may be ordered HDG; check with factory. HD15—Simpson gray paint

- 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 1/32" to a maximum of 1/16" larger than the bolt diameter (per 10.4.1.2 CSA O86-01).
 - 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 Holdown and no washer is required. See page 22 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 factored tensile 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 holdown.
 - To tie multiple 2x members together, the designer must determine the fasteners required to join members to act as one unit without splitting. See page 15 for SDS values.
 - For holdowns, per ASTM test standards, anchor bolt nut should be finger-tight plus 1/3 to 1/2 turn with a hand wrench, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut. Impact wrenches should not be used.
 - Stud bolts should be snugly tightened.

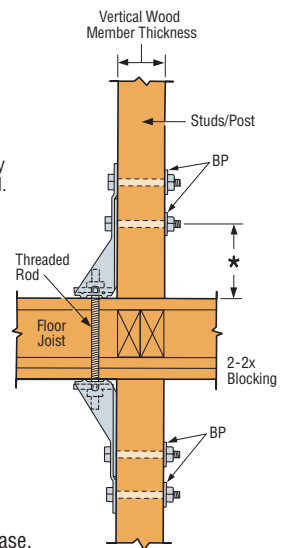


HD10A
(HD6A, HD8A and HD14A similar)

Vertical HD15 Installation



Vertical HD5A Installation with SSTB Anchor Bolt
Washers are not required at the base.



Typical HD5A Tie Between Floors

* To achieve tabulated resistances, 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.

These products are available with additional corrosion protection. Additional products on this page may also be available with this option, check with Simpson Strong-Tie for details.

Model No.	Material		Dimensions (in)							Fasteners		Factored Tensile Resistance ($K_D=1.15$) ^{1,8,9}												
	Base Ga	Body Ga	HB ⁵	SB	W	H	B	SO	Φ	Anchor Dia.	Stud Machine Bolts	Wood Member Thickness												
												D.Fir-L						S-P-F						
												2 1/2"	3"	3 1/2"	4 1/2"	5 1/2"	6"	2 1/2"	3"	3 1/2"	4 1/2"	5 1/2"	6"	
Qty.	Dia.	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs								
HD2A	7	12	4 1/16	2 1/2	2 3/4	8	2 9/16	3/8	1 7/16	5/8	2	5/8	2240	2630	3050	3845	4050	4075	2120	2475	2850	3610	3805	3830
													9.98	11.71	13.59	17.13	18.04	18.15	9.44	11.02	12.69	16.08	16.95	17.06
HD5A	3	10	5 1/4	3	3 1/8	9 7/16	3 3/16	1/2	2 3/16	5/8	2	3/4	2795	3240	3710	4645	5360	5585	2675	3080	3510	4355	4970	5180
													12.45	14.43	16.53	20.69	23.88	24.88	11.92	13.72	15.63	19.40	22.14	23.07
HD6A	3/8	7	6 1/16	3 1/2	3 1/4	11 1/16	3 7/16	9/16	2 1/16	7/8	2	7/8	3700	4240	4800	5895	6630	6910	3575	4075	4590	5550	6150	6405
													16.48	18.89	21.38	26.26	29.53	30.78	15.92	18.15	20.45	24.72	27.39	28.53
HD8A	3/8	7	6 3/16	3 1/2	3 1/4	14 9/16	3 7/16	9/16	2 1/16	7/8	3	7/8	4915	5630	6375	7830	8805	8805	4750	5410	6100	7370	8165	8165
													21.89	25.08	28.40	34.88	39.22	39.22	21.16	24.10	27.17	32.83	36.37	36.37
HD10A	3/8	7	6 3/16	3 1/2	3 1/4	18 1/16	3 7/16	9/16	2 1/16	7/8	4	7/8	6015	6885	7800	9580	10770	11225	5810	6620	7460	9010	9985	10405
													26.79	30.67	34.74	42.67	47.97	50.00	25.88	29.49	33.23	40.13	44.48	46.35
HD14A	3/8	3	7	4	3 1/2	20 9/16	3 3/8	5/8	2 3/16	1	4	1	—	—	10300	11655	12915	13070	—	—	9545	10805	11970	12475
													—	—	45.88	51.92	57.53	58.22	—	—	42.52	48.13	53.32	55.57
HD15	3/8	3	7	4	3 1/2	24 1/2	4 7/16	3 3/8	2 1/8	1 1/4	5	1	—	—	—	15100	15735	—	—	—	—	13995	14585	
													—	—	—	67.26	70.09	—	—	—	—	62.34	64.97	

1. Factored resistances have been increased 15% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
2. HD15 requires a minimum 6x6 nominal post.
3. Use a minimum 4x6 nominal post for the HD14A.
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 on page 20-21.
7. See page 21 for anchor bolt retrofit.
8. Lag bolts will not develop the listed factored resistances.
9. Holdowns installed raised off the mudsill may have deflection values larger than 1/8".