PHD PREDEFLECTED HOLDOWNS

SIMPSON Strong-Tie™

This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

The Predeflected Holdown (PHD) is a revolutionary development in holdown connections. Predeflected during manufacturing, the PHD virtually eliminates deflection from material stretch.

SPECIAL FEATURES:

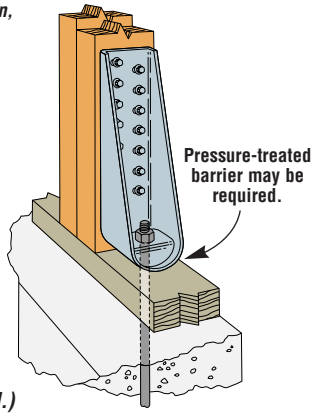
- Wood screws reduce slip due to overdrilled bolt holes.
- Smaller centerline reduces eccentricity in the stud.
- No stud bolts to countersink.
- The slot in the seat provides anchor bolt adjustment.
- Fits easily on a 4x stud.

MATERIAL: See table. **FINISH**: Galvanized.

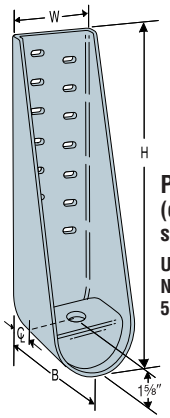
INSTALLATION: • Use all specified fasteners. See General Notes.

- Place the PHD over the anchor bolt.
- **Install Simpson's code-recognized SDS¼x3 wood screws, which are provided with the holdown. *(Lag screws will not achieve the same load.)***
- For an improved connection, use a steel nylon locking nut or a thread adhesive on the anchor bolt. **(No washer required.)**
- See SSTB Anchor Bolts, page 24, for anchorage options. The design engineer may specify any alternate anchorage calculated to resist the tension load for a specific job. Anchorage length should take the bearing plate height of 1⅝" into account, to ensure adequate length of threads to engage the nut. **For 3x sill plates use SSTBL.**
- **To tie double 2x members together, the designer must determine the fasteners required to bind members to act as one unit without splitting the wood.**

CODES: See page 10 for Code Listing Key Chart.



Typical PHD Installation as a Holdown



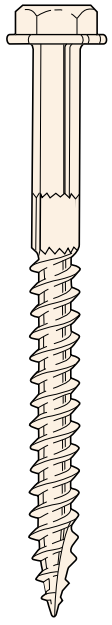
PHD5 (others similar)

US Patent No. 5,979,130

For holdowns, per ASTM test standards, anchor bolt nuts should be finger-tight plus ⅓ to ½ turn with a wrench, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut.

Model No.	Ga	Dimensions				Fasteners		Avg Ult	Allowable Tension Loads 2-2x and Greater Vertical Wood Member DF/SP (133)	Allowable Tension Loads 2-2x and Greater Vertical Wood Member SPF/HF (133)	Holdown[5] Deflection at Highest Allowable Design Load Flush	Holdown[5] Deflection at Highest Allowable Design Load Raised	Code Ref.
		W	H	B	℄	Anchor Dia.	No. of Simpson SDS¼x3 Wood Screws						
PHD2-SDS3	14	3	9 5/16	2 7/8	1 3/8	⅝	10	12,520	3610	3375	.033	.076	31, 98, 140
PHD5-SDS3	14	3	11 5/16	2 7/8	1 3/8	⅝	14	15,670	4685	4380	.047	.111	
PHD6-SDS3	12	3 1/8	13 3/16	2 7/8	1 3/8	⅞	18	18,250	5860	5480	.045	.077	
PHD8-SDS3	10	3 1/8	17 3/16	2 7/8	1 3/8	⅞	24	21,243	6730	6295	.051	.060	

1. Allowable loads have been increased 33% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
2. The designer must specify anchor bolt type, length and embedment. See the SSTB Anchor Bolts.
3. See page 16 and 22 for retrofit anchor bolt.
4. Loads are based on static tests on wood studs, limited by the lowest of 0.125" deflection, ultimate divided by 3, or the wood screw value.
5. Deflection at Highest Allowable Design Load: The deflection of a holdown measured between the anchor bolt and the strap portion of the holdown when loaded to the highest allowable load listed in the catalog table. This movement is strictly due to the holdown deformation under a static load test conducted on a steel jig.
6. Installs best with a low speed ½" right angle drill with a ⅜" hex head driver.
7. **SDS¼x3 screws are required for PHD's. Call Simpson for PHD loads using shorter screws.**
8. **When using structural composite lumber columns, screws must be applied to the wide face of the column.**



SDS¼x3 Screw

US Patent No. 6,109,850

See screw info on page 10