

# Foundation Connectors



## Holdowns

### HD Series



#### PRODUCT FEATURES:

Holdowns (HD) are used to resist uplift forces due to wind or overturning of shear walls. These are available in various sizes to meet the light to heavy load requirements using nails, screws and bolts as fasteners. Other HD applications include purlin-to-purlin, Concrete/ Masonry walls to decking or flooring attachments.

#### MATERIAL:

See Allowable Loads Table.

#### COATING:

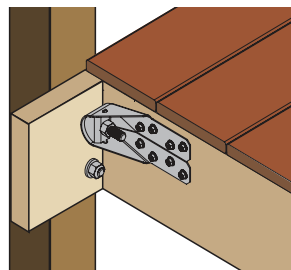
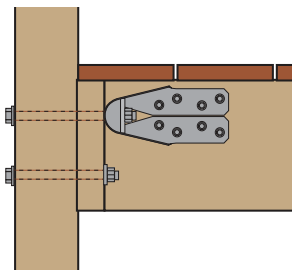
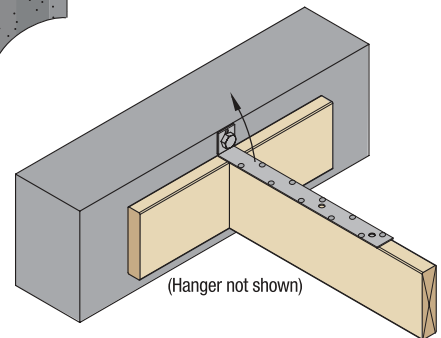
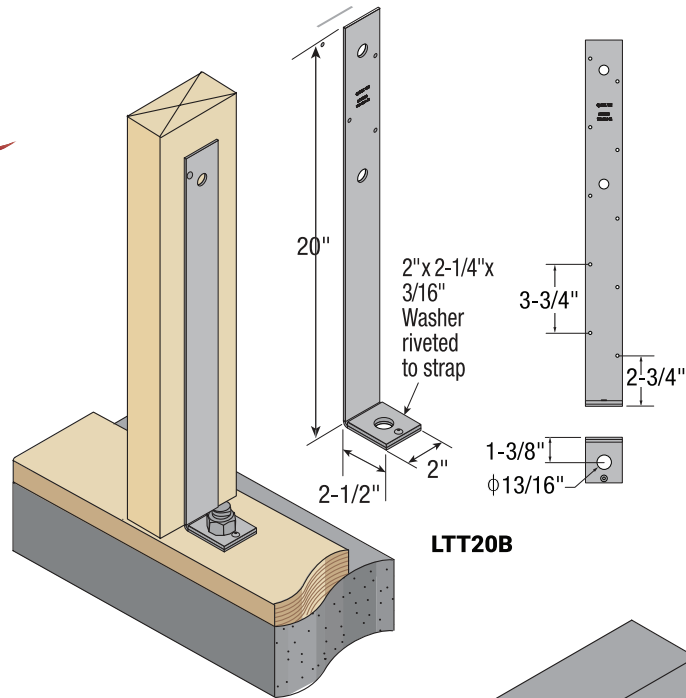
Galvanized (G185) - LTT20B, HDTT, HDTT45, HD5, HD7 & HD11  
 Spray Painted Primer (gray) - HD12, HD14, & HD15/20

#### INSTALLATION:

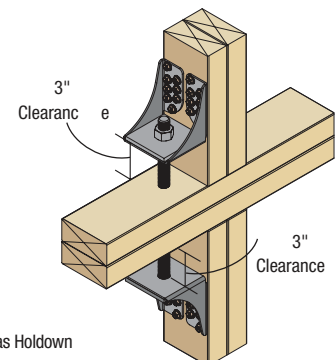
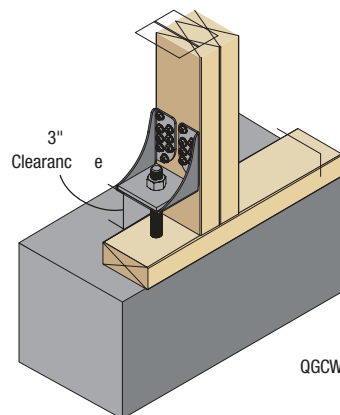
- Use all specified fasteners in schedule to achieve values indicated

#### CODE COMPLIANCE:

TER 0910-01; FL 3557



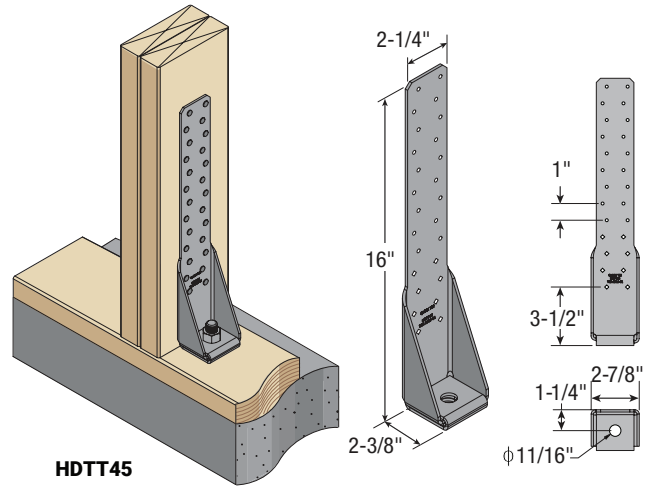
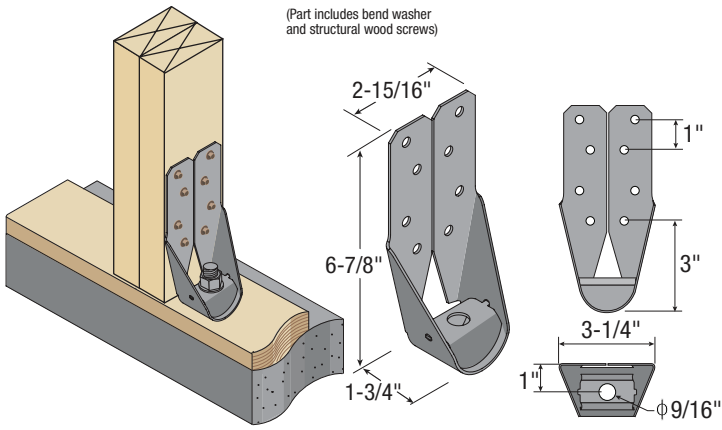
HDTT as Deck Tension Tie



QGCW as Holdown

**HDTT**

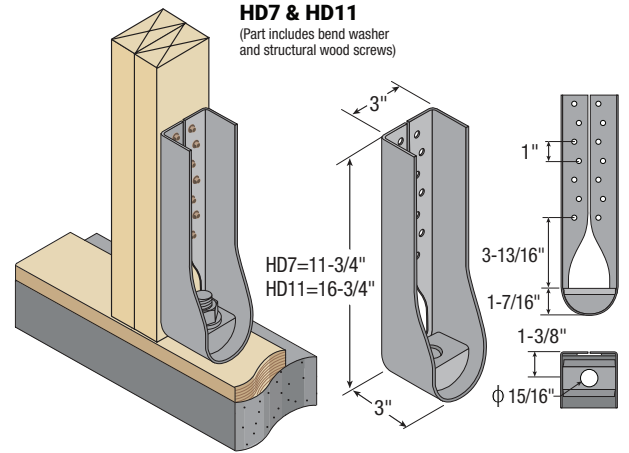
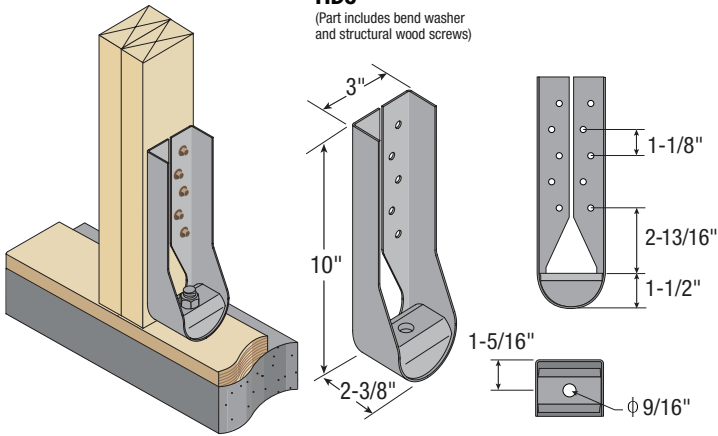
(Part includes bend washer and structural wood screws)



**HDTT45**

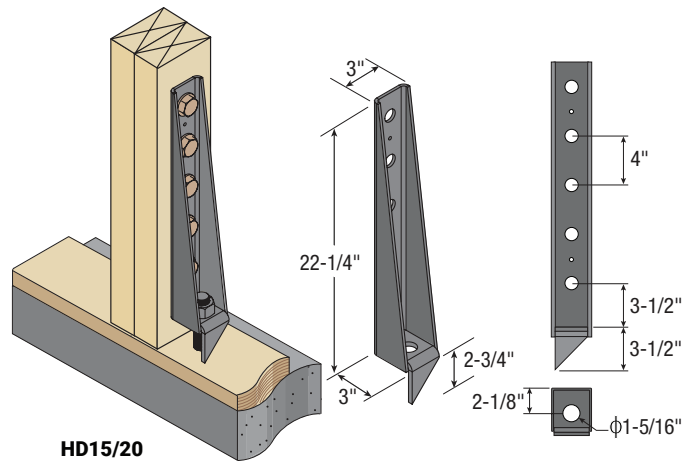
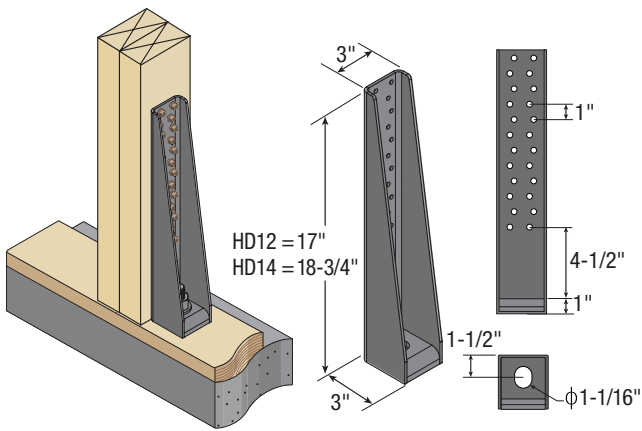
**HD5**

(Part includes bend washer and structural wood screws)



**HD7 & HD11**

(Part includes bend washer and structural wood screws)



**HD12 & HD14**

(Part includes structural wood screws)

**HD15/20**

## ALLOWABLE LOADS FOR HOLDOWNS (LB)<sup>1</sup>

Part No.		Steel Gauge	Dimensions (in.)						Fasteners				Uplift (lb)			
			Height	Width	Depth	Stud to Anchor CL (in.)	Bottom Plate to Top of Washer (in.)	Min. Wood Member Size (in.)	Nails/Screws <sup>2</sup> /Bolts		Anchor Bolt		SP / DF-L (SG = 0.50)		S-P-F (SG = 0.42)	
QT	Reference No.								H	W	D	Type	Qty	Size	Qty	C <sub>D</sub> = 1.6
LTT20B	LTT20B / LTS20B	12 ga	20	2	2½	1⅜	-	1½ x 3½	10d x 1½	10	¾	1	1,575	0.186	1,375	0.172
HDTT <sup>3</sup>	DTT2Z, DTT2Z-SDS2.5 / DTB-TZ	14 ga	6⅞	3¼	1¾	1	1⅜	1½ x 3½	SWH15	8	½	1	2,055	0.149	1,525	0.088
QGCW <sup>4</sup>	HDU2-SDS2.5 / PHD2A	12 ga	3⅜	3¼	3	1⅜	3⅜	3 x 3½	SWH3	16	⅝	1	4,295	0.227	3,705	0.188
HD5	HDU2-SDS2.5, HDU4-SDS2.5 / PHD2A, PHD4A	14 ga	10	3	2⅜	1⅜	1½	3 x 3½	SWH3	10	½	1	5,445	0.181	2,080	0.059
HDTT45	HTT4, HTT5 / HTT45	10 ga	16	2¼	2	1¼	-	3 x 3½	16d x 2½	26	⅝	1	6,155	0.082	5,650	0.075
HD7	HDU5-SDS2.5 / PHD5A	12 ga	11¾	3	3	1⅜	1⅜	3 x 3½	SWH3	14	⅞	1	6,980	0.098	4,845	0.069
HD11	HDU8-SDS2.5, HDQ8-SDS3 / PHD8, UPHD8	12 ga	16¾	3	3	1⅜	1⅜	3 x 3½	SWH3	24	⅞	1	11,080	0.112	8,305	0.088
HD12 <sup>5</sup>	HDU11-SDS2.5, HHDQ11-SDS2.5 / UPHD9	10 ga	17	3	3½	1½	1	3 x 5½	SWH3	24	1	1	12,225	0.074	8,350	0.045
HD14 <sup>5</sup>	HHDQ14-SDS2.5 / ---	7 ga	18¾	3	3½	1½	1	3 x 5½	SWH3	30	1	1	14,060	0.095	11,170	0.075
HD15/20 <sup>6,7</sup>	HD19, HDU14-SDS2.5 / TD15, UPHD14, UPHD11	3 ga	25	3¼	3⅜	2⅜	3½	3 x 7¼	1	5	1¼	1	15,635	0.100	13,460	0.082
								5½ x 5½	1	5	1¼	1	20,065	0.087	19,695	0.086

### NOTES:

- Anchor bolt installation into any substrates should be designed to resist the allowable uplift loads.
- Refer to page 54 for structural wood screw SWH3 (1/4" x 3") and SWH15 (1/4" x 1-1/2") details.
- HDTT: Allowable loads based on connector attached to 2x4 from 1" above the base (i.e. no resistance from prying action).
- QGCW shall be installed with at least 3" offset from the end of the stud.
- HD12 & HD14: Bend washer (3/8") welded to bend strap around perimeter with 1" offset from the base.
- HD15/20: Bend washer (3/8") welded to bend strap around perimeter with 3-1/2" offset from the base.
- Minimum bolt requirements: Bending yield strength, F<sub>yb</sub> = 45,000 psi and Dowel Bearing strength, F<sub>es</sub> = 87,000 psi.