

# POWERLAGS<sup>®</sup>

## STRUCTURAL WOOD-TO-WOOD CONNECTIONS



SPAX<sup>®</sup> PowerLags<sup>®</sup> are the largest selection of code compliant structural wood-to-wood screws for framing in the industry. Featuring SPAX<sup>®</sup> patented thread technology, they require no pre-drilling, and drive faster and easier than conventional lags and other structural lag screws.

### POWERLAGS<sup>®</sup> FOR STRONG WOOD-TO-WOOD CONNECTIONS

German engineered and American made, SPAX<sup>®</sup> PowerLags<sup>®</sup> are professional grade structural screws and sold in job-friendly package quantities, including bulk pails.

- No pre-drilling required (1/4" and 5/16")
- Heat treated for strength and durability
- Independently tested DrJ Engineering Technical Evaluation Reports (TER No. 1912-07; Structural Wood Fastener Properties, TER No. 1711-01; Deck Ledger Attachment and TER No. 1802-03; Multi-ply: Sawn Lumber Assemblies & Engineered Wood Assemblies).
- Patented thread serrations require up to 40% less driving torque to increase installation speed while helping prevent cracking in logs.
- Built-on washer head designs eliminate the need and extra cost of a separate washer.
- Fastener length stamp on the head provides convenient identification without measuring and aids on-site inspections.

### SCREW STYLES

- Hex washer head style
- T-STAR washer head style
- Zinc, yellow zinc, coating options for interior applications.
- HCR<sup>®</sup> (High Corrosion Resistance) coating for exterior use, including treated lumber.



# POWERLAGS<sup>®</sup>

## STRUCTURAL WOOD-TO-WOOD CONNECTIONS



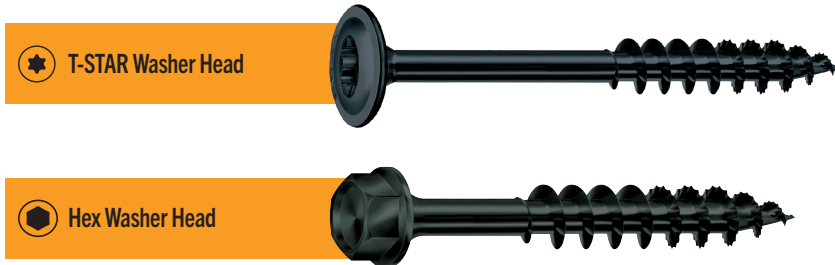
**THE IDEAL REPLACEMENT FOR THE CONVENTIONAL LAG**

**Applications**

Deck Ledger Attachment  
Heavy Carpentry

Multi-Ply – Sawn Lumber and Engineered Wood  
Treated Lumber – Decks and Pergolas

EXTERIOR



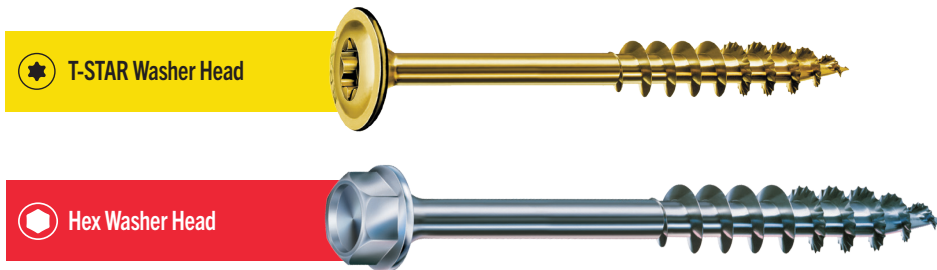
TER No. 1912-07  
Structural Wood  
Fastener Properties

▲ TER No. 1711-01  
Deck Ledger  
Attachment

■ TER No. 1802-03  
Multi-ply Sawn  
Lumber Assemblies

● TER No. 1802-03  
Multi-ply Engineered  
Wood (LVL, PSL, LSL)  
Assemblies

INTERIOR



### PowerLags<sup>®</sup> for Log Homes

Use for timber frame construction



INTERIOR



### Specialty - Interior Truss Screw

The ideal replacement for Hurricane Ties

INTERIOR



◆ TER No. 1910-02  
Trusses Properties &  
Applications

# T-STAR Washer Head HCR®

POWERLAGS®



EXTERIOR

## DESCRIPTION

SPAX® T-STAR Washer Head construction fasteners with HCR® coating are intended for wood-to-wood connections in exterior structural applications when attaching treated lumber components. These fasteners are designed with a low profile, large diameter wafer head for applications requiring additional surface area under the head for superior pull-down force. Ideal for deck ledger attachment and multi-ply beam applications.

## MATERIALS & COATING

Cold-rolled “carbon steel” wire heat treated and plated with an HCR® (High Corrosion Resistance) double barrier coating. “HCR” is tested and recognized for use in ground contact pressure treated lumber for exterior, freshwater general construction applications (e.g., AWWA UC1-UC4A, UCFA).



### Built-on Washer Head

Eliminates the need and cost of a separate washer.

\*T-STAR drive reduces stripping.



### Patented Serrations

Allow for quicker, easier fastening.

\*40% lower driving torque.



### Reliable Connections

Heat treated for strength and durability.



TER No. 1912-07  
Structural Wood  
Fastener Properties



## TYPICAL EXTERIOR APPLICATIONS

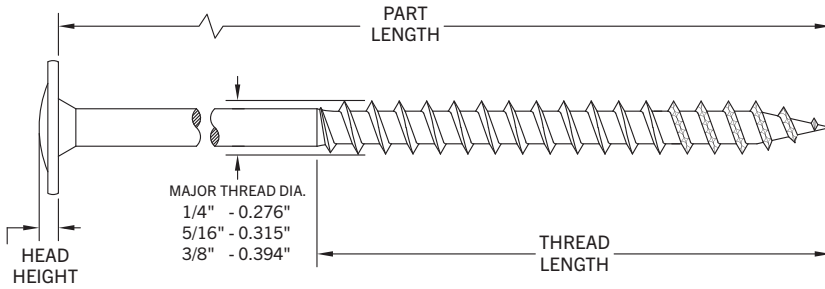
- Multi-ply LVL beam assembly
- Multi-ply girder truss assembly
- Exterior treated lumber pergolas & gazebos
- Landscaping timber
- Outdoor furniture
- Exterior fencing posts
- Exterior out buildings
- Deck ledger to residential band joist attachment

# T-STAR Washer Head HCR®

POWERLAGS®



EXTERIOR



## PRODUCT SELECTION



▲ TER No. 1711-01  
Deck Ledger  
Attachment  
(see pg. 99)

■ TER No. 1802-03  
Multi-ply Sawn  
Lumber Assemblies  
(see pg. 101)

● TER No. 1802-03  
Multi-ply Engineered Wood  
(LVL, PSL, LSL) Assemblies  
(see pg. 101)

PART LENGTH	THREAD LENGTH	HEAD DIA. HEAD HT.	DRIVE/BIT SIZE	APPROX. QTY.	PKG. TYPE	MASTER QTY.	PART NO.
1/4" x 2-1/2"	1.375"	0.697" 0.097"	T30	1	Individual*	50	4581820700637
				12	Project Pax®	5	45818207006343
				50	Contractor Pax®	4	4581820700635
				500	Bulk Pail	N/A	3581820700630
1/4" x 3"	1.790"	0.697" 0.097"	T30	1	Individual*	50	4581820700767
				12	Project Pax®	5	45818207007643
				50	Contractor Pax®	4	4581820700765
				500	Bulk Pail	N/A	3581820700760
1/4" x 3-1/2"	1.960"	0.697" 0.097"	T30	1	Individual*	50	4581820700907
				12	Project Pax®	5	45818207009043
				50	Contractor Pax®	4	4581820700905
				500	Bulk Pail	N/A	3581820700900
1/4" x 4"	2.375"	0.697" 0.097"	T30	1	Individual*	50	4581820701007
				12	Project Pax®	5	45818207010043
				50	Contractor Pax®	4	4581820701005
				500	Bulk Pail	N/A	3581820701000
1/4" x 4-1/2"	2.375"	0.697" 0.097"	T30	1	Individual*	50	4581820701557
				12	Project Pax®	5	45818207015543
				50	Contractor Pax®	4	4581820701555
				500	Bulk Pail	N/A	3581820701550
1/4" x 5"	2.375"	0.697" 0.097"	T30	1	Individual*	50	4581820701277
				12	Project Pax®	5	45818207012743
				50	Contractor Pax®	4	4581820701275
				500	Bulk Pail	N/A	3581820701270
1/4" x 6"	2.375"	0.697" 0.097"	T30	1	Individual*	50	4581820701527
				12	Project Pax®	5	45818207015243
				50	Contractor Pax®	4	4581820701525
				500	Bulk Pail	N/A	3581820701520

\* Bit not included.



# T-STAR Washer Head HCR<sup>®</sup>



## POWERLAGS<sup>®</sup>

### PRODUCT SELECTION



▲ TER No. 1711-01  
Deck Ledger  
Attachment  
(see pg. 99)

■ TER No. 1802-03  
Multi-ply Sawn  
Lumber Assemblies  
(see pg. 101)

● TER No. 1802-03  
Multi-ply Engineered Wood  
(LVL, PSL, LSL) Assemblies  
(see pg. 101)

PART LENGTH	THREAD LENGTH	HEAD DIA. HEAD HT.	DRIVE/BIT SIZE	APPROX. QTY.	PKG. TYPE	MASTER QTY.	PART NO.
5/16" x 3" ■	1.650"	0.776" 0.140"	T40	1	Individual*	25	4581820800767
				12	Project Pax <sup>®</sup>	5	45818208007643
				50	Contractor Pax <sup>®</sup>	4	4581820800765
				250	Bulk Pail	N/A	3581820800760
5/16" x 3-1/2" ●	2.050"	0.776" 0.140"	T40	1	Individual*	25	4581820800907
				12	Project Pax <sup>®</sup>	5	45818208009043
				50	Contractor Pax <sup>®</sup>	4	4581820800905
				250	Bulk Pail	N/A	3581820800900
5/16" x 4" ▲	2.375"	0.776" 0.140"	T40	1	Individual*	25	4581820801007
				12	Project Pax <sup>®</sup>	5	45818208010043
				50	Contractor Pax <sup>®</sup>	4	4581820801005
				250	Bulk Pail	N/A	3581820801000
5/16" x 4-1/2" ■	2.375"	0.776" 0.140"	T40	1	Individual*	25	4581820801157
				12	Project Pax <sup>®</sup>	5	45818208011543
				50	Contractor Pax <sup>®</sup>	4	4581820801155
				250	Bulk Pail	N/A	3581820801150
5/16" x 5" ● ▲	2.375"	0.776" 0.140"	T40	1	Individual*	25	4581820801277
				12	Project Pax <sup>®</sup>	5	45818208012743
				50	Contractor Pax <sup>®</sup>	4	4581820801275
				250	Bulk Pail	N/A	3581820801270
5/16" x 6" ■	2.375"	0.776" 0.140"	T40	1	Individual*	25	4581820801527
				12	Project Pax <sup>®</sup>	5	45818208015243
				50	Contractor Pax <sup>®</sup>	4	4581820801525
				250	Bulk Pail	N/A	3581820801520
5/16" x 6-3/4" ●	2.375"	0.776" 0.140"	T40	50	Contractor Pax <sup>®</sup>	4	4581820801715
				250	Bulk Pail	N/A	3581820801710
5/16" x 8" ●	2.375"	0.776" 0.140"	T40	1	Individual*	25	4581820802037
				12	Project Pax <sup>®</sup>	5	45818208020343
				50	Contractor Pax <sup>®</sup>	2	4581820802035
				150	Bulk Pail	N/A	3581820802030
5/16" x 10" ●	2.375"	0.776" 0.140"	T40	1	Individual*	25	4581820802547
				12	Project Pax <sup>®</sup>	5	45818208025443
				50	Contractor Pax <sup>®</sup>	2	4581820802545
				150	Bulk Pail	N/A	3581820802540
5/16" x 12" ●	2.375"	0.776" 0.140"	T40	1	Individual*	25	4581820803047
				50	Contractor Pax <sup>®</sup>	2	4581820803045
				150	Bulk Pail	N/A	3581820803040

\* Bit not included.

# T-STAR Washer Head HCR<sup>®</sup>

POWERLAGS<sup>®</sup>



EXTERIOR

## PRODUCT SELECTION



▲ TER No. 1711-01  
Deck Ledger  
Attachment  
(see pg. 99)

■ TER No. 1802-03  
Multi-ply Sawn  
Lumber Assemblies  
(see pg. 101)

● TER No. 1802-03  
Multi-ply Engineered Wood  
(LVL, PSL, LSL) Assemblies  
(see pg. 101)

PART LENGTH	THREAD LENGTH	HEAD DIA. HEAD HT.	DRIVE/BIT SIZE	APPROX. QTY.	PKG. TYPE	MASTER QTY.	PART NO.
3/8" x 5"	3.150"	0.970" 0.173"	T50	1	Individual*	15	4581821001277
				12	Project Pax <sup>®</sup>	5	45818210012743
				25	Contractor Pax <sup>®</sup>	4	4581821001275
				150	Bulk Pail	N/A	3581821001270
3/8" x 6"	3.150"	0.970" 0.173"	T50	1	Individual*	15	4581821001527
				12	Project Pax <sup>®</sup>	5	45818210015243
				25	Contractor Pax <sup>®</sup>	4	4581821001525
				150	Bulk Pail	N/A	3581821001520
3/8" x 8"	3.150"	0.970" 0.173"	T50	1	Individual*	15	4581821002037
				25	Contractor Pax <sup>®</sup>	4	4581821002035
				150	Bulk Pail	N/A	3581821002030
3/8" x 10"	3.150"	0.970" 0.173"	T50	1	Individual*	15	4581821002547
				150	Bulk Pail	N/A	3581821002540

NOTE: 3/8" fasteners require 0.172" pilot hole.  
\* Bit not included.



Individual



Project Pax<sup>®</sup>



Contractor Pax<sup>®</sup>



Bulk Pail



T-STAR Bit

## BIT SELECTION

DRIVE BIT	BIT SIZE	MASTER QTY.	PART NO.
T30	1"	10	5000002016309
T40	1"	10	5000002016409
T50	1"	10	5000002016509



NOTE: Only sold in master cartons. Made in Taiwan.

**FASTENER LENGTHS**



▲ TER No. 1711-01  
Deck Ledger  
Attachment  
(see pg. 99)

■ TER No. 1802-03  
Multi-ply Saw  
Lumber Assemblies  
(see pg. 101)

● TER No. 1802-03  
Multi-ply Engineered Wood  
(LVL, PSL, LSL) Assemblies  
(see pg. 101)

PART LENGTH	HEAD	FASTENER	PART LENGTH	HEAD	FASTENER
1/4" x 2-1/2"			5/16" x 5" ● ▲		
1/4" x 3"			5/16" x 6" ■		
1/4" x 3-1/2"			5/16" x 6-3/4" ●		
1/4" x 4"			5/16" x 8"		
1/4" x 4-1/2"			5/16" x 10"		
1/4" x 5"			5/16" x 12"		
1/4" x 6"			3/8" x 5"		
5/16" x 3" ■			3/8" x 6"		
5/16" x 3-1/2" ●			3/8" x 8"		
5/16" x 4" ▲			3/8" x 10"		
5/16" x 4-1/2" ■					

**PERFORMANCE SPECIFICATIONS**



TER No. 1912-07  
Structural Wood Fastener Properties

DIAMETER	LENGTH	ALLOWABLE WITHDRAWAL (W), HEAD PULL-THROUGH (W <sub>H</sub> ), LATERAL SHEAR PARALLEL TO GRAIN (Z <sub>  </sub> ), AND LATERAL SHEAR PERPENDICULAR TO GRAIN (Z <sub>⊥</sub> ) VALUES <sup>1,2,3,4,5,6,7</sup>											
		SOUTHERN PINE (G=0.55)				DOUGLAS-FIR (G=0.50)				HEM FIR & SPRUCE-PINE-FIR (G=0.42)			
		WITHDRAWAL	HEAD PULL-THROUGH	LATERAL SHEAR		WITHDRAWAL	HEAD PULL-THROUGH	LATERAL SHEAR		WITHDRAWAL	HEAD PULL-THROUGH	LATERAL SHEAR	
		(W)	(W <sub>H</sub> )	Z <sub>  </sub>	Z <sub>⊥</sub>	(W)	(W <sub>H</sub> )	Z <sub>  </sub>	Z <sub>⊥</sub>	(W)	(W <sub>H</sub> )	Z <sub>  </sub>	Z <sub>⊥</sub>
(lbs./inch)	(lbs.)	(lbf.)	(lbf.)	(lbs./inch)	(lbs.)	(lbf.)	(lbf.)	(lbs./inch)	(lbs.)	(lbf.)	(lbf.)		
1/4"	< 3"			305	285			265	235			250	225
	3.5"	375	850	390	370	310	785	360	340	245	585	315	285
	ALL OTHER LENGTHS			400	370			360	335			350	310
5/16"	< 3"			340	305			310	280			265	230
	3.5"	415	965	400	380	300	840	360	340	250	665	325	300
	ALL OTHER LENGTHS			440	405			405	375			380	355
3/8"	ALL	465	1245	530	485	300	1085	475	440	280	880	445	405

<sup>1</sup> "Withdrawal", "Head Pull-Through", and "Lateral Shear" design values shall be adjusted by all applicable adjustment factors per NDS Table 11.3.1.  
<sup>2</sup> "Withdrawal" design values are to be multiplied by the length of the thread penetration into the side grain of the main member. Length includes tip.  
<sup>3</sup> "Withdrawal" design values are from the main member, and "Head Pull-Through" design values are based on a minimum of 1-1/2" side member thickness.  
<sup>4</sup> Tabulated "Withdrawal" and "Head Pull-Through" design values are for the wood species with the listed assigned specific gravities. Where the wood species assigned specific gravity is not listed, use the next lower assigned specific gravity values.  
<sup>5</sup> Tabulated "Lateral Shear" design values are for the wood species with the listed assigned specific gravities applied to both the main and side members. Where the members are different assigned specific gravities, use the lower of the two.  
<sup>6</sup> Tabulated "Lateral Shear" design values require fasteners must be oriented perpendicular to the side grain, and the underside of the fastener head be installed flush with the surface of the side member.  
<sup>7</sup> Tabulated "Lateral Shear" design values require a minimum fastener penetration into the main member of 1.375" for fasteners less than 4" and 2.375" for all other lengths.