Titen Turbo™ Concrete and Masonry Screw Anchor

The Titen Turbo screw anchor features an innovative Torque Reduction Channel to trap drilling dust where it can't obstruct thread action, significantly reducing binding, stripping, and snapping without compromising strength. The patented reverse thread design enables smooth driving with less torque while providing superior holding power. The Torque Reduction Channel also allows more space for dust to help prevent anchors from bottoming out in smaller-diameter screw holes. The Titen Turbo screw anchors feature a serrated leading edge to cut into concrete or masonry, and a pointed tip for fast, easy installation in wood-to-concrete and wood-to-wood anchoring applications.

Features

- Patent-pending Torque Reduction Channel that displaces dust where it can't obstruct the thread action, reducing the likelihood of binding in the hole
- Availability with either a hex head or, for a flush profile, a 6-lobe-drive countersunk flat head
- The 6-lobe drive's larger contact area provides better bit grip for reduced cam-outs, more torque, better performance and longer bit life
- 6-lobe bit included in packaging for countersunk flat head version
- Superior tension load performance compared to leading competitors in the market
- Matched-tolerance bit not required; use a standard ANSI drill bit for installation
- Serrated screw point for easier starts when fastening wood
- Designed for installation with an impact driver or cordless drill. Installation using the Titen Turbo Installation Tool is recommended.
- Use in dry interior environments only
- Code listed in accordance with ICC-ES AC193 for uncracked concrete and ICC-ES AC106 for masonry applications without cleaning dust from predrilled holes

Codes: IAPMO UES ER-712 (uncracked concrete) (City of LA Supplement within ER-712);
IAPMO UES ER-716 (masonry) (City of LA Supplement within ER-716);
FL16230 (concrete and masonry)

Material: Carbon steel

Coating: Zinc plated with baked ceramic coating

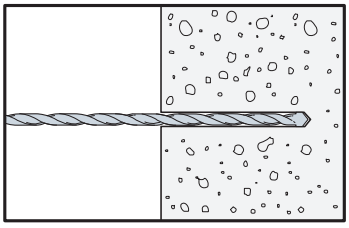
Titen Turbo Flat Head Screw
Patent Pending

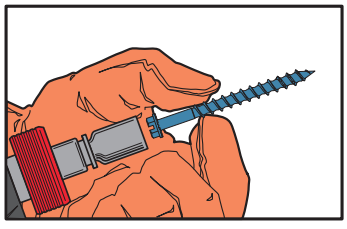
Titen Turbo Hex-Head Screw
Patent Pending

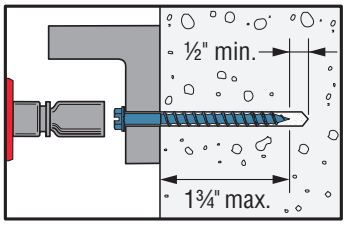
NEW

6-lobe drive

Installation Sequence







Versatile Applications

Sliding door track installation

Window frames

Furring strips

Titen Turbo™ Concrete and Masonry Screw Anchor

Blue Titen Turbo Product Data (3⁄16" diameter)

Size (in.)	Head Style	Model No.	Drill Bit Dia. (in.)	Quantity	
				Pack	Carton
3⁄16 x 1 1⁄4	1⁄4" hex	TNT18114H	5⁄32	100	1,600
3⁄16 x 1 3⁄4		TNT18134H		100	500
3⁄16 x 2 1⁄4		TNT18214H		100	500
3⁄16 x 2 3⁄4		TNT18234H		100	500
3⁄16 x 3 1⁄4		TNT18314H		100	400
3⁄16 x 3 3⁄4		TNT18334H		100	400
3⁄16 x 1 1⁄4	T25 6-lobe flat	TNT18114TF	5⁄32	100	1,600
3⁄16 x 1 3⁄4		TNT18134TF		100	500
3⁄16 x 2 1⁄4		TNT18214TF		100	500
3⁄16 x 2 3⁄4		TNT18234TF		100	500
3⁄16 x 3 1⁄4		TNT18314TF		100	400
3⁄16 x 3 3⁄4		TNT18334TF		100	400

Blue Titen Turbo Product Data (1⁄4" diameter)

Size (in.)	Head Style	Model No.	Drill Bit Dia. (in.)	Quantity	
				Pack	Carton
1⁄4 x 1 1⁄4	5⁄16" hex	TNT25114H	3⁄16	100	1,600
1⁄4 x 1 3⁄4		TNT25134H		100	500
1⁄4 x 2 1⁄4		TNT25214H		100	500
1⁄4 x 2 3⁄4		TNT25234H		100	500
1⁄4 x 3 1⁄4		TNT25314H		100	400
1⁄4 x 3 3⁄4		TNT25334H		100	400
1⁄4 x 4		TNT25400H		100	400
1⁄4 x 5		TNT25500H		100	400
1⁄4 x 6		TNT25600H		100	400
1⁄4 x 1 1⁄4	T30 6-lobe flat	TNT25114TF	3⁄16	100	1,600
1⁄4 x 1 3⁄4		TNT25134TF		100	500
1⁄4 x 2 1⁄4		TNT25214TF		100	500
1⁄4 x 2 3⁄4		TNT25234TF		100	500
1⁄4 x 3 1⁄4		TNT25314TF		100	400
1⁄4 x 3 3⁄4		TNT25334TF		100	400
1⁄4 x 4		TNT25400TF		100	400

White Titen Turbo Product Data (6-Lobe Flat Head)

Size (in.)	Head Style	Model No.	Drill Bit Dia. (in.)	Quantity	
				Pack	Carton
3⁄16 x 1 1⁄4	T25 6-lobe flat	TNTW18114TF	5⁄32	100	1,600
3⁄16 x 1 3⁄4		TNTW18134TF		100	500
3⁄16 x 2 1⁄4		TNTW18214TF		100	500
3⁄16 x 2 3⁄4		TNTW18234TF		100	500
3⁄16 x 3 1⁄4		TNTW18314TF		100	400
3⁄16 x 3 3⁄4		TNTW18334TF		100	400
1⁄4 x 1 1⁄4	T30 6-lobe flat	TNTW25114TF	3⁄16	100	1,600
1⁄4 x 1 3⁄4		TNTW25134TF		100	500
1⁄4 x 2 1⁄4		TNTW25214TF		100	500
1⁄4 x 2 3⁄4		TNTW25234TF		100	500
1⁄4 x 3 1⁄4		TNTW25314TF		100	400
1⁄4 x 3 3⁄4		TNTW25334TF		100	400

Silver Titen Turbo Product Data (6-Lobe Flat Head)

Size (in.)	Head Style	Model No.	Drill Bit Dia. (in.)	Quantity
3⁄16 x 1 3⁄4	T25 6-lobe flat	TNTS18134TFB	5⁄32	1,000
3⁄16 x 2 3⁄4		TNTS18234TFB		1,000
3⁄16 x 3 3⁄4		TNTS18334TFB		1,000
1⁄4 x 2 3⁄4	T30 6-lobe flat	TNTS25234TFB	3⁄16	1,000
1⁄4 x 3 1⁄4		TNTS25314TFB		1,000

Titen Turbo™ Concrete and Masonry Screw Anchor

Titen Turbo Screw Anchor — Installation Tool

Six-piece kit includes:

- 6-lobe bit socket
- T25 and T30 bits
- ¼" and 5⁄16" hex sockets
- Canvas storage bag

Titen Turbo Screw Anchor Installation Kit

Titen Turbo Installation Tool

Model No.	Quantity	
	Clamshell	Carton
TNTINSTALLKIT	1	4

Titen Turbo Screw Anchor — Drill Bits

Size (in.)	Model No.	Use With		Quantity	
		Screw	Length	Box	Carton
5⁄32 x 3 1⁄2	MDB15312	3⁄16" diameter	To 1 3⁄4	12	48
5⁄32 x 4 1⁄2	MDB15412		To 3 1⁄4		
5⁄32 x 5 1⁄2	MDB15512		To 4		
3⁄16 x 3 1⁄2	MDB18312	1⁄4" diameter	To 1 3⁄4	12	48
3⁄16 x 4 1⁄2	MDB18412		To 3 1⁄4		
3⁄16 x 5 1⁄2	MDB18512		To 4		

SDS-plus Shank Bit

Titen Turbo Screw Anchor — SDS-plus® Drill Bits

Size (in.)	Model No.	For Screw Diameter (in.)	Drilling Depth (in.)	Overall Length (in.)
5⁄32 x 6	MDPL01506H	3⁄16	3 1⁄8	6
5⁄32 x 7	MDPL01507H		4 1⁄8	7
3⁄16 x 5	MDPL01805H	1⁄4	2 3⁄8	5
3⁄16 x 6	MDPL01806H		3 1⁄8	6
3⁄16 x 7	MDPL01807H		4 1⁄8	7

Titen drivers are sold individually.

Titen Turbo Screw Drill Bit/Driver — Bulk Packs*

Diameter (in.)	Drilling Depth (in.)	Overall Length (in.)	For Screw Diameter (in.)	Model No.
5⁄32	4 1⁄8	7	3⁄16	MDPL01507H-R25
3⁄16	4 1⁄8	7	1⁄4	MDPL01807H-R25

*SDS-plus shank.

Titen Turbo™ Concrete and Masonry Screw Anchor

Titen Turbo Installation Information and Additional Data[1]

Characteristic	Symbol	Units	Nominal Anchor Diameter (in.)	
			3/16	1/4
Installation Information				
Drill Bit Diameter	d	in.	5/32	3/16
Minimum Baseplate Clearance Hole Diameter	d_c	in.	1/4	5/16
Minimum Hole Depth	h_{hole}	in.	2 1/4	2 1/4
Embedment Depth	h_{nom}	in.	1 3/4	1 3/4
Effective Embedment Depth	h_{ef}	in.	1.25	1.20
Critical Edge Distance	c_{ac}	in.	3	3
Minimum Edge Distance	c_{min}	in.	1 3/4	1 3/4
Minimum Spacing	s_{min}	in.	1	2
Minimum Concrete Thickness	h_{min}	in.	3 1/4	3 1/4
Additional Data				
Yield Strength	f_{ya}	psi	100,000	
Tensile Strength	f_{uta}	psi	125,000	
Minimum Tensile and Shear Stress Area	A_{se}	in.^{2}	0.0131	0.0211

1. The information presented in this table is to be used in conjunction with the design criteria of ACI 318-14 Chapter 17 or ACI 318-11 Appendix D.

Titen Turbo Tension Strength Design Data[1]

Characteristic	Symbol	Units	Nominal Anchor Diameter (in.)	
			3/16	1/4
Anchor Category	1, 2 or 3	—	1	
Embedment Depth	h_{nom}	in.	1 3/4	1 3/4
Steel Strength in Tension				
Tension Resistance of Steel	N_{sa}	lb.	1,640	2,640
Strength Reduction Factor — Steel Failure	ϕ_{sa}	—	0.65[2]	
Concrete Breakout Strength in Tension				
Effective Embedment Depth	h_{ef}	in.	1.25	1.20
Critical Edge Distance	c_{ac}	in.	3	3
Effectiveness Factor — Uncracked Concrete	k_{uncr}	—	24	
Modification Factor	$\Psi_{c,N}$	—	1.0	
Strength Reduction Factor — Concrete Breakout Failure	ϕ_{cb}	—	0.65[3]	
Pullout Strength in Tension				
Pullout Resistance Uncracked Concrete (f'_c = 2,500 psi)[4]	$N_{p,uncr}$	lb.	1,515	1,515
Strength Reduction Factor — Pullout Failure	ϕ_p	—	0.65[5]	

1. The information presented in this table is to be used in conjunction with the design criteria of ACI 318-14 Chapter 17 or ACI 318-11 Appendix D.
2. The tabulated value of ϕ_{sa} applies when the load combinations of Section 1605.2 of the IBC, ACI 318-14 Section 5.3 or ACI 318-11 Section 9.2 are used. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of ϕ must be determined in accordance with ACI 318-11 Section D.4.4.
3. The tabulated value of ϕ_{cb} applies when both the load combinations of Section 1605.2 of the IBC, ACI 318-14 Section 5.3 or ACI 318-11 Section 9.2 are used and the requirements of ACI 318-14 Section 17.3.3 (c) or ACI 318-11 Section D.4.3, as applicable, for Condition B are met. Condition B applies when supplementary reinforcement is not provided. For installations where complying supplementary reinforcement can be verified, the ϕ_{cb} factor described in ACI 318-14 Section 17.3.3 (c) or ACI 318-11 Section D.4.3, as applicable, for Condition A are allowed. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of ϕ must be determined in accordance with ACI 318-11 Section D.4.4.
4. The characteristic pullout resistance for greater compressive strengths may be increased by multiplying the tabular value by $(f'_c/2500)^{0.23}$ for 1/4" screw anchors. No increase in the characteristic pullout resistance for greater compressive strengths is permitted for 3/16" screw anchors.
5. The tabulated value of ϕ_p applies when both the load combinations of Section 1605.2 of the IBC, ACI 318-14 Section 5.3 or ACI 318-11 Section 9.2 are used and the requirements of ACI 318-14 Section 17.3.3 (c) or ACI 318-11 Section D.4.3 (c) for Condition B are met. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of ϕ must be determined in accordance with ACI 318-11 Section D.4.4 for Condition B.

** See p. 12 for an explanation of the load table icons.*

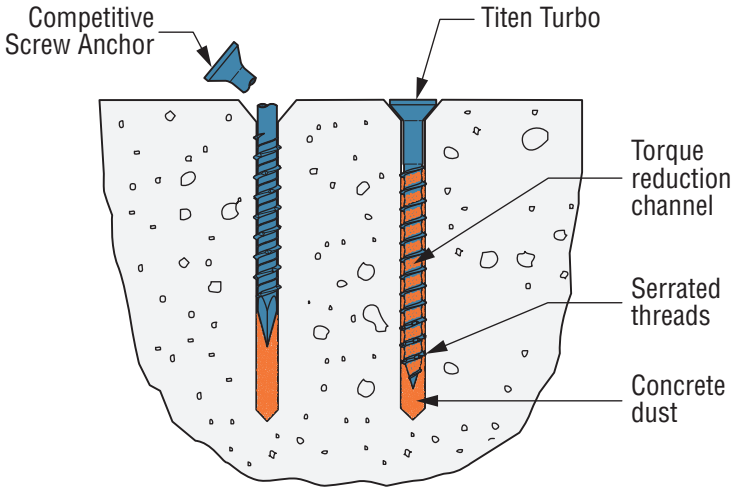
Titen Turbo™ Concrete and Masonry Screw Anchor

Titen Turbo Shear Strength Design Data Into Concrete[1]

Characteristic	Symbol	Units	Nominal Anchor Diameter (in.)	
			3/16	1/4
Anchor Category	1, 2 or 3	—	1	
Embedment Depth	h_{nom}	in.	1¾	1¾
Steel Strength in Shear				
Shear Resistance of Steel	V_{sa}	lb.	475	720
Strength Reduction Factor — Steel Failure	ϕ_{sa}	—	0.60[2]	
Concrete Breakout Strength in Shear				
Outside Diameter	d_a	in.	0.129	0.164
Load Bearing Length of Anchor in Shear	l_e	in.	1.25	1.20
Strength Reduction Factor — Concrete Breakout Failure	ϕ_{cb}	—	0.70[3]	
Concrete Pryout Strength in Shear				
Coefficient for Pryout Strength	k_{cp}	—	1.0	
Strength Reduction Factor — Concrete Pryout Failure	ϕ_{cp}	—	0.70[4]	

1. The information presented in this table is to be used in conjunction with the design criteria of ACI 318-14 Chapter 17 or ACI 318-11 Appendix D.
2. The tabulated value of ϕ_{sa} applies when the load combinations of Section 1605.2 of the IBC, ACI 318-14 Section 5.3 or ACI 318-11 Section 9.2 are used. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of ϕ must be determined in accordance with ACI 318-11 Section D.4.4.
3. The tabulated value of ϕ_{cb} applies when both the load combinations of Section 1605.2 of the IBC, ACI 318-14 Section 5.3 or ACI 318-11 Section 9.2 are used and the requirements of ACI 318-14 Section 17.3.3 (c) or ACI 318-11 Section D.4.3, as applicable, for Condition B are met. Condition B applies when supplementary reinforcement is not provided. For installations where complying supplementary reinforcement can be verified, the ϕ_{cb} factor described in ACI 318-14 Section 17.3.3 (c) or ACI 318-11 Section D.4.3, as applicable, for Condition A are allowed. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of ϕ must be determined in accordance with ACI 318-11 Section D.4.4.
4. The tabulated value of ϕ_{cp} applies when both the load combinations of Section 1605.2 of the IBC, ACI 318-14 Section 5.3 or ACI 318-11 Section 9.2 are used and the requirements of ACI 318-14 Section 17.3.3 (c) or ACI 318-11 Section D.4.3 (c) for Condition B are met. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of ϕ must be determined in accordance with ACI 318-11 Section D.4.4 (c).

Torque Reduction Channel to trap drilling dust where it can't obstruct thread action.



Torque Reduction Channel Displaces Dust for Trouble-Free Installation

US Patent Pending

** See p. 12 for an explanation of the load table icons.*

Titen Turbo™ Concrete and Masonry Screw Anchor

Allowable Tension Load for Titen Turbo™ Screw Anchor Installed in Face of Grouted CMU[1,2,3]

Anchor Diameter (in.)	Embedment Depth (in.)	Minimum Dimensions (in.)			Allowable Load (lb.)[4]
		Spacing	Edge	End	
3/16	2	3	3 7/8	3 7/8	267
3/16	2	3	1 1/2	3 7/8	267
1/4	2	4	3 7/8	3 7/8	393
1/4	2	4	1 1/2	3 7/8	343

1. The tabulates values are for screw anchors installed in minimum 8"-wide grouted concrete masonry walls having reached a minimum f'_m of 1,500 psi at time of installation.
2. Embedment is measured from the masonry surface to the embedded end of the screw anchor.
3. Screw anchors must be installed in grouted cell. The minimum edge and end distances must be maintained.
4. Allowable loads are based on a safety factor of 5.0 for installations under the IBC and IRC.

Allowable Shear Load for Titen Turbo Screw Anchor Installed in Face of Grouted CMU[1,2,3]

Anchor Diameter (in.)	Embedment Depth (in.)	Minimum Dimensions (in.)			Direction of Loading	Allowable Load (lb.)[4]
		Spacing	Edge	End		
3/16	2	3	3 7/8	3 7/8	Toward edge, parallel to wall end	218
3/16	2	3	1 1/2	3 7/8	Toward wall end, parallel to wall edge	218
1/4	2	4	3 7/8	3 7/8	Toward edge, parallel to wall end	342
1/4	2	4	1 1/2	3 7/8	Toward wall end, parallel to wall edge	283

1. The tabulates values are for screw anchors installed in minimum 8"-wide grouted concrete masonry walls having reached a minimum f'_m of 1,500 psi at time of installation.
2. Embedment is measured from the masonry surface to the embedded end of the screw anchor.
3. Screw anchors must be installed in grouted cell. The minimum edge and end distances must be maintained.
4. Allowable loads are based on a safety factor of 5.0 for installations under the IBC and IRC.

Allowable Tension Load for Titen Turbo Screw Anchor Installed in Hollow CMU Wall Faces[1,2,3]

Anchor Diameter (in.)	Embedment Depth (in.)	Minimum Dimensions (in.)			Allowable Load (lb.)[4]
		Spacing	Edge	End	
3/16	1 1/4	3	3 7/8	3 7/8	117
1/4	1 1/4	4	3 7/8	3 7/8	117

1. The tabulates values are for screw anchors installed in minimum 8"-wide grouted concrete masonry walls having reached a minimum f'_m of 1,500 psi at time of installation.
2. Embedment is the thickness of the face shell.
3. Screw anchors may be installed at any location in the wall face provided the minimum edge and end distances are maintained.
4. Allowable loads are based on a safety factor of 5.0 for installations under the IBC and IRC.

Allowable Shear Load for Titen Turbo Screw Anchor Installed in Hollow CMU Wall Faces[1,2,3]

Anchor Diameter (in.)	Embedment Depth (in.)	Minimum Dimensions (in.)			Direction of Loading	Allowable Load (lb.)[4]
		Spacing	Edge	End		
3/16	1 1/4	3	3 7/8	3 7/8	Toward edge, parallel to wall end	164
1/4	1 1/4	4	3 7/8	3 7/8	Toward edge, parallel to wall end	190

1. The tabulates values are for screw anchors installed in minimum 8"-wide grouted concrete masonry walls having reached a minimum f'_m of 1,500 psi at time of installation.
2. Embedment is the thickness of the face shell.
3. Screw anchors may be installed at any location in the wall face provided the minimum edge and end distances are maintained.
4. Allowable loads are based on a safety factor of 5.0 for installations under the IBC and IRC.

** See p. 12 for an explanation of the load table icons.*