

The Transport Anchor



Material Handling System - Fast, Easy, Efficient



WOOD you like to CONNECT?

CONTACT US

sales@my-ti-con.com

1.866.899.4090

Technical Support

info@my-ti-con.com

1.866.899.4090

www.my-ti-con.com



Install 1/2" x 6" anchor bolt



Leave anchor bolt 5/8" proud



Engage transport anchor



Engage lifting chains



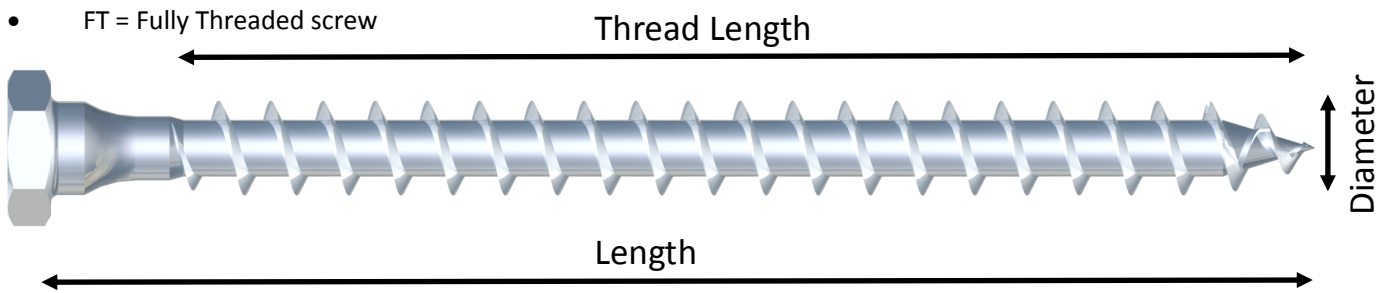
Lift log

ADVANTAGES:

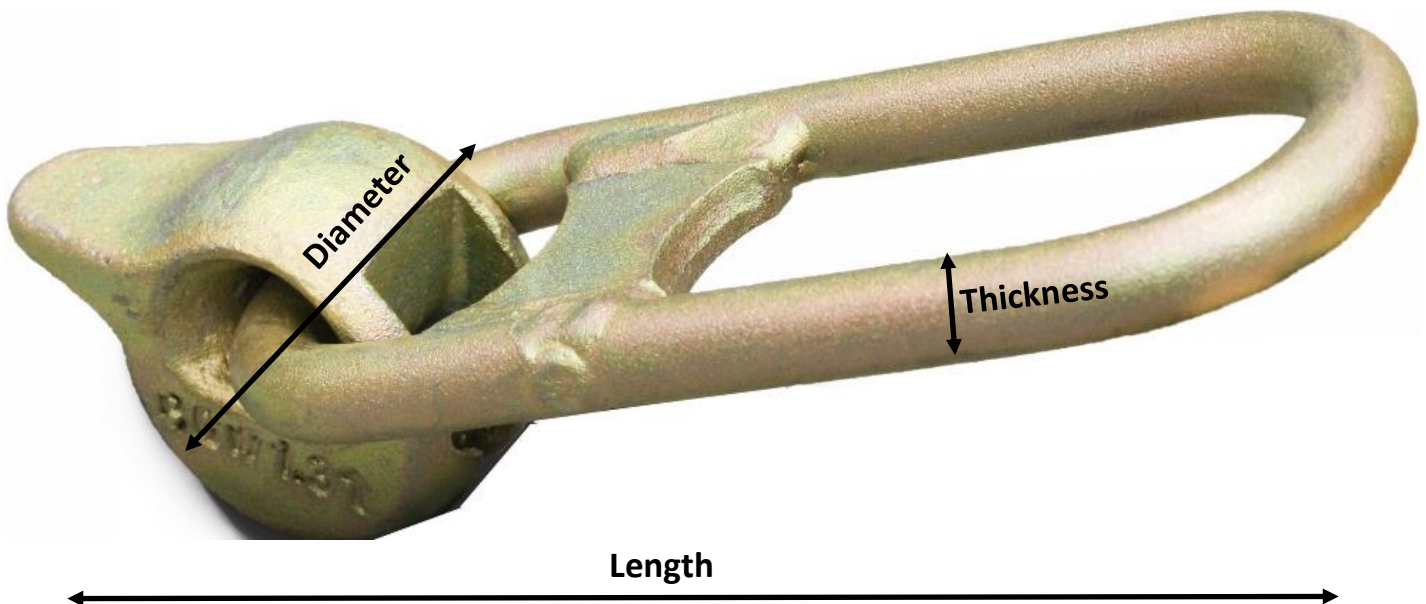
1. No slings required around log
2. Log can be set in place easily
3. Quick engage and release of anchor
4. Faster Install = Reduced crane time!
5. No tong marks on log

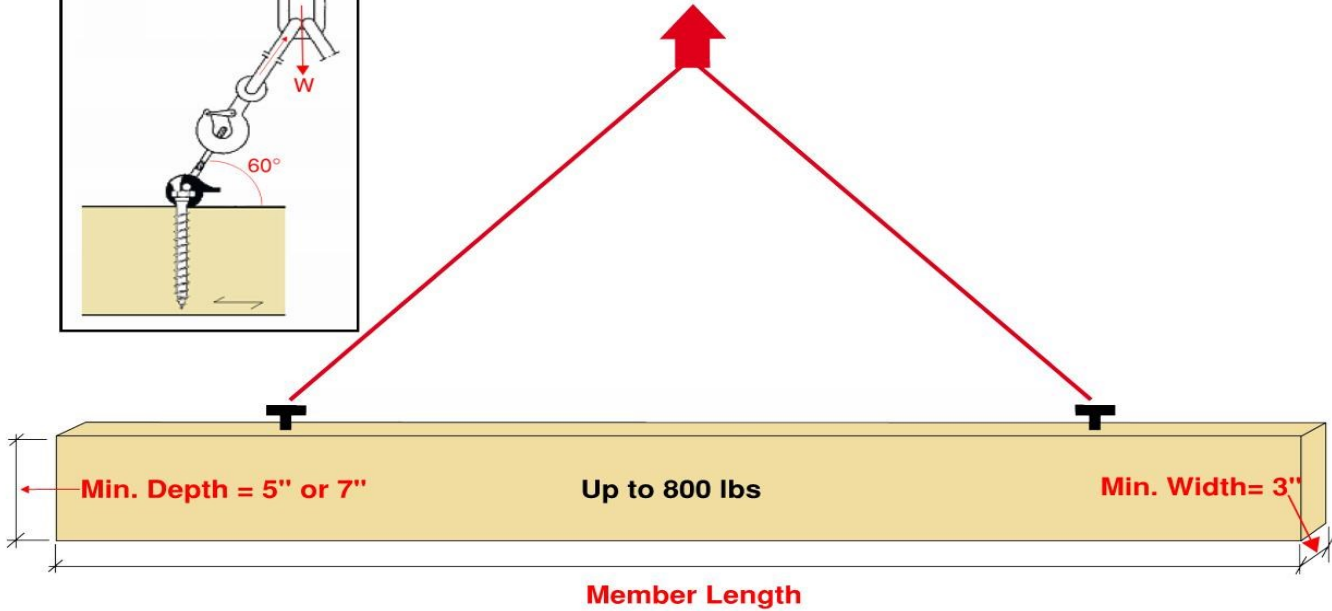
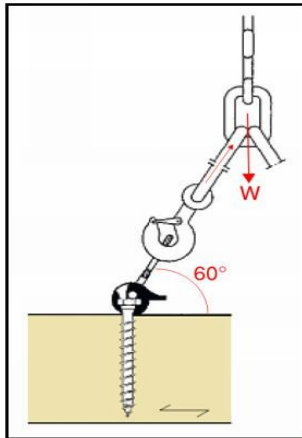
Screw type	Diameter [inch]	Length [inch]	Thread length [inch]	Box quantity [pc]
KOMBI PT	1/2	4 3/4	3 1/8	50
KOMBI FT	1/2	6 1/4	5 3/4	50

- PT = Partially Threaded screw
- FT = Fully Threaded screw



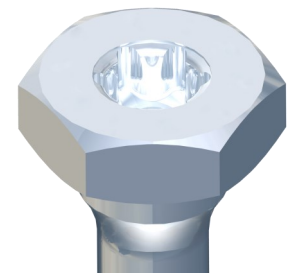
Type	Diameter [inch]	Length [inch]	Thickness [inch]	Box quantity [pc]
Transport	2	8	1/2	2

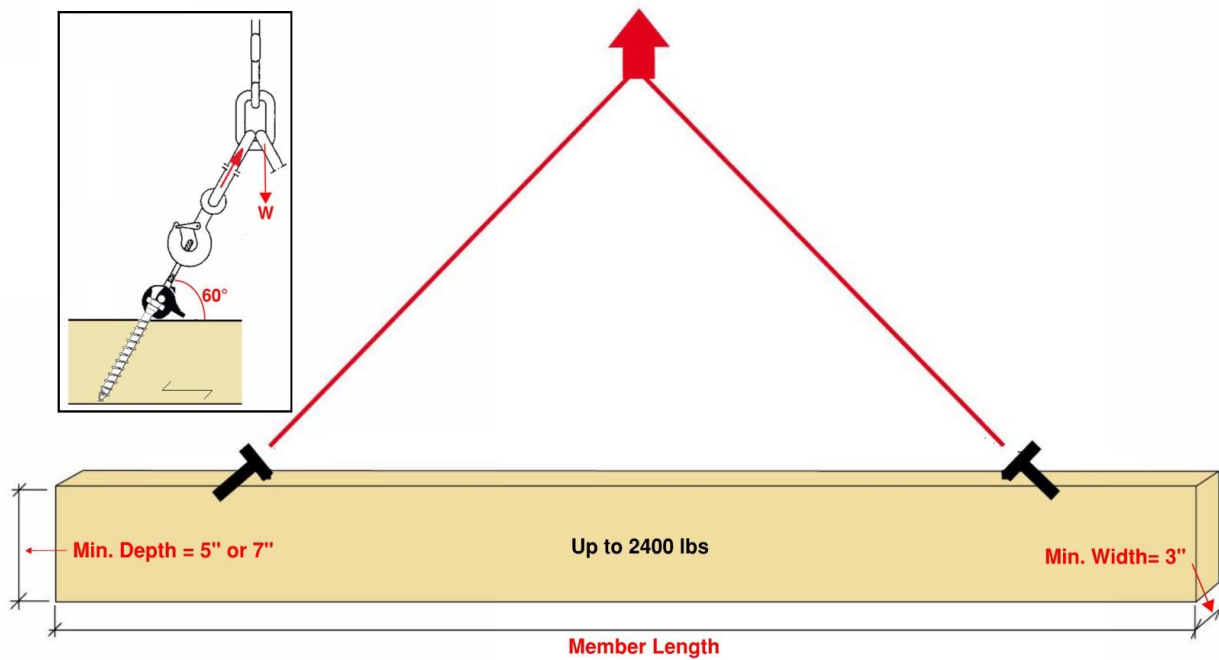




System Combinations	CASE #1: SCREW INSERTED AT 90°		
Timber Species (Green Service Conditions*)	Maximum Lifting Capacity [lbs] (using 2 lifting points)		
	D.Fir-L	S-P-F	WRC
Transport Anchor plus 1/2" x 4 3/4" KOMBI PT screw	500	350	300
Transport Anchor plus 1/2" x 6 1/4" KOMBI FT screw	800	600	500

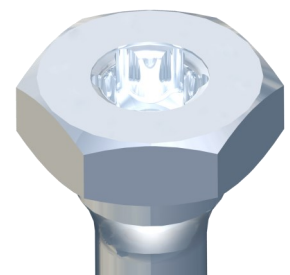
- Reference Design values have been developed in accordance with NDS-2012 : 11.3,12.4 and Evaluation Report ICC ESR-3178 & ESR-3179 and shall be checked by a qualified designer
* refers to wood moisture content $\phi > 19\%$
- WRC = Western Red Cedar (Northern species)
- Screw must never be installed into checks or cracks! Screws shall only be used once!
- Load table does not apply for end-grain applications
- Rigging equipment and lifting slings have to be designed and checked accordingly

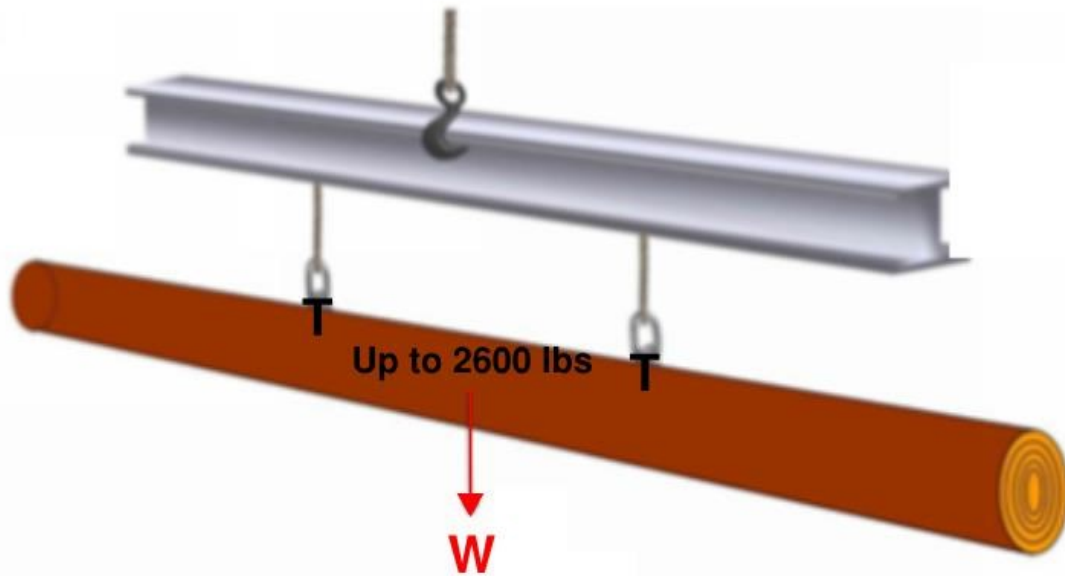




System Combinations	CASE #2: SCREW INSERTED AT 60°		
Timber Species (Green Service Conditions*)	Maximum Lifting Capacity [lbs] (using 2 lifting points)		
	D.Fir-L	S-P-F	WRC
Transport Anchor plus 1/2" x 4 3/4" KOMBI PT screw	650	600	400
Transport Anchor plus 1/2" x 6 1/4" KOMBI FT screw	2000	1400	1200

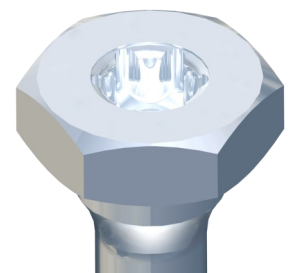
- Reference Design values have been developed in accordance with NDS-2012 : 11.3,12.4 and Evaluation Report ICC ESR-3178 & ESR-3179 and shall be checked by a qualified designer
* refers to wood moisture content $\varphi > 19\%$
- WRC = Western Red Cedar (Northern species)
- Screw must never be installed into checks or cracks! Screws shall only be used once!
- Load table does not apply for end-grain applications
- Rigging equipment and lifting slings have to be designed and checked accordingly





System Combinations	CASE #3: SCREW INSERTED AT 90° LIFTED W/ SPREADER BEAM		
Timber Species (Green Service Conditions*)	Maximum Lifting Capacity [lbs] (using 2 lifting points)		
	D.Fir-L	S-P-F	WRC
Transport Anchor plus 1/2" x 4 3/4" KOMBI PT screw	1300	800	600
Transport Anchor plus 1/2" x 6 1/4" KOMBI FT screw	2600	1800	1500

- Reference Design values have been developed in accordance with NDS-2012 : 11.3,12.4 and Evaluation Report ICC ESR-3178 & ESR-3179 and shall be checked by a qualified designer
* refers to wood moisture content $\phi > 19\%$
- WRC = Western Red Cedar (Northern species)
- Screw must never be installed into checks or cracks! Screws shall only be used once!
- Load table does not apply for end-grain applications
- Rigging equipment and lifting slings have to be designed and checked accordingly

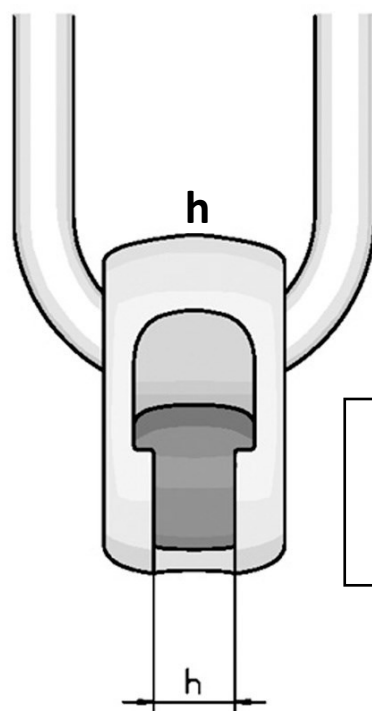


Wear and Tear on the Transport Anchor system

Any lifting system will experience wear and tear in service. Frequent inspection is key to safe working and lifting procedures. A few simple steps need to be followed when inspecting the Transport Anchor system.

Inspection requirements:

- The transport anchor is to be examined by a trained, professional safety expert with at least one inspection per year. Under daily use one inspection after each shift is suggested.
The inspector must look for damage and wear on the device. If damage is found the device must not be used.
- The receiver mouth width “h” must not exceed 1/2” (13mm). Whenever the width is $h > 1/2$ ” (13mm) the system must not be used.
- Repairs or modifications on the transport anchor system of any kind - particularly welding - are not permitted!
- For safety, the screws may only be used once.



Receiver mouth width “h” must not exceed 1/2”

DESIGN EXAMPLE OF TRANSPORT ANCHOR	
Conditions of Use :	<p>Screws inserted at 90° relative to lifted member grain direction; 2 lifting points</p> <p>System combination of (2): 1/2" x 6 1/4" Kombi FT + Transport Anchor</p>
Reference Withdrawal Capacity (W') :	<p>Obtained from testing according to ICC ES AC233 modified to meet requirements of wet service conditions in timber lifting systems</p> <p>$W = @ 90^\circ$ (Assume wood species = D.Fir) = 312 lb/in</p>
Relevant Parameters and Applicable Adjustment Factors:	<p>Following NDS-2012: 11.3</p> <p>$n_f = 2$ (number of fasteners)</p> <p>$d =$ outside screw diameter (mm) = 0.472" (1/2" nom.)</p> <p>$l_{ef} =$ effective embedment length of screw (thread length—tip length(=d)) (in)</p> <p>$= 5.71" - 0.472" = 5.24"$</p> <p>$W' = W \cdot C_D \cdot C_M \cdot C_t \cdot C_{eg} \cdot C_{tn} \cdot C_{Dynamic}$</p> <p>Adjustment Factors:</p> <p>$C_D =$ load duration factor = 1.6 (10 mins) ; (Table 2.3.2)</p> <p>$C_M =$ Wet in-service conditions = 0.7 (>19%) ; (Table 11.3.3)</p> <p>$C_t =$ Temperature factor = 1.0 ; (Table 11.3.4)</p> <p>$C_{eg} =$ End-Grain factor = N/A = 1.0 (12.2.2)</p> <p>$C_{tn} =$ Toe-nail factor = N/A = 1.0 (12.2.2)</p> <p>$C_{Dynamic} =$ Adjustment factor for dynamic loading = 1/1.4 = 0.71 ; (EC5)</p>
Calculation Effective Withdrawal Capacity:	<p>$W = 312 \text{ (lb/in)} \cdot l_{ef} = 312 \cdot 5.24" = 1,635 \text{ (lbs per screw)}$</p> <p>$W' = W \cdot C_D \cdot C_M \cdot C_t \cdot C_{eg} \cdot C_{tn} \cdot C_{Dynamic} = 1,635 \cdot 1.6 \cdot 0.7 \cdot 1.0 \cdot 1.0 \cdot 1.0 \cdot 0.71 =$</p> <p>$W' = 1,300 \text{ (lbs)} \cdot n_f = 1,300 \cdot 2 = 2,600 \text{ (lbs per pair of screws)}$</p>
Calculation of Maximum Permissible Lifting Capacity (W) :	<p>Allowable Tensile Resistance of Screws = 3,430 (lbs) · 2 = 6,860 (lbs)</p> <p>Max. rated resistance for transport anchor = 3.040 (lbs) · 2 = 6,080 (lbs)</p> <p>Max. Capacity of screws is min (6080, 6860, W') = 2600 (lbs)</p> <p>Max Lifting Capacity $W_{max} = W'$ (at 90°)</p> <p>$W_{max} = 2600 \text{ (lbs per pair with spreader beam)}$</p>

