Shrinkage compensators require evaluations for: fit, strength, expansion and deflection. Two code defined deflections **($\triangle$A)** and **($\triangle$R)** are required.

Load-deflection ($\triangle$A) design load/actual load * Rated $\triangle$A.
Delta R ($\triangle$R) is always added in full to system deflection. Delta R is the product internal slack.

Example:

Reaction Load = 11,000 pounds

Shrinkage Compensator AT 100 (Select based on the rod size)
Rated Capacity: 25,300 pounds.
Deflection Maximum: $\triangle$A = 0.032", $\triangle$R = 0.002"
Expansion 1.2" (ICC ESR 1344)
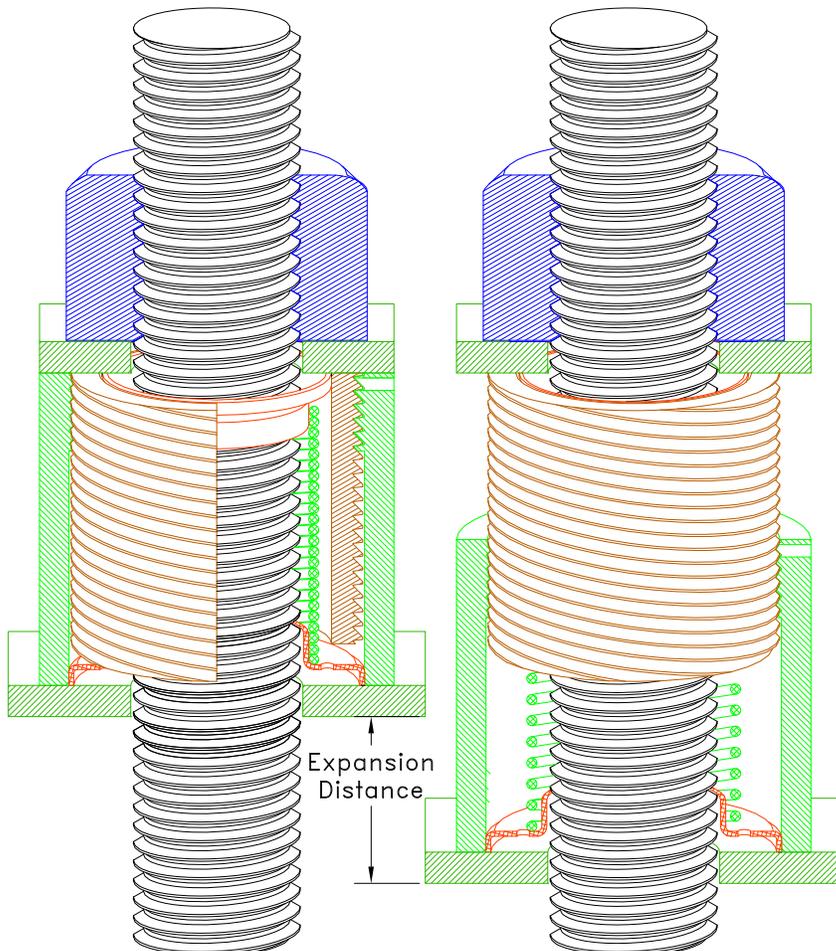
Calculate Deflection: Load Deflection = 0.032 * 11,000/25,300 = 0.014"
                 Delta R ($\triangle$R) (From Table)   = <u>0.002"</u>
                 Total Deformation   = <u>0.016"</u>
Add sum to the system elongation per AC 316 and AC 391 section 3.1.1.

Want to know more? Watch a 2 minute video that explains $\triangle$R on our website.

US Patents 6,390,747 6,585,469. Other patents foreign and domestic, pending

Expansion Distance

AutoTight:

Rod Sizes to 2" Dia!
Larger rod = <u>Lower Deflection</u>

Inside Spring
   = Protected Mechanism

Special thread
   = <u>60% Lower Deflecton</u>

Tightest Systems
   = Shear Wall Performance

The AutoTight shrinkage compensator automatically expands as the building shrinks and settles.
This expansion helps keep shear walls tight and performing to the code.

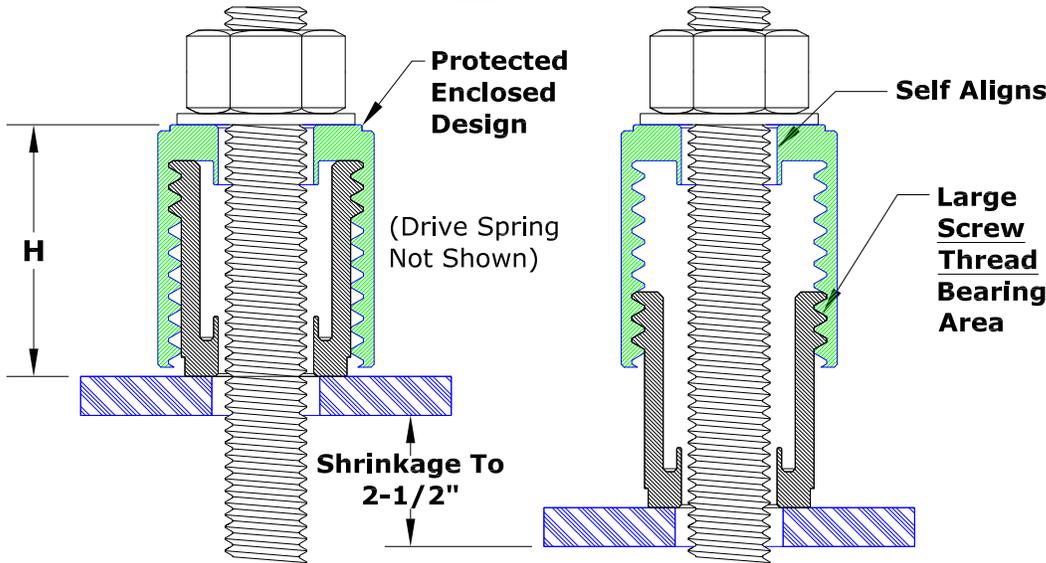**Code Listed: ICC ESR-1344, COLA RR-25480, Tested to AC 316 & AC 391, IBC 2012 Rated**

Material: Aluminum - 6061 Alloy, **Finish:** Light Oil
Steel - 12L14, **Finish:** Zinc chromate, moly disulfide lubricant.

Installation: Place a steel bearing plate over the rod and onto the wood
Place the AT over the rod and onto the bearing plate,
Place Washer over the rod and onto the AT, Install and tighten Nut,
Remove the activation screw.
Listen for release

Threaded Mechanism = <u>NO</u> Backlash (Δr), No Looseness!

Protected Enclosed Design

(Drive Spring Not Shown)

H

Shrinkage To 2-1/2"

Self Aligns

Large Screw Thread Bearing Area

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**No Backlash with AutoTight
=
Much Better Shear Wall Performance**

Some shrinkage compensators use ratchets. These ratchets can introduce looseness (backlash) up to $\frac{3}{16}$".

This looseness can reduce the shear wall capacity by 40%.

**See Videos at
www.comminsmfg.com**

**High Capacity, NO Backlash,
"Floating" Take-Up Device = Jam resistant
Tested at 3°out-of-plumb. (3° = 6-1/4" in 10 feet.)
Stackable: Doubles Expansion to 5"
Tested to 3 times rated load.
Fully functional at 2-$\frac{1}{2}$ times rated load**

	Model Number	Rod Diameter	Matl.	Dimensions (Inches)		Rated Take-Up (Inches)	Allowable Load Pounds	Average Ultimate Pounds	Seating Increment Δ_R*	Deflection at Allowable Load Δ_A"
				Dia.	H					
New	AT4A-1.5	1/2"	Aluminum	1-1/2"	3"	1-1/2"	6,450	24,857	0.000"	0.011
New	AT4A-2.5				4-1/16"	2-1/2"				
New	AT6A-1.5	3/4"		2-1/8"	3-3/16"	1-1/2"	10,550	40,737		0.011
New	AT6A-2.5				4-3/16"	2-1/2"				
	AT 75	3/4"	Steel	2"	3"	1.10"	16,450	50,533	0.002"	0.024
	AT 75-2.5			2"	4"	2-1/2"	15,183	54,728		0.020
	AT 100	1"		2-1/4"	3-1/8"	1.10"	25,300	78,067		0.032
	AT 125	1-1/4"		2-3/4"	3-1/8"	1.12"	34,500	104,683		0.016
New	AT 200-2.0	2"		4"	3-3/4"	2.25"	50,000	150,000		0.024

Note: Δ_R= Average Travel and Seating Increment is the "Lost Motion" with device direction change from advancing to load resistance. This is sometimes called "Backlash".

*The AutoTight Aluminum Shrinkage Compensator has 0.0002" backlash (Δ_r).