Shrinkage compensators require evaluations for: fit, strength, expansion and deflection. Two separate deflection evaluations must be added for total deflection. These are load-deflection (△a) and Delta r (△r). Note that Delta r is the slack (lost motion) that results from load reversal due to shrinkage or movement.

Load-deflection (△a) is determined by adjusting design load deflection to the actual load.
Delta r (△r) is independent of load and is **added in full** to the system deflection. Both must be done!

AutoTight Example: Reaction Load = 11,000 pounds

Shrinkage Compensator AT 100 (Select based on the rod size)
Rated Capacity: 25,300 pounds.
Deflection Maximum: 0.032", △r = 0.002"
Expansion 1.1" (ICC ESR 1344)

Calculate Deflection: Load Deflection = 0.032 * 11,000/25,300 = 0.014"
Delta r (△r) (From Table) = 0.002"
Total Deformation = 0.016"

For System Elongation: Sum Rod, bearing plate and Shrinkage compensator deformation.

Ratchet Example: Reaction Load = 11,000 pounds

Shrinkage Compensator CN-8 (Select based on the rod size)
Rated Capacity: 42,130 pounds.
Deflection Maximum: 0.024", △r = 0.105" (ICC-ESR 2190)

Calculate Deflection: Load Deflection = 0.024 * 11,000/42,130 = 0.006"
Delta r (△r) = 0.105"
Total Deformation = 0.111"

Note: the full value of is added to the system elongation per AC 316 and AC 391 section 3.1.1.

Watch a working Demonstration shearwall looseness introduced into systems
See Video 3 on our web site for A 2 minute Video that clearly demonstrates △r.

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

No Backlash with AutoTight
=
Better Shear Wall Performance

See Videos at www.comminsmfg.com

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

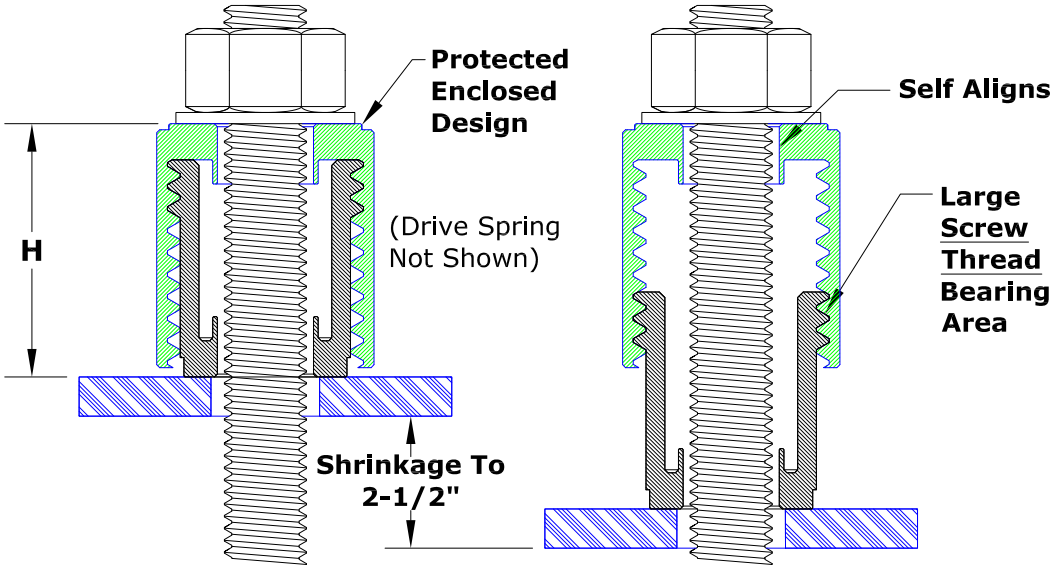
Code Listed: ICC ESR-1344, COLA RR-25480, Tested to AC 316 & AC 391 IBC 2009 Rated

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.

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

Threaded Mechanism = NO Backlash (Δr), No Looseness!



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 2-½ times rated load

No Backlash with AutoTight
=
Much Better Shear Wall Performance

Some shrinkage compensators use ratchets. These ratchets can introduce looseness (backlash) up to 3/16".

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

See Videos at www.comminsmfg.com

	Model Number	Rod Diameter	Matl.	Dimensions (Inches) Dia.	Dimensions (Inches) H	Rated Take-Up (Inches)	Allowable Load Pounds	Average Ultimate Pounds	Seating Increment Δ_r (inches) (Backlash)	Deflection at Allowable Load Δ_A"
New	AT4A-1.5	1/2"	Aluminum	1-1/2"	3"	1-1/2"	**7,273**	**24,857**	0.000"*	0.014
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"	**13,579**	**40,737**		0.014
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

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).**