

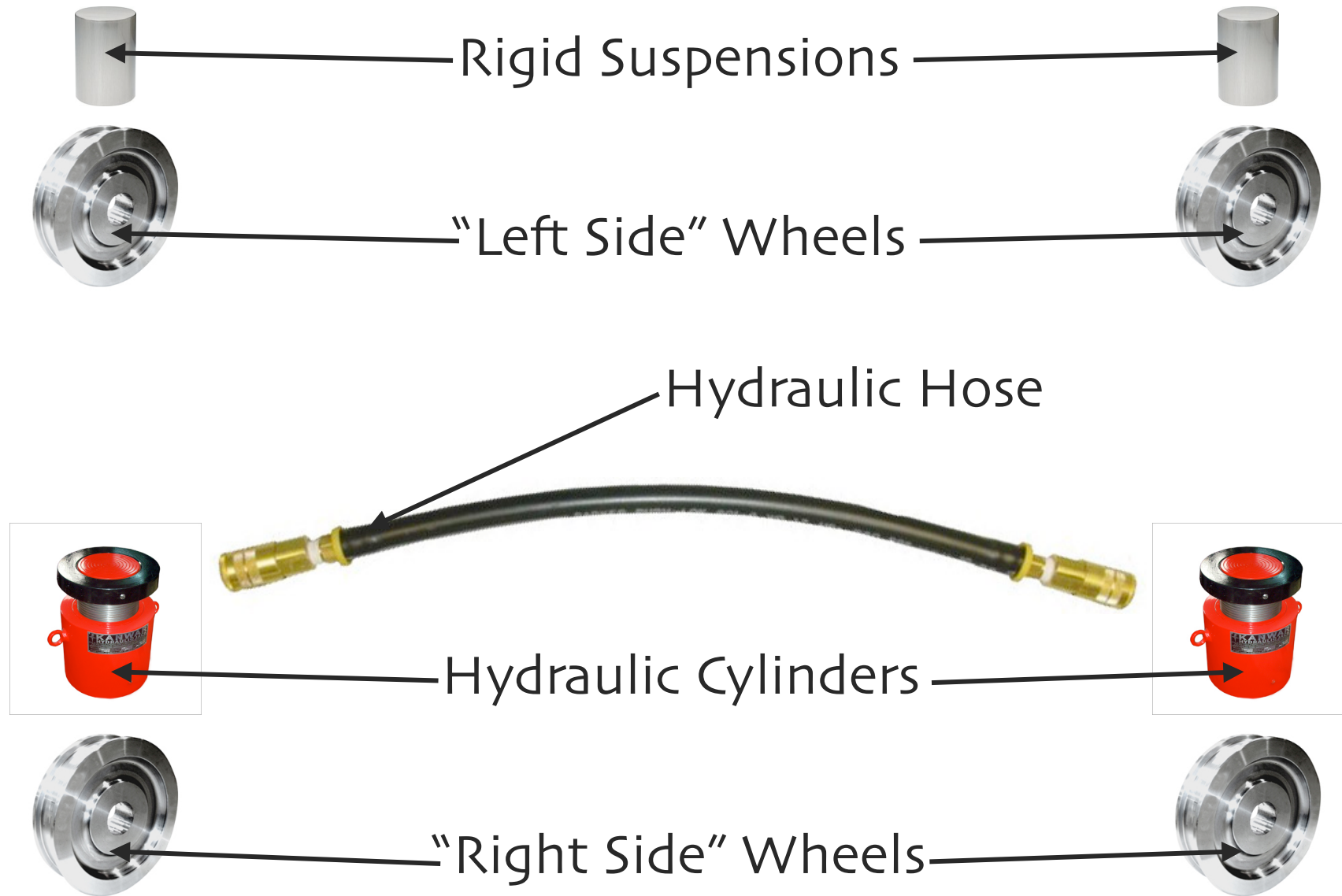
The TS Platform: Suggestions for Engineers

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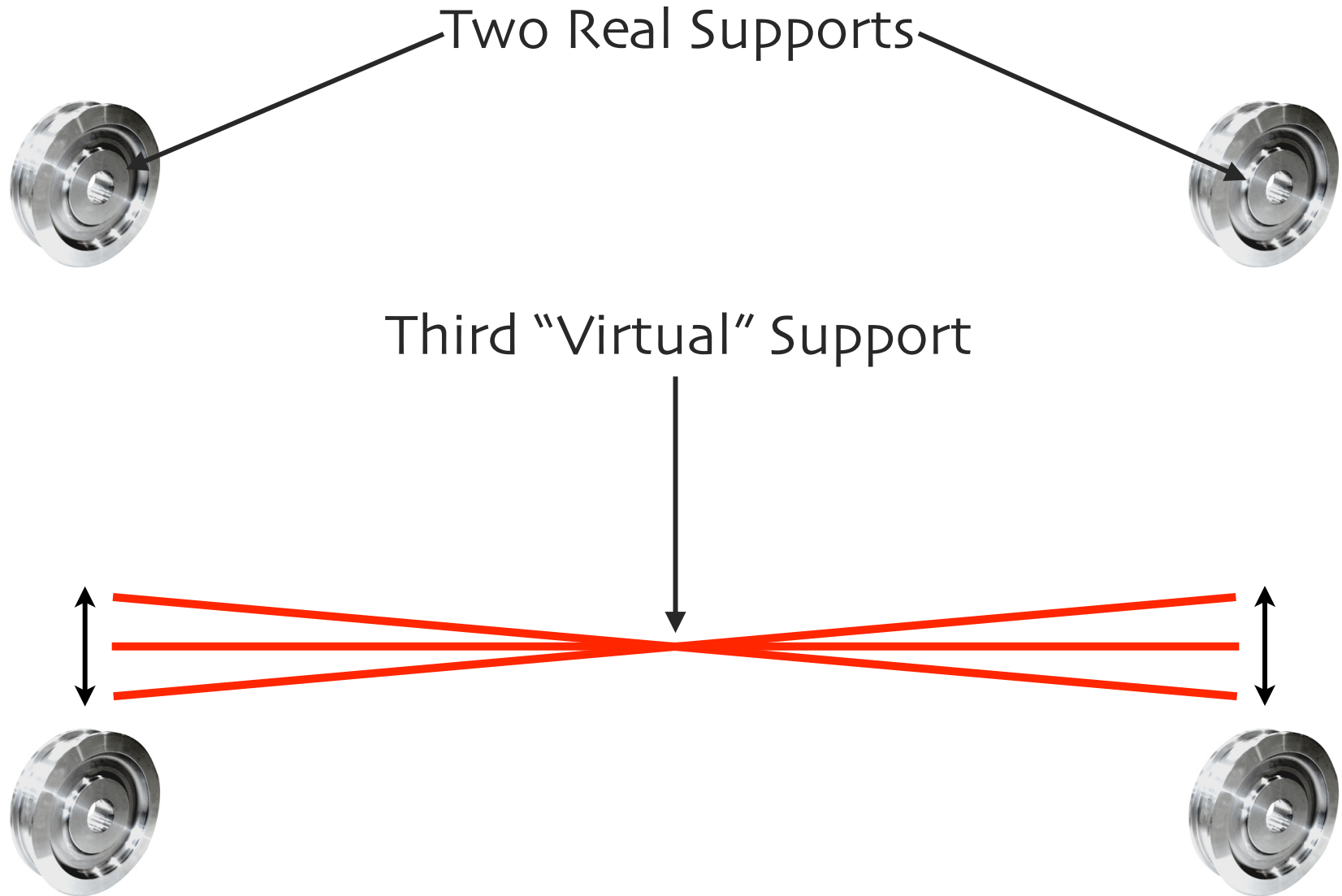
Design Guidelines

- Clearance for target dump installation
- Small stresses and deformations on the platform
- Capability to cope with floor unevenness
 - 3 supports for movement “strictly”
- Fine positioning adjustment on the “standing” supports

3 Virtual Wheels on 4 Real Ones

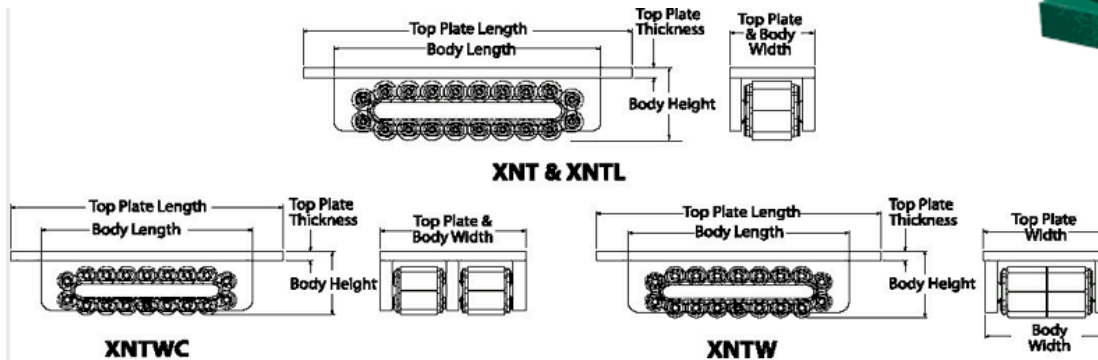
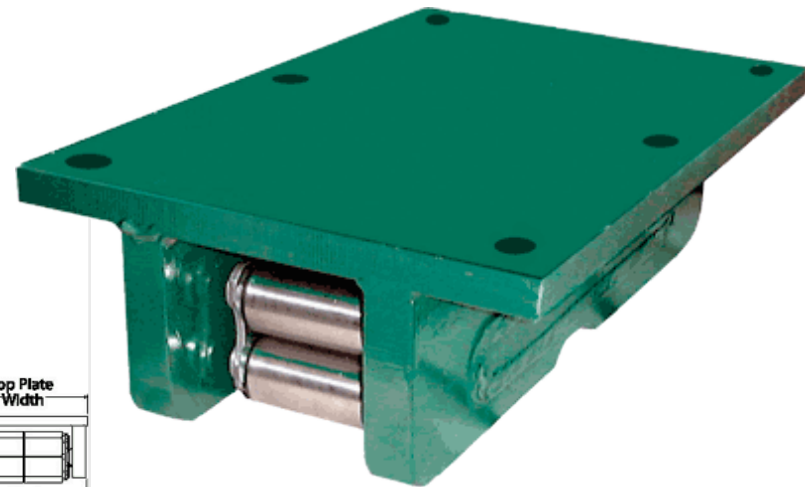


3 Virtual Wheels on 4 Real Ones



How I'd Do It "Low Profile"

- Instead of wheels, Hilman Rollers
- Low profile railway



	Body Dimensions			Top Plate Dimensions			Footprint			Weight lbs.(kgs)	
	Capacity Metric Tons	Length Inches (mm)	Height* Inches (mm)	Width Inches (mm)	Thickness Inches (mm)	Width Inches (mm)	Length Inches (mm)	Contact Rolls	Roll Dia. Inches (mm)		Roll Width Inches (mm)
100-XNT	100-tons	21.0 (533)	6.75 (171)	7.875 (200)	1.00 (25)	7.875 (200)	27.0 (686)	7	1-15/16 (49)	3-5/8 (92)	228 (103)
150-XNTL	150-tons	32.0 (813)	6.75 (171)	7.875 (200)	1.00 (25)	7.875 (200)	38.0 (965)	11	1-15/16 (49)	3-5/8 (92)	341 (155)
150-XNTW	150-tons	21.0 (533)	6.75 (171)	9.875 (251)	1.00 (25)	9.875 (251)	27.0 (686)	14	1-15/16 (49)	2-3/4 (70)	280 (127)
200-XNTL	200-tons	36.0 (914)	6.75 (171)	7.875 (200)	1.00 (25)	7.875 (200)	42.0 (1067)	14	1-15/16 (49)	3-5/8 (92)	396 (180)
200-XNTW	200-tons	21.0 (533)	6.75 (171)	11.5625 (294)	1.00 (25)	11.5625 (294)	27.0 (686)	14	1-15/16 (49)	3-5/8 (92)	333 (151)
200-XNTWC	200-tons	21.0 (533)	6.75 (171)	14.5 (368)	1.00 (25)	14.5 (368)	27.0 (686)	14	1-15/16 (49)	3-5/8 (92)	408 (185)
300-XNT	300-tons	34.0 (864)	10.0 (254)	10.75 (273)	1.50 (38)	10.75 (273)	42.0 (1067)	8	2-15/16 (74)	5 (127)	739(335)
500-XNT	500-tons	34.0 (864)	10.0 (254)	20.0 (508)	1.50 (38)	20.0 (508)	42.0 (1067)	16	2-15/16 (74)	5 (127)	1355 (615)
750-XNT	750-tons	34.0 (864)	10.0 (254)	27.5 (699)	1.50 (38)	27.5 (699)	42.0 (1067)	24	2-15/16 (74)	5 (127)	2009 (911)
1000-XOT	1000-tons	Consult factory for product specifications and weight									

* Height Includes Top Plate Thickness

100 tons:
Length 533mm
Width 208mm
Height 171mm



How I'd Do It "Low Profile"

- Low profile hydraulic cylinders
- Two 50t ones per roller

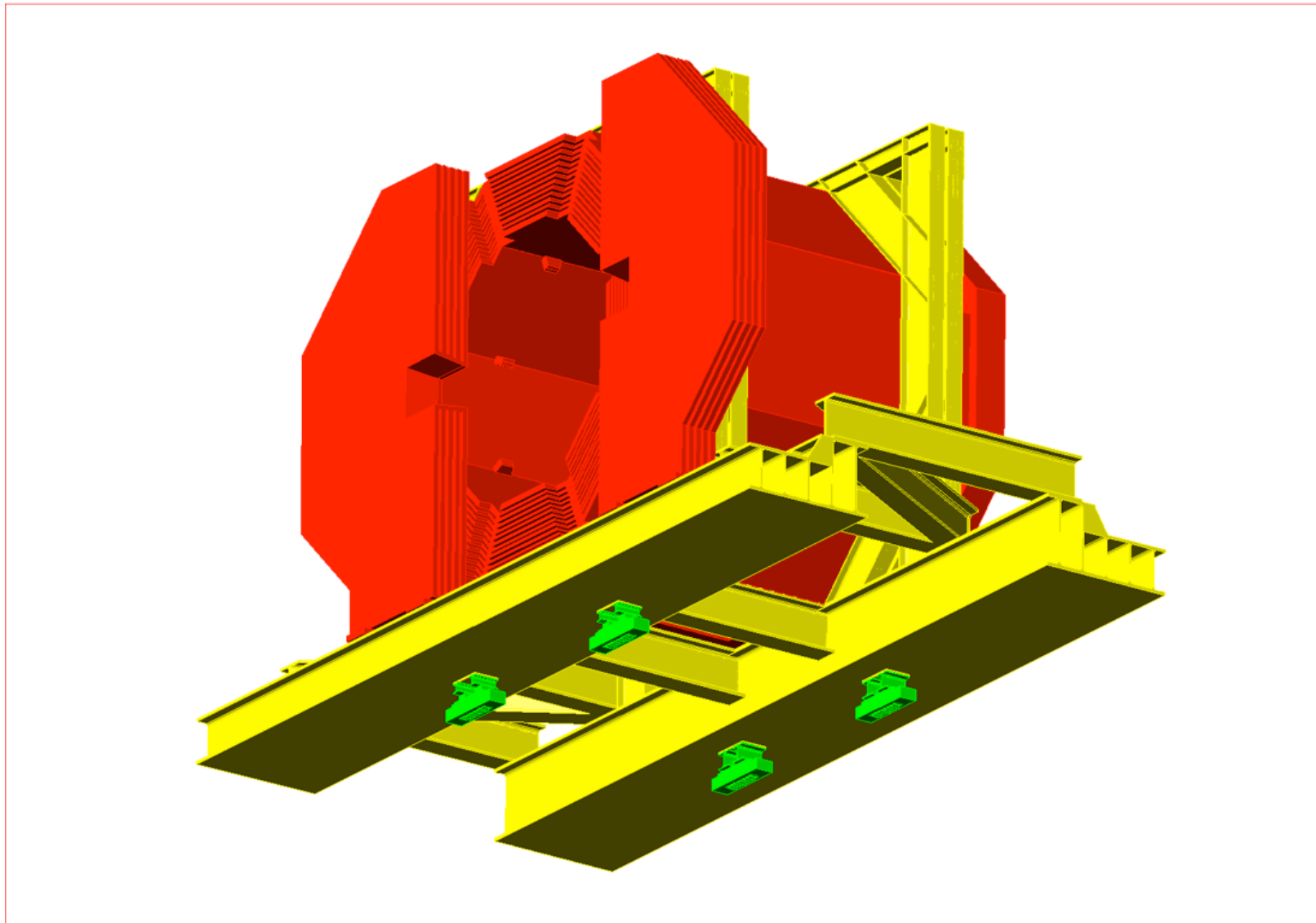


PRODUCT INFORMATION

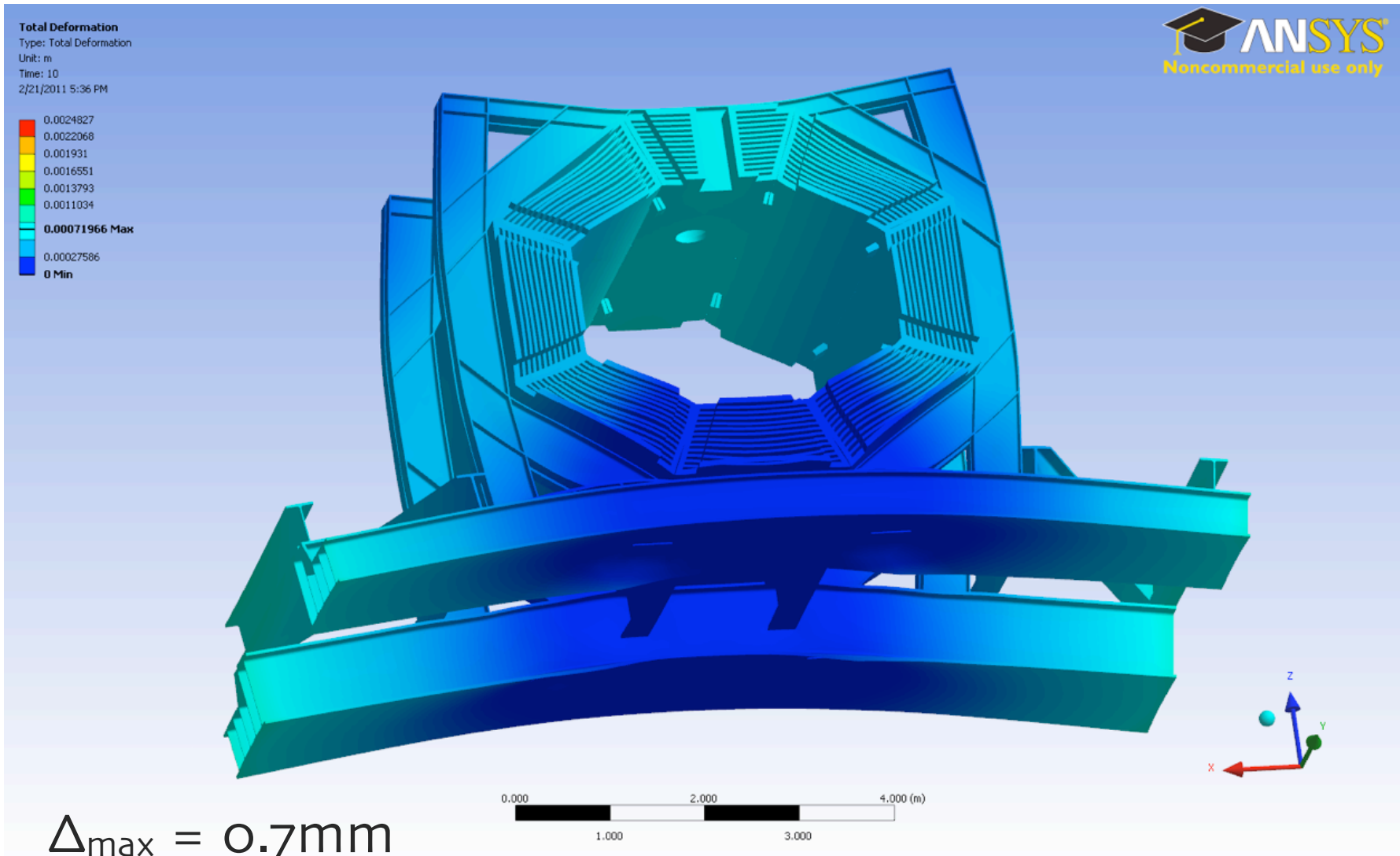
ITEM	Single Acting Cylinder
TYPE	Flat
MATERIAL OF CONSTRUCTION	Steel
CAPACITY (TONS)	50
STROKE (IN.)	0.63
OIL CAPACITY (CU.-IN.)	6.01
RETRACTED HEIGHT (IN.)	2.63
OUTSIDE DIA. (IN.)	5.50 x 4.50
PLUNGER DIA. (IN.)	2.75
INCLUDES	Female Coupler and Dust Cap
WEIGHT	15.00

Length 140mm
Width 115mm
Height 67mm
Stroke 16mm

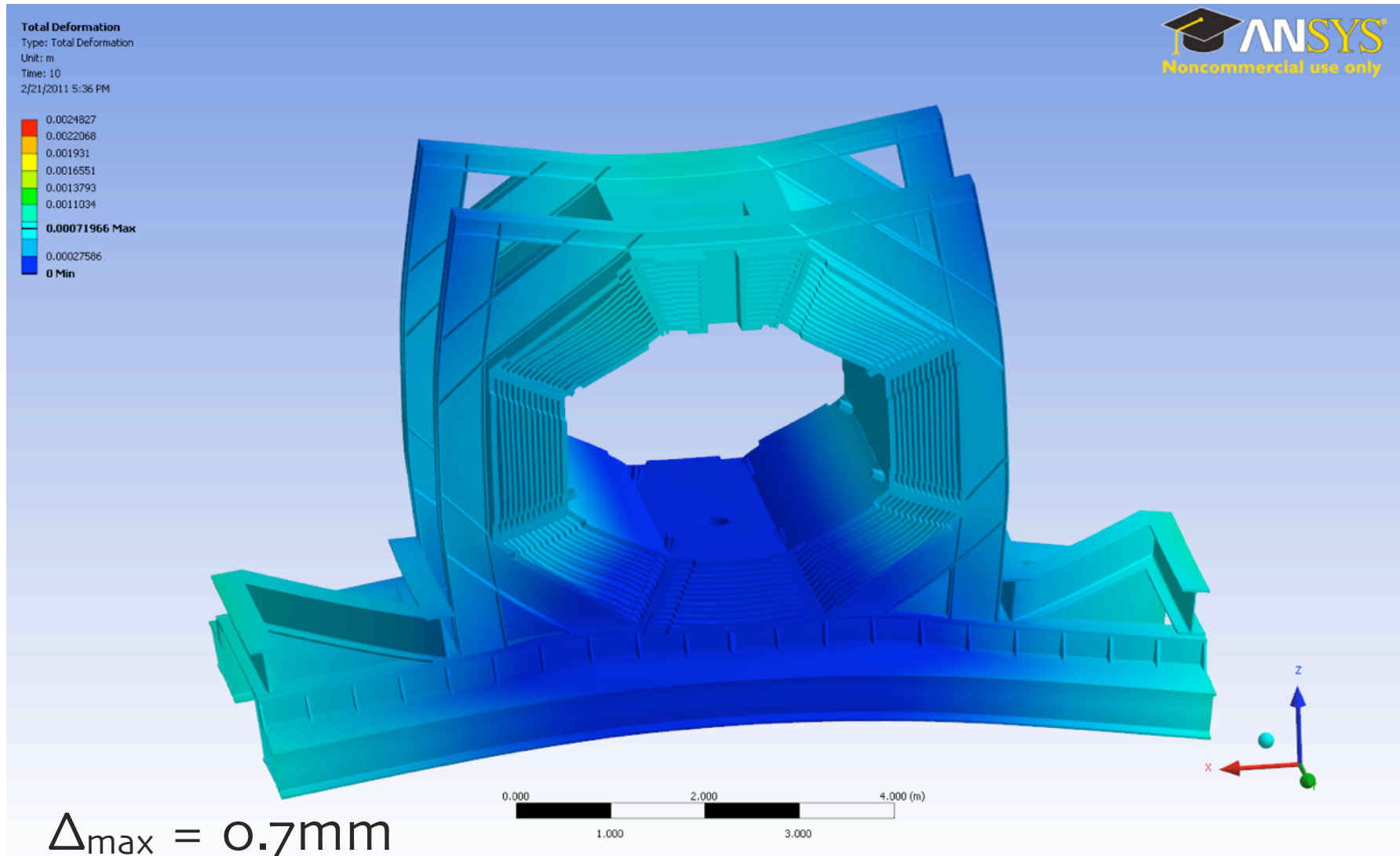
How It Could Look



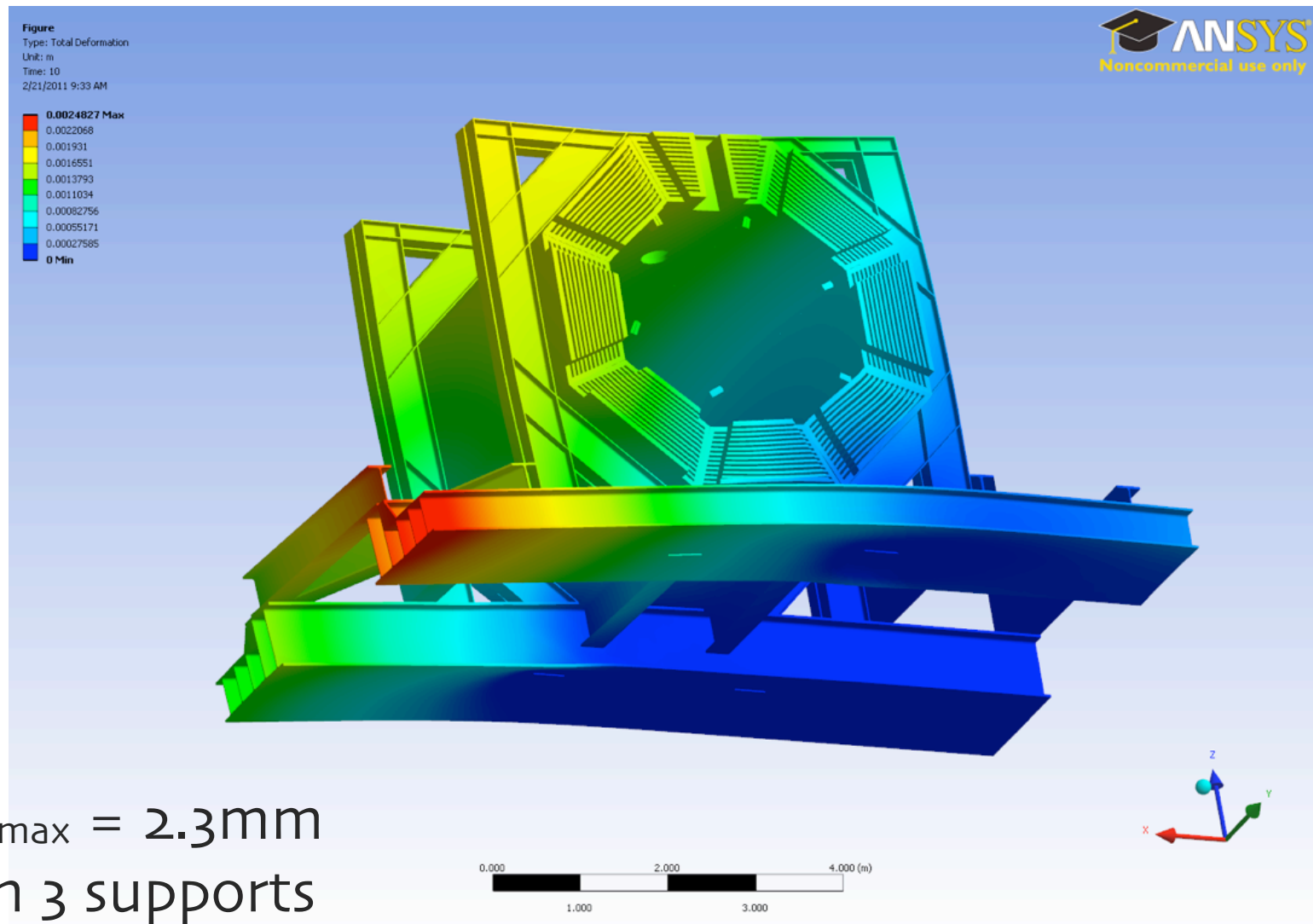
How It Could Work



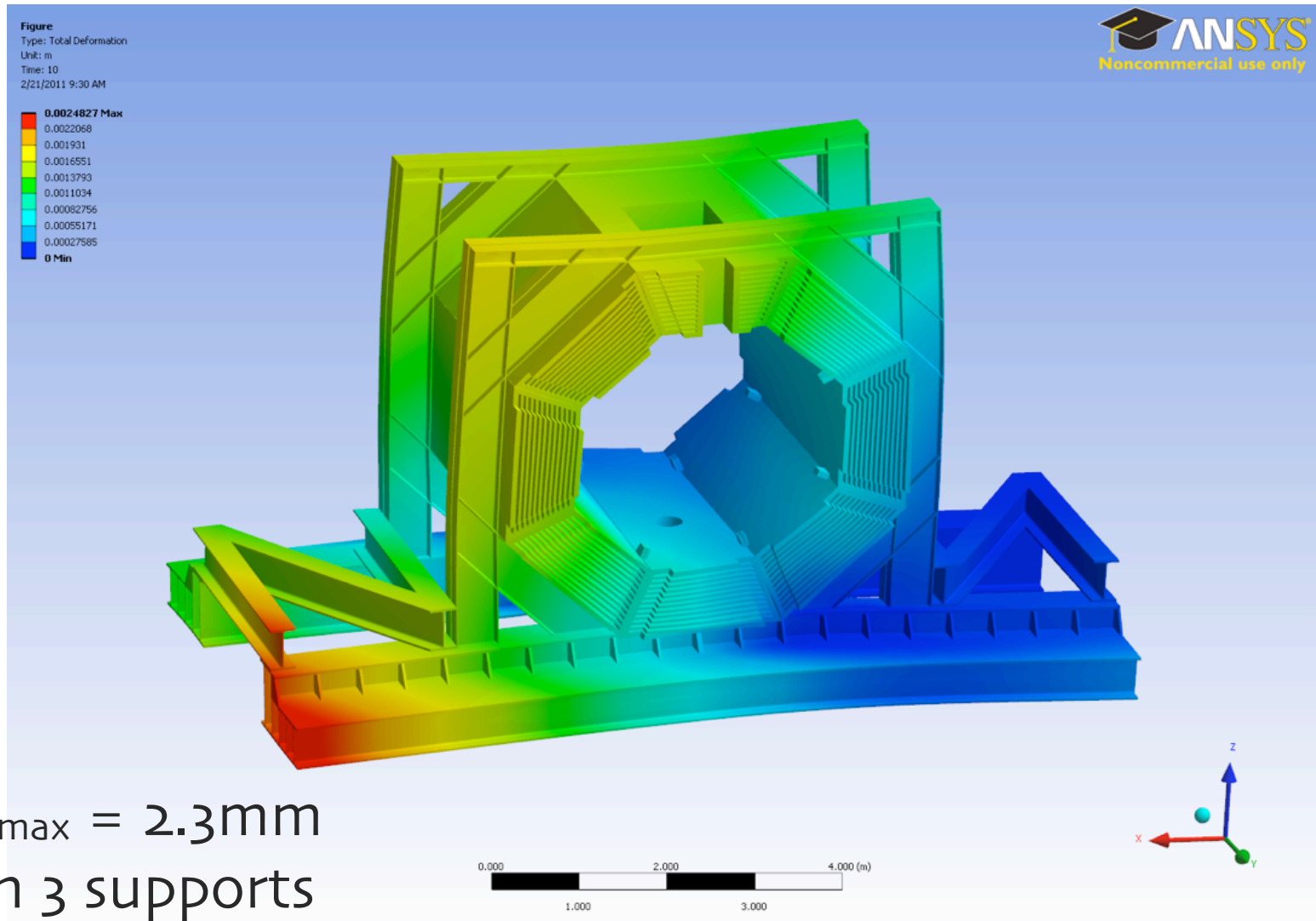
How It Could Work



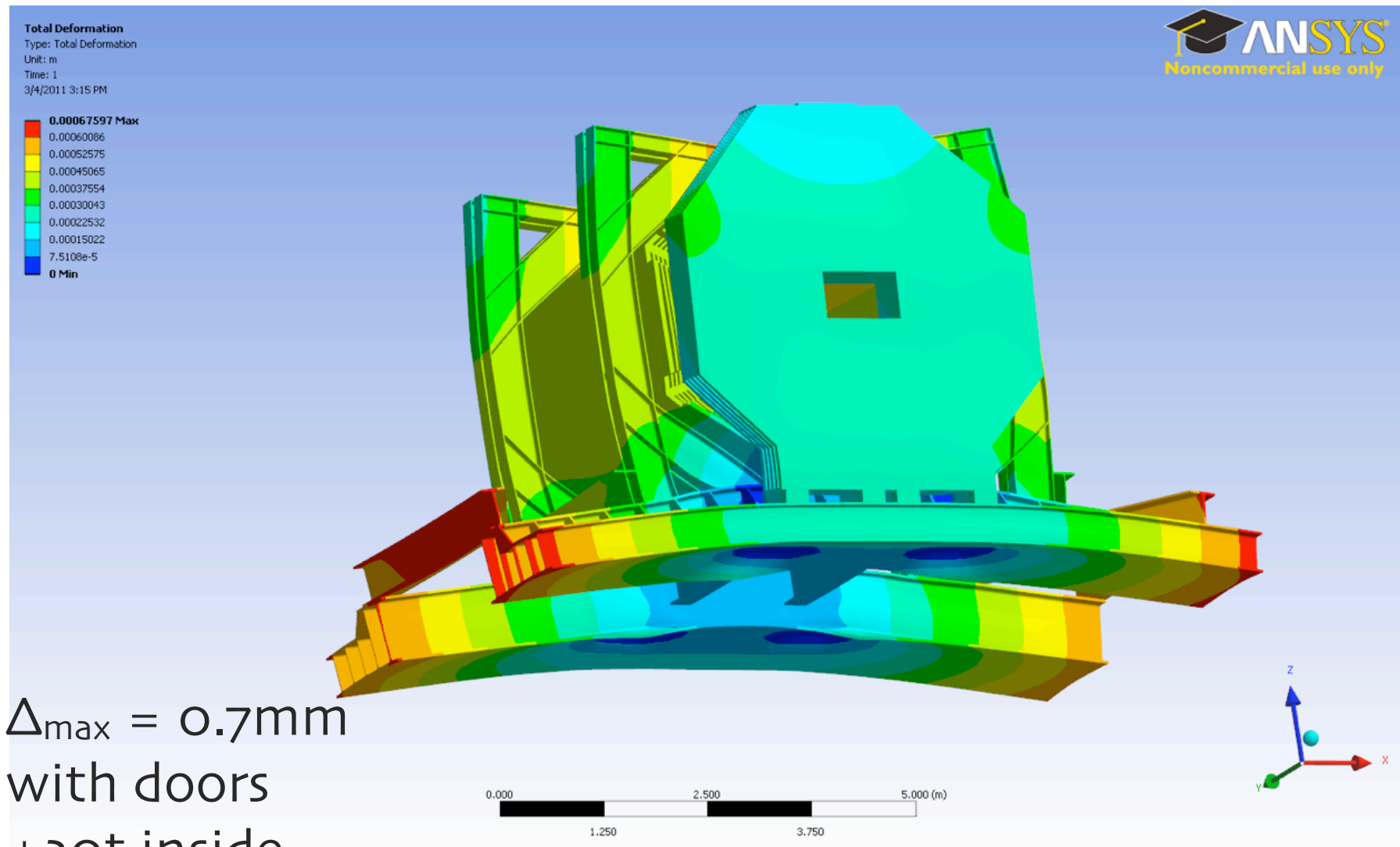
Anyhow, a Stiffer Platform...



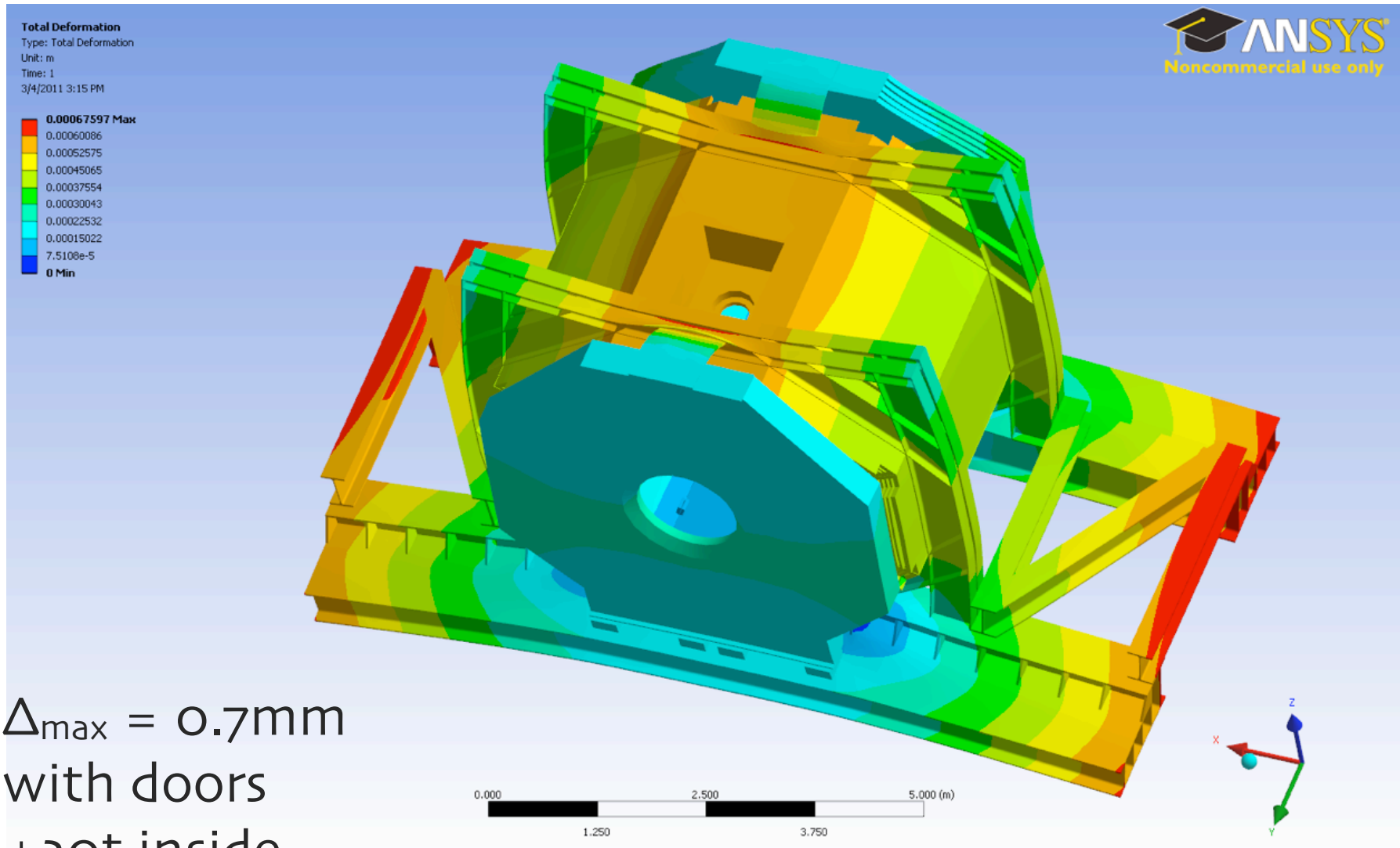
Anyhow, a Stiffer Platform...



With a More Complete Model



With a More Complete Model



Conclusions

- Three “virtual” supports can be achieved with 4 rollers
- The rollers+cylinders can be kept very thin
- The platform can be made thicker and stiffer
- The platform deformations during movement can be dramatically reduced down to less than 1mm
- Positioning and fixating in operation and garage position can be made with ~10 supports, with screw jacks and sliding pads