

# DIN ISO 3408-4:2011-04 (E)

## Ball screws - Part 4: Static axial rigidity (ISO 3408-4:2006)

---

<b>Contents</b>		<b>Page</b>
National foreword .....		3
National Annex NA (informative) Bibliography .....		3
1	Scope .....	4
2	Normative references .....	4
3	Terms and definitions .....	4
4	Symbols and subscripts .....	4
4.1	Symbols .....	4
4.2	Subscripts .....	5
5	Determination of static axial rigidity, R .....	6
5.1	General .....	6
5.2	Static axial rigidity, R .....	8
5.3	Static axial rigidity of ball screw, R <sub>bs</sub> .....	8
5.4	Static axial rigidity of ball screw shaft, R <sub>s</sub> .....	8
5.4.1	General .....	8
5.4.2	Rigid mounting of ball screw shaft at one end .....	8
5.4.3	Rigid mounting of ball screw shaft at both ends .....	9
5.5	Static axial rigidity of ball nut unit, R <sub>nu</sub> .....	9
5.5.1	Static axial rigidity of ball nut unit with backlash, R <sub>nu1</sub> .....	9
5.5.2	Static axial rigidity of symmetrically preloaded ball nut unit, R <sub>nu2,4</sub> .....	13
5.5.3	Correction for accuracy, f <sub>ar</sub> .....	15
Annex A (informative) Example calculation of static axial rigidity in preloaded symmetrical double nut system .....		17
Annex B (informative) Correction for load application, f <sub>al</sub> .....		20