

ANSYS Class3 Error Report

ERROR NO:
2013-16

Keywords:

BEAM188 BEAM189 LARGE DEFLECTION
BUCKLING MODAL ARBITRARY CROSS SECTION

Description of Error:

Results are incorrect for a modal or buckling analysis containing the 3-D 2-Node Beam [BEAM188] element or the 3-D 3-Node Beam [BEAM189] element if -

1. Large-deflection effects are included in the preceding static analysis [NLGEOM,ON],
and
2. Arbitrary beam section is used [SECTYPE,BEAM,ASEC],
and
3. The beam cross section has a non-zero centroid (i.e., CGy or CGz input with the SECDATA command is non-zero),
and
4. The beam is subjected to torsional loads.

Typical GUI Path(s):

Main Menu>Preprocessor>Sections>Beam>Common Sections

Other Comments:

The error is the result of the polar moment of inertia (I_{pp}) being incorrectly calculated; the severity of the impact on results increases as the centroid coordinates exceeds significantly the inertial entrees (I_{yy} , I_{zz}). The impact of this error on results may be negligible otherwise.

First Incorrect Version:

Release 5.5

Corrected In:

Release 15.0

Suggested User Action For Running on Uncorrected Version:

If possible, use one of the standard common beam cross sections.

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