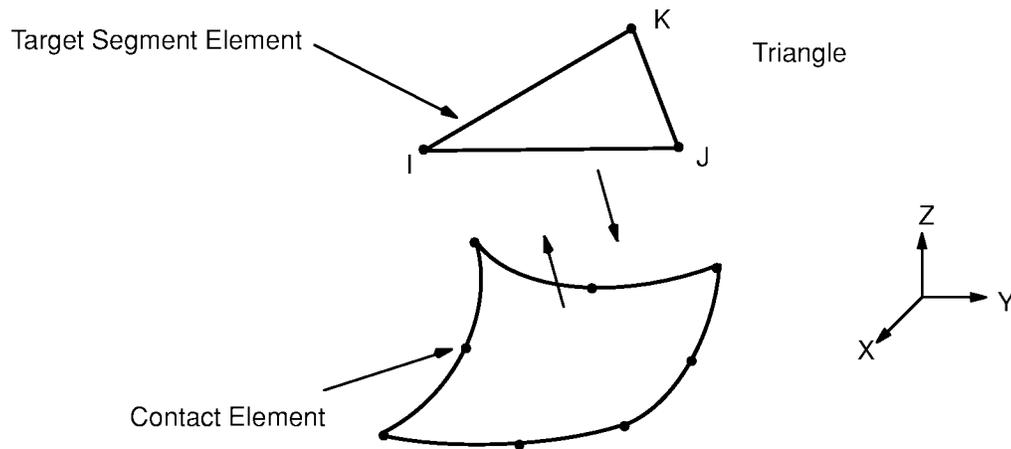


14.170 TARGE170 — 3-D Target Segment



14.170.1 Introduction

In studying the contact between two bodies, the surface of one body is conventionally taken as a contact surface and the surface of the other body as a target surface. The “contact–target” pair concept has been widely used in finite element simulations. For rigid–flexible contact, the contact surface is associated with the deformable body; and the target surface must be the rigid surface. For flexible–flexible contact, both contact and target surfaces are associated with deformable bodies. The contact and target surfaces constitute a “Contact Pair”.

TARGE170 is used to represent various 3–D target surfaces for the associated contact elements (CONTA173 and CONTA174). The contact elements themselves overlay the solid elements describing the boundary of a deformable body that is potentially in contact with the rigid target surface, defined by TARGE170. Hence, a “target” is simply a geometric entity in space that senses and responds when one or more contact elements move into a target segment element.

14.170.2 Segment Types

The target surface is modelled through a set of target segments; typically several target segments comprise one target surface. Each target segment is a single element with a specific shape or segment type. TARGE170 supports eight 3–D segment types; see Figure 14.170–1

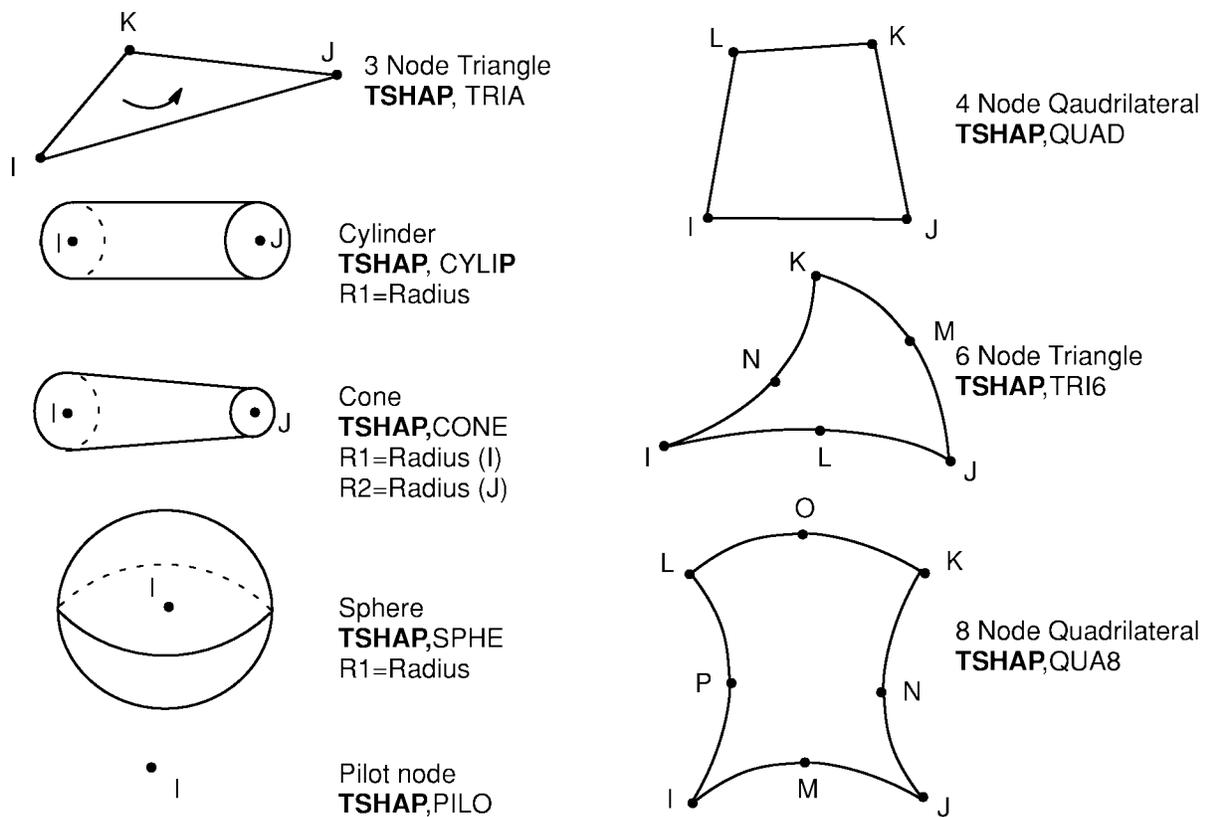


Figure 14.170-1 3-D Segment Types

14.170.3 Reaction Forces

The reaction forces on the entire rigid target surface are obtained by summing all the nodal forces of the associated contact elements. The reaction forces are accumulated on the pilot node. If the pilot node has not been explicitly defined by the user, one of the target nodes (generally the one with the smallest number) will be used to accumulate the reaction forces.