

*ELEMENT_SPH_{OPTION}

Available options include:

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VOLUME

Purpose: Define a lumped mass element assigned to a nodal point.

If the VOLUME option is used, the field for MASS of the following cards is treated as particle volume. It has the same effect as giving a negative number in each field.

Card	1	2	3	4	5	6	7	8	9	10
Variable	NID	PID	MASS							
Type	I	I	F							
Default	none	none	0.							
Remarks			1							

VARIABLE	DESCRIPTION
NID	Node ID and Element ID are the same for the SPH option.
PID	Part ID to which this node (element) belongs.
MASS	GT.0: Mass value LT.0: Volume. The absolute value will be used as volume. The density ρ will be retrieved from the material card defined in PID. SPH element mass is calculated by $ MASS \times \rho$.

Remarks:

- Axisymmetric SPH.** Axisymmetric SPH (IDIM = -2 in *CONTROL_SPH) is defined on the global XY-plane, with Y-axis as the axis of rotation. An axisymmetric SPH element has a mass of ρA , where ρ is its density and A is the area of the SPH element. A can be approximated by the area of its corresponding axisymmetric shell element (see Figure 17-33). The mass printout in the d3hsp file is the mass per radian, that is, $\rho A x_i$. See Figure 17-34.

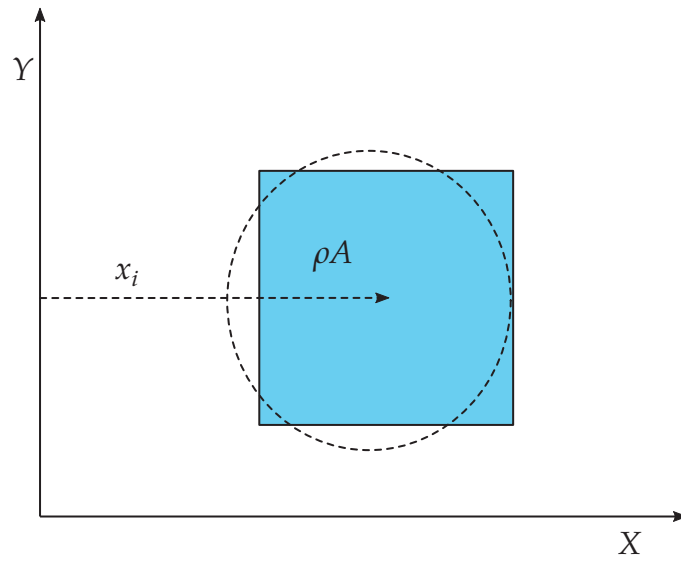


Figure 17-33. Schematic of axisymmetric SPH cross section

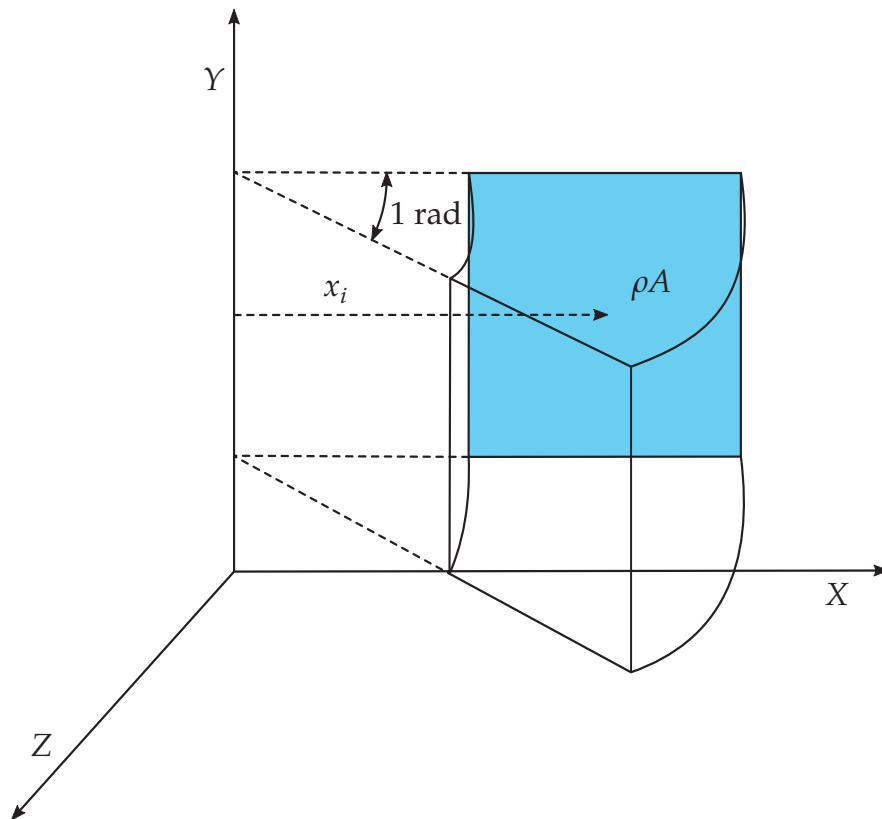


Figure 17-34. Mass printout in d3hsp

NOTE: This keyword was replaced by *CONTROL_FORMING_TRIMMING starting in Revision 87566.