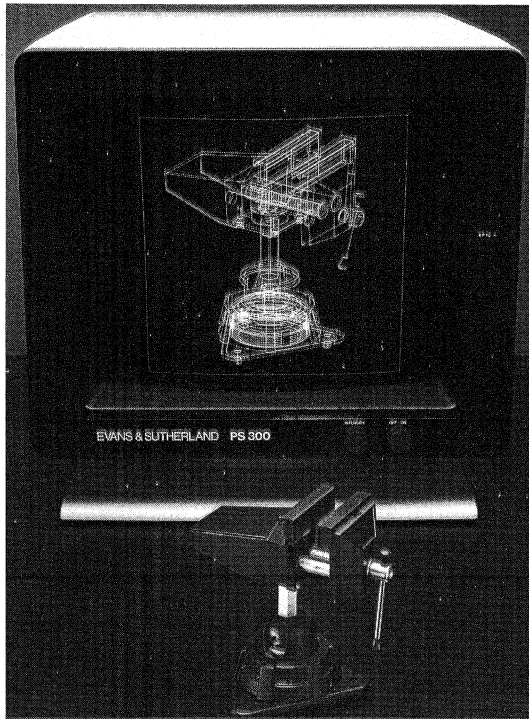


ROMULUS

EVANS & SUTHERLAND

SOLID GEOMETRIC MODELER



ROMULUS is an interactive three-dimensional solid geometric modeler developed by Shape Data, Ltd., of Cambridge, England, a wholly owned subsidiary of Evans & Sutherland. ROMULUS is a design tool, providing the user with a comprehensive command language to build true geometric component models, modify them, manipulate them and interrogate information about them. It is a program that allows a designer to directly interact with the model being created.

ROMULUS stores unambiguous shape information in a data structure which allows non-geometric information, such as material type, surface finish, part number, etc., to be associated with the model. Solid models are stored as explicit representations of the bounding faces, edges and vertices, as well as the geometrical data, giving the coordinates of each vertex, the form of each edge, and the surface of each face.

ROMULUS provides an interactive, user-friendly interface, with features such as extensive user prompting and help facilities; keyboard, menu and cursor input; and comprehensive message and error output. ROMULUS comes with complete user documentation. Specialized training courses are available.

Surfaces	Planar Cylindrical Conical	Spherical Toroidal	
Curves	Straight lines Circles	Ellipses Intersection Curves	
Primitives	Cube Sphere Torus	Cone Wire Block	Cylinder Prism Sheet
Boolean Operations	Unite objects Subtract objects from others Find common intersection between objects Check for interference Boolean operations work on solid and sheet objects		
Sectioning Operations	Section with infinite planes or cylinders Section with arbitrary profiles—broaching Extract profile sections from model		
Defining Geometry	Construct 2- and 3-dimensional geometric points, points of intersection and tangency, and curves and surfaces Grid for profile generation		

Sweeping	Linear and rotational sweeping Sweeping of lines to produce ducting and piping Sweeping of sheets to create solids	
Local Operations	Fillets and rounds by blending edges Chamfers on edges	
Positioning	Move models in any direction Rotate models about any axis Mirror objects about any plane Scale models about any point Locate objects relative to one another	
Features	Identification of useful features, such as boss, pocket, etc. Translations, rotation, removal and copying of features	
Modifying	Copy bodies Rename entities	Build bodies by adding edges
Removing	Delete bodies, construction geometry, and superfluous edges	
Viewing	Wireframe rendering Full hidden line removal Local hidden line removal Greyscale pictures Cross-hatching of faces Radial hatching of curved faces Labeling of topological and geometrical entities Display of construction entities Viewing from any direction Rotate view Zoom in or out Stereo views	
Color	Separate colors for bodies, hatching, construction lines, menu, etc. Color shading	
Dimensioning	Linear, radial, diametric, and angular dimensions Textual annotation	
Utilities	Enquire about geometry of model List topological entities of model Save model in textual neutral file Save interactive modeling session file Retrieve stored model(s) Execute previously generated ROMULUS command files Plotting	
Mass Property Calculations	Volume Surface area Center of gravity	Principle axes Moments of inertia
Interfaces	Drafting systems Finite element mesh generation systems Numerical control and manufacturing systems	

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