

FLUID MECHANICS, INTERNAL FLOW SERIES:TITLES

The ESDU Fluid Mechanics, Internal Flow Series contains Items covering a wide range of topics, many of which will be of interest to aerospace systems engineers. The following is a complete list of the Items to be found in that Series.

Item No	Title
General	
CFA	Conversion factors.
FMI1	Introductory memorandum on the pressure losses in internal flow systems.
Compressible flow relationships	
67035	Jet flow parameters.
74028	One-dimensional compressible gas flow in ducts.
95011	One-dimensional representation of steady, spatially non-uniform flow. An equivalent mean-value set for compressible flow. Part 1. Implementation for an ideal, calorically-perfect gas.
97029	One-dimensional representation of steady, spatially non-uniform flow. An equivalent mean-value set for compressible flow. Part 2. Implementation for an ideal, thermally-perfect gas.
03012	Computer program for calculation of mean value properties for non-uniform compressible flows
Straight pipes	
66027	Friction losses for fully-developed flow in straight pipes.
74029	Friction losses for fully-developed flow in straight pipes of constant cross section - subsonic compressible flow of gases.
79014	Losses caused by friction in straight pipes with systematic roughness elements.
TN08008	CFD studies for the validation of friction losses and flow characteristics in circular straight pipes with smooth walls (Web and CD only)
TN08009	CFD validation studies for transitional flow in circular straight pipes with smooth walls (Web and CD only)

Item No	Title
Bends, branches and junctions	
73022	Pressure losses in three-leg pipe junctions: dividing flows.
73023	Pressure losses in three-leg pipe junctions: combining flows.
83037	Pressure losses in curved ducts: single bends.
77009	Pressure losses in curved ducts: interaction factors for two bends in series.
77029	Pressure losses in curved ducts: coils.
Duct fittings and equipment	
66030	Pressure losses in flowmetering devices.
69022	Pressure losses in valves.
72009	Pressure drop in ducts across round-wire gauzes normal to the flow.
74040	Pressure loss during crossflow of fluids with heat transfer over plain tube banks without baffles.
79034	Crossflow pressure loss over banks of plain tubes in square and triangular arrays including effects of flow direction.
81021	Pressure losses caused by obstructions in ducts or pipes.
81039	Flow of liquids. Pressure losses across orifice plates, perforated plates and thick orifice plates in ducts.
82009	Compressible flow of gases. Pressure losses and discharge coefficients of orifice plates, perforated plates and thick orifice plates in ducts.
TN07007	Incompressible flow through orifice plates – a review of the data in the literature (Web and CD only)
Ejectors and jet pumps	
92042	Ejectors and jet pumps: computer program for design and performance for compressible gas flow.
93022	Ejectors and jet pumps: computer program for design and performance for liquid flow.
85032	Ejectors and jet pumps. Design and performance for incompressible liquid flow.
86030	Ejectors and jet pumps. Design for steam driven flow.
94046	Ejectors and jet pumps: computer program for design and performance for steam/gas flow.