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Nota di contenuto

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1.7.3 Rectangular Duct with Bulk Reacting Lining 1.7.4 Circular Duct with Bulk Reacting Lining; 1.8 Three-Dimensional Waves along Elliptical Ducts; References; 2. Theory of Acoustic Filters; 2.1 Units for the Measurement of Sound; 2.2 Uniform Tube; 2.3 Radiation Impedance; 2.4 Reflection Coefficient at an Open End; 2.5 A Lumped Inertance; 2.6 A Lumped Compliance; 2.7 End Correction; 2.8 Electroacoustic Analogies; 2.9 Electrical Circuit Representation of an Acoustic System; 2.10 Acoustical Filter Performance Parameters; 2.10.1 Insertion Loss, IL; 2.10.2 Transmission Loss, TL
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3.11.1 Three-Duct Cross-Flow Expansion Chamber Element

Sommario/riassunto

"Fully updated second edition of the premier reference book on muffler and lined duct acoustical performance. Engine exhaust noise pollutes the street environment and ventilation fan noise enters dwellings along with fresh air. People have become conscious of their working environment. Governments of most countries have responded to popular demand with mandatory restrictions on sound emitted by automotive engines, and a thorough knowledge of acoustics of ducts and mufflers is needed for the design of efficient muffler

configurations. This fully updated Second Edition of Acoustics of Ducts and Mufflers deals with propagation, reflection and dissipation/absorption of sound along ducts/pipes/tubes, area discontinuities, perforated elements and absorptive linings that constitute the present-day mufflers and silencers designed to control noise of exhaust and intake systems of automotive engines, diesel-generator sets, compressors and HVAC systems. It includes equations, figures, tables, references, and solved examples and unsolved exercises with answers, so it can be used as a text book as well as a reference book. It also offers a complete presentation and analysis of the major topics in sound suppression and noise control for the analysis and design of acoustical mufflers, air conditioning and ventilation duct work. Both the fundamentals and the latest technology are discussed, with an emphasis on applications. Deals with reactive mufflers, dissipative silencers, the frequency-domain approach, and the time-domain approach. Fully updated second edition of the premier reference book on muffler and lined duct acoustical performance, in one complete volume. Presents original new research on topics including baffle silencers and louvers, 3D analytical techniques, and flow-acoustic analysis of multiply-connected perforated-element mufflers. Includes a general design procedure to help muffler designers in the automotive industry, exhaust noise being a major component of automobile and traffic noise pollution. Written by an expert with four decades' experience in teaching to graduate students, publishing extensively in reputed international journals, and consulting with industry for noise control as well as designing for quietness. --
