

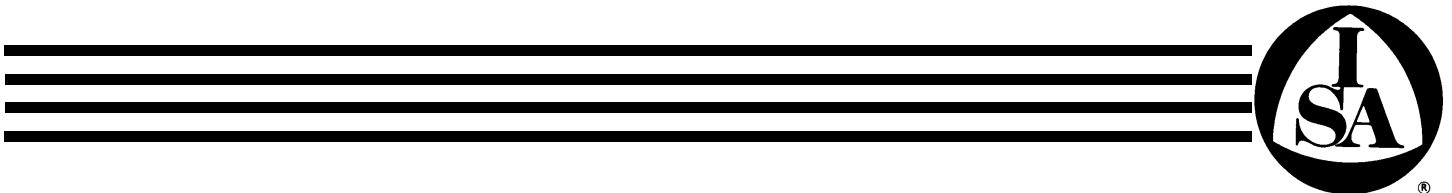
**ISA-RP75.23-1995**

Approved June 2, 1995

Recommended Practice



# **Considerations for Evaluating Control Valve Cavitation**



ISA-RP75.23, Considerations for Evaluating Control Valve Cavitation

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## Preface

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## 1 Scope

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This recommended practice is intended for control valves used in the control of process fluids and is not intended to apply to fluid power components. The reader and user should be familiar with fluid mechanics fundamentals and ISA standards ANSI/ISA S75.01 and ANSI/ISA S75.02 on valve sizing and testing. Definitions of terms in this document are intended for general understanding; more rigorous definitions are found in the references.

Noise measurement and prediction methods are beyond the current scope of this document. Methods of liquid flow noise measurement and prediction may be found in standards of the International Electrotechnical Commission, CEI/IEC documents 534-8-2 and 534-8-4. The relationship between cavitation parameters used in this recommended practice and those of the IEC documents is discussed in [Annex B](#).

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## 2 Purpose

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Cavitation as an applied science has not evolved to the highly refined level of that supporting the more traditional control valve sizing calculations. However, there is a great need by users and manufacturers alike for practical information in this area. The purpose of this document is to supply that information, and to that end it is necessarily broad in scope. It embodies several objectives:

- a) to provide educational material in a background section that condenses the literature and educates the reader in state-of-the-art valve cavitation knowledge and practice;
- b) to establish a basis for communication by defining cavitation parameters and nomenclature;
- c) to propose methods for evaluating the cavitation characteristics of individual control valves through testing procedures and application experience; and
- d) to offer guidelines for selecting control valves for given applications.

ISA Subcommittee SP75.16 recognizes that the science of cavitation is in its infancy in terms of defining the behavior of cavitation in complex valve geometry. The final objective of this recommended practice is to promote additional research and testing. Subsequently, this practice can serve as a starting point for those seeking to advance the state of the art.