

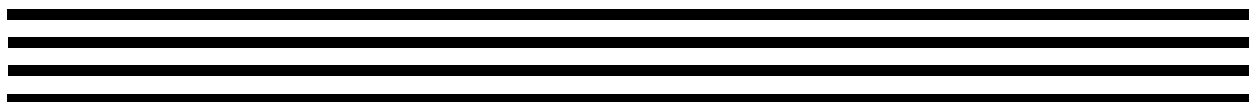
**ANSI/ISA-S75.02-1996**

Approved October 1, 1996

Standard



# **Control Valve Capacity Test Procedures**



ANSI/ISA-S75.02 — Control Valve Capacity Test Procedures

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## Contents

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<b>1 Scope</b> .....	<b>9</b>
<b>2 Purpose</b> .....	<b>9</b>
<b>3 Nomenclature</b> .....	<b>9</b>
<b>4 Test system</b> .....	<b>11</b>
4.1 General description .....	11
4.2 Test specimen .....	11
4.3 Test section .....	11
4.4 Throttling valves .....	12
4.5 Flow measurement .....	12
4.6 Pressure taps .....	12
4.7 Pressure measurement .....	12
4.8 Temperature measurement .....	13
4.9 Installation of test specimen .....	13
4.10 Accuracy of test .....	14
<b>5 Test fluids</b> .....	<b>14</b>
5.1 Incompressible fluids .....	14
5.2 Compressible fluids .....	14
<b>6 Test procedure — incompressible fluids</b> .....	<b>14</b>
6.1 $C_V$ Test procedure .....	14
6.2 $F_L$ Test procedure.....	16
6.3 $F_P$ Test procedure .....	17
6.4 $F_{LP}$ Test procedure.....	17
6.5 $F_R$ Test procedure .....	17
6.6 $F_F$ Test procedure.....	17
<b>7 Data evaluation procedure — incompressible fluids</b> .....	<b>18</b>
7.1 $C_V$ Calculation.....	18
7.2 $F_L$ Calculation.....	19
7.3 $F_P$ Calculation.....	19
7.4 $F_{LP}$ Calculation .....	19
7.5 $F_R$ Calculation.....	19
7.6 $F_F$ Calculation.....	19

<b>8 Test procedure — compressible fluids .....</b>	<b>20</b>
8.1 $C_V$ Test procedure .....	20
8.2 $x_T$ Test procedure .....	20
8.3 Alternative Test procedure for $C_V$ and $x_T$ .....	21
8.4 $F_P$ Test procedure .....	22
8.5 $x_{TP}$ Test procedure .....	22
<b>9 Data evaluation procedure — compressible fluids .....</b>	<b>22</b>
9.1 $C_V$ Calculation .....	22
9.2 $x_T$ Calculation .....	23
9.3 $F_P$ Calculation .....	23
9.4 $x_{TP}$ Calculation .....	23
<b>10 Numerical constants .....</b>	<b>24</b>



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## 1 Scope

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This test standard utilizes the mathematical equations outlined in ANSI/ISA-S75.01, *Flow Equations for Sizing Control Valves*, in providing a test procedure for obtaining the following:

- a) Valve flow coefficient,  $C_V$
- b) Liquid pressure recovery factors,  $F_L$  and  $F_{LP}$
- c) Reynolds Number factor,  $F_R$
- d) Liquid critical pressure ratio factor,  $F_F$
- e) Piping geometry factor,  $F_P$
- f) Pressure drop ratio factor,  $x_T$  and  $x_{TP}$

This standard is intended for control valves used in flow control of process fluids and is not intended to apply to fluid power components as defined in the National Fluid Power Association Standard NFPA T.3.5.28-1977.

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## 2 Purpose

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The purpose of this standard is to provide a procedure for testing control valve capacity and related flow coefficients for both compressible and incompressible fluids. This standard also provides a procedure to evaluate the major data.

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## 3 Nomenclature

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### Symbol Description

$C_V$	Valve flow coefficient
$d$	Valve inlet diameter
$D$	Internal diameter of the pipe
$F_d$	Valve style modifier
$F_F$	Liquid critical pressure ratio factor, dimensionless
$F_k$	Ratio of specific heats factor, dimensionless
$F_L$	Liquid pressure recovery factor of a valve without attached fittings, dimensionless
$F_{LP}$	Product of the liquid pressure recovery factor of a valve with attached fittings (no symbol has been identified) and the piping geometry factor, dimensionless