

ISO 15086-2:2025-02 (E)

Hydraulic fluid power - Determination of the fluid-borne noise characteristics of components and systems - Part 2: Measurement of the speed of sound in a fluid in a pipe

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Symbols	2
5	Instrumentation	3
5.1	Static measurements	3
5.2	Dynamic measurements	3
5.3	Frequency analysis of pressure ripple	3
6	Hydraulic noise generator	4
6.1	General	4
6.2	Generator vibration	4
7	Test conditions	4
7.1	General	4
7.2	Fluid temperature	4
7.3	Fluid density and viscosity	4
7.4	Mean fluid pressure	4
7.5	Mean flow measurement	5
8	Test rig	5
8.1	General	5
8.2	Thermal insulation	5
8.3	Method 1: Three-transducer method	5
8.4	Method 2: Antiresonance method	6
8.5	Calibration of pressure transducers	8
9	Test procedure for Method 1	9
10	Test procedure for Method 2	10
11	Test report	11
11.1	General information	11
11.2	Test data	11
11.3	Test results	12
12	Identification statement (Reference to this part of ISO 15086)	12
Annex A (normative) Errors and classes of measurement of mean value		13
Annex B (normative) Errors and classes of dynamic measurement		14
Annex C (informative) Data reduction algorithms		15
Annex D (informative) Example of speed of sound calculation in MATLAB® language using three pressure transducers in a pipe (Method 1)		19
Annex E (informative) Example of speed of sound calculation in MATLAB® language using two pressure transducers in a closed-end pipe (Method 2)		22
Bibliography		24