

# ISO 10767-1:2015-10 (E)

## Hydraulic fluid power - Determination of pressure ripple levels generated in systems and components - Part 1: Method for determining source flow ripple and source impedance of pumps

---

<b>Contents</b>		<b>Page</b>
Foreword .....		v
Introduction .....		vi
1	Scope .....	1
2	Normative references .....	1
3	Terms and definitions .....	1
4	Instrumentation .....	3
4.1	Static measurements .....	3
4.2	Dynamic measurements .....	4
4.3	Frequency analysis of pressure ripple .....	4
5	Pump installation .....	4
5.1	General .....	4
5.2	Drive vibration .....	5
5.3	Reference signal .....	5
6	Test conditions and setting .....	5
6.1	General .....	5
6.2	Mean flow .....	5
6.3	Mean discharge pressure .....	5
6.4	Pump shaft speed .....	5
6.5	Fluid temperature .....	5
6.6	Fluid property .....	6
7	Test rig .....	6
7.1	General .....	6
7.2	Test pump .....	6
7.3	Test fluid .....	6
7.4	Inlet line .....	6
7.5	Inlet pressure gauge (for static pressure) .....	6
7.6	Pump discharge line .....	7
7.6.1	General .....	7
7.6.2	Pump discharge port connection .....	8
7.6.3	Reference pipe .....	8
7.6.4	Connecting pipe .....	8
7.6.5	Extension pipe .....	9
7.7	Pressure transducer .....	9
7.7.1	Dynamic pressure transducer .....	9
7.7.2	Static pressure transducer .....	9
7.8	Loading valve .....	9
7.9	Back pressure valve .....	9
7.10	Safety valve .....	9
8	Test procedure .....	10
8.1	General .....	10

8.2	Frequency analyses of pressure ripple .....	11
8.3	Evaluation of source flow ripple, $Q_s$ , in the standard "Norton" model .....	11
8.4	Evaluation of source impedance, $Z_s$ , in the standard "Norton" model .....	12
8.5	Evaluation of source flow ripple, $Q_s^*$ , in the modified model .....	12
8.6	Evaluation of blocked acoustic pressure ripple rating .....	13
9	Test report .....	13
9.1	General information and test conditions .....	13
9.2	Test results .....	13
Annex A (normative) Test forms .....		15
Annex B (informative) Two pressures/two systems method .....		21
Bibliography .....		28