

---

**Milking machine installations —  
Mechanical tests**

*Installations de traite mécanique — Essais mécaniques*



**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2007

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 0111  
Fax + 41 22 749 0947  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

Page

Foreword.....	v
1 Scope .....	1
2 Normative references .....	1
3 Definitions .....	1
4 Test equipment .....	1
4.1 General.....	1
4.2 Measurement of vacuum.....	2
4.3 Measurement of a vacuum changing over time .....	2
4.4 Measurement of atmospheric pressure.....	2
4.5 Measurement of back pressure .....	2
4.6 Measurement of airflow.....	3
4.7 Measurement of pulsation characteristics.....	3
4.8 Measurement of pump rotational frequency.....	3
4.9 Teatcup plugs.....	3
5 Vacuum system.....	4
5.1 General requirements and preparation .....	4
5.2 Vacuum regulation.....	5
5.3 Vacuum pumps .....	8
5.4 Vacuum regulator leakage .....	10
5.5 Vacuum gauge error .....	11
5.6 Vacuum drop in air line .....	11
5.7 Effective volume of interceptor .....	11
5.8 Effective volume of the sanitary trap.....	12
5.9 Leakage in vacuum system .....	12
5.10 Vacuum drop across vacuum taps for bucket milking units .....	12
6 Pulsation system .....	13
6.1 Airflow at stall taps .....	13
6.2 Pulsation rate, pulsator ratio, pulsation chamber vacuum phases and vacuum drop in pulsator air line .....	13
7 Milk system.....	14
7.1 Slope of milkline .....	14
7.2 Milk system leakage .....	14
7.3 Effective volume of receiver.....	14
7.4 Leakage in releaser.....	15
8 Milking unit .....	15
8.1 Mouthpiece depth and effective length of liner .....	15
8.2 Teatcup or cluster fall-off air inlet.....	17
8.3 Leakage through shut-off valves of milking units.....	17
8.4 Air vent and leakage into teatcup or cluster.....	17
8.5 Effective volume of buckets, transport cans and recorder jars .....	17
8.6 Measuring the vacuum in the cluster .....	18
8.7 Measurement of the vacuum drop from accessories attached in the long milk tube .....	18
8.8 Airflow at the end of the long milk tube .....	18
Annex A (normative) Laboratory tests of vacuum in the milking unit.....	20
Annex B (informative) Alternative method for the measurement of air inlet and leakages in clusters.....	25
Annex C (informative) Examples of test procedure to reduce the test work .....	27