

Portable agricultural auger conveying equipment — General safety



Legal Notice for Standards

Canadian Standards Association (CSA) standards are developed through a consensus standards development process approved by the Standards Council of Canada. This process brings together volunteers representing varied viewpoints and interests to achieve consensus and develop a standard. Although CSA administers the process and establishes rules to promote fairness in achieving consensus, it does not independently test, evaluate, or verify the content of standards.

Disclaimer and exclusion of liability

This document is provided without any representations, warranties, or conditions of any kind, express or implied, including, without limitation, implied warranties or conditions concerning this document's fitness for a particular purpose or use, its merchantability, or its non-infringement of any third party's intellectual property rights. CSA does not warrant the accuracy, completeness, or currency of any of the information published in this document. CSA makes no representations or warranties regarding this document's compliance with any applicable statute, rule, or regulation.

IN NO EVENT SHALL CSA, ITS VOLUNTEERS, MEMBERS, SUBSIDIARIES, OR AFFILIATED COMPANIES, OR THEIR EMPLOYEES, DIRECTORS, OR OFFICERS, BE LIABLE FOR ANY DIRECT, INDIRECT, OR INCIDENTAL DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES, HOWSOEVER CAUSED, INCLUDING BUT NOT LIMITED TO SPECIAL OR CONSEQUENTIAL DAMAGES, LOST REVENUE, BUSINESS INTERRUPTION, LOST OR DAMAGED DATA, OR ANY OTHER COMMERCIAL OR ECONOMIC LOSS, WHETHER BASED IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR ANY OTHER THEORY OF LIABILITY, ARISING OUT OF OR RESULTING FROM ACCESS TO OR POSSESSION OR USE OF THIS DOCUMENT, EVEN IF CSA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES.

In publishing and making this document available, CSA is not undertaking to render professional or other services for or on behalf of any person or entity or to perform any duty owed by any person or entity to another person or entity. The information in this document is directed to those who have the appropriate degree of experience to use and apply its contents, and CSA accepts no responsibility whatsoever arising in any way from any and all use of or reliance on the information contained in this document.

CSA is a private not-for-profit company that publishes voluntary standards and related documents. CSA has no power, nor does it undertake, to enforce compliance with the contents of the standards or other documents it publishes.

Intellectual property rights and ownership

As between CSA and the users of this document (whether it be in printed or electronic form), CSA is the owner, or the authorized licensee, of all works contained herein that are protected by copyright, all trade-marks (except as otherwise noted to the contrary), and all inventions and trade secrets that may be contained in this document, whether or not such inventions and trade secrets are protected by patents and applications for patents. Without limitation, the unauthorized use, modification, copying, or disclosure of this document may violate laws that protect CSA's and/or others' intellectual property and may give rise to a right in CSA and/or others to seek legal redress for such use, modification, copying, or disclosure. To the extent permitted by licence or by law, CSA reserves all intellectual property rights in this document.

Patent rights

Attention is drawn to the possibility that some of the elements of this standard may be the subject of patent rights. CSA shall not be held responsible for identifying any or all such patent rights. Users of this standard are expressly advised that determination of the validity of any such patent rights is entirely their own responsibility.

Authorized use of this document

This document is being provided by CSA for informational and non-commercial use only. The user of this document is authorized to do only the following:

If this document is in electronic form:

- load this document onto a computer for the sole purpose of reviewing it;
- search and browse this document; and
- print this document if it is in PDF format.

Limited copies of this document in print or paper form may be distributed only to persons who are authorized by CSA to have such copies, and only if this Legal Notice appears on each such copy.

In addition, users may not and may not permit others to

- alter this document in any way or remove this Legal Notice from the attached standard;
- sell this document without authorization from CSA; or
- make an electronic copy of this document.

If you do not agree with any of the terms and conditions contained in this Legal Notice, you may not load or use this document or make any copies of the contents hereof, and if you do make such copies, you are required to destroy them immediately. Use of this document constitutes your acceptance of the terms and conditions of this Legal Notice.



CANADIAN STANDARDS
ASSOCIATION

CSA Standards Update Service

M688-10

August 2010

Title: *Portable agricultural auger conveying equipment — General safety*

Pagination: **16 pages** (vii preliminary and 9 text), each dated **August 2010**

To register for e-mail notification about any updates to this publication

- go to **www.ShopCSA.ca**
- click on **E-mail Services** under **MY ACCOUNT**
- click on **CSA Standards Update Service**

The **List ID** that you will need to register for updates to this publication is **2420732**.

If you require assistance, please e-mail techsupport@csa.ca or call 416-747-2233.

Visit CSA's policy on privacy at www.csagroup.org/legal to find out how we protect your personal information.

Currently in preview, click buy full version

CSA Standard

M688-10

***Portable agricultural auger conveying
equipment — General safety***



**CANADIAN STANDARDS
ASSOCIATION**

®Registered trade-mark of Canadian Standards Association

*Published in August 2010 by Canadian Standards Association
A not-for-profit private sector organization
5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6
1-800-463-6727 • 416-747-4044*

Visit our Online Store at www.ShopCSA.ca



The Canadian Standards Association (CSA) prints its publications on Rolland Enviro100, which contains 100% recycled post-consumer fibre, is EcoLogo and Processed Chlorine Free certified, and was manufactured using biogas energy.

To purchase CSA Standards and related publications, visit CSA's Online Store at www.ShopCSA.ca or call toll free 1-800-463-6727 or 416-747-4044.

ISBN 978-1-55491-493-7

Technical Editor: Dave Shanahan

© Canadian Standards Association — 2010

All rights reserved. No part of this publication may be reproduced in any form whatsoever without the prior permission of the publisher.

Contents

Technical Committee on Agricultural Machinery v

Preface vii

1 Scope 1

- 1.1 Purpose 1
- 1.2 Equipment included 1
- 1.3 Equipment excluded 1
- 1.4 Terminology 1
- 1.5 Dual dimensions 1

2 Reference publications 1

3 Definitions 2

4 General requirements 3

- 4.1 Shields and guards for drive components 3
 - 4.1.1 Belts, pulleys, chains, and sprockets 3
 - 4.1.2 Implement input drivelines 3
 - 4.1.3 Drive shafts 3
- 4.2 Shields and guards for functional components 3
 - 4.2.1 General 3
 - 4.2.2 Fixed hopper flighting guarding 3
 - 4.2.3 Intake guarding 4
- 4.3 Lateral stability 4
- 4.4 Tube restraint 4
- 4.5 Winch 4
 - 4.5.1 Winch drum 4
 - 4.5.2 Hand winch 4
 - 4.5.3 Electric winch 4
- 4.6 Wire ropes and cables 4
- 4.7 Pulleys 4
- 4.8 Hydraulics 4
- 4.9 Operator's manual 5
- 4.10 Transport 5
- 4.11 Safety signs 5
 - 4.11.1 General 5
 - 4.11.2 Flighting hazard — modification or removal of the intake guard 5
 - 4.11.3 Retractable intake guards 5
 - 4.11.4 High pressure 5
 - 4.11.5 Power line contact 5
 - 4.11.6 Upending 5
 - 4.11.7 Instructional signs 6

5 Electrical requirements 6

- 5.1 Grounding 6
- 5.2 Conductors and connectors 6
- 5.3 Electrical controls and wiring 6
 - 5.3.1 Motors operating at less than 30 V 6
 - 5.3.2 Motors operating at more than 100 V 6
- 5.4 Electric motors 6

- 5.4.1 Motor rating 6
- 5.4.2 Motor enclosure 6

Annexes

- A** (informative) — Bibliography 9
-

Figures

- 1** — Conventional portable auger 7
- 2** — Swing-away auger 7
- 3** — Intake guard 8

Technical Committee on Agricultural Machinery

F. Desir	Ontario Ministry of Agriculture, Food and Rural Affairs, Guelph, Ontario	<i>Chair</i>
J. Wassermann	Prairie Agricultural Machinery Institute, Humboldt, Saskatchewan	<i>Vice-Chair</i>
D. Anderson	Ontario Farm Safety Association, Guelph, Ontario	<i>Associate</i>
D. Browning	Nova Scotia Agriculture, Truro, Nova Scotia	
T. Buss	Manitoba Agriculture, Food and Rural Initiatives, Beausejour, Manitoba	
H. Chorney	Prairie Agricultural Machinery Institute, Portage la Prairie, Manitoba	<i>Associate</i>
D. Drollinger	Association of Equipment Manufacturers, Milwaukee, Wisconsin, USA	<i>Associate</i>
D. Durant	John Deere Co., Waterloo, Iowa, USA	
A. Grande	John Deere Welland Works, Welland, Ontario	<i>Associate</i>
F. Granger	Commission de la santé et de la sécurité du travail du Québec, Montréal, Québec	
G. Grant	Standards Council of Canada, Ottawa, Ontario	<i>Associate</i>
I. Hale	Quebec Farmers' Association, Aicove, Québec	
J. Henry	CNH Canada Ltd., Saskatoon, Saskatchewan	<i>Associate</i>
L. Henry	Canadian Federation of Agriculture, Portage la Prairie, Manitoba	
R. Wilpatrik	National Research Council Canada, Industrial Research Assistance Program, North Bay, Ontario	
K. Klotzbach	CNH America LLC, New Holland, Pennsylvania, USA	

W. Lenius	MacDon Industries Ltd., Winnipeg, Manitoba	
N. McLaughlin	Agriculture and Agri-Food Canada, Ottawa, Ontario	
H. Mitchell	Prince Edward Island Federation of Agriculture, Cardigan, Prince Edward Island	
E. Morton	AGCO Corporation, Oakville, Ontario	
E. Nyborg	Nyborg Professional Services, Dorval, Québec	
B. Olson	Power Pin Inc., Fort Qu'Appelle, Saskatchewan	
E. Pridham	Ontario Federation of Agriculture, Stayner, Ontario	
L. Redding	Mexia, Texas, USA	<i>Associate</i>
R. Vust	Manitoba Farmers with Disabilities, Portage la Prairie, Manitoba	
M. Weber	Association of Equipment Manufacturers Milwaukee, Wisconsin, USA	<i>Associate</i>
T. Whitworth	Grand Valley, Ontario	
D. Shanahan	Canadian Standards Association, Mississauga, Ontario	<i>Project Manager</i>

Preface

This is the first edition of CSA M688, *Portable agricultural auger conveying equipment — General safety*.

This Standard is intended to specify safe design and performance requirements for portable agricultural auger conveying equipment and is based (with modifications) on ANSI/ASAE S361.3-1990 (R2005), *Safety for Portable Agricultural Auger Conveying Equipment*.

This Standard was prepared by the Technical Committee on Agricultural Machinery, under the jurisdiction of the Strategic Steering Committee on Occupational Health and Safety, and has been formally approved by the Technical Committee. This Standard will be submitted to the Standards Council of Canada for approval as a National Standard of Canada.

August 2010

Notes:

- (1) Use of the singular does not exclude the plural (and vice versa) when the sense allows.
- (2) Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.
- (3) This publication was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as “substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity”. It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this publication.
- (4) CSA Standards are subject to periodic review, and suggestions for their improvement will be referred to the appropriate committee.
- (5) All enquiries regarding this Standard, including requests for interpretation, should be addressed to Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6.
Requests for interpretation should
 - (a) define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;
 - (b) provide an explanation of circumstances surrounding the actual field condition; and
 - (c) be phrased where possible to permit a specific “yes” or “no” answer.

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are published in CSA's periodical Info Update, which is available on the CSA Web site at www.csa.ca.

CSA gratefully acknowledges the support of



Agriculture and
Agri-Food Canada

Agriculture et
Agroalimentaire Canada



M688-10

Portable agricultural auger conveying equipment — General safety

1 Scope

1.1 Purpose

The purpose of this Standard is to provide for a reasonable degree of personal safety for operators and others during normal operation of portable auger conveying equipment used to convey agricultural materials on farms.

Note: *Users of this Standard should be aware that hazard control and accident prevention depend not only on the design and configuration of the equipment but also on the prudence of those who operate, transport, maintain, and store the equipment or use or maintain facilities for the equipment.*

1.2 Equipment included

This Standard covers conventional and swing-away portable agricultural augers (and some of their accessories, e.g., hoppers, winches, wire ropes, pulleys, and hydraulic lifting systems) designed primarily for conveying agricultural materials on farms.

1.3 Equipment excluded

All conveying equipment not covered by [Clause 1.2](#), including drag augers, bin sweeps, and other augers that do not have wheels suitable for towing on public roads, is not within the scope of this Standard.

1.4 Terminology

In CSA standards, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (nonmandatory) to define their application.

1.5 Dual dimensions

The values given in SI (metric) units are the standard. The values given in parentheses are for information only.

2 Reference publications

This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below, including all amendments published thereto.

Note: See [Annex A](#) for additional relevant Standards.