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AMENDMENT 1
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Garden equipment — Safety requirements for combustion-engine-powered lawnmowers —

Part 2: Pedestrian-controlled lawnmowers

AMENDMENT 1: OPC, cutting means, pressurized hoses

Matériel de jardinage — Exigences de sécurité pour les tondeuses à gazon à moteur à combustion interne —

Partie 2: Tondeuses à gazon à conducteur à pied

AMENDEMENT 1: OPC, organes de coupe, tuyaux sous pression

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Amendment 1 to ISO 5395-2:2013 was prepared by ISO Technical Committee TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 13, *Powered lawn and garden equipment*.

Garden equipment — Safety requirements for combustion-engine-powered lawnmowers —

Part 2: Pedestrian-controlled lawnmowers

AMENDMENT 1: OPC, cutting means, pressurized hoses

Page 1, Clause 2

Delete the following reference:

ISO 13849-1:2006, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

Page 5, 4.3

Replace 4.3 with the following:

4.3 Operator presence control (OPC)

The lawnmower shall be fitted with operator presence control device(s) which:

— conforms to well-tried principles and applies well-tried components; and

— requires activation by the operator before the lawnmower's traction (if so equipped) and cutting means drive systems can be started; these functions of OPC and starting shall be separate; and

— requires sustained activation by the operator to allow continued operation; and

— automatically activates the stopping of the cutting-means rotation and/or traction-drive system, if so equipped, when the operator releases the control device.

The sustained activation and release functions of the traction-drive OPC can be combined with the cutting means OPC or separate.

A "well-tried component" for a safety-related application is a component which has been either

a) widely used in the past with successful results in similar applications, or

b) made and verified using principles which demonstrate its suitability and reliability for safety-related applications.

Newly developed components and safety principles may be considered as equivalent to "well-tried" if they fulfil the conditions of b).

NOTE For further information, see ISO 13849-1 [13].

From a complete stop position, restart of the cutting-means rotation shall require two separate and distinct actions. Activation of the OPC shall be one of the actions. If these actions are to be carried out using the same hand, then the actions shall be separate and dissimilar to prevent accidental restarting of the cutting means.

If the OPC is reactivated before the cutting means have stopped, the cutting means can resume operation if there is sufficient kinetic energy to restart the engine.

Automatic or single-action stopping and starting of the cutting means is permissible during continuous operation of the OPC.

Compliance shall be checked by functional test and inspection.

Page 11, 4.11

Replace 4.11 with the following:

4.11 Pressurized hoses of hydraulic systems

Hoses that operate at a maximum working pressure greater than 5 000 kPa and located less than 1 000 mm from the operator control zone shall be located or shielded so that, in the event of a rupture, the fluid cannot be discharged directly onto the operator when in the normal operating position.

The same requirements apply to pressurized hoses with a working pressure of 500 kPa to 5 000 kPa and within 1 000 mm of the operator control zone and where the temperature of the pressurized fluid exceeds 50 °C when operated at an ambient temperature of 20 °C ± 5 °C.

Compliance shall be checked by inspection and measurement.

Page 17, 5.2

Replace 5.2 with the following:

5.2 Impact of the cutting means

The lawnmower shall withstand a sudden impact to the cutting means in accordance with ISO 5395-1:2013, Annex B and any of the following outcomes of the tests shall be regarded as a failure to meet this requirement:

— target penetration by any part of the lawnmower;

— breakage of the cutting means;

— detachment from the lawnmower of the cutting means or cutting-means arm or disc on which it is mounted.

Breakage of a drive shearing device or chipping of the cutting-means cutting edge shall not be considered as test failures.

It is not required that the machine be suitable for use after the test.

Compliance shall be checked by inspection and tested in accordance with ISO 5395-1:2013, Annex B.

Page 34, Bibliography

Add the following reference:

[13] ISO 13849-1:2015, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

