STANDARDS UPDATE NOTICE (SUN)
ISSUED: December 20, 2024

STANDARD INFORMATION

If the project requires any changes to the Certification Data Report outside of Section 1, then this SUN applies.

Standard: UL 62841-4-2 / CSA C22.2 No. 62841-4-2
Standard ID:
Electric Motor-operated Hand-held Tools, Transportable Tools and Lawn and Garden Machinery - Safety - Part 4-2: Particular Requirements for Hedge Trimmers [UL 62841-4-2:2019 Ed.1+R:29Mar2024]
Electric Motor-operated Hand-held Tools, Transportable Tools and Lawn and Garden Machinery - Safety - Part 4-2: Particular Requirements for Hedge Trimmers [CSA C22.2#62841-4-2:2019 Ed.1+A1]
Previous Standard ID:
Electric Motor-operated Hand-held Tools, Transportable Tools and Lawn and Garden Machinery - Safety - Part 4-2: Particular Requirements for Hedge Trimmers [UL 62841-4-2:2019 Ed.1]
Electric Motor-operated Hand-held Tools, Transportable Tools and Lawn and Garden Machinery - Safety - Part 4-2: Particular Requirements for Hedge Trimmers [CSA C22.2#62841-4-2:2019 Ed.1]

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **March 29, 2027**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: No action is required for currently certified products. If modifications to the product after the effective date require an evaluation and/or testing, then the product must undergo re-evaluation to the new requirements.

This standard contains Functional Safety requirements.

Overview of Changes:

- Updated conditions for the tests
- Revised markings and instructions
- Additional requirements for handles
- new Creepage distances, clearances and distances through insulation
- Revised requirements for mechanical strength

Specific details of new/revised requirements are found in table below

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.

STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
		Additions to existing requirements are <u>underlined</u> and deletions are shown ~~lined out~~ below.
5	Info	**General conditions for the tests**
5.103		***New clause added;*** For machines that do not attain maximum speed under no load conditions, the manufacturer shall provide samples with special hardware and/or software in order to perform the required tests.
8	Info	**Marking and instructions**
8.2		Hedge trimmers shall be marked with safety information which shall be written in one of the official languages of the country in which the machine is to be sold or marked with the appropriate symbol. For all hedge trimmers: ~~– " DANGER – Keep hands away from blade"; or~~ ~~– the safety sign specified in Figure AA.1; or~~ ~~– the safety sign specified in Figure AA.2.~~ <u>marking may be omitted if the measured emission sound pressure level at the operator's ear in accordance with Annex I does not exceed 85 dB(A); and</u> <u>– " ⚠ DANGER – Keep hands away from blade" or the safety sign specified in Figure AA.1 or the safety sign specified in Figure AA.2.</u> The DANGER marking or symbol shall be readily visible to the user and shall not be located on the underside of the machine. For all hedge trimmers with a degree of protection of less than IPX4: ~~– " WARNING – Do not expose to rain"; or~~ ~~– the safety sign specified in Figure AA.3.~~ ~~For mains supplied machines:~~ ~~– " WARNING – Remove plug from the mains immediately if the cable is damaged or cut"; or~~ ~~– the safety sign specified in Figure AA.1.~~

CLAUSE	VERDICT	COMMENT
		– " ⚠ WARNING – Do not expose to rain" or the safety sign specified in Figure AA.3. – " ⚠ WARNING – Remove plug from the mains immediately if the cable is damaged or cut" or the safety sign specified in Figure AA.4.
8.14.1.1		***New clause added;*** For machines classified at least IPX4, the warning may be replaced as specified below. c) Do not operate the machine in rain or wet conditions. Water entering the machine may increase the risk of electric shock or malfunction that could result in personal injury. For Category 1 hedge trimmers that can be converted to a grass shear, the term "hedge trimmer" may be replaced by alternate wording (e.g. "grass shear/hedge trimmer" or "grass shear/shrub shear"). For this case, the verbatim warnings below need not be repeated for the two configurations. **Hedge trimmer safety warnings:** a) Do not use the hedge trimmer in bad weather conditions, especially when there is a risk of lightning. This decreases the risk of being struck by lightning. b) Keep all power cords and cables away from cutting area. Power cords or cables may be hidden in hedges or bushes and can be accidentally cut by the blade. c) Wear ear protection. Adequate protective equipment will reduce the risk of hearing loss. NOTE 101 This warning can be omitted if the measured emission sound pressure level at the operator's ear in accordance with Annex I does not exceed 85 dB(A). d) Hold the hedge trimmer by insulated gripping surfaces only, because the blade may contact hidden wiring or its own cord. Blades contacting a "live" wire may make exposed metal parts of the hedge trimmer "live" and could give the operator an electric shock. e) Keep all parts of the body away from the blade. Do not remove cut material or hold material to be cut when blades are moving. Blades continue to move after the switch is turned off. A moment of inattention while operating the hedge trimmer may result in serious personal injury. f) When clearing jammed material or servicing the hedge trimmer, make sure all power switches are off and the power cord is disconnected. Unexpected actuation of the hedge trimmer while clearing jammed material or servicing may result in serious personal injury. g) Carry the hedge trimmer by the handle with the blade stopped and taking care not to operate any power switch. Proper carrying of the hedge trimmer will decrease the risk of inadvertent starting and

CLAUSE	VERDICT	COMMENT
		resultant personal injury from the blades. h) When transporting or storing the hedge trimmer, always use the blade cover. Proper handling of the hedge trimmer will decrease the risk of personal injury from the blades.
8.14.1.2		***New clause added;*** **Additional safety instructions for extended-reach hedge trimmers** **Extended-reach hedge trimmer safety warnings:** a) Always use head protection when operating the extended-reach hedge trimmer overhead. Falling debris can result in serious personal injury. NOTE 101 Alternate wording for "extended-reach" is possible, e.g. "pole" or "long reach". b) Always use two hands when operating the extended-reach hedge trimmer. Hold the extended-reach hedge trimmer with both hands to avoid loss of control. c) To reduce the risk of electrocution, never use the extended-reach hedge trimmer near any electrical power lines. Contact with or use near power lines may cause serious injury or electric shock resulting in death.
14	Info	**Moisture resistance**
14.2.2		***New clause added;*** Immediately after the appropriate treatment, the machine shall withstand the electric strength test of Annex D between live parts and accessible parts, the test voltage being 2 500 V. Then the machine is connected to the supply. It shall not start with the power switch in the "off" position. Afterwards, inspection shall show that there is no trace of water on insulation which could result in a reduction of creepage distances between bare conductors of different potential below the values specified in 28.1. For all instances where creepage distances could be reduced below the values specified in 28.1, a short circuit is introduced between adjacent conductors. The machine is then evaluated for – the risk of fire in accordance with item a) of 18.6.1; and – the loss of any SCF, unless the machine is rendered into a safe state.
17	info	**Endurance**
17.2		The machine is operated in its most unfavourable configuration in accordance with 8.14.2 b) 108). <u>Care shall be taken to avoid overheating the cutting device by operating continuously and therefore appropriate interruptions for cooling and lubrication may be introduced.</u>

CLAUSE	VERDICT	COMMENT
19	Info	**Mechanical hazards**
19.1		***New clause added;*** All power-driven hazardous parts (e.g. gears), other than those moving parts (e.g. cutting device), barriers and covers which are separately covered by 19.102, 19.103, 19.105 and 19.106, shall be so positioned or enclosed to provide adequate protection. The requirements of this subclause apply to all operating configurations as described in 8.14.2.
19.101	Info	**Handles**
19.101.1	Info	**Hedge trimmer handles**
19.101.1.2		**Dimensions of bail or closed** handles On bail or closed handles (U-shaped handles) the gripping length is related to the inner length of the gripping surface. There shall be a minimum radial clearance of 25 mm around the gripping length. In addition, for a handle incorporating a blade control, there shall be a minimum radial clearance of 25 mm around the blade control actuator with the blade control not depressed. If a bail or closed handle is used, the gripping length L in Figure 105 a) shall be measured using lengths A and B as follows: – the length A is measured within region X where the radius is at least 100 mm; – the length(s) B are measured within region(s) Y where the transition radius is less than 100 mm, but each length B cannot exceed 10 mm in each region Y of the gripping surface. Compliance is checked by inspection and by measurements.
19.101.1.3		**Dimensions of handles supported centrally (T-type)** If a handle is supported centrally (i.e. T-type), there shall be a minimum radial clearance of 25 mm around the gripping length. The gripping length shall be calculated as follows (see Figure 105 b)): – for handles with a perimeter P (not including the support) of less than 80 mm, the gripping length is the sum of the two parts of the gripping length X + Y on either side of the support; – for handles with a perimeter P (not including the support) of 80 mm or more, the gripping length is the complete length Z from end to end. In addition, for a handle incorporating a blade control, there shall be a minimum radial clearance of 25 mm around the blade control actuator with the blade control not depressed.

CLAUSE	VERDICT	COMMENT
19.101.2	Info	**Extended-reach hedge trimmer handles**
19.101.2.1		**General** For extended-reach hedge trimmers, the minimum number of handles shall be in accordance with Table 102. If a part containing the motor complies with the dimensions for a handle, it may be considered as a handle. A shaft may be used as a handle if specified in accordance with 8.14.2. The handles shall be designed in such a way that each one can be grasped with one hand. Handles shall be suitably shaped to be grasped securely and have a perimeter P between 6563 mm and 170 mm as illustrated in Figure 105 a), Figure 105 b) or Figure 105 c). The perimeter P is determined by a chain measurement with the blade control, if any, fully depressed. The gripping length of the front handle and the rear handle shall be at least 100 mm long. In addition, for a handle incorporating a blade control, there shall be a minimum radial clearance of 25 mm around the blade control actuator with the blade control not depressed. If applicable, the part of the handle containing the blade control shall be counted as part of the handle gripping length. If there are finger grips or similar superimposed profiles, the handle gripping length shall not be measured along the surface, but only the arc or straight line distance of the gripping surface, as applicable, shall be taken into account. If handles are adjustable to different positions without tools in accordance with 8.14.2 b), it shall not be possible to inadvertently operate the machine when locked in a position which contravenes other provisions of this standard. This may be achieved by at least one blade control requiring two separate and dissimilar actions before the cutting device operates as described in 21.18.102 for power switches and also meet the requirements of 21.17.1 for self-restoring lock-off devices. Compliance is checked by inspection and by measurements.
19.101.2.2		**Dimensions of bail or closed handles** On bail or closed handles (U-shaped handles), the gripping length is related to the inner length of the gripping surface. There shall be a minimum radial clearance of 25 mm around the gripping length. In addition, for a handle incorporating a blade control, there shall be a minimum radial clearance of 25 mm around the blade control actuator with the blade control not depressed.

CLAUSE	VERDICT	COMMENT
		If a bail or closed handle is used, the gripping length L in Figure 105 a), shall be measured using lengths A and B as follows: – the length A is measured within region X where the radius is at least 100 mm; – the length(s) B are measured within region(s) Y where the transition radius is less than 100 mm, but each length B cannot exceed 10 mm in each region Y of the gripping surface. Compliance is checked by inspection and by measurements.
19.101.2.3		**Dimensions of handles supported centrally (T-type)** If a handle is supported centrally (i.e. T-type), there shall be a minimum radial clearance of 25 mm around the gripping length. The gripping length shall be calculated as follows (see Figure 105 b)): – for handles with a perimeter P (not including the support) of less than 80 mm, the gripping length is the sum of the two parts of the gripping length X + Y on either side of the support; – for handles with a perimeter P (not including the support) of 80 mm or more, the gripping length is the complete length Z from end to end. In addition, for a handle incorporating a blade control, there shall be a minimum radial clearance of 25 mm around the blade control actuator with the blade control not depressed. Compliance is checked by inspection and by measurements.
19.101.3	Info	**Handles that are adjustable during operation**
19.101.3.2		Any adjustable handle shall have a defined centre position. The handle shall have a locking detent at the centre position and at any other intended handle adjustment position of operation as described in 8.14.2. These other operating positions shall not locate the handle further than 95° from the centre position about their axis of rotation. See Figure 106 and Figure 107. The handle movement, when locked by the detent and subjected to a torque of (2 ± 0,1) Nm, shall be limited to 5° rotation. The handle shall have a handle release control as required in 19.101.3.3 that releases the handle from the detent position. The handle shall automatically lock into each detent position when adjusting the handle, unless the handle release control is operated. Compliance is checked by inspection and by measurement.

CLAUSE	VERDICT	COMMENT
19.103	Info	**Cutting device**
19.103.2	Info	**Blunt extensions**
19.103.2.4		**Hedge trimmer category 4 (see Figure 116)** The minimum depth of the blunt extensions, if required in accordance with 19.103.2.1, shall be no less than 8 mm as shown in Figure 116 a). In addition, the distance between the blade teeth and the side of a (120 +1/-0) mm test cylinder shall not be less than 4 mm when the test cylinder is positioned perpendicular to the plane of the cutting device and between two blunt extensions as shown in Figure 116 a). For machines with blunt extensions that are not an integral part of the cutting device, the following additional requirement shall be met: The distance between the end of the cutting plane between the cutter blades and the side of the test cylinder shall not be less than 4 mm when the test cylinder is positioned as shown in Figure 116 a) and then tilted around the ends of the blunt extensions up to an angle of 40° as shown in Figure 116 b). Blunt extensions are not required for category 4 hedge trimmers with a blade configuration where there are only two handles, and the front handle is a stick-type handle that is permanently fixed to the smooth side of a single sided cutting device (see Figure 104 b)). Compliance is checked by inspection and by manual test.
20	Info	**Mechanical strength**
20.3.1		A hedge trimmer is dropped once from each of the four orientations shown in Figure 120, while adjusted to its minimum extension in accordance with 8.14.2 b) and with any adjustable device or adjustable handle in the zero degree cutting position, on a concrete surface from a height of 1 m. The lowest point of the machine shall be 1 m above the concrete surface. For the test, separable accessories are not mounted. Secondary impacts shall be avoided. NOTE 1 A method for avoiding secondary impacts is tethering. If attachments are provided as specified and mounted in accordance with 8.14.2, the test is repeated, with each attachment or combination of attachments mounted to a separate machine sample. Additionally, an extended-reach hedge trimmer shall be dropped once in each of the three most unfavourable positions and configurations, on a concrete surface at its maximum extension. For each additional drop, the machine is pivotally supported at the rear of the blade control

CLAUSE	VERDICT	COMMENT
		in the rear handle 1 m above the concrete surface. The nearest cutting edge of the cutter blade to the rear handle is raised to a height of 2 m above the concrete surface and allowed to drop onto the concrete surface. See Figure 121. ~~Each drop shall be conducted on a separate unit. At the manufacturer's request, each drop may be conducted on the same unit. Each drop shall be conducted on a separate unit, unless a single sample can be subjected to multiple drops without failure.~~ If a sample has been subjected to multiple drops and fails, then the drop in the orientation that resulted in the failure is repeated using a new sample. If the new sample passes the test for the drop in that orientation, then the requirements for the drop in that orientation are considered to be fulfilled. The test is continued in this manner until all drops in each of the four orientations are completed.
20.101	Info	**Hedge trimmer mechanical strength**
20.101.3	Info	**Extended-reach hedge trimmer strength**
20.101.3.3		The extended-reach hedge trimmer shall possess the mechanical strength to withstand static forces while cuts are being performed. The machine shall not – temporarily deflect more than an additional 15 % of the length measured from the point of the ~~blade control in the rear handle~~ power switch closest to the cutter blade and the nearest cutting edge of the cutter blade while a force of 50 N is applied to a part of the cutter blade tooth nearest to the front handle, with the additional deflection being measured at the point of each applied force; – permanently be deformed by more than 5 % of the length measured from the point of the ~~blade control in the rear handle~~ power switch closest to the cutter blade and the nearest cutting edge of the cutter blade after removal of the applied force above, with the permanent deformation being measured at the point of each applied force; and – break or show cracking visible with normal vision as a result of the applied force that could lead to noncompliance with the requirements of Clause 20.
21	Info	**Construction**
21.17.1		***New clause added;*** This subclause of Part 1 is also applicable for an operator presence sensor whose motion is mechanically obstructed and either – functions as a lock-off device; or – is locked off by the lock-off device.

CLAUSE	VERDICT	COMMENT
		New table added; **Switch trigger force**

Table 7

Trigger type	Force N
Single finger trigger (trigger length < 30 mm)	100
Multi finger trigger (trigger length ≥ 30 mm)	150
Operator presence sensor	100

21.18.102 Info **Hedge trimmers with a single blade control**

21.18.102.3

The hedge trimmer shall be provided with a blade control having a lock-off device such that at least two separate and dissimilar actions are required before drive to the cutting device is possible. It shall not be possible to achieve these actions with a single grasping motion or a straight line motion within any grasping surface identified in accordance with 8.14.2 b) 6).

~~The lock-off device and the operator presence sensor (if any) shall be actuated before the blade control can enable drive to the cutting device.~~

Drive to the cutting device shall only be enabled when the lockoff device is operated prior to the blade control.

Additionally, for lock-off devices that are actuated in a direction generally perpendicular to the longitudinal vertical plane of the machine, (see Figure 124), and that are located within any grasping surface of handle(s) or grasping surface(s) identified in accordance with 8.14.2 b) 103), in order to determine if it is possible to actuate the blade control and the lock-off device with a single grasping motion or a straight line motion, compliance is checked by the following test:

With the blade control in the "off" position, the lock-off device shall not be actuated by the cylindrical face of a 25 mm diameter × 75 mm long steel rod when applied with a force not exceeding 20 N. The axis of the rod is applied perpendicular to the axis of the handle and is either:

– rotated around the handle, see Figure 126; or
– applied in the direction perpendicular to the handle axis, see Figure 127,

while bridging the handle surface and surface of the lock-off device and any surface adjacent to the lockoff device. When applying the steel rod, the circular end faces and edges shall not be used for probing.

CLAUSE	VERDICT	COMMENT
		During the test, it shall not be possible to actuate the blade control by applying a force as specified in Table 7.
21.30.101		Extended-reach hedge trimmers are considered to be machines likely to cut into concealed wiring or their own cord and shall meet the following requirements: Handles and grasping surfaces of extended-reach hedge trimmers, as specified in 8.14.2 b) 6), shall be formed of insulating material or, when of metal, shall be either adequately covered by insulating material having a thickness of at least 1 mm or their accessible parts shall be isolated by insulating barrier(s) from accessible metal parts that may become live by the cutting device. These insulating barriers are not to be regarded as basic insulation, supplementary insulation or reinforced insulation. An insulated, stick type, auxiliary handle shall be provided with a flange having a height not less than 12 mm above the handle and covering at least 2/3 of the periphery to provide a barrier to minimize the likelihood of the hand from slipping onto surfaces that are not suitably insulated or isolated. A grasping surface formed by sections of the shaft of an extended-reach hedge trimmer shall be provided with a flange at each end to minimize the likelihood of the hand from slipping onto surfaces that are not suitably insulated or isolated. Both flanges shall have a height not less than 6 mm above the grasping surface and shall cover at least 2/3 of the periphery. The flange nearest to the rear handle may be omitted if the shaft insulation extends from the rear handle to the grasping surface. The flange nearest to the cutting device may be omitted if the shaft insulation combined with the grasping surface extends to a location at least 1,2 m from the blade control in the rear handle.
23	Info	**Components**
23.3		Protection devices (e.g. overload or over-temperature protection devices) or circuits that switch off the hedge trimmer shall be of the non-self-resetting type. This subclause is not applicable for – machines fitted with two blade controls that require simultaneous actuation; and – extended-reach hedge trimmers.

CLAUSE	VERDICT	COMMENT
28		***New section added;*** **Creepage distances, clearances and distances through insulation** Creepage distances and clearances shall not be less than: See standard for details.
Annex I		***Annex I has been majorly re-written;*** **Measurement of noise and vibration emissions** See standard for details.
Annex K		***Annex K has been majorly re-written;*** **Battery tools and battery packs** See standard for details.
Annex L		***Annex L has been majorly re-written.*** **Battery tools and battery packs provided with mains connection or non-isolated sources** See standard for details.