



DPC: 22 / 30448571 DC

BSI Group Headquarters

389 Chiswick High Road London W4 4AL

Tel: +44 (0)20 8996 9000

Fax: +44 (0)20 8996 7400

www.bsigroup.com

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Responsible committee: CPL/116 Safety of motor-operated electric tools

Interested committees:

Title: BS EN 62841-3-11 Ed.1.0 Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery
- Safety Part 3-11: Particular requirements for transportable combined mitre and bench saws

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- iii) requires additional national guidance or information

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Responsible Committee Secretary: **Jasnam Channe (BSI)**

Direct tel:

E-mail: jasnam.channe@bsigroup.com

Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



116/554/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:

IEC 62841-3-11 ED1

DATE OF CIRCULATION:

2022-01-28

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2022-04-22

SUPERSEDES DOCUMENTS:

116/532/NP, 116/545/RVN

IEC TC 116 : SAFETY OF MOTOR-OPERATED ELECTRIC TOOLS	
SECRETARIAT: United States of America	SECRETARY: Mr Joseph Harding
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☒ SAFETY	
☒ SUBMITTED FOR CENELEC PARALLEL VOTING Attention IEC-CENELEC parallel voting The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 3-11: Particular requirements for transportable combined mitre and bench saws

PROPOSED STABILITY DATE: 2027

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS,
TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY –
SAFETY –****Part 3-11: Particular requirements for transportable combined mitre and
bench saws**

FOREWORD

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International Standard IEC 62841-3-11 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools.

The text of this standard is based on the following documents:

FDIS	Report on voting
116/xxx/FDIS	116/xxx/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document is to be used in conjunction with the first edition of IEC 62841-1 (2014).

This document supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC Standard: Particular requirements for hand-held cut-off machines.

Where a particular subclause of IEC 62841-1 is not mentioned in this document, that subclause applies as far as reasonable. Where this document states “addition”, “modification” or “replacement”, the relevant text in IEC 62841-1 is to be adapted accordingly.

The following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in small roman type.

The terms defined in Clause 3 are printed in **bold typeface**.

Subclauses, notes, tables and figures which are additional to those in IEC 62841-1 are numbered starting from 101.

Subclauses, notes, tables and figures in Annex K and Annex L which are additional to those in the main body of this document are numbered starting from 301.

A list of all parts of the IEC 62841 series, under the general title: *Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety*, can be found on the IEC website.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 36 months from the date of publication.

ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY –

Part 3-11: Particular requirements for transportable combined mitre and bench saws

1 Scope

IEC 62841-1:2014, Clause 1 is applicable, except as follows:

Addition:

This part of IEC 62841 applies to transportable **combined mitre and bench saws** intended to be used with a toothed saw blade for cutting wood and analogous materials, plastics and nonferrous metals except magnesium with a saw blade diameter not exceeding 315 mm, which hereinafter is simply referred to as saw or tool.

This standard does not apply to

- saws intended to cut other metals, such as magnesium, steel and iron or food;
- saws with an automatic feeding device;
- saws designed for use with abrasive wheels;
- single function bench or table saws;
- single function mitre saws;
- **combined mitre and bench saws** other than transportable.

NOTE 101 Transportable saws intended to cut ferrous metals will be covered by a future part of IEC 62841-3.

NOTE 102 **Transportable tools** designed for use with abrasive wheels are covered by IEC 62841-3-10:2015.

NOTE 103 Transportable table saws are covered by IEC 62841-3-1:2014.

NOTE 103 Transportable mitre saws are covered by IEC 62841-3-9:2020.

NOTE 104 In Europe (EN IEC 62841-3-11), the following additional NOTE applies:

NOTE Z101 **Combined mitre and bench saws** other than transportable are covered by EN 1870-3:2014.

2 Normative references

IEC 62841-1:2014, Clause 2 is applicable, except as follows:

Addition:

IEC 62841-1:2014, *Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety – Part 1: General requirements*

ISO 180, *Plastics – Determination of Izod impact strength*

NOTE In Europe (EN IEC 62841-3-11), the following additional normative reference applies:

EN 847-1:2017, *Tools for woodworking - Safety requirements - Part 1: Milling tools, circular saw blades*

3 Terms and definitions

IEC 62841-1:2014, Clause 3 is applicable, except as follows:

Addition:

3.101

anti-kickback device

device that allows the movement of the workpiece in the cutting direction but reduces the likelihood of the rapid movement of the workpiece in the direction opposite of feed

3.102

bevel angle

angular displacement of the saw blade plane with respect to the **table top** plane, the position of the saw blade plane that is perpendicular to the **table top** being the 0° bevel position

3.103

combined mitre and bench saw

saw intended to be used:

- a) as a down-cutting cross cut saw;
- b) as a circular bench saw

Note 101 to entry: The saw may be of type "A" or type "B" as defined in 3.103.1 and 3.103.2.

3.103.1

type "A" saw

combined mitre and bench saw equipped with two tables: a mitre saw table having a **fence** to support the material to be cut as the saw blade is brought down and a bench table which supports the material to be cut as it is fed by hand towards to the saw blade

NOTE 101 to entry: In mitre saw mode, the saw blade is suspended over the mitre saw table from an arm, normally from a point located at the table or on a part of the frame of the machine. A sliding cutting movement may follow a downward cutting action or vice-versa.

NOTE 102 to entry: In bench saw mode, the saw blade projects through a slot in the bench saw table.

NOTE 103 to entry: See Figure 101.

3.103.2

type "B" saw

combined mitre and bench saw equipped with a single table which supports and positions the workpiece during mitre and bench sawing operations

NOTE 101 to entry: The saw blade is capable of being located either above or below the table.

NOTE 102 to entry: In mitre saw mode, the saw blade is suspended over the table from an arm, normally from a point located at the table or on a part of the frame of the machine. In some cases, a sliding movement follows a downward cutting action or vice-versa.

NOTE 103 to entry: In bench saw mode, the saw blade projects through a slot in the table.

NOTE 104 to entry: See Figure 102.

3.104

cross cutting

any cutting operation performed utilizing a **cross-cutting fence** to guide the workpiece

Note 101 to entry: For natural wood, a cross cut is performed predominantly in a perpendicular direction with the grain of the wood; for engineered materials, a cross cut is performed perpendicular to the length of the workpiece.

3.105**maximum cutting capacity**

cutting capacity at the maximum depth setting of the saw blade and, unless otherwise specified, at 0° bevel

3.106**D**

maximum specified diameter of the saw blade

3.107**dadoing**

non-through cutting operation performed with a stack of specially designed saw blades of a desired thickness to produce a rectangular sided slot in the workpiece

3.108**fence**

device to position the workpiece and absorb the horizontal forces from the saw blade during the cutting process

3.108.1**cross-cutting fence**

fence that is designed to move parallel with the plane of the saw blade during the cutting process or to position the workpiece for a table saw with sliding function

Note 1 to entry: Some **fences** have provisions to adjust the workpiece guiding face laterally and/or have **mitre angle** capability.

3.108.2**rip fence**

fence that has the workpiece guiding face parallel with the plane of the saw blade and can be set to a desired distance from the saw blade

3.109**grooving**

series of repeated non-through cuts of same or different depth and spacing from each other, performed with an ordinary saw blade, to remove material for the purpose of creating a slot or for shaping or bending the workpiece

Note 101 to entry: **Grooving** is also known as slotting or kerfing.

3.119**kerf width**

distance between two parallel planes that are touching the opposing sides of at least three saw blade tooth tips

3.110**kickback**

sudden reaction to a pinched, jammed or misaligned workpiece with respect to the saw blade, which causes the workpiece to be propelled by the saw blade

3.111**linked action**

action of opening and closing of the **guard** is related to the corresponding up and down movement of the **saw unit**. This **linked action** need not be a rigid connection

3.112**mitre angle**

angular displacement of the plane of the **fence** with respect to the cutting line, the position of the saw blade plane that is perpendicular to the plane of the **fence** being the 0° mitre position

3.113**moulding head cutting**

non-through cutting operation performed with a specially shaped cutting device which produces a corresponding shape of the cutter on the bottom surface of the workpiece, predominantly used for decoration

Note 101 to entry: **Moulding head cutting** is also known as shaping.

3.114**non-removable (device)**

device that is welded, riveted or utilizing non-standard simple fasteners and cannot be removed with ordinary household tools, such as slotted or Philips-tip screwdrivers and/or simple wrenches

3.115**non-through cutting**

any cutting operation where the cutting device does not protrude beyond the thickness of the workpiece

3.116**plowing**

non-through cutting operation performed by moving a workpiece over an ordinary saw blade utilizing a special **fence** that is not parallel to the cutting line of the saw blade, and in very small increments increasing the depth of the cut after each pass to shave off large, arcing surface areas

Note 101 to entry: **Plowing** is also known as cove cutting.

3.117**plunge cutting**

non-through cutting operation starting at a location other than the edge of a workpiece

Note 101 to entry: The cut is typically performed by first securing the workpiece over the stationary saw blade lowered below the **table top** and then by slowly raising the rotating saw blade into the workpiece. The saw blade can be raised to fully cut through the thickness of the workpiece before the workpiece is advanced by guiding it with a rip or **cross-cutting fence**.

3.118**rabbeting**

non-through cutting operation creating a rectangular notch in the edge of a workpiece where the notch is either cut by dado blades or by two non-through cuts perpendicular to each other, performed with an ordinary saw blade on the side and the bottom edge of the workpiece

Note 101 to entry: **Rabbeting** is also known as rebating.

3.119**resawing**

combination of two non-through cuts performed with an ordinary saw blade in the same plane but on opposite sides of a workpiece that result in reducing the thickness of the workpiece

3.120**riving knife**

device located behind and in the plane of the saw blade, within the cutting capacity of the saw blade and in a fixed proximity to the saw blade through an entire depth of cut and **bevel angle** operating range of the saw blade, with an intended function to reduce the risk of saw blade pinching and binding

3.120.1**adjustable extended riving knife**

device designed to function at least in one position as an **extended riving knife** and in a second position as a **riving knife**

3.120.2**extended riving knife**

device, in all aspects identical to a **riving knife** except it extends above the **maximum cutting capacity** of the saw blade to allow the mounting of a **saw blade guard** and/or an **anti-kickback device**

3.120.3**fixed extended riving knife**

extended riving knife that is fixed in position

3.121**rip cutting**

any cutting operation performed utilizing a **rip fence** to guide the workpiece

Note 101 to entry: For natural wood, a rip cut is performed predominantly in a parallel direction with the grain of the wood; for engineered materials, a rip cut is performed parallel with the length of the workpiece.

3.122**saw unit**

device with an affixed saw blade, capable of performing a cutting action

3.123**saw blade guard**

device designed to minimize inadvertent contact of the blade, being either

– a top guard, mounted above the table in bench saw mode such that a workpiece will pass between the mounted device and the table; or

– a lower guard, a movable self-closing and blade-covering device in mitre saw mode

3.123.1**over-arm saw blade guard**

saw blade guard suspended from a device above the table such that the mounting structure for the **saw blade guard** is not in the workable range of the **table top** plane

3.124**table top**

horizontal surface that is in contact with and supports the workpiece

3.125**tapered cut**

cut performed utilizing a fixture to hold the workpiece such that the straight edge of the workpiece is not parallel to the cutting line of the saw blade

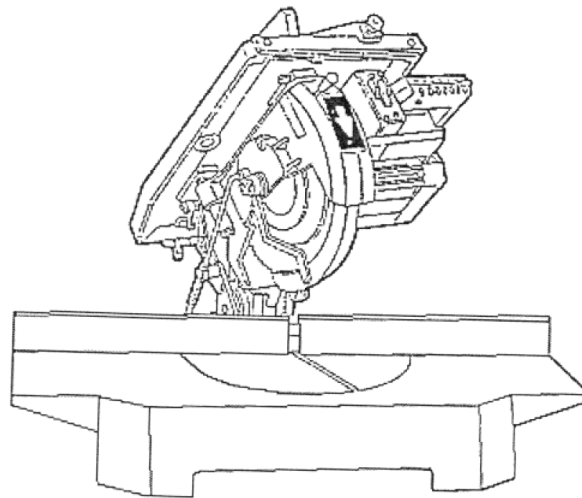
Note 101 to entry: The fixture is guided by the **rip fence**.

3.126**through cutting**

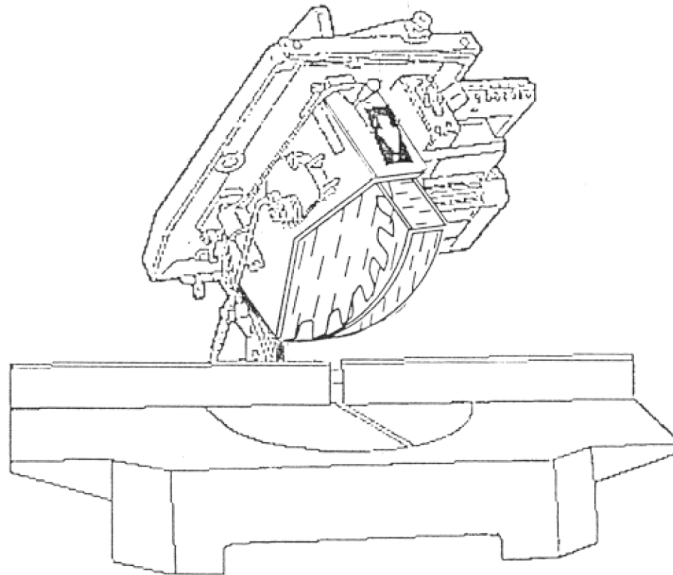
any cutting operation where the saw blade protrudes beyond the thickness of the workpiece

3.127**zero clearance table insert**

table insert that is manufactured without any slot for the saw blade, with the intention that the slot in the table insert will be cut after installation in the table saw by the actual saw blade installed in the table saw

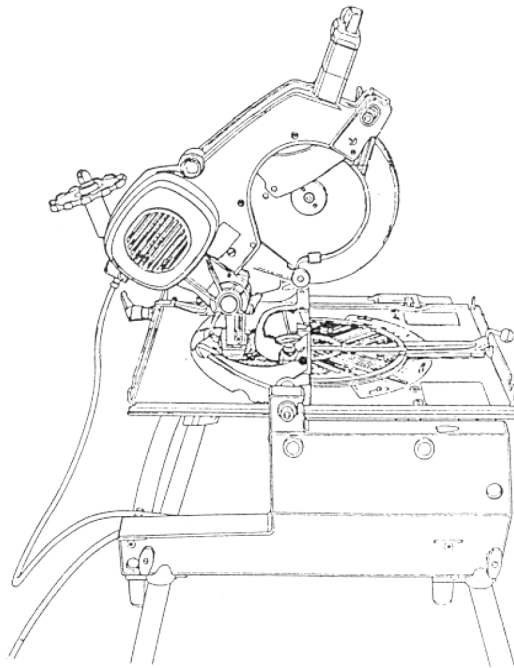


a) Example provided with U-shaped guard

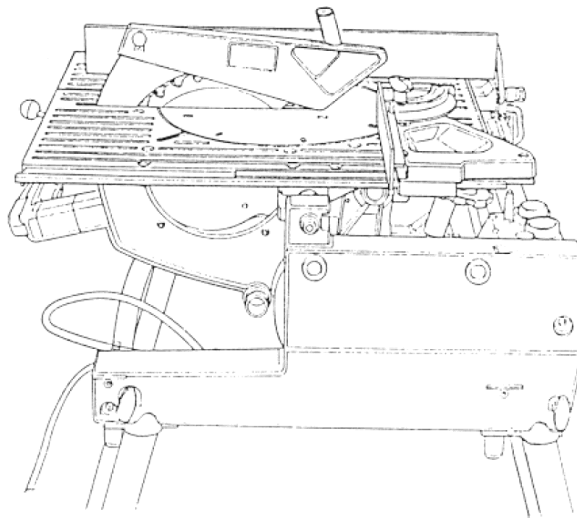


b) Example provided with open guard construction

Figure 101 – Combined mitre and bench saw (Type “A”)



a) Example in mitre saw position



b) Example in bench saw position

Figure 102 – Combined mitre and bench saw (Type “B”)

4 General requirements

IEC 62841-1:2014, Clause 4 is applicable, except as follows:

Addition:

4.101 Throughout the remaining part of this document, unless otherwise explicitly stated, whenever a requirement or a reference is made to

- “saw blade”:
this shall equally apply to any “saw blade” as specified in accordance with 8.14.2 a);

- 396 – “force” as multiple of ***D***:
397 the force shall be measured in N and the saw blade diameter ***D*** shall be measured in mm;
398 – “**riving knife**”:
399 this shall equally apply to “**extended riving knife**”, but not vice versa.
400 This terminology rule does not apply to “**riving knife position**”, i.e. the “**riving knife**
401 **position**” cannot be substituted with an “**extended riving knife position**”.

402 5 General conditions for the tests

403 IEC 62841-1:2014, Clause 5 is applicable.

404 6 Radiation, toxicity and similar hazards

405 IEC 62841-1:2014, Clause 6 is applicable.

406 7 Classification

407 IEC 62841-1:2014, Clause 7 is applicable.

408 8 Marking and instructions

409 IEC 62841-1:2014, Clause 8 is applicable, except as follows:

410 8.1 Addition:

411 **Combined mitre and bench saws** shall be marked with:

- 412 – maximum and minimum saw blade diameter;
- 413 – **rated no-load speed**;
- 414 – indication of direction of rotation of the saw blade;
- 415 – the **maximum cutting capacity** for bench sawing operation;
- 416 – saw blade bore diameter;
- 417 – thickness of **riving knife**.

418 If the top **guard** in bench saw mode is made of non-transparent material, an indication of the
419 cutting line in alignment with the plane of the saw blade shall be marked on the top **guard**.

420 8.3 Addition:

421 The direction of rotation of the saw blade shall be indicated on a fixed part of the saw in the
422 vicinity of the spindle axis by an arrow raised or sunk, which is visible when changing the saw
423 blade, or by any other means not less visible and indelible.

424 Where the machine is designed to operate at more than one spindle speed, the following
425 requirements apply:

- 426 – on machines where a speed change is achieved by changing the position of the drive belts
427 on the drive pulleys, the selected speed shall be indicated on the same side of the
428 machine as the start control by a diagram showing the relevant speed selected for each
429 combination of pulleys;
- 430 – on machines where a speed change is achieved by an electronic control circuit, the
431 selected speed shall be indicated on the machine at the selecting device (e.g. variable
432 speed control dial provided with numerical speed settings).

8.14.1 Addition:

The additional safety instructions as specified in 8.14.1.101 to 8.14.1.103 shall be given. This part may be printed separately from the “General Power Tool Safety Warnings”.

8.14.1.101 Safety instructions for combined mitre and bench saws

- a) **Combined mitre and bench saws are intended to cut wood or wood-like products, they cannot be used with abrasive cut-off wheels for cutting ferrous material such as bars, rods, studs, etc. Abrasive dust causes moving parts such as the lower guard to jam. Sparks from abrasive cutting will burn the lower guard, the kerf insert and other plastic parts.**
- b) **Keep guards in place. Guards must be in working order and be properly mounted, especially after a mode change. A guard that is loose, damaged, or is not functioning correctly must be repaired or replaced.**
- c) **Do not use the saw until the table is clear of all tools, wood scraps, etc., except for the workpiece. Small debris or loose pieces of wood or other objects that contact the revolving blade can be thrown with high speed.**
- d) **Cut only one workpiece at a time. Stacked multiple workpieces cannot be adequately clamped or braced and may bind on the blade or shift during cutting.**
- e) **The cut-off piece must not be jammed or pressed by any means against the spinning saw blade. If confined, i.e. using length stops, the cut-off piece could get wedged against the blade and thrown violently.**
- f) **Turn off the saw and disconnect the power cord when removing the table insert, changing the saw blade or making adjustments to the riving knife, anti-kickback device or saw blade guard, and when the machine is left unattended. Precautionary measures will avoid accidents.**

NOTE 101 If an **anti-kickback device** is not provided, the phrase “**anti-kickback device**” is omitted in item f) above.

NOTE 102 At the manufacturer's discretion, it is possible to replace the term “**anti-kickback device**” by an appropriate term such as “**anti-kickback pawls**” or “**anti-kickback rollers**” in item f) above.

- g) **Never leave the saw running unattended. Turn it off and don't leave the tool until it comes to a complete stop. An unattended running saw is an uncontrolled hazard.**
- h) **Mount or place the saw in a well-lit and level area where you can maintain good footing and balance. It should be installed in an area with firm work surface that provides enough room to easily handle the size of your workpiece. Cramped, dark areas, and uneven slippery floors invite accidents. A level and firm work surface reduces the risk of the saw becoming unstable.**
- i) **Frequently clean and remove sawdust from under the saw table and/or the dust collection device. Accumulated sawdust is combustible and may self-ignite.**
- j) **The saw must be secured. A saw that is not properly secured may move or tip over.**
- k) **Remove tools, wood scraps, etc. from the table before the saw is turned on. Distraction or a potential jam can be dangerous.**
- l) **Always use saw blades with correct size and shape (diamond versus round) of arbour holes. Saw blades that do not match the mounting hardware of the saw will run off-centre, causing loss of control.**
- m) **Never use damaged or incorrect saw blade mounting means such as flanges, saw blade washers, bolts or nuts. These mounting means were specially designed for your saw, for safe operation and optimum performance.**
- n) **Never stand on the saw, do not use it as a stepping stool. Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.**
- o) **Make sure that the saw blade is installed to rotate in the proper direction. Do not use grinding wheels, wire brushes, or abrasive wheels on a saw. Improper saw blade installation or use of accessories not recommended may cause serious injury.**

- p) **Keep saw blades clean, sharp, and with sufficient set. Never use warped saw blades or saw blades with cracked or broken teeth. Sharp and properly set saw blades minimise binding, stalling and kickback.**

8.14.1.102 Safety instructions for mitre saws mode

- a) **Use clamps to support the workpiece whenever possible. If supporting the workpiece by hand, you must always keep your hand at least 100 mm from either side of the saw blade. Do not use this saw to cut pieces that are too small to be securely clamped or held by hand. If your hand is placed too close to the saw blade, there is an increased risk of injury from blade contact.**
- b) **The workpiece must be stationary and clamped or held against both the fence and the table. Do not feed the workpiece into the blade or cut “freehand” in any way. Unrestrained or moving workpieces could be thrown at high speeds, causing injury.**
- c) **Push the saw through the workpiece. Do not pull the saw through the workpiece. To make a cut, raise the saw head and pull it out over the workpiece without cutting, start the motor, press the saw head down and push the saw through the workpiece. Cutting on the pull stroke is likely to cause the saw blade to climb on top of the workpiece and violently throw the blade assembly towards the operator.**
- d) **Never cross your hand over the intended line of cutting either in front or behind the saw blade. Supporting the workpiece “cross handed” i.e. holding the workpiece to the right of the saw blade with your left hand or vice versa is very dangerous.**
- e) **Do not reach behind the fence with either hand closer than 100 mm from either side of the saw blade, to remove wood scraps, or for any other reason while the blade is spinning. The proximity of the spinning saw blade to your hand may not be obvious and you may be seriously injured.**
- f) **Inspect your workpiece before cutting. If the workpiece is bowed or warped, clamp it with the outside bowed face toward the fence. Always make certain that there is no gap between the workpiece, fence and table along the line of the cut. Bent or warped workpieces can twist or shift and may cause binding on the spinning saw blade while cutting. There should be no nails or foreign objects in the workpiece.**
- g) **Plan your work. Every time you change the bevel or mitre angle setting, make sure the adjustable fence is set correctly to support the workpiece and will not interfere with the blade or the guarding system. Without turning the tool “ON” and with no workpiece on the table, move the saw blade through a complete simulated cut to assure there will be no interference or danger of cutting the fence.**

NOTE 101 The phrase “bevel or” does not apply for saws without bevel adjustment in item g) above.

- h) **Provide adequate support such as table extensions, saw horses, etc. for a workpiece that is wider or longer than the table top. Workpieces longer or wider than the mitre saw table can tip if not securely supported. If the cut-off piece or workpiece tips, it can lift the lower guard or be thrown by the spinning blade.**
- i) **Do not use another person as a substitute for a table extension or as additional support. Unstable support for the workpiece can cause the blade to bind or the workpiece to shift during the cutting operation pulling you and the helper into the spinning blade.**
- j) **Always use a clamp or a fixture designed to properly support round material such as rods or tubing. Rods have a tendency to roll while being cut, causing the blade to “bite” and pull the work with your hand into the blade.**
- k) **Let the blade reach full speed before contacting the workpiece. This will reduce the risk of the workpiece being thrown.**
- l) **If the workpiece or blade becomes jammed, turn the mitre saw off. Wait for all moving parts to stop and disconnect the plug from the power source and/or remove the battery pack. Then work to free the jammed material. Continued sawing with a jammed workpiece could cause loss of control or damage to the mitre saw.**
- m) **After finishing the cut, release the switch, hold the saw head down and wait for the blade to stop before removing the cut-off piece. Reaching with your hand near the coasting blade is dangerous.**

- n) **Hold the handle firmly when making an incomplete cut or when releasing the switch before the saw head is completely in the down position.** *The braking action of the saw may cause the saw head to be suddenly pulled downward, causing a risk of injury.*

NOTE 102 The warning in item n) above applies only for saws with a brake system.

8.14.1.103 Safety instructions for bench saws mode

1) Guarding related warnings

- a) **Always use saw blade guard, riving knife and anti-kickback device for every through-cutting operation.** *For through-cutting operations where the saw blade cuts completely through the thickness of the workpiece, the guard and other safety devices help reduce the risk of injury.*

NOTE 101 If an **anti-kickback device** is not provided, the phrase “and **anti-kickback device**” is omitted in item 1) a) above.

NOTE 102 At the manufacturer’s discretion, it is possible to replace the term “**anti-kickback device**” by an appropriate term such as “**anti-kickback pawls**” or “**anti-kickback rollers**” in item 1) a) above.

NOTE 103 The warning in item 1) a) above is omitted, if the **saw** is designed with a **non-removable fixed extended riving knife** that has a **non-removable** guarding system.

- b) **After completing a non-through cut such as rabbeting, resawing, or dadoing, restore the riving knife to the extended-up position. With the riving knife in the extended-up position, reattach the blade guard and the anti-kickback device.** *The guard, riving knife, and anti-kickback device help to reduce the risk of injury.*

NOTE 104 The term “**rabbeting**” can be substituted by “**rebating**” in item 1) b) above.

NOTE 105 If **dadoing** or **resawing** cuts are not permitted, the term “**dadoing or resawing cuts**” is omitted in item 1) b) above.

NOTE 106 If an **anti-kickback device** is not provided, the warning in item 1) b) above is revised as follows:

After completing a non-through cut such as rabbeting, resawing, or dadoing, restore the riving knife to the extended-up position. With the riving knife in the extended-up position, reattach the blade guard. *The guard and riving knife help to reduce the risk of injury.*

NOTE 107 At the manufacturer’s discretion, it is possible to replace the term “**anti-kickback device**” by an appropriate term such as “**anti-kickback pawls**” or “**anti-kickback rollers**” in item 1) b) above.

NOTE 108 The warning in item 1) b) above is omitted, if the **saw** is designed with a **non-removable fixed extended riving knife** that has a **non-removable** guarding system.

- c) **Make sure the saw blade is not contacting the guard, riving knife or the workpiece before the switch is turned on.** *Inadvertent contact of these items with the saw blade could cause a hazardous condition.*

- d) **Adjust the riving knife as described in this instruction manual.** *Incorrect spacing, positioning and alignment can make the riving knife ineffective in reducing the likelihood of kickback.*

- e) **For the riving knife and anti-kickback device to work, they must be engaged in the workpiece.** *The riving knife and anti-kickback device are ineffective when cutting workpieces that are too short to be engaged with the riving knife and anti-kickback device. Under these conditions a kickback cannot be prevented by the riving knife and anti-kickback device.*

NOTE 109 If an **anti-kickback device** is not provided, the warning in item 1) e) above is revised as follows:

For the riving knife to work, it must be engaged in the workpiece. *The riving knife is ineffective when cutting workpieces that are too short to be engaged with the riving knife. Under these conditions, a kickback cannot be prevented by the riving knife.*

NOTE 110 At the manufacturer’s discretion, it is possible to replace the term “**anti-kickback device**” by an appropriate term such as “**anti-kickback pawls**” or “**anti-kickback rollers**” in item 1) e) above.

- f) **Use the appropriate saw blade for the riving knife.** *For the riving knife to function properly, the saw blade diameter must match the appropriate riving knife and the body of*

the saw blade must be thinner than the thickness of the riving knife and the cutting width of the saw blade must be wider than the thickness of the riving knife.

2) Cutting procedures warnings

A DANGER: Never place your fingers or hands in the vicinity or in line with the saw blade. A moment of inattention or a slip could direct your hand towards the saw blade and result in serious personal injury.

b) Feed the workpiece into the saw blade or cutter only against the direction of rotation. Feeding the workpiece in the same direction that the saw blade is rotating above the table may result in the workpiece, and your hand, being pulled into the saw blade.

NOTE 111 If cutters other than the saw blade are not permitted in accordance with 8.14.2 then “or cutter” is omitted in item 2) b) above.

c) Never use the mitre gauge to feed the workpiece when ripping and do not use the rip fence as a length stop when cross cutting with the mitre gauge. Guiding the workpiece with the rip fence and the mitre gauge at the same time increases the likelihood of saw blade binding and kickback.

d) When ripping, always keep the workpiece in full contact with the fence and always apply the workpiece feeding force between the fence and the saw blade. Use a push stick when the distance between the fence and the saw blade is less than 150 mm, and use a push block when this distance is less than 50 mm. “Work helping” devices will keep your hand at a safe distance from the saw blade.

e) Use only the push stick provided by the manufacturer or constructed in accordance with the instructions. This push stick provides sufficient distance of the hand from the saw blade.

f) Never use a damaged or cut push stick. A damaged or cut push stick may break causing your hand to slip into the saw blade.

g) Do not perform any operation “freehand”. Always use either the rip fence or the mitre gauge to position and guide the workpiece. “Freehand” means using your hands to support or guide the workpiece, in lieu of a rip fence or mitre gauge. Freehand sawing leads to misalignment, binding and kickback.

h) Never reach around or over a rotating saw blade. Reaching for a workpiece may lead to accidental contact with the moving saw blade.

i) Provide auxiliary workpiece support to the rear and/or sides of the saw table for long and/or wide workpieces to keep them level. A long and/or wide workpiece has a tendency to pivot on the table’s edge, causing loss of control, saw blade binding and kickback.

j) Feed the workpiece at an even pace. Do not bend, twist or shift the workpiece from side to side. If jamming occurs, turn the tool off immediately, unplug the tool, then clear the jam. Jamming the saw blade by the workpiece can cause kickback or stall the motor.

k) Do not remove pieces of cut-off material while the saw is running. The material may become trapped between the fence or inside the saw blade guard and the saw blade pulling your fingers into the saw blade. Turn the saw off and wait until the saw blade stops before removing material.

l) Use an auxiliary fence in contact with the table top when ripping workpieces less than 2 mm thick. A thin workpiece may wedge under the rip fence and create a kickback.

3) Kickback causes and related warnings

Kickback is a sudden reaction of the workpiece due to a pinched, jammed saw blade or misaligned line of cut in the workpiece with respect to the saw blade or when a part of the workpiece binds between the saw blade and the rip fence or other fixed object.

Most frequently during **kickback**, the workpiece is lifted from the table by the rear portion of the saw blade and is propelled towards the operator.