Mitsukota Instrument Co. Ltd.

Digital Note Counter – MCD100

User Manual

[Revision 5.0 August 2018]

READ THIS MANUAL CAREFULLY BEFORE USE – FAILURE TO DO SO MAY RESULT IN INJURY, PROPERTY DAMAGE AND MAY VOID WARRANTY. • KEEP THIS MANUAL FOR FUTURE REFERENCE. • Products covered by this manual may vary in appearance, assembly, inclusions, specifications, description and packaging.

Notes can stick together, resulting in an incorrect count. Double-count to improve the reliability of results. Always complete a secondary count manually, or use a weight-based money counter to verify counting results for ultimate reliability. • Counterfeit / mismatched note detection features built into this machine are to be used as a guide only. Always visually check authenticity of the notes using methods recommended by the government.

Safety

Safety messages are designed to alert you to possible dangers or hazards that could cause death, injury or equipment or property damage if not understood or followed. Safety messages have the following symbols:

⚠	You WILL be KILLED or SERIOUSLY INJURED if you do not follow instructions.	⚠	You CAN be KILLED or SERIOUSLY INJURED if you do not follow instructions.	⚠	You CAN be INJURED if you do not follow instructions or equipment damage may occur.

It is important that you read and understand the instruction manual before use and keep the manual in a safe place for future reference. Safety information presented here is generic in nature – some advice may not be applicable to every piece of equipment.

All safety precautions must be observed to reduce the risk of personal injury when operating the equipment.

The term "equipment" refers to your product, be it electrical mains, battery or petrol engine powered.

IMPORTANT – Handle the equipment safely and carefully.

BEFORE USE - If you are not familiar with the safe operation/handling of this equipment, or are in any way unsure of any aspect of suitability or correct use it for your application, you should complete training conducted by a person or organization qualified in safe use and operation of this equipment, including fuel/electrical handling and safety.

- Read all safety warnings and all instructions. Failure to follow warnings and instructions may result in electric shock, fire and/or serious injury.
- Never run a combustion engine in confined areas.
- Do not operate the equipment in flammable or explosive environments, such as in the presence of flammable liquids, gases or dust. Engine and equipment may create sparks or heat that may ignite vapours, dust etc
- Keep clear of moving parts.
- This equipment may be a potential source of electric shock if misused.
- Do not operate the equipment if it is damaged, malfunctioning or is in an excessively worn state.
- Do not allow others to use the equipment unless they have read this manual and are adequately trained.
- When using the equipment, basic safety precautions detailed here must always be followed to reduce the risk of fire, electric shock, personal injury and material damage.
- When wiring electrically powered equipment, follow all electrical and safety codes.
- Ensure all power sources conform to equipment voltage requirements and are disconnected before connecting equipment.

General Work Area Safety

Work areas should be clean and well it.

Do not operate the equipment if bystanders, animals etc are within operating range of the equipment or the general work area.

Personal Safety

Keep packaging away from children - risk of suffocation! Operators must use the equipment correctly. When using the equipment, consider conditions and pay due care to persons and property.

Prevent unintentional starting of the equipment - ensure equipment and power source switches are in the OFF position before connecting or moving the equipment. Do not carry equipment with hands/fingers touching any controls. Remove any tools or other items that are not a part of the equipment from it before starting or switching on.

Stay alert and use common sense when operating equipment. Do not overreach. Keep proper footing and balance at all times. Do not use equipment when tired or under the influence of drugs, alcohol or medication. This equipment is not intended for use by persons with reduced physical, sensory or mental capabilities.

You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. Always wear eye protection. Protective equipment such as respirators, non-skid safety shoes, hard hat, hearing protection etc should be used for appropriate conditions. Other people nearby should also wear appropriate personal protective equipment. Do not wear loose clothing or jewellery, which can be caught in moving parts. Keep hair and clothing away from the equipment.

If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of dust collection can reduce dust-related hazards.

General Equipment Use and Care

Do not force the equipment. Use the correct equipment for your application. The correct equipment will perform better and be safer within its design parameters. Do not use the equipment if the ON/OFF switch malfunctions – any equipment that cannot be controlled with the ON/OFF switch is dangerous and must be repaired.

Use the equipment and accessories etc. in accordance with these instructions, considering working conditions and the work to be performed. Using the equipment for operations different from those intended could result in hazardous situations.

Before use, inspect the equipment for misalignment or binding of moving parts, loose components, damage or any other condition that may affect its operation. If damaged, have the equipment repaired by an authorized service centre or technician before use.

Always keep the equipment and accessories (cutting tools, nozzles, bits etc) properly maintained. Keep the equipment, controls and handles dry and free from dirt, oil and grease.

Store the equipment out of reach of children or untrained persons. To avoid burns or fire hazards, let the equipment cool completely before transporting or storing. Never place the equipment in places where there are flammable materials, combustible gases or combustible liquids etc.

The equipment is not weather proof, and should not be stored in direct sunlight, at high ambient temperatures or locations that are damp or very humid.

Product Use and Care

- Before installing, ensure that the machine is compliant with the mains electrical supply.
- **Electric shock/electrocution hazard** - Only use the power cable provided with the machine. Use of other cables may present an electrocution, electrical shock or fire hazard. Do not use the machine of the electrical cord is damaged.
- **Electric shock/electrocution hazard** - Do not insert any object into the machine other than as designed as this may present an electrocution, electrical shock or fire hazard
- **Electric shock/electrocution hazard** - NEVER immerse the electrical cord or machine in water.
- Do not use the product if there is a malfunction. Disconnect the power supply to the machine and have the machine inspected and repaired at an authorised service centre.
- Ensure that the machine is switched OFF when not in use or before performing cleaning or maintenance.

- This machine is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge. All users should have adequate training in safely operating the product or be under supervision of a person responsible for their safety.
- After removing the machine from its packaging, check for any damage. If damage is found, contact the retailer.
- The packing materials (plastic bags, polystyrene foam, nails, metal strips, etc.) represent choking or suffocation hazards and must be kept away from children.
- Do not attempt to repair or alter the machine.
- The manufacturer is not responsible for any injuries to persons or animals or property damage that may be caused by the incorrect installation or use of this product.
- The batch function is not designed to be used with polymer / plastic notes. Use will result in unreliable operation.
- Notes can stick together, resulting in an incorrect count. Double-count to improve the reliability of results. Always complete a secondary count manually, or use a weight-based money counter to verify counting results for ultimate reliability.
- Counterfeit / mismatched note detection features built into this machine are to be used as a guide only. Always visually check authenticity of the notes using methods recommended by the government.

General Service Information

- Have the equipment serviced or repaired at authorized service centres by qualified personnel only.
- Replacement parts must be original equipment manufacturer (OEM) to help ensure that equipment safety is maintained.
- Do not attempt any maintenance or repair work not described in this instruction manual.
- After use, the equipment and components may still be hot – allow the equipment to cool and disconnect spark plugs and/or electrical power sources and/or batteries from it before making adjustments, changing accessories or performing repair or maintenance.
- Do not make adjustments while the equipment is running.
- Perform all service related activities under suitable conditions, such as a workshop etc.
- Replace any worn, damaged or missing warning labels immediately.
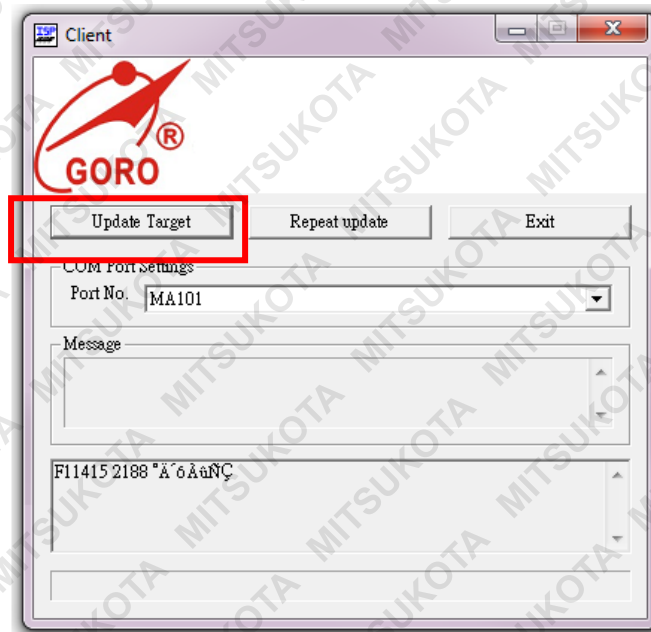- Do not clean equipment with solvents, flammable liquids or harsh abrasives.
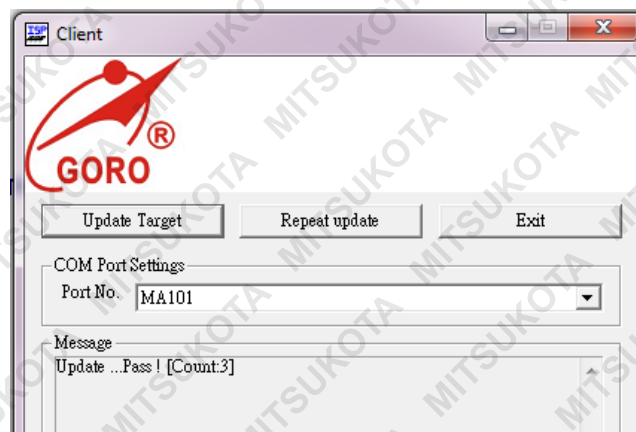
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Updating Machine Software

This counter can be updated for use with Australian and International currencies. Please complete an update prior to first use. From time to time, updates may become available for changes in currency, additional features, fixes and/or other improvements. It is recommended to check http://www.updatemc.com for update files – there are folders for the date of the update that contain a "zipped" application file. If an update is available, it is recommended to download and install it. The update application runs on Windows computers only.

1. Download the software update application file (for example, *http://www.updatemc.com/2018jan/SCNOTMITACD1-2188.exe.zip*).

2. "Unzip" the file to a suitable location on your computer.

3. Connect the money counter adaptor cable (USB on one end and "telephone" style plug on the other) to a USB port on your computer, and to the socket at the back of the money counter.

4. Switch the money counter ON.

5. Double-click the "exe" file – an application will open on the computer – click **Update Target** to begin the process.

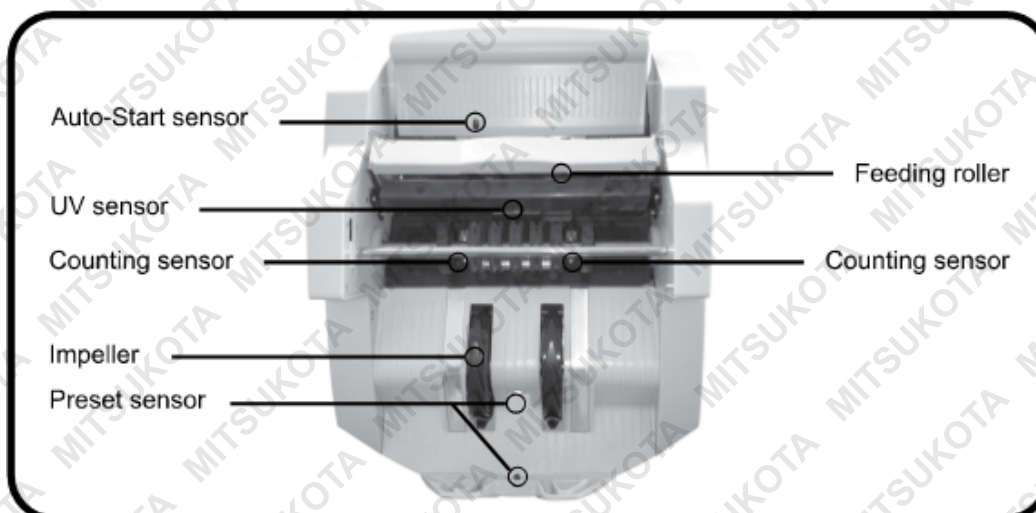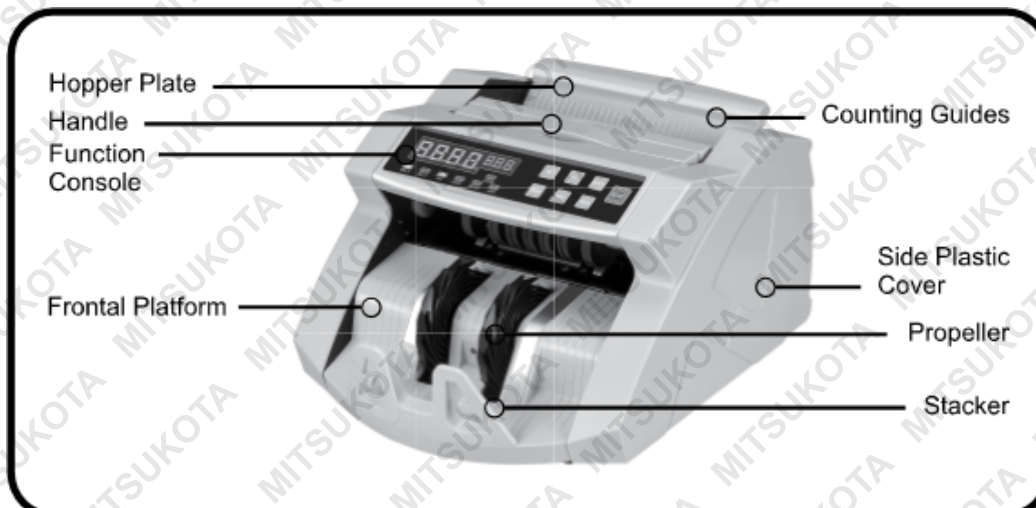6. The money counter screen will be blank during the update. When the update is complete, an "*Update ..Pass!*" message displays.

7. Switch the money counter OFF, then disconnect the adaptor cable and close the update application.

8. Use the money counter as normal.

Parts Identification

NOTE: The following images show components that are common to most models, however, some may feature different display types etc.

Controls and Display

NOTE: The following image shows the display layout for one model type, however, functionality between models is the same, with slight variations (for example, LCD displays may change colour etc).

No.	Name	No.	Name
a	Counting display	**i**	UV indicator
b	Batch display	**j**	Count indicator
c	+ button	**k**	Batch indicator
d	- button	**l**	Alarm indicator
e	Batch button	**m**	Add indicator
f	Restart button	**n**	Add button
g	MG1 indicator	**o**	UV button
h	MG2 indicator	**p**	MG button

The unit may feature a secondary display that connects to the connector on the rear of the unit. The secondary display shows the count only – it does not show detection or error codes.

Operation

Usage and Set-Up Guidelines

In order to achieve the most accurate and consistent operation, do the following:

NOTE: The machine cannot be guaranteed to be 100% accurate due to factors, such as the condition of the notes, wear etc. However, if set-up and used correctly, it will provide reasonable accuracy as a high-speed counting device.

- Always separate bank notes by value into separate bundles before counting (that is, all "10s" together, all "5s" together and so on).
- For notes of the same value but of different types (paper, plastic etc), separate them into bundles by type before counting.

It is recommended to perform several tests to set-up the machine before actual use. You should conduct the testing for each note type (paper or plastic) as there can be a significant difference in the thickness of the note, which may affect count accuracy. Test as follows:

1. Manually count out a suitable number of notes. Remember, the notes must be of the same value and type. For example, 100 notes. Do not use more notes than the capacity of the hopper. Do not use damaged notes or particularly dirty notes, if possible.

2. Switch the machine ON, then disable UV, magnetic, double note and size detection functions. This is simply to allow the machine to count without disruption for set-up purposes.

3. Load the notes into the hopper and count them. If the machine counts less than the known number of notes, the note thickness adjustment needs to reduced as it occasionally counting 2 notes as 1. Repeat testing until the count is consistent and acceptably accurate.

4. Separate the notes into 2 or 3 bundles, then recount them using the "add" function. The total of notes counted should again be consistent and acceptably accurate.

5. Activate the "batch" function, setting it to, for example, "20". Load the entire bundle into the machine, then begin counting. Manually check each batch of notes – the count should be consistent and acceptably accurate.

Switching ON

Connect the electrical supply cable to the machine power connector, then plug it to the power source and switch the unit ON. The unit will conduct a self-checking by spanning the feeding roller and testing the ultra-violet (UV) and magnetic (MG) detection functions. The counting display will show "**O**" when the self-test is finished and the unit is in normal working condition.

Loading Notes and Basic Counting

Place a bundle of notes (100 notes is the recommended maximum, for polymer notes 60 is the recommended maximum) into the hopper – if the counter regularly 'flicks notes out' then it's being over-filled – be sure to insert the entire bundle together – money stacks should be inserted 'pointing straight up' (vertical at 90°) for the counter to feed polymer notes more successfully – 'fan the notes' before counting to help free any notes that are stuck together – ensure that the notes are fully inserted into the hopper and are placed centrally in the hopper, then release it. If the "auto-count" function is enabled, the machine will begin counting automatically; if auto-count is disabled, press **RESTART** to start counting. The number of notes counted shows on the display. Once the counted notes have been removed from the stacker, it is ready to

count again. Note that if the machine features adjustable width guides, set these to help guide the notes in evenly, but not squeeze them. Always count each stack multiple times to improve accuracy.

Count using the following settings:

- MG1 light on.
- MG2 light off.
- UV light on.
- COUNT light off.

If there is any issue counting with these settings, adjust to the following:

- MG1 light off.
- MG2 light off.
- UV light of.
- COUNT light on.

Add Counting

Use the Add function to add the current number of notes to the previous count. After counting the first load of notes, press the **ADD** button (**ADD** indicator illuminates). Remove the counted notes from the stacker, load more notes into the hopper, then start counting. When counting completes, the display shows the total number of notes counted. Press the **ADD** button again to exit this function.

Batch Counting

NOTE: The Batch function is NOT designed to be used with polymer / plastic notes. Use will result in unreliable operation.

Use the Batch function to count a set number of notes (default = 100. Batches of 50 notes or less is recommended), then automatically stop. Press the **BATCH** button (**BATCH** indicator illuminates), then press or hold down the **+** or **-** button to set the number of notes, as required, then release the button when the desired number is reached. Press the **BATCH** button again to exit this function.

Sensitivity Settings and Additional Functions

NOTE: Not all additional functions may be supported.

To access the "settings" menu, press and hold the **RESTART** button until the display shows "**OP-A**" (this is the first setting). To step to the next available setting, press the **+** button. To change the value of a setting, press the **–** button. For example, to change the value of a setting from "01" to "03", press the **–** button twice.
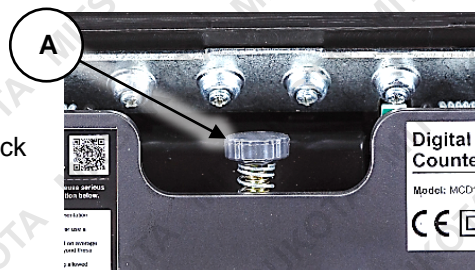
Function	Description
OP-A	**UV Detection** – Activation and sensitivity adjustment. Settings are "off", then "01" least sensitive to "10" most sensitive.. The default setting is "05".
OP-B	**Magnetic Detection** – Activation and sensitivity adjustment. Settings are "off", then "01" least sensitive to "10" most sensitive. The default setting is "03".
OP-C	**Double Note Detection** – This function attempts to detect several notes stuck together. To activate this function, set to "yes"; to deactivate, set to "no". The default setting is "yes".
OP-D	**Size Detection** – This function attempts to detect abnormally sized notes. To activate this function, set to "yes"; to deactivate, set to "no". The default setting is "no".
OP-E	**Auto-Count** – Sets how the machine is triggered to start counting. When this function is active, the machine immediately begins counting when notes are detected in the hopper. When this function is not active, you must press the **RESTART** button to begin counting. To activate this function, set to "yes"; to deactivate, set to "no". The default setting is "yes". It is recommended to deactivate this function.

Function	Description
OP-H	For future use.
OP-U	**Count All** – Sets if the machine adds any suspicious notes detected to the count. When this function is active, the machine will "alarm" when a suspicious note is detected, however, will add it to the number of notes counted. When this function is not active, the machine will "alarm" when a suspicious note is detected, however, will not add it to the number of notes counted. To activate this function, set to "yes"; to deactivate, set to "no". The default setting is "yes".

Note Thickness Adjustment

If improper note feeding occurs, such as inability to feed notes or several notes being fed but counted as 1, adjust the note thickness setting. To do this, rotate the adjustment screw (**A**) located at the back of the unit until consistent feeding is achieved.

- Rotate the screw right (clockwise) to decrease note thickness.

- Rotate the screw left (anti-clockwise) to increase note thickness.

Detection Messages

NOTE: Depending on the material and construction of some notes, not all detection functions may be applicable. For example, notes not containing any magnetically sensitive materials are not affected by magnetic sensitivity scanning. • Most problems are caused by dust or dirt inside the unit, dirty or damaged notes. Keep the unit clean at all times and ensure that you do not load damaged notes, notes of different values or types etc.

If the machine detects a suspect note, it will go into "alarm" – beeps and flashes and shows and "alarm code" (see descriptions below), and stops counting so the note can be retrieved from the stacker. Once the suspect note has been removed, press **RESTART** to resume counting.

Ultra-Violet (UV) Detection

This function detects counterfeit notes using UV light technology. It is automatically active when the unit is switched on (UV indicator illuminates). It can be deactivated by pressing the UV button.

Magnetic Detection

This function detects counterfeit notes using magnetic field technology. There are two levels of magnetic detection – "MG1" and "MG2". MG1 detects notes with lower magnetic content, while MG2 detects notes with high magnetic content. MG1 is automatically active when the unit is switched on (MG1 indicator illuminates). MG2 can be selected by pressing the MG button until the MG2 indicator illuminates. Magnetic detection can be deactivated by pressing the MG button until no magnetic function indicators are illuminated.

Alarm	Description
E-1	A torn or partial, or folded note has been detected.
E-2	A note that fails UV testing has been detected. If you are encountering an abnormally high number of alarms for notes that are not suspect, try reducing or disabling UV sensitivity.
E-3	A note that fails magnetism testing has been detected. If you are encountering an abnormally high number of alarms for notes that are not suspect, try reducing or disabling magnetic sensitivity.
E-5	An undersized, partial or folded note has been detected. If you are encountering an abnormally high number of alarms for notes that are not suspect, try disabling size detection.
E-9	Several notes that are not fully separated have been detected.
E-C	Several notes that are stuck together back-to-back have been detected. If you are encountering an abnormally high number of alarms for notes that are not suspect, try disabling double note detection.
E-H	Several notes that are not fully separated have been detected.

Maintenance and Troubleshooting

- Do not operate the unit in areas with high ambient temperature, humidity, water and/or other liquids, as it may cause the unit to stop working or prevent it from counting accurately.

- When not in use, switch the unit OFF and disconnect it from the electrical supply.

- Never operate the unit in direct sunlight.

- Clean the unit frequently. Before cleaning, switch the unit OFF and disconnect it from the electrical supply. Clean the unit internals using the supplied brush (do NOT allow any liquids to enter the unit). Clean the external surfaces with a soft cloth – do NOT use detergents, solvents, abrasives etc.

Troubleshooting

If a suspect note or error is detected during counting, a "code" is shown on the display. Most problems are caused by dust or dirt inside the unit. Keep the unit clean at all times. Its recommended to switch the unit OFF then ON again after an error.

Code	Description
C-1	Error with auto-start sensor – clean sensor. Replace if problem persists.
C-2	Error with clean sensor – clean sensor. Replace if problem persists.
C-3	Error with left-count sensor – clean sensor. Replace if problem persists.
C-4	Error with right-count sensor – clean sensor. Replace if problem persists.
C-5	Error with UV sensor – clean sensor and check electrical connection. Replace if problem persists.
C-6	Error with speed sensor – clean sensor. Replace if problem persists.
C-7	Error with magnetic sensor – clean sensor. Replace if problem persists.
C-8	Error with magnetic sensor – clean sensor. Replace if problem persists.
C-9	Error with magnetic sensor – clean sensor. Replace if problem persists.

Specifications

Maximum Counting Speed	1000 pieces/min
Maximum Note Load Capacity	100 pieces (for thicker notes, this value may reduce)
Compatible Currency	AUD, USD, NZD, others

<table>
<tr>
<td>⚠️</td>
<td>Some experts believe that the incorrect or prolonged use of almost any product may cause serious injury or death. To help reduce your risk of serious injury or death, refer to the information below. For more information, see www.datastreamserver.com/safety</td>
</tr>
</table>

- Consult all documentation, packaging and product labelling before use. Note that some products feature documentation available online. It is recommended to print and retain the documentation.

- Before each use, check the product for loose/broken/damaged/missing parts, wear or leaks (if applicable). Never use a product with loose/broken/damaged/missing parts, wear or leaks.

- Products must be inspected and serviced (if applicable) by a qualified technician every 6 months. This is based on average residential use by persons of average size and strength, and on a property of average metropolitan size. Use beyond these recommendations may require more frequent inspections/servicing.

- Ensure that all users of the product have completed a suitable industry recognised training course before being allowed access to the product.

- The product has been supplied by a general merchandise retailer that may not be familiar with your specific application or description of application. Be sure to attain third-party approval from a qualified specialist for your application before use, regardless of any assurances from the retailer or its representatives.

- This product is not intended for use where fail-safe operation is required. As with any product (for example, automobile, computer, toaster), there is the possibility of technical issues that may require the repair or replacement of parts, or the product itself. If the possibility of such failure and the associated time it may take to rectify could in any way inconvenience the user, business or employee, or financially affect the user, business or employee, then the product is not suitable for your requirements. This product is not intended for use where incorrect operation or a failure of any kind, including but not limited to, a condition requiring product return, replacement, parts replacement or service by a technician may cause financial loss, loss of employee time or an inconvenience requiring compensation.

- If this product has been purchased in error when considering the information presented here, contact the retailer directly for details of their returns policy, if required.