MATSUKO
POND & GARDEN

INSTALLATION AND OPERATING MANUAL

SWITCH BOX • SWITCH BOX TIMER
SWITCH BOX TIMER + PUMPGUARD™

WARNING:

Ensure that your Matsuko Switch Box is switched off at the mains before you attempt to conduct any type of maintenance.

WARNING:

PLEASE READ THE FOLLOWING SAFETY INFORMATION FIRST.

IMPORTANT SAFETY INFORMATION
PLEASE READ CAREFULLY

- Always consult with a qualified electrician before attempting any electrical installation.

- Always isolate the unit from mains electricity supply before carrying out any maintenance.

- Use in the area of the garden pond only if the installation complies with the relevant wiring regulations.

- Power must be supplied through a Residual Current Device (RCD) with a residual operating current not exceeding 30mA.

- This unit must be earthed.

- Never use a fuse larger than 13 amps on the power lead.

- The unit must not be submerged in water.

- Young children should always be supervised near water.

IN THE EVENT OF A POWER FAILURE

Following a power failure, the Switch Box will restart with each line in the same position as before the power interruption. The Switch Box Timer will resume as per its programming. However, in order for all of this to occur, the Switch Box must be run for a minimum of 48 hours with uninterrupted power to enable the back up capacitor to be fully charged. This function is for short term power cuts only. Long term power outages will result in all models needing to be re-programmed.

PRODUCT INFORMATION

- Model Ratings: 220-240V. 5 LINES. 1500 W MAX POWER PER LINE.
  3000 W MAX TOTAL OUTPUT

- All units are IP56. All units are CE approved.

Disposal Of Your Old Product

Your product is designed and manufactured with high quality material and components, which can be recycled and reused. When this crossed-out wheeled bin symbol is attached to a product, it means the product is covered by the European Directive 2002/96/EC. Please contact your local authority about correct disposal for electrical and electronic equipment.

Please act according to your local rules and do not dispose of your old products with your normal household waste. The correct disposal of your old product will help prevent potential negative consequences for the environment and human health.

CONTENTS

INTRODUCING THE MATSUKO SWITCH BOX RANGE

Congratulations on purchasing your Matsuko Switch Box. All Matsuko Switch Boxes are built to complement your outdoor enjoyment, giving you total control of your lifestyle. All Matsuko Switch Boxes are designed to be weatherproof, stylish, robust and safe in your outdoor environment.

The Matsuko Switch Box range comprises of 3 models:

SWITCH BOX*

5 Way Switch Box - Offering up to 5 lines of power up to 1500 W per line.

Each connected device can be manually powered on or off at the touch of a button.

NOTE:- total unit output is limited to 3000W.

SWITCH BOX TIMER*

5 Way Programmable Switch Box - Offers 5 lines of power each delivering up to 1500 W per line.

Every device that gets connected can be individually programmed to power on or off at your convenience.

NOTE:- total unit output is limited to 3000W.

SWITCH BOX TIMER + PUMPGUARD™*

Gives you the same great flexibility over your devices as the Timer version but with the added benefit of **PumpGuard**™ and power consumption monitor.

The **PumpGuard**™ will protect your primary pump in case of failure and also show you the power consumption of line 1 individually plus lines 1 - 5 combined.

NOTE:- total unit output is limited to 3000W.

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DIMENSIONS

226 mm · 70 mm · 160 mm
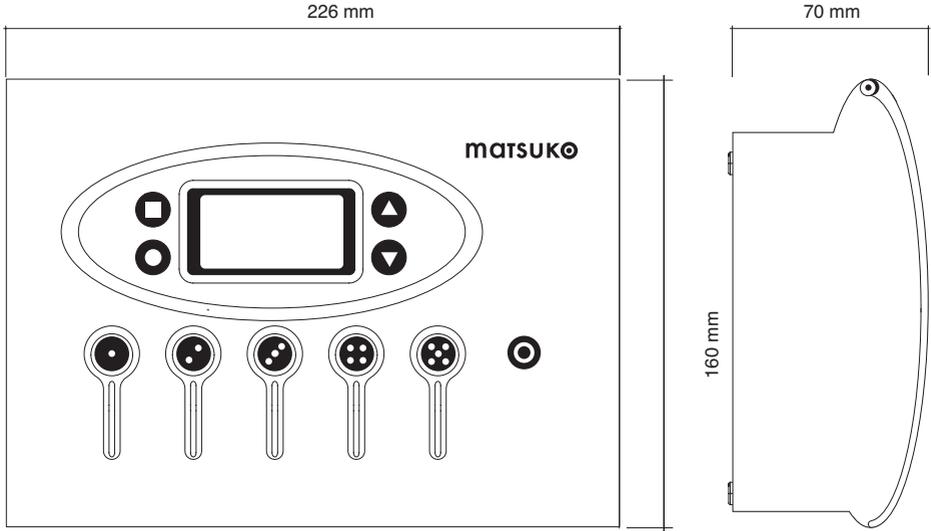
	Switch Box	Switch Box Timer	Switch Box Timer + PG
Output	220/240 V	220/240 V	220/240 V
Max. Power Per Line*	1500 W	1500 W	1500 W
Max. Total Output	3000 W	3000 W	3000 W
Programmable	–	◉	◉
Number of Lines	5 Lines	5 Lines	5 Lines
Model Number	Switch Box	Switch Box Timer	Switch Box Timer + PG
Internal Fuses	6.3A G-Fuse 5 mm x 20 mm		
Double Layer Capacitor**	–	◉	◉
PumpGuardTM + Power consumption	–	–	◉

* 1500 Watts per line when installed into the mains household electrical wiring using appropriate cable.

** A double layer capacitor stores electrical energy to remember your programs in case of a power cut for at least 24 hrs when fully charged. The Matsuko double layer capacitors need minimum 48 hours to be fully charged.

INSTALLATION

> **WARNING:** ALWAYS TURN THE SWITCH BOX POWER OFF AT THE MAINS ELECTRIC BEFORE OPENING THE COVER. ALWAYS SECURE WITH CLOSING SCREW.

OPENING THE COVER

To open the cover insert a small screwdriver (1) or similar implement into the round opening at the base of the cover.

Use it to push the fastening connection towards the left until the catch is released (2). Gently lift the cover open to the maximum angle of 100 degrees (3). DO NOT force the cover to open further.

Once you have connected all your appliances (see page 8), always secure the lid with the closing screw (the closing screw is packed together with the 2 blanking plugs).

1

Locking Screw

2

max. 100°

3

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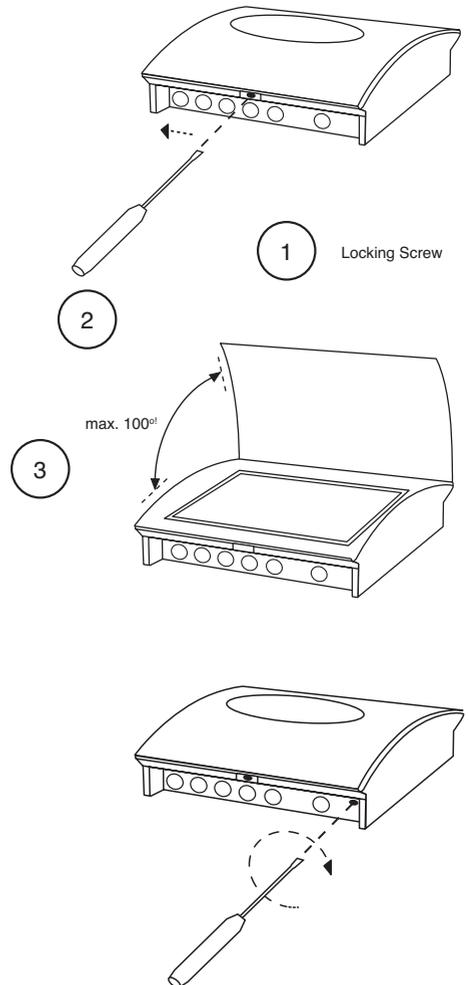
CONNECTING THE CABLES

> **WARNING:** ALWAYS TURN THE SWITCH BOX POWER OFF AT THE MAINS ELECTRIC BEFORE OPENING THE COVER. ALWAYS SECURE WITH CLOSING SCREW. ⚠

It is essential for your safety that you ensure the power of all inputs (including mains) is turned off before proceeding with installation. Do not attempt to install cables without required knowledge and expertise! Use of a qualified electrician is recommended for all installations.

IMPORTANT: Connect the wires to the appropriate pins (Live, Neutral, Earth). Up to five outgoing connections can be installed into the Switch Box (4-8).

Power input is supplied into a separate mains channel (9). Use two screws to secure the cable grip and fix each cable into place inside the Switch Box (11). Outside the Switch Box, if using the supplied cable gland sealing ring, ensure the cable gland sealing ring is turned clockwise until the cable is firmly secured and sealed in the connector (10).

Our NEW PCB terminal blocks are easy click push connectors allowing the user to connect the power in and out cables.

5 mm

40 mm
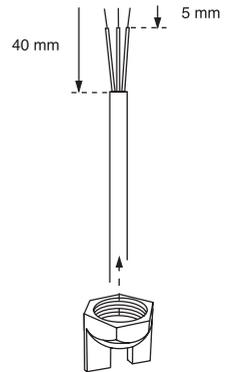
Use a screw driver to push the fastening clip over on the terminal block, place the cable into the terminal block and release the clip securing the cable. Always use ferrule clamps on the cables to ensure a safe connection.

4–9

Power

4	5	6	7	8	9
L N PE	L N PE	L N PE	L N PE	L N PE	L N PE
Out	Out	Out	Out	Out	Line

10

11

8
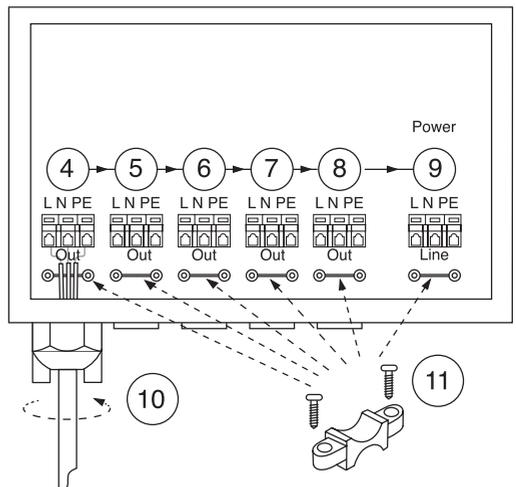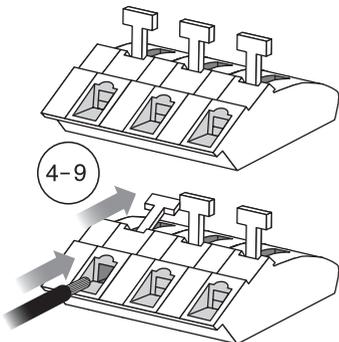
FINISHING CONNECTIONS & BLANKING PLUGS

WARNING: ALWAYS TURN THE SWITCH BOX POWER OFF AT THE MAINS ELECTRIC BEFORE OPENING THE COVER. ALWAYS SECURE WITH CLOSING SCREW. ⚠

Once you have connected all of your appliances, always secure the lid with the closing screw. There are two blanking plugs supplied with Matsuko Switch Boxes. These blanking plugs should be used to replace the cable glands if you decide not to wire a device in at any point.
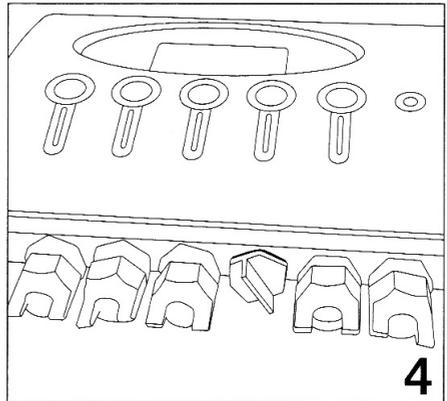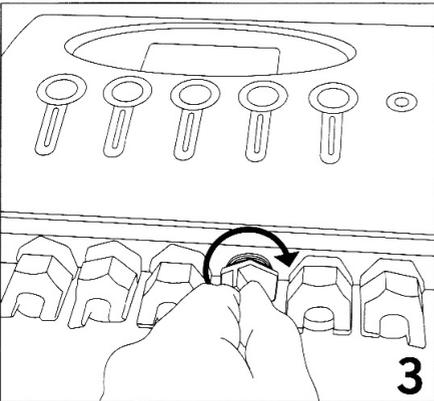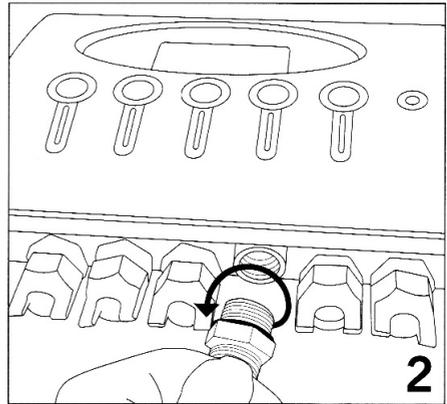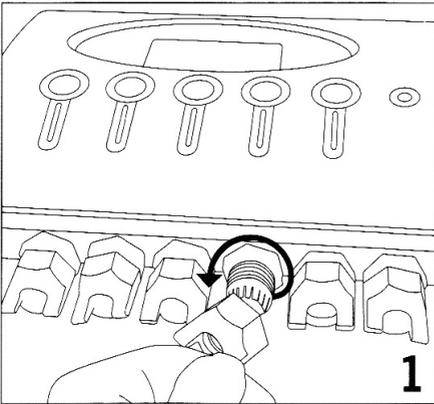
ACTIVATING CONNECTED APPLIANCES (SWITCH BOX ONLY)

To activate each appliance, simply press the corresponding on / off button on the front of the Switch Box, labelled:

LINE 1   LINE 2   LINE 3   LINE 4   LINE 5
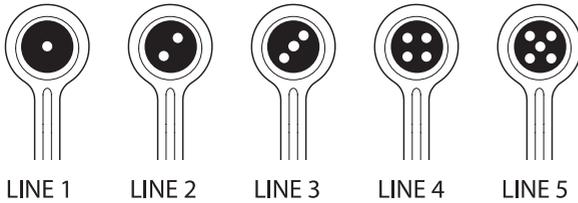
For more detailed programming instructions (for the Switch Box Timer) see page 11.

TYPICAL EXAMPLE OF A COMPLETE INSTALLATION

PUMP   UV   LIGHTS   FEEDER   SKIMMER   POWER IN
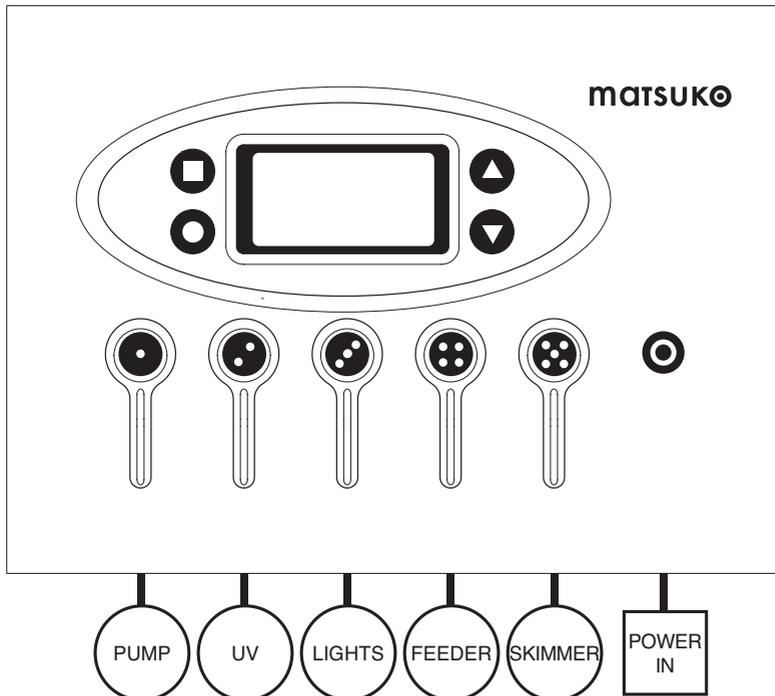
PROGRAMMING (SWITCH BOX TIMER, AND TIMER + PG)

After starting the power supply there is a short delay while the system starts up. Once the screen has turned on, press **Menu** ■ to display the programming menu. To return to the main menu press **Menu** ■. The icons below represent the buttons.

MENU ENTER UP DOWN

TO PROGRAM THE DATE AND TIME

Press **Menu** ■ to enter the programming mode, then use **Down** ▼ to select the clock icon (6 clicks down), then press **Enter** ●. Select date in the format DD/MM/YYYY and 24hr clock as displayed.

To change the date and time, use **Up** ▲ and **Down** ▼ to change number displayed. Confirm selection with **Enter** ● and move on. Press **Menu** ■ at any point to move back. When you have confirmed the minutes with **Enter** ●, the program will change automatically to the main screen **PROGRAMMING MODE**.

TO PROGRAM A LINE

Press **Menu** ■ to get to the programming menu. The five lines are automatically labelled 1-5. Use **Up** ▲ and **Down** ▼ to select a line and press **Enter** ●.

Choose a device description (see list on next page) with **Up** ▲ and **Down** ▼ through device options. The line will be renamed with selected device name. Press **Enter** ● to select one.

Each line can have up to five different program time slots which are labelled "a" through to "e". Use **Up** ▲ to turn a program slot on, a check mark will appear to show that a program slot is being set. Press **Enter** ● to proceed to set 'on' and 'off' times with **Up** ▲ and **Down** ▼.

Use **Menu** ■ at any point to move back through the options. When you have finished programming, press **Enter** ● repeatedly to scroll through the remaining program slots.

The screen will display a large **TICK** ✓ to confirm that program slot changes have been recorded.

When a line switches on, the light on the Switch Box will illuminate to show the line is on.

PUMPGUARD™

WHAT IS PUMPGUARD™ (SWITCH BOX TIMER+PG ONLY)

Pumpguard™ is patent pending, smart technology that helps to avoid possible disasters occurring when your pump blocks or overloads.
Line 1 on every Matsuko Switch Box Timer + PG is set to automatically learn how the new pump behaves when it is first connected and turned on through the timer.

The **PumpGuard**™ will run the pump at different power levels for a twenty minute period until it understands its normal operation. Once the learning process is over **PumpGuard**™ goes into monitoring mode. **PumpGuard**™ will monitor the pump all day everyday looking out for signs of overloading or cutting out.

A pump that constantly keeps restarting can easily burn itself out. **PumpGuard**™ detects this situation and will run the pump on a lower intensity programme to see if this will correct the problem. If a solution cannot be found, **PumpGuard**™ will disconnect the power and save your pump from damaging itself further. In this situation **PumpGuard**™ sounds a stop alarm (the signal for a pump failure alarm is a fast beeping sound plus a red LED on line one) and the display shows "pump fail".

POWER CONSUMPTION MONITOR (SWITCH BOX TIMER+PG ONLY)

The digital display on the screen gives two electrical consumption readings. The Switch Box Timer + PG gives a constant reading on line 1. The second reading on the screen shows a total consumption of all the lines been used by all the devices on the switch box through lines 1 – 5.
To get a reading for an individual simply switch off every line you do not want to monitor. The consumption monitor gives an indicative reading with an accuracy of +/-5%.
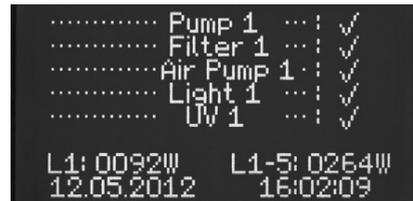
L1: Shows power consumption on line 1.
L1–5: Shows total power consumptions of all lines.

CLEARING A FAULT FROM THE PUMPGUARD™

If you wish to clear the **PumpGuard**™ once the unit has sent the warning that there has been a failure press **Menu** ■, using the **Arrow Keys** ▲▼ scroll down to the **PumpGuard**™ and press Enter ●, this will open the **PumpGuard**™ menu, press **Enter** ● while the arrow is illuminated next to "Clear", this will clear the fault.

ADDING A NEW PUMP

If you want to add a new pump to the **PumpGuard**™ so it can learn its normal function, open the **PumpGuard**™ menu as above and use the arrow keys to move the cursor over to illuminate the arrow next to new pump, now press **Enter** ●, when pressed the text will show (current deleted) and will start to run the new pump to learn its behaviour, this will take roughly twenty minutes. Now press **Menu** ■ to return to the main menu.

PROGRAMMING (SWITCH BOX TIMER AND TIMER + PG)

TO EDIT OR DELETE A PROGRAM SLOT

Press **Menu** ▆ to enter the programming menu. Select the line you want to change using **Up** ▲ and **Down** ▼. Press **Enter** ●.

If required, use **Up** ▲ and **Down** ▼ to change the name of the device and press **Enter** ●. Then Press **Enter** ● to scroll through the program settings and press **Up** ▲ and **Down** ▼ to edit times.

If you need to delete a program slot, move the cursor back to highlight the program slot check mark and press the **Up** ▲ button. The check mark and settings for the program slot will disappear to show that the program slot has been de-activated.

When you have finished programming, press **Enter** ● repeatedly to scroll through the remaining program slots. The screen will display a large **TICK** ✓ to confirm that program slot changes have been recorded.

DEVICE DESCRIPTIONS
The user has several choices for 'Device Descriptions' including:

Air Pump 1	Aux 1	Pump 1
Air Pump 2	Aux 2	Pump 2
Air Pump 3	Aux 3	Pump 3
Heater 1	Feeder 1	UV 1
Heater 2	Feeder 2	UV 2
Heater 3	Feeder 3	UV 3
Filter 1	<None>	Light 1
Filter 2		Light 2
Filter 3		Light 3

POWER SAVING MODE

After 5 minutes the display will go into power saving mode, to re-activate press the **Menu** ▆ key.

MANUAL ON/OFF, AND OVER-RIDE PROGRAMME

If a line is off, you can manually turn if on and off by pressing that line button. When a line comes ON that you have programmed, you can manually turn it off by pressing that line button. It will then come back on when it reaches its next 'ON' that you have programmed.

NEW FEEDER TIMER FUNCTION
(SWITCH BOX TIMER AND TIMER + PG)

The new feeder timer function lets you specify the amount of time you want a feeder to operate. This can be set in minutes and seconds.

Connect your feeder to line 4 or 5.

To set the feeder time press Menu ▇ to enter the programming mode, then use

Arrow Keys ▲▼ to select either line 4 or line 5 (the line that is attached to your feeder).

Press Enter ⬤

Scroll through the "Type:" with the Arrow Keys ▲▼ select "Feeder" (1-3)

Press Enter ⬤

SET THE TIME YOU WANT YOUR FEEDER TO TURN ON

Each line can have up to five different program time slots which are labelled "a" through to "e". Use **Up** ▲ to turn a program slot on, a check mark will appear to show that a program slot is being set. Press **Enter** ⬤ to set the 'on' time use **Arrow Keys** ▲▼ Press **Enter** ⬤ after the you have selected the required hour, use **Arrow Keys** ▲▼ to select the minutes, press **Enter** ⬤ to proceed to set the amount of time the program will run for.

SET THE AMOUNT OF TIME YOUR FEEDER IS ON

Use Arrow Keys ▲▼ to select the number of minutes to a maximum of 20 minutes.

Press Enter ⬤ use Arrow Keys ▲▼ to select the number of seconds.

Press Enter ⬤

Continue to fill in the lines for the required times that you require your feeder to turn on.

When you have finished programming, press Enter ⬤ repeatedly to scroll through the remaining programme slots. The screen will display a large Tick ✓ to confirm that the programme slot changes have been recorded.

NOTES

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