



KOSMOS MALABARES



KOSMOS MALABARES

USER MANUAL
JUGGLING PRODUCTS WITH:

JS2
JUGGLING
SYNCHRONIZATION
SYSTEM



USER MANUAL

Thank you for purchasing our product.

Please take some time to read this simple manual in order to get full benefit and care of the Kosmos Malabares illuminated and magnet-programmable products.

This manual is valid for all juggling products by Kosmos Malabares with following features: Magnetic programming, Dual program, Touch Sensor and Juggling synchronization system *JS²*.

All Kosmos Malabares illuminated products are the result of many years of experience, which have allowed us to standardize some use and quality features. Still, we expect to keep growing with you in order to be able to offer better products and performance, so do not hesitate to contact us to share any concerns you may have at www.kosmosmalabares.com

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INTRODUCTION



Magnetic programming®

This technology have been developed by Kosmos Malabares in 2006. Since that time it has changed the standard in illuminated juggling products making easier to use and durable.

The main features are:

- Shockproof design
- Not affected by intensive use or time.
- Allows to choose 42 colors / 1500 color combinations.
- Easy to turn on/off
- Program memory, do not need to select the program on every use.
- It works with every conventional mid power magnet.

The principle of use is easy. When sliding a magnet close to the sensitive area, the product will detect it and flash 1 second light in red. This is called *"short pulse"*
If the magnet is moved to the sensitive area and kept on it until the red flash is off, this is called *"long pulse"*.

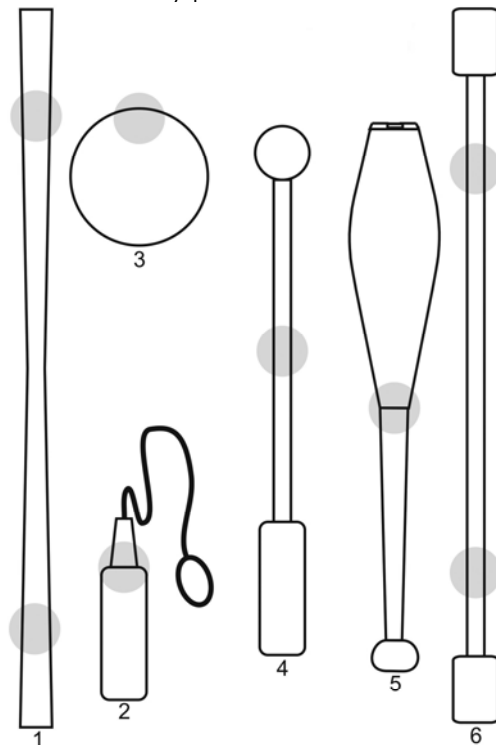
With a combination of short and long pulses is possible to set all features, chose colors and more else. See "General features" chapter for more information.
All Kosmos Malabares products includes a magnet in their supply. This is a normal magnet. In case it get lost, every medium power magnet can be used.

Magnet sensitive area:

See the following diagram to find the sensitive area in every product:

Note:

In the ball the sensitive area is opposite to the charging Connector.



- 1.- Colo
- 2.- Swing
- 3.- Pelota
- 4.- Antorcha de Swing
- 5.- Clava
- 6.- Bastón

Touch Sensor®



The Touch Sensor technology available in all JS2 products use a new featured touch detector that activates on every single hand shock while juggling. This way you can get lighting sequences synchronized with the juggling dynamics.

Depending on the selected program, Touch Sensor will change the product color, init a sequence or make a flash of selected color.
For more information see "program Table"

JS2

Juggling Synchronization System®

This exclusive technology of Kosmos Malabares called **JS²**, moves the juggling into the new communication age.

Every product incorporates a innovative **JS²** communication module. This module transmits and receive information between neighbour devices making a complete synchronization. The complete synchronization includes colour, speed, sequence, program. Also the synchronized program is stored in the internal memory depending if memory 1 or 2 is selected (see also "Dual program").

The working range of **JS²** is combined. The effective synchronization is executed when the distance is about 30cm or less. However, after a successfully synchronization the system keep working to very long distances to maintain the same parameters (colour, speed, sequence). This working mode allows good scene freedom. The artist have the control when he wants to synchronize the products. After do it they will keep synchronized no mater the distance.

The use of **JS²** between products from the same family is fully compatible. So staff, clubs, swings stick or wherever will effectively synchronize.

There are no limitation in the amount of devices to synchronize. Every product can be set as 3 different modes: **JS²** master, **JS²** slave, **JS²** off.

JS² requires no additional accessories to work as remote controllers or other devices. The product is only controlled and programmed by a ordinary magnet.

JS² does not increase the power consumption significantly. It work with the new low power technology that will not reduce the battery operation time. The principle of work is based on use the same led light modulated in frequency to transmit data. This kind of transmission is ecologic and not harmful to any body nor cause other devices interference.

JS² on its 3 operation modes:

- OFF. The product deactivates the *JS²* communication module. It does not transmit nor receive any signal. The product will turn off when powering off by the magnet. Use this mode if you are playing your products next to another person using the same products and you do not want to synchronize with him. We strongly recommend this mode to transport your products safely.
- *JS²* in MASTER mode. Another products set in slave within range will copy its properties (program, color, sequence). The slave products will store the copied program in their memory (memory 1 or 2 see Dual Program). When a *JS²* product in MASTER mode is turned off by magnet pulse, it will remain 30 minutes in stand-by state. If any another MASTER product is on and within the range during this time the product will turn on. After the 30 minutes the product will turn off. If another products are within a range when powering off by a magnet pulse, they will also turn off.
- *JS²* in SLAVE mode: the product turns on in the memorized program. When it get close to a master device (about 30cm) it will synchronize with it and save the same program in the same memory as the master device. When a SLAVE product is turned off by magnet pulse, it will remain in stand by for 30 minutes waiting for a master one. If a master product reach its 30cm range the slave will turn on and synchronize.

NOTES

In the programs that uses Touch Sensor with random colours, on every touch the synchronization will store the same program but the random colour will be different in every product.

In products composed by 2 parts like the dismantable staff, is better to use one half in MASTER mode and the second one in SLAVE to keep the device synchronized all time. In case a second staff is used, the second one can be all SLAVE.

Two products in MASTER mode will not synchronize.

Every product can be set as *JS²* OFF, MASTER, SLAVE.

Dual program®



Every professional show needs more stages with different colours or scenarios. Dual Program technology allows the products to store up to 2 custom program. This feature improves the product customisation by duplicating the programming choices. It also enables to the user to use both programs or only one. When using this feature during performances, the any of the stored programs can be activated or switched from one to the other one with no necessity of entering program mode. Every program stores its own colours and parameters.

GENERAL FEATURES

Innovation:

Following new features are present in all *JS²* products:

- Magnetic programming system.
- Touch sensor technology
- NiMh batteries, light and with minimum memory effect.
- Battery life between 3 and 6 hours (when fully charged).
- Shockproof design..
- RGB LED technology.
- 42 colours that can be freely selected and mixed. More than 1500 combinations.
- DEMO mode displays all the modes automatically
- Memorization of 1 or 2 operating program.
- *JS²* communication module

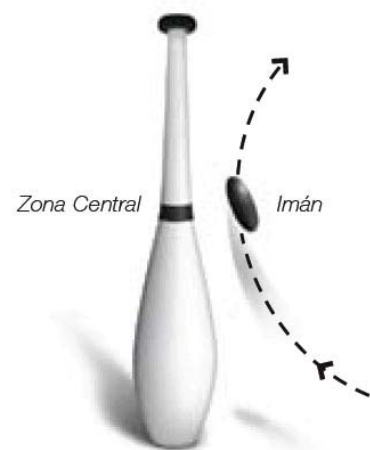
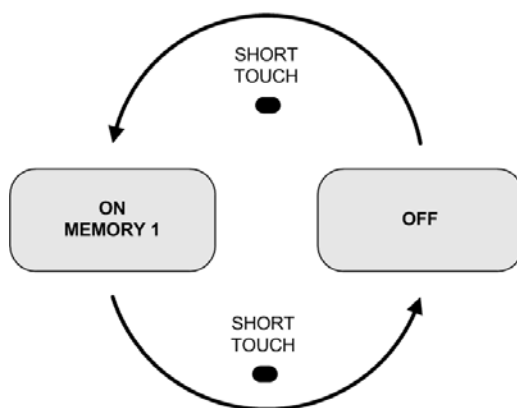
Turning ON and OFF

The products with dual programming feature allows to activate 1 or 2 any program from the program list. In case of 2 program are activated, is possible to switch from first one to second one without entering on program mode.

One active program operation:

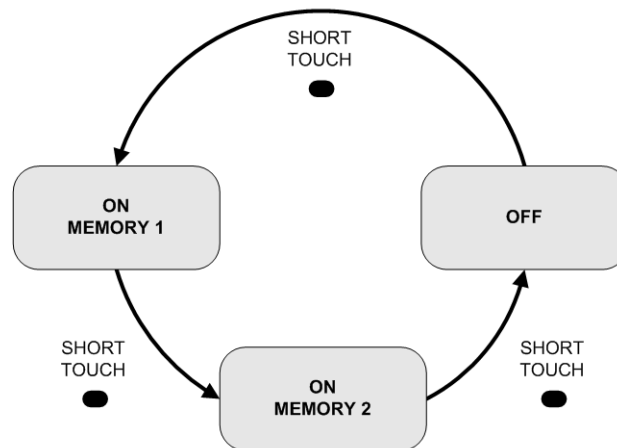
1) Switch on the illuminated product by sliding the magnet over the sensitive area. The product will always glow in the previously saved program.

2) Switch it off by sliding the magnet again. The program stored in position 2 is not active.



Two active program operation:

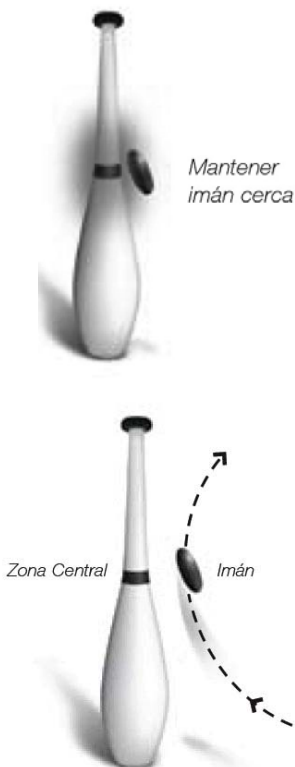
- 1) Switch on the illuminated product by sliding the magnet over the sensitive area (see *Magnetic Programming*). The product will always glow in the program stored in memory 1.
- 2) Slide the magnet again to switch to the program stored in memory position 2.
- 3) Switch it off by sliding the magnet again.



In order to avoid unwanted operation, never transport the magnet close to the illuminated products sensible zone.

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Changing the program



1) Switch on the illuminated product

2) Enter the *JS²* configuration menu by holding the magnet on the sensible zone until the red goes off. When is already off move the magnet away. The *JS²* configuration menu is now active.

3) If you are satisfied with the actual *JS²* settings and you do not want to change them repeat the procedure 2) holding the magnet until the red light goes off. Move away the magnet.

4) A 5 seconds time bar will slide along the product. Make a short touch with the magnet before the time bar reaches its end to activate the *program menu*.

5) Change the active program by short touches. After every touch the next program in the list will be active (see program table).

Choose a colour

Programs 1 and 5 (see program tables) allows to select the first and second colours. That customized colours are used in following programs in the list (see program table). Those colours can be used still, flashing at different speeds or combined between first and second one. This feature increase the total colour combinations up to 1500.

To choose a colour, see the slow sequence of 42 colors. Make a short touch just in time when the one you want to select is displaying.

Store the desired program

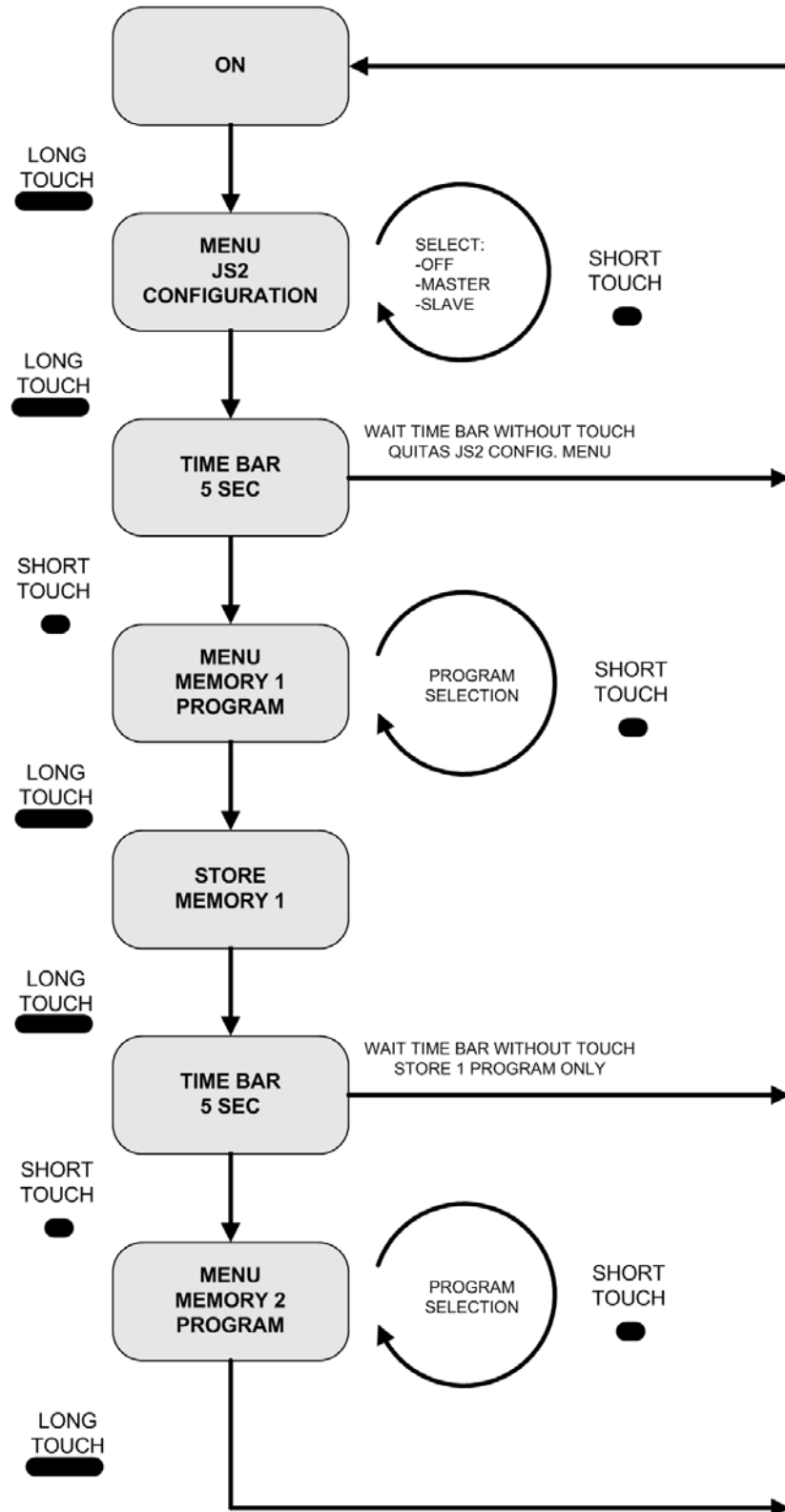
When you have found the desired program you must store it in *memory 1* (see also *Dual Program*) by holding the magnet on the sensitive zone until the red light goes off. After move the magnet away the product will show a 5 seconds time bar again. If you wait until the bar time reaches its end the option to activate a second program will be disabled and the product will function as 1 memory only.

Activating the second program memory

After storing the program in *memory 1* when the magnet is released the time bar is shown. If you slide the magnet before the bar reaches its end you will activate the second memory and enter the program menu. Select the desired program and colour 1 and 2 in same way as *memory 1* and store it by holding the magnet until the red goes off.

The product operation will be as 2 active programs..

Programming chart.



Note:

- Turn off is not possible when program mode is active.
- The program list is circular. After the last one in the list comes the first one.

Using JS²

This technology allows product light synchronization. They can turn on and off at the same time and glow in the same colour and program all the time. Basically all products set as SLAVE will follow the one set in MASTER when they are within the range (see *Juggling Synchronization System* at the beginning of this manual to know more about this function)

Every JS² product can be set in any of the different operation modes:

- **JS² OFF.** The communication module is disabled. There is no data transmitted or received. The product will turn off completely after powering off by the magnet. Use this mode if you are using your product next to another person using the same products and you do not want to synchronize with him. We also recommend this mode to transport the products safely.
- **JS² MASTER.** Another product in SLAVE mode will follow it. When powering off by magnet will stay 30 minutes in *stand by* mode. In this time if another functioning MASTER device gets inside the operational range of 30cm, the product will turn on. After the 30 minutes period the product will turn off fully. If another product is within the operational range when turning off by magnet, all those products will also turn off.
- **JS² SLAVE.** The product turns on in the stored program. When a MASTER device is within the operation range the SLAVE will follow it and store the active program in the same memory as the MASTER one. When powering off it will remain 30 minutes in *stand by* mode. If another MASTER device is within an operation range the SLAVE will turn on automatically.

NOTES

In the programs using *Touch Sensor* in random colour on every touch, the products will be synchronized when within an operation range. Then every product will follow its own random colour.

In products composed by 2 parts as the long staff, every half can be set in different mode. It is recommended to use one half in MASTER and the other one in SLAVE to keep synchronization all the time. However you have the option to use both halves in SLAVE mode to synchronize the whole staff with another product.

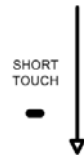
If two MASTER devices are together there will be no synchronization between them. If you are using two MASTER devices in your juggling routine, use one at a time to synchronize the SLAVE ones.

Setting JS² in modes OFF, MASTER, SLAVE

To change the JS² configuration or just check the actual setting without change it you must enter the JS² configuration mode (see "change the program" and "Programming chart")

With the product ON make a long touch with the magnet until the red light goes off. Release it and the JS² configuration mode will be active. The actual settings will be shown in red light in following way:

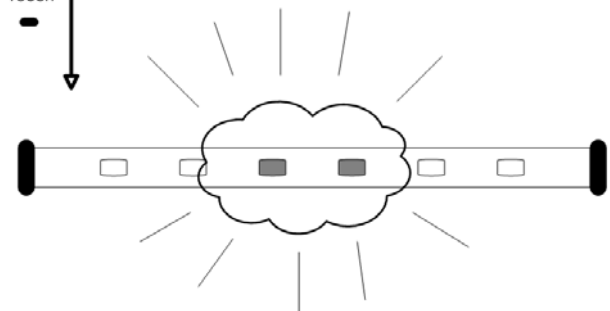
- **SLAVE**, the light comes from ends to centre (shows as reception)



- **MASTER**, the lights moves from centre to the ends (shows as transmission)



- **OFF**, light is still at the centre.



The JS² configuration can be changed between modes by short touches in following sequence: **OFF**→ **SLAVE**→ **MASTER**→ **OFF**...

Remember that is also possible to enter to this configuration mode to check the actual status and quit without change it.

To accept the desired JS² mode make a long touch (see also changing the program)

Battery charging

The illuminated product will lose brightness when battery level is low. If the battery reaches a critical low level, the illuminated product will flash a red light and then it will be turned off by the battery protection circuitry and can not be turned on until is charged.

You can make a complete battery charge when the brightness is low. The approximate battery life is specified in the program table for each model.

The batteries can be charged by using any multicharger available in Kosmos Malabares:

- AC adaptor 220V/12VDC - 300mA
- Travel AC auto voltage adaptor 110-240VCA / 12V 500mA
- charge distributor to be used by any 12V source / CAR adaptor

You can also use another standard AC adaptor in case of missing or broken charger, because the charging regulator has been included inside every illuminated product. This way you just need to buy an AC adaptor with the following specification:

- Output: 10 to 24VDC (12V recommended) / 300mA
- Connector type: female plug, 2,1mm
- Polarity: +  - (built in reverse polarity protection in every product)

How to charge the batteries.

To charge the battery you should plug any of the charger outputs to the product charging connector.

If the product is on, it will turn off when receiving charge. This way, it is easy to check the charging procedure: if the juggling product does not turn off, it means there is some abnormal behaviour.

The charging time is 14 hours for full charge. It is possible to make partial charges by charging 7 hours, then using the product for a while and then charging again.

Note: charging the product for more than 14 hours will not increase the glowing time. In case you forget the charger connected to the product for longer time, the protection circuitry will avoid any overload.

Simultaneous charging of different Kosmos Malabares products connected to the same charger is allowed.

System reset

Every time the product is charged, a restart occurs. This reset does not clear the program memory. If for any reason a reset is needed just plug the charger into the AC outlet supply.

Program mode description

* Programs 1 & 5 also allows to choose desired colours to be used on following programs.

TS selected program activates the Touch Sensor system.

MODE	DESCRIPTION	BATTERY LIFE
1 *	Rainbow effect, slow. Choose COLOR 1 Runs a 42 full colored step sequence. Before to jump to next program, current color is stored in memory as COLOR 1	Normal
2	Color stored in program 1 (color 1) glows still Last color shown in program 1 was stored and glows still. There are 42 colors.	Normal
3	Color 1 + medium speed STROBE Color selected in program 1 (COLOR1) glows with STROBE FLASH at medium speed. There are 42 color possibilities.	Long
4	Color 1 + fast speed STROBE Color selected in program 1 (COLOR1) glows with STROBE FLASH at fast speed. There are 42 color possibilities.	Long
5 *	Rainbow effect, slow. Choose COLOR 2 Runs a 42 full colored step sequence. Before to jump to next program, current color is stored in memory as COLOR 2	Normal
6	Rainbow effect between COLOR 1 & COLOR 2 at med speed Colors between the selected in programs 1 (COLOR1) & 5 (COLOR2) are sequenced at medium speed.	Normal
7	Sequence COLOR 1 & COLOR 2 at medium speed Colors selected in programs 1 (COLOR1) & 5 (COLOR2) are sequenced at medium speed. There are mode than 1500 possibilities.	Long
8	Sequence COLOR 1 & COLOR 2 at high speed Colors selected in programs 1 (COLOR1) & 5 (COLOR2) are sequenced at high speed. There are mode than 1500 possibilities.	Long
9	Rainbow effect, slow speed + STROBE Runs a 42 full colored step sequence plus fast strobe flash. This program is specially designed for juggling and spinning practice.	Long
10	Multicolor swing sequence 1	Long
11	Multicolor swing sequence 2 (EXTENDED)	Long
12	JS² product is divided in 6 different still color zones.	Normal
13 _{TS}	Touch Sensor. Fantastic multicolour sequence that changes on every touch.	Long
14	Rainbow effect, slow speed + STROBE + SLIDING Runs a 42 full colored step sequence plus fast strobe flash. The visual effect is mixed with a red sliding light from one end to the other one.	Long
15	COLOR 1 + SLIDING + STROBE Shows COLOR1 plus a strobe flash mixed with a red sliding light from one end to the other one.	Long
16	Slow rainbow effect- Split. Runs a 42 colors sequence. The product is split in 3 parts with different color.	Normal

...See next page



...continued

MODE	DESCRIPTION	BATTERY LIFE
17	Fast sequence of 8 non conventional colors + STROBE Runs a sequence of blue, orange, light blue, emerald, yellow, violet and light green plus strobe flash. Use this program for fast and dynamic juggling scenes.	Long
18 _{TS}	Touch Sensor. COLOR 1 + COLOR 2 The product color toggles between COLOR 1 and COLOR2 every time it touches the hand when playing.	Normal
19 _{TS}	Touch Sensor. COLOR 1 + Flash COLOR 2 The product powers up on COLOR1. It will make a COLOR2 flash when flying during juggling. If it is still, the flash is shown every 3 seconds to identify the program.	Normal
20 _{TS}	Touch Sensor. Random split color (42 colors) Every time the device touches the juggler hand, it will shows different color. Some color combinations are split.	Normal
21 _{TS}	Touch Sensor. Random whole color (42 colors) Every time the device touches the juggler hand, it will shows different color. The whole product glows on the same color..	Normal
22 _{TS}	Touch sensor. Red slide effect with a white flash on every touch.	Long
23	DEMO Program Shows programs from 1 to 21, changing automatically every 15 seconds. The previously selected COLOR 1 & 2 will be displayed. Note: while in program mode, this program is identified by blinking red.	Long
24▲	Select handle and body clours (on clubs). Handle is COLOURS1, body is COLOUR2. In products with different shape, it will be divided in 2 zones of COLOURS 1 and 2	Normal
25▲	Select handle and body clours (on clubs) + STROBE SLOW Handle is COLOURS1, body is COLOUR2. In products with different shape, it will be divided in 2 zones of COLOURS 1 and 2	Long
26▲	Select handle and body clours (on clubs) + STROBE FAST Handle is COLOURS1, body is COLOUR2. In products with different shape, it will be divided in 2 zones of COLOURS 1 and 2	Long

▲ Programs added on firmware 13



Looking after your product

The illuminated products have been designed for usual falls and kicks during juggling play. The casing material allows impacts on its surface. Use a soft cloth with water or non corrosive soap to clean it. Medicinal alcohol is also allowed.

- Avoid any liquid contact in the charging connector zone.
- Make a full battery charge prior to store your illuminated product for long periods.
- Make a full charge at least one every 4 month.
- Avoid exposures to extreme cold or hot conditions.
- Avoid shocks on the charging connector when the AC adaptor plug is inserted.
- Do not use under the rain.



This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment

Twelve-month warranty:

Every illuminated product and the AC adaptor is warranted for 12 months if no signs of abnormal use are present. Keep the purchase receipt and the warranty card with the serial number and purchase date to valid the warranty.

Corrosion on charging connector or problems due to use of any kind of solvent are not covered by this warranty.

Frequently asked questions.

How many colors does a Kosmos illuminated product have?	KOSMOS uses RGB color LED technology combined with 8 bit RISC microprocessor to get a full set of 42 colors.
I would like to know more about the 42 colors.	Magnetic Programming technology allows to freely choose any of the 42 colors and combine it with another one. This extends the possible play combinations to over 1500. Colors can be used in 3 different flashing speeds.
Is my Kosmos illuminated product robust enough?	All of our models have been designed and tested for normal shocks during juggling play.
Do they have warranty?	Every Kosmos product has 12-month warranty from purchase date.
Do they include any accessories?	Every illuminated product set includes 1 carrying case, 1 magnet, user manual and warranty card.
What kind of batteries are used in Kosmos Malabares products?	Kosmos uses NiMh "memory effect"- free batteries. This allows partial battery charging without compromising battery life.
How to charge them	Simply connect them to the charger. A battery charge controller is included in every Kosmos product to take care of the internal battery. The battery life is about 1000 charges.
What can I do if I lose the supplied charger?	A battery charge controller is included in every Kosmos product. This allows to use any kind of AC adaptor that fulfils the specification. See Charging chapter in user manual.
How long is the glowing time?	Between 3 and 6 hours depending on the lighting mode.
Why does my Kosmos Malabares illuminated product turn off when plugging the charger?	This feature allows to check the charging procedure is happening normally.
Why does the product turn on when unplugging the charger?	This behaviour is correct. Slide the magnet to turn it off.
I have lost the magnet. What can I do?	The products are designed to be used with any kind of strong magnet.
I can not switch off my illuminated product.	That may happen because the program mode is active. Keep the magnet close to the sensitive area until the red goes off and try again.
The product behaviour is not right.	Try charging it. The system will restart every time the product receives charge.
Why I can not program my JS2 staff?	Be sure to have one half in MASTER and the other half in SLAVE mode. Program only the MASTER. The SLAVE will follow the MASTER one.
My JS ² products do not synchronize..	1)Check if one device is in MASTER mode and the other/s in SLAVE. 2)Be sure all products are JS ²
I can not turn on the product. It makes a red flash every time I slide the magnet.	1) Try speeding up the sliding, 2) The battery is flat. Perform a complete charge.