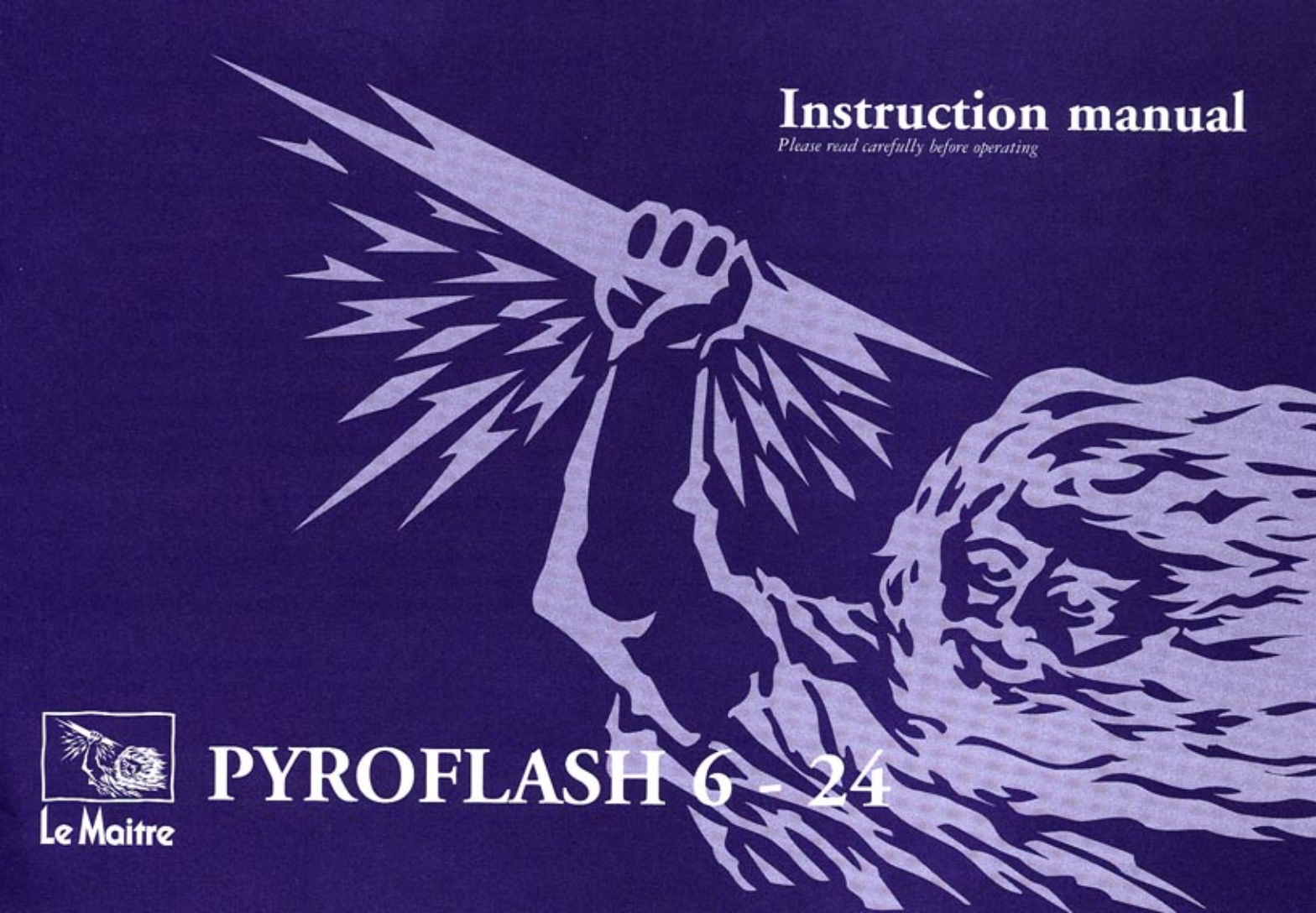
Instruction manual

Please read carefully before operating



Le Maitre

PYROFLASH 6 - 24

Overview

The 6-24 is one of the latest additions to Le Maitre's range of Pyrothechnic detonating devices, and as such represents the very latest in safety and technology, by maximising ignition throughput capabilities with safety features yet to be implemented in any other detonating device.

Intelligent monitoring enables instant fault/damage condition recognition, and allows system disabling in advance of any hazard. Phase sensitive electronics allow one of four effects to be selected per channel, with the option of firing up to 6 selected channels simultaneously. During displays, this feature reduces the requirement of effect re-loading, increases safety levels, and promotes a greater level of visual professionalism.

The 6-24 unit is the solution to Pyro-effect firing systems, be it from single fire to complex multi-sequence generation.

Unit Specification

Detonating Method	High energy 'low voltage', time slice, current controlled capacitive discharge, with Lock out.
Channel Switching	Mechanical individual switching with LED status indicators.
Pod/Effect Selection	4 way mechanical Rotary switching with LED status Selection per Pod/Effect.
Isolation	Mains On/Off removes all power. Keyswitch disconnects power sourcing and discharges the detonator energy source.
Output	Pyro standard 3 pin sockets. 2 wire cable for Single or Twin Pod. 3 wire cable for multiple Pod networks.
Cabling	The use of 0.5mm cable is specified for the 6-24 system. Cable lengths of up to 50 Metres are supported and any combination of lengths is allowed.
Monitoring	Test status LED - <20mA test current Unit Armed LED Channel Selected LED per channel Pod/Effect Selected LED per Pod/Effect Fire Switch Monitor LED when active Detonation Pulse Monitor LED when active
Supply Power	240V a.c. 50Hz 15W Thermal protection 110V a.c. 60Hz 15W Thermal protection 3 Amp fusing advised where applicable

The Pyroflash 6-24 in use

Before any connections are made to the 6-24, or Pyro effects, a system check should be performed.
This will verify the integrity of the 6-24 and reduce confusion over possible system errors.

To perform a system check, simply power up the 6-24, with no pod output connections, switch on the Mains, insert the Key and 'Arm' the unit.

The UNIT ARMED LED will illuminate, as will one POD/EFFECT LED, along with any CHANNEL LED switched to the ON position. (Theoretically no channel switch should be left in the on position).

Testing and Firing

In accordance with safety regulations, the testing of Pyro-technic effects should be viewed as a possible detonation. Therefore all clearance and safety zoning is applicable at such times.

Before power is connected to the 6-24, all channels should be in the **OFF position**, i.e. no channel LEDs on.

Power up the 6-24, and ARM the unit via the Keyswitch control.

By selecting Channels and Pod/Effect, one by one, each effect connected within the system can be checked for a correct circuit loop, and this will be verified by the illumination of the Channel Test LED. This test cannot identify cross wiring within multiple connector leads, only a closed circuit path.

All wiring should be checked before use. See Wiring/Pod checkout section.

Any suspect device should only be removed from the system after the 6-24 unit has been disarmed and isolated from the mains supply.

(Suspect devices are very rare and therefore wiring should be checked initially).

Should it be thought that a suspect effect is present, remove it from the system as described, store it in the original packing, and return it safely to the source of supply.

When all effects and system wiring has been verified as correct, the 6-24 should be securely disarmed and isolated from the mains supply.

Detonating any sequence is an identical operation to testing, except that the FIRE button will be used to perform effect ignition. All channels should be returned to their OFF position after firing to prevent possible corruption of the next detonation.

It should be noted that the FIRE mechanism is of a LOCK-OUT mode type, and that continuous hold down of the Fire switch whilst changing channels or Pod/Effects, will NOT fire these selections.

The FIRE button must be released after ignitions, to enable further selections to be fired.
Safety is of the utmost importance in all aspects of Pyro-Technic displays and is above all else. If in doubt - DON'T.
All persons involved within any pyrotechnic display should be aware of all Safety Zones.
This unit should never be operated without an adequate earth connection.
Mains lead wiring should comply with the cable tag notice.

The PYROFLASH 6-24 will detonate all PyroTechnic effects manufactured by Le Maitre, including those listed below.

Theatrical flash - Small, Medium, Large. Red Flash, Green Flash. Silver Star, Small, Medium, Large. Golden Star. Coloured Fire - Red, Green, Blue, Amber, White, Mauve. 7 Second Coloured Smokes - Red, Blue, Green, Yellow, White. 30 Second Coloured Smokes - Red, Blue,Green, Yellow, White. Streamer Cartridges - (multi mini streamers). Silver Jet. Whistler Cartridges. 7 Second Gerb Cartridges. Mini Gold Gerbs. Large Glitter Cartridges. Large Confetti Cartridges.
Large Streamer Cartridges - etc.

The following Wired Effects can be detonated by using Le Maitre 'Jumper Leads'.

Pyro Pots - Theatrical Flash, Silver Star, Smoke Puffs.
Maroons - Small, Medium, Large, Giant.
Microdets.
4oz Gerbs - Silver, Gold, Gold to Silver. 8oz Gerbs - Silver, Gold, Gold to Silver.
Please note: the Maroon devices will require the use of Le Maitre 'Bomb Tanks'.

Checking Wiring and Pods

Before any cable or Pod is used in a display situation, several checks should be made to ensure that these devices are in good working condition. Although the pressures of live performances can give rise to the need of haste, it must always be remembered that the Pyro-Effects Engineer will be ultimately responsible for any errors that may occur, no matter who made them.

A thorough visual check of cables/connectors for signs of physical damage in the form of cuts, overtwisting, exposed cores, missing securing screws etc. is the first check that can be performed.

Any faulty cabling should be discarded or repaired.

It would be wise to check the security of all connector wiring lock screws, on a regular basis, to ensure that vibration in transit/stage conditions, has not caused any loosening. At the same time, the cable clamping may be inspected to ensure that the cable has not been subjected ot overstress.

A visual inspection of Pods will identify any visual damage to the Pod case, sockets or cable connector. The cable connector sockets should be checked for over opened terminals, which could result from excessive force, and lead to open circuits. If they are not actually damaged, these terminals can be closed to their correct shape with the aid of narrow nosed pliers. Any damaged Pod should be referred for service.

After a visual check has been performed, the Pyroflash 6-24 may be used to check wiring integrity, Pod cartridge sockets, and Twin-Pod electrical performance.

Connect all cabling and Pods to the 6-24 with the Pods in close proximity to the 6-24 Detonator.

With all Pods empty, perform the individual Channel/Effect test procedure. At no stage should the Channel Test LED give an indication. If the Channel Test LED does come on, then a short circuit in the cable or Pod exists. Disconnect the Pod attached to this particular channel cable and re-test. If the LED still remains on, then the cable is faulty, if not, then the Pod is at fault. Either way, the faulty item should be referred for service.

The two MONITOR LEDs should not be on at this stage. Pressing the FIRE switch should cause the SWITCH MONITOR LED to illuminate, and the PULSE MONITOR to flash briefly.

Should either or both LEDs remain on, the unit should not be used, and a service referral made.

If all is well, the channel switches, and the rotary selector can be checked for LED monitoring.

Where multiple effects are to be fired, all wiring and connections should be checked before use.

The 6-24 should now be disarmed and switched off ready for any Pod/Effect connections to be made.

Effect Pod Options (See accompanying diagrams)

Single Pods may be connected to any channel and can be fired by selecting POD A, Effect I or II. Twin core cable is required (Ref 1).

One Twin Pod connection may be made to any channel and can be fired by selecting POD A, Effect I and II for each effect. Twin core cable is required (Ref 2).

One Twin Pod plus a Single or Angled Flash Pod connection may be made to any channel and can be fired by selecting POD A, Effect I and II for the Twin Pod effects, and POD B, Effect I or II for the Single or Angled Flash Pod (Ref 3). 3 core cable is required for both connection and inter-connection.
Note that all effects per channel should be in the same Safety Zone.

Two Twin Pods may be connected to any channel and can be fired by selecting POD A, Effect I and II for the first Twin Pod, and POD B, Effect I and II for the second Twin Pod. The first Pod connected will be pod A, which will then connect through to Pod B (Ref 4). 3 core cable is required for both connection and inter-connection.
Note that all effects per channel should be in the same Safety Zone.

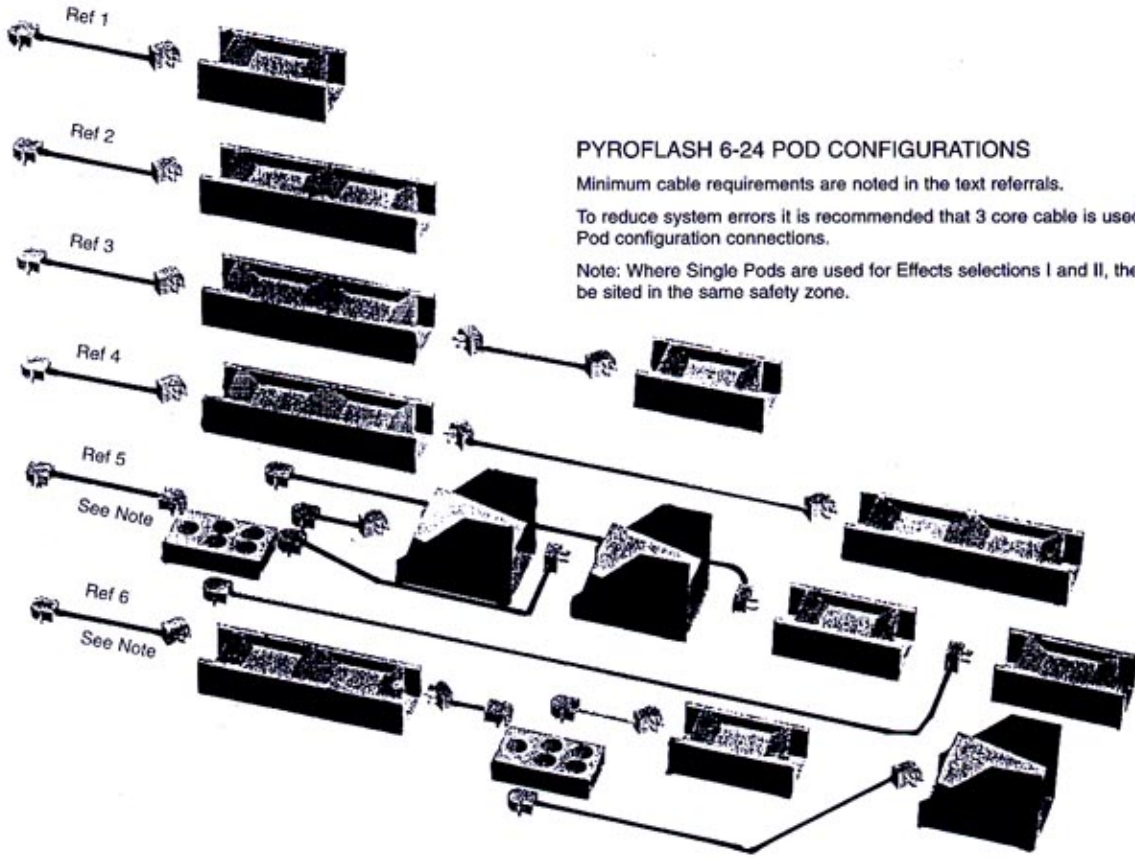
Single or Angle flash Pods can also be connected to the output of a channel cable, or the output of a Twin Pod by using a 6-24 Splitter Box, which provides a single input and four output Pod/Effect sockets, and is powered by the main unit (Ref 5, 6). 3 core cable is required for connection to splitter.
2 core cable is required to Pods.
These two single Pods are grouped as Pod A, I and II, or
Pod B, I and II.
Note that all effects per channel should be in the same Safety Zone.

In order to prevent cable confusion in a system which will be using multiple effects as well as single Pods, the use of 3 core cable, for all interconnections, is recommended.

After the effects configuration has been selected, siting should be in accordance with all Pyro-Technic safety regulations.
(Line of sight, safety zoning, fire hazard etc.)

At no time should any effect be loaded into a cabled system, without having first removed the Arming Key, isolating the mains supply and checking that no LED remains illuminated.

All effects placements should be noted, and be available to the operator at the time of firing. A china-graph window is available on the 6-24 channel selectors to assist with effect selection.



PYROFLASH 6-24 POD CONFIGURATIONS

Minimum cable requirements are noted in the text referrals.

To reduce system errors it is recommended that 3 core cable is used for all Pod configuration connections.

Note: Where Single Pods are used for Effects selections I and II, they should be sited in the same safety zone.

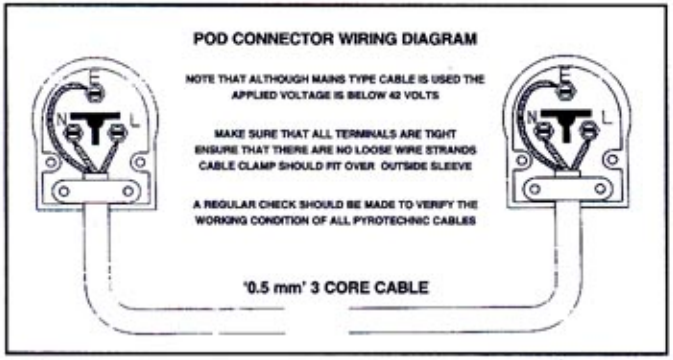
The next stage requires the insertion of the **blank test-cartridge**, supplied with the 6-24, which will mimic the presence of a pyro-electric cartridge. By inserting this cartridge in each Pod, and Testing all Channel/Effect selections, only the appropriate Channel/Effect selection should indicate a pass.

Should any other Effect selection cause a second pass condition, try a new cable. If this does not correct the situation then Pod damage has occurred. Mark this Pod and refer for service.

Should an opposed Effect selection occur, i.e. II instead of I and vice-versa, cable core reversal is present. Check the cable and rectify the fault.

All being well, the system of cable and Pods will check out correctly and verify the working condition of the individual pyrotechnic components.

Although this may at first reading appear to be rather an arduous task, in reality it takes very little time, and can only lead to system confidence, and hence operational safety.



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