coemar

ProWash LX

manuale
di istruzioni

instruction
manual

ProWash LX

numero di serie/serial number _____

data di acquisto/date of purchase _____

fornitore/retailer _____

indirizzo/address _____

cap/città/suburb _____

provincia/capital city _____

stato/state _____

tel./fax/ _____

Prendete nota, nello spazio apposito, dei dati relativi al modello e al rivenditore del vostro **ProWash LX**: in caso di richiesta di informazioni, pezzi di ricambio, servizi di riparazione o altro ci permetteranno di assistervi con la massima rapidità e precisione.

Please note in the space provided above the relative service information of the model and the retailer from whom you purchased your **ProWash LX**: This information will assist us in providing spare parts, repairs or in answering any technical enquiries with the utmost speed and accuracy.

ATTENZIONE: la sicurezza dell'apparecchio è garantita solo con l'uso appropriato delle presenti istruzioni, pertanto è necessario conservarle.

WARNING: the security of the fixture is granted only if these instructions are strictly followed; therefore it is absolutely necessary to keep this manual.

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English

Congratulations on having purchased a **coemar** product. You have assured yourself of a fixture of the highest quality, both in componentry and in the technology used. We renew our invitation to you to complete the service information on the previous page, to expedite any request for service information or spares (in case of problems encountered either during, or subsequent to, installation). This information will assist in providing prompt and accurate advice from your **coemar** service centre.

Following the instructions and procedures outlined in this manual will ensure the maximum efficiency of this product for years to come.

1. Packaging

Open the packaging and ensure that no part of the equipment has suffered damage in transit. In case of damage to the equipment, contact your carrier immediately by telephone or fax, following this with formal notification in writing.

packing list
Ensure the packaging contains:

1 **ProWash LX**
1 **instruction manual**
1 **T 8A (115v) or T 5A (230v) fuse**

2. Transportation

The **ProWash LX** should be transported in its original packaging or in a **coemar** approved flight case.
We recommend the use of a suitable flight case which will stop the articulated movement of the **ProWash LX** during transportation.

3. Important safety information

Fire prevention:
1. **ProWash LX** utilises a Philips MSD 250W/2. The use of any other lamp is not recommended and will null and void the fixtures warranty.
2. Never locate the fixture on any flammable surface.
3. The minimum distance from flammable materials: 0,5 m.
4. The minimum distance from the closest illuminable surface: 2 m..
5. Replace any blown or damaged fuses only with those of identical values. Refer to the schematic diagram if there is any doubt.
6. Connect the projector to main power via a thermal magnetic circuit breaker.

Prevention of electric shock:
1. High voltage is present in the internals of the unit. Isolate the projector from mains supply prior to performing any function which involves touching the internals of the unit, including lamp replacement.
2. For mains connection, adhere strictly to the guidelines outlined in section 7 of this manual.
3. The level of technology inherent in the **ProWash LX**, requires the use of specialised personnel for all service applications; refer all work to your authorised **coemar** service centre.
4. A good earth connection is essential for proper functioning of the projector.
   Never operate the unit without proper earth connection..
5. The fixture should never be located in an exposed position, or in areas of extreme humidity. A steady supply of circulating air is essential.

Protection against ultraviolet radiation:
1. Never turn on the lamp if any of the lenses, filters, or the housing is damaged; their respective functions will only operate efficiently if they are in perfect working order.
2. Never look directly into the lamp when it is operating.

Safety:
1. The projector should always be installed with bolts, clamps, and other fixings which are suitably rated to support the weight of the unit.
2. Always use a secondary safety chain of a suitable rating to sustain the weight of the unit in case of the failure of the primary fixing point.
3. The external surfaces of the unit at various points may exceed 80°C. Never handle the unit until at least 10 minutes have elapsed since the lamp was turned off.
4. Always replace the lamp if any physical damage is evident.
5. Never install the fixture in an enclosed area lacking sufficient air flow; the ambient temperature should not exceed 45°C.
6. A hot lamp may explode. Always wait for at least 10 minutes to elapse after the unit has been turned off prior to attempting to replace the lamp.
   Always wear suitable hand protection when handling lamps.

4. Lamp: Installation and replacement

ProWash LX utilises a Philips MSD 250W/2 or equivalent.
The lamp is available from your authorised **coemar** sales agent:

|	
coemar cod.	**105214/1**
power	250 w
luminous flux	18.000 lm
colour temperature	8.500° K
lamp base	GY 9,5
approximate life	2000 hours

Attention
Disconnect mains prior to opening up the unit

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The fixture's internal temperature can reach 150° C after 5 minutes with a maximum peak of 350° C; ensure that the lamp is cold prior to attempting removal. The fixture should be allowed to stand and cool for 10 minutes prior to its removal.
The lamps are part of the mercury vapour family of discharge lamps and must be handled with great care. The lamps operate at high pressure, and the slight risk of explosion exists if operated over their recommended lamp life.
We recommend, therefore, that the lamp be replaced within the manufacturer's specified lamp life.
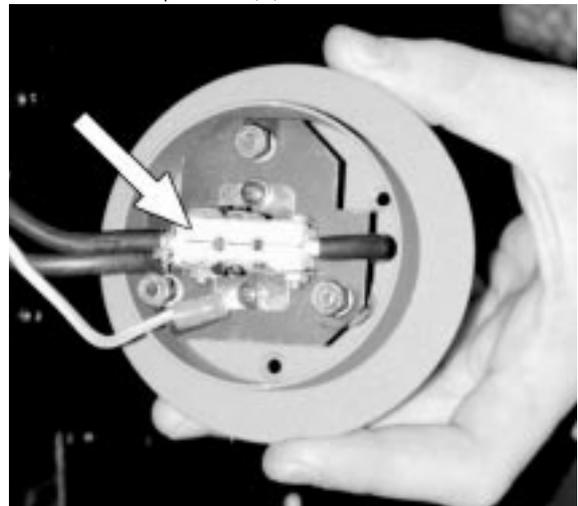
installing the lamp

1) Using a Philips head screwdriver, remove the 3 screws (**A**) which affix the lamp assembly (indicated by the letters x y & z).
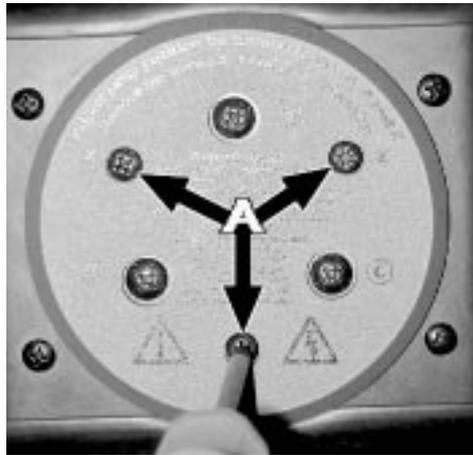
2) Remove the lamp assembly (**B**).
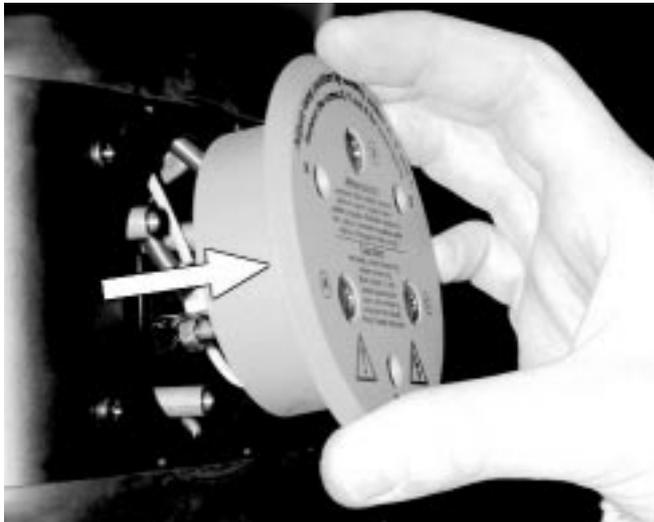

3) Locate the lampholder (**C**)

4) Insert the lamp in the lampbase. The lamp is manufactured from quartz glass and should be handled with care; always adhere to the instructions supplied in the lamp's packaging. Never touch the glass directly, use the tissue provided in the lamp's packaging. The GY 9,5 lampholder is asymmetrical in construction, with one lamp pin larger than the other. DO NOT USE UNDUE FORCE. In case of difficulty, inspect for physical damage and then repeat the installation procedure.


5) Replace the lamp assembly (**B**) into its original position and replace the screws (**A**) which were removed previously.
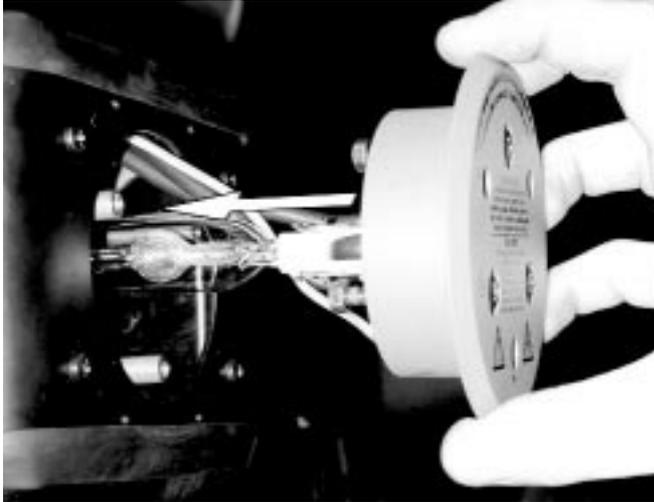
Attention: we recommend that replacement lamps be realigned in the optical path of the lamp so as to avoid any accidental overheating of the internal components of the fixture. This procedure is describe in the section of this manual entitled **"Aligning the lamp in the optical path"**.

5. Operating voltage and frequency

The projector may operate at 100-115-208, 230 or 245V .at 50 or 60 Hz; **coemar** presets (barring specific requests), an operating voltage of 230V and a frequency of 50Hz. The operating voltage and frequency of the projector is noted on the base of the unit.

factory set main at:
- ☐ 100V
- ☐ 115V
- ☐ 208V
- ☒ 230V
- ☐ 245V
- ☒ 50Hz
- ☐ 60Hz
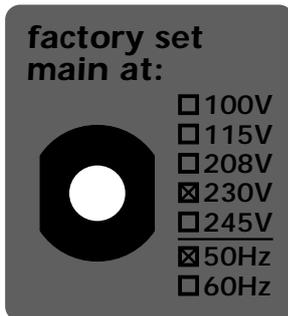
If this preset does not correspond with the conditions in your particular country of operation, follow the instructions in the appropriate section of this manual, section **16. Altering the operating voltage and frequency.**
Incorrect frequency and voltage selection will detrimentally affect the operation of the projector.

6. Installing the unit

mounting
ProWash LX can operate in any mounting position.
The structure from which the unit is hung should be of sufficient rating to hold the weight of the unit, as should any clamps used to hang the unit. The structure should also be sufficiently rigid so as to not move or shake whilst the **ProWash LX** moves during its operation.
The two mounting holes Ø13 mm (**A**) on the base of the **ProWash LX** allows the projector to have hook clamps fitted for the purpose of hanging.

safety chains
The use of a safety chain fixed to the **ProWash LX** and to the primary suspension structure is highly recommended to protect against the accidental failure, however unlikely, of the primary suspension point.
If using an aftermarket safety chain not manufactured by **coemar**, ensure that it is of a sufficient rating to hold the weight of the unit.
The safety chain is attached by means of the two holes **B** located in the base of the unit as shown in the diagram.
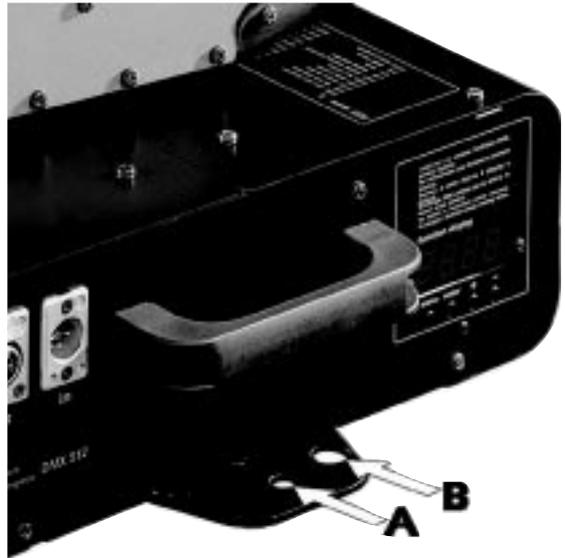
movement
The projector has an articulated movement of 530° in the base and 284° through its yoke; **DO NOT** obstruct the articulated movement in any way.

protection against liquids
The projector contains electric and electronic components that must not come into contact with water, oil, or any liquid.

risk of fire
Each fixture produces heat and must be installed in a well-ventilated position. The minimum recommended distance from flammable material is: 0.5m. Minimum distance from the object being illuminated is: 2m.

forced ventilation
You will note that the projectors housing contains several air entry points and fan outlets, positioned both on the head and the base of the unit; under no circumstances should any of these points be obstructed!
Obstruction of any of these points will result in the over-heating of the unit, detrimentally and seriously affecting the proper operation of the **ProWash LX**.
On this point, refer to section **18 "Electronic motor alignment"**, subsection temperature (**temp**).

7. Mains connection

cable preparation
The mains cable provided is thermally resistant, complying to the most recent international standards.
NB: In case of cable replacement, similar cable with comparable thermal resistant qualities must be used exclusively (cable 3x1,5 ø external 8 mm, rated 300/500V, tested to 2KV, operating temperature -40° +180°).

mains connection
ProWash LX can operate at voltages from 208V-230V-240V at 50 or 60Hz (operating voltage and frequency can be selected as described in section 5 and 16 of this manual). Prior to connecting the unit to your mains supply, ensure that the model in your possession correctly matches the mains supply available to you.
For connection purposes, ensure your plug is of a suitable rating: 2,1 amps at 245, 230v, 208V and 4,7 at 100 and 115V.
Locate the mains cable which exits the base of the unit and connect as shown below:
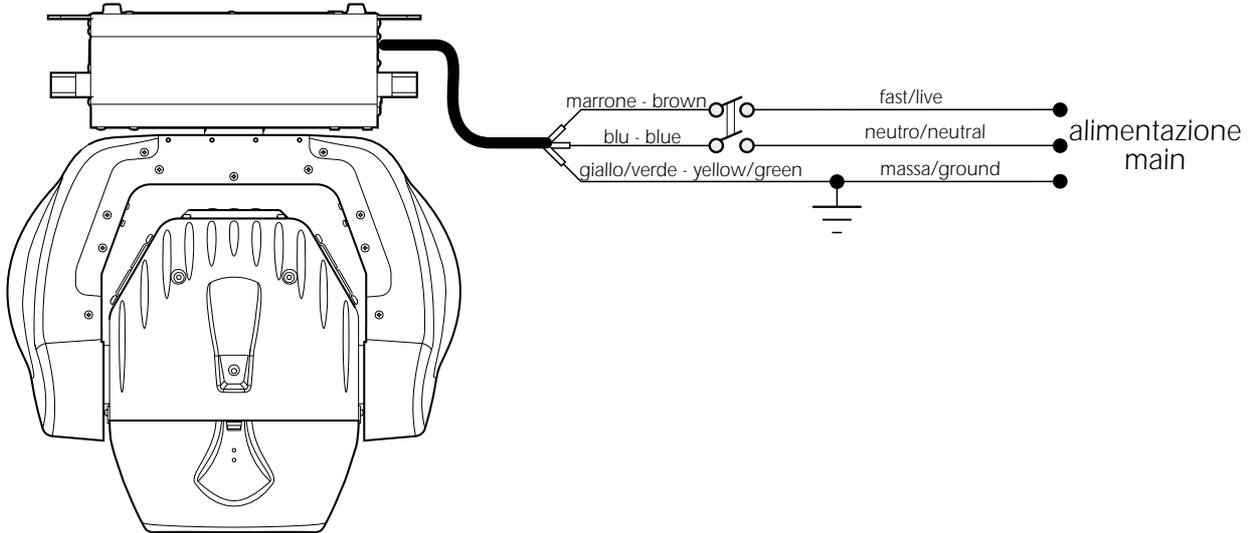
protection
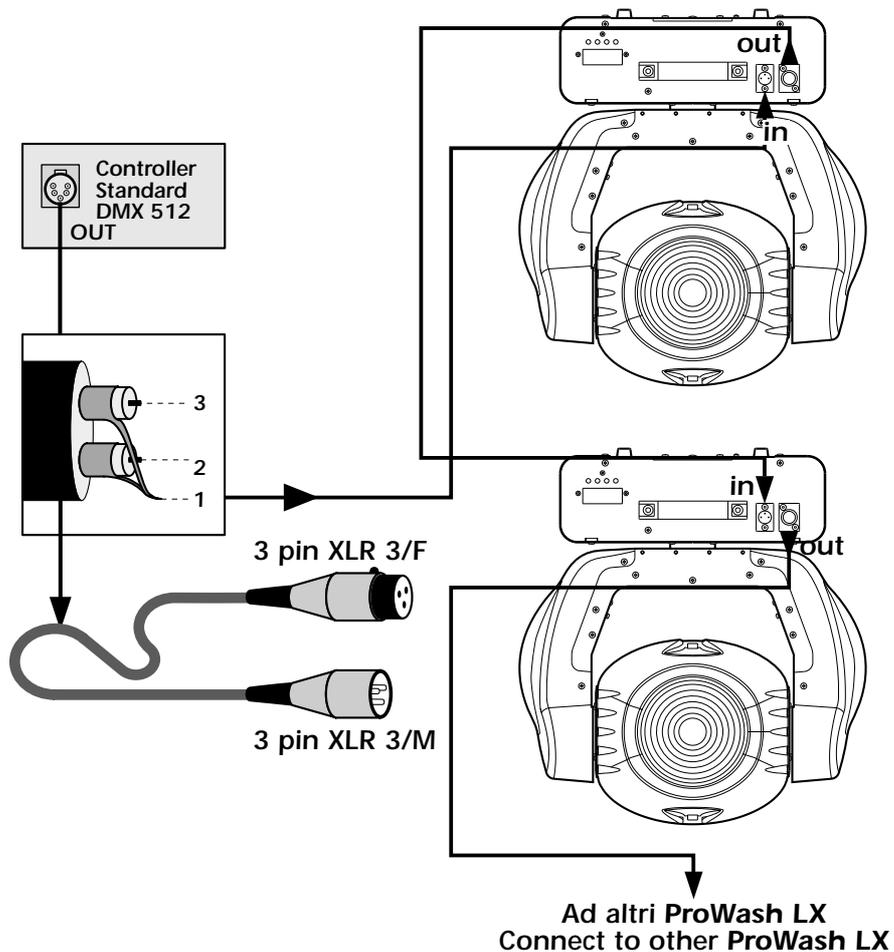The use of a thermal magnetic circuit breaker is recommended for each **ProWash LX**.
A good earth connection is essential for the correct operation of the fixture. Strict adherence to regulatory norms is strongly recommended.

8. Signal connection

Control signal is digital and is transmitted via two pair screened ø 0,5cable.
Signal type is DMX 512, conforming to international standard; in order to reduce production costs and to allow easy worldwide availability of parts, coemar utilises XLR 3 plugs and sockets for signal connection. Pin connection conforms to international standards:

pin 1= screening 0 V
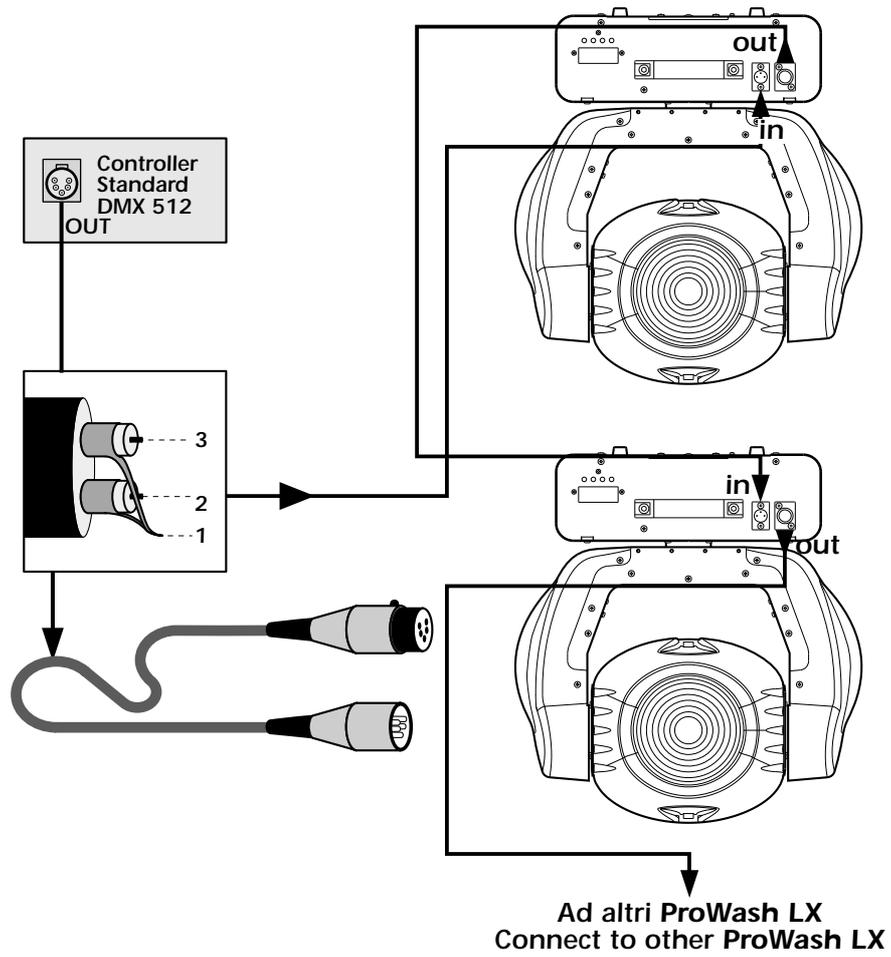pin 2= data -
pin 3= data +

Controller Standard DMX 512 OUT

out
in

3
2
1

3 pin XLR 3/F

in
out

3 pin XLR 3/M

Ad altri ProWash LX
Connect to other ProWash LX

Should your DMX 512 controller utilise only XLR 5 sockets, the polarity of pins 1, 2 and 3 must be preserved as shown in the diagram. Do not connect pins 4 and 5.

pin 1= screening 0 volt   pin 4= not connected
pin 2= data –   pin 5= not connected
pin 3= data +

out

in

Controller
Standard
DMX 512
OUT

3

2

1

in

out

Ad altri ProWash LX
Connect to other ProWash LX

Ensure that all data conductors are isolated from one another and the metal housing of the connector.

Note: the housing of the cannon XLR 3 must be isolated.

9. Powering up

After having followed the preceding steps, turn on the DMX 512 controller which will be used to control the **ProWash LX**; following this, turn on the power to the unit and turn on the units **power** switch. The projector will perform a reset function on all the internal and external motors. This will last some few seconds, after which it will be subject to the external signal from the controller.

DMX reception
The display will be static on to indicate that DMX 512 signal is being correctly received.

function display

A00 I

menu enter + −
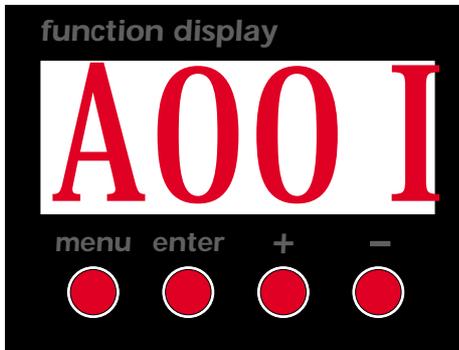
If the display flashes, the projector is not receiving signal. Check your cabling and the controller for correct functioning.

Software versions
Two software systems operate within the projector, one in the display system "D" and one in the master system "M". Upon startup, the projectors multifunction display panel will momentarily show a readout of the software versions installed in your projector.
For example, in the **ProSpot LX** you may see:

D 3.10 (display software "D" version 3.30).

M.24 (master software "M" version 1.22.)

10. DMX addressing

Each **ProWash LX** utilises **14** channels of **DMX 512** signal for complete control.
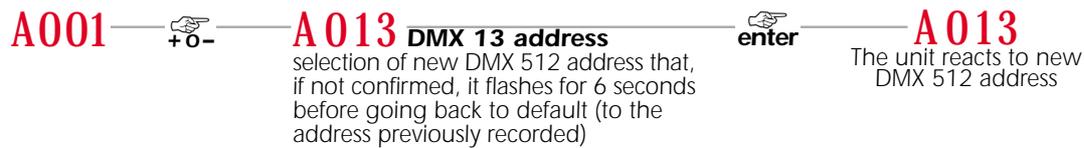
DMX addresses
To ensure that each projector accesses the correct signal, it is necessary to correctly address each fixture. Any number between 1 and 499 can be generated via the multifunction panel of the **ProWash LX**.
This procedure must be carried out on every **ProWash LX** being used.
When initially powered up, each projector will show **A001** indicating **DMX** address **1**; a projector thus addressed will respond to channels **1** to **14** from the **DMX 512** controller; a second unit should be addressed as **17**, a third as **33** and so on until the final **ProSpot LX**, has been addressed.from the **DMX 512** controller; a second unit should be addressed as **15**, a third as **29** and so on until the final **ProWash LX**, has been addressed.

altering the dmx setting
1) Press the + or – buttons until the desired DMX address is displayed. The display will flash to indicate the selected address is not stored in memory

A001 ——☞—— A013 **DMX 13 address**
       +o–   selection of new DMX 512 address that,
                if not confirmed, it flashes for 6 seconds
                before going back to default (to the
                address previously recorded)

☞ **enter** —— A013
The unit reacts to new
DMX 512 address

2) Press the enter button to confirm your selection; the display will stop flashing and the projector will now respond to the new DMX 512 setting.
3) To better understand the function of each channel, we refer you to section 12 "DMX 512 channel functions".

Important Note: Keeping the + or – buttons pressed will cause the display to alter at increased speed, allowing a faster selection to be effected.

11. Display panel functions

The display panel on the base of the **ProWash LX** is used to display and set function information and various parameters and can enhance the operation of the projector to suit your particular application.

Altering the coemar factory settings may vary the functioning of the projector, causing to not respond to external DMX 512 signal. Please read and familiarise yourself with the following information very carefully before altering any selections.

NOTE: the ☞ symbol is used throughout the following table to indicate the action of pressing the particular button referred to in the accompanying text.

A001 menu ☞ +o– **P D IR** **pan movement inversion** enter +o– **C W** enter
To reverse horizontal movement direction at same DMX level clockwise
variation
+o– **C C W** enter
counter-clockwise

+o– **T D IR** **tilt movement inversion** enter +o– **C W** enter
To reverse vertical movement direction at same DMX level clockwise
variation
+o– **C C W** enter
counter-clockwise

+o– **O PT O** **optic sensor deactivation** enter +o– **O N** enter
Return in position of the unit if accidentaly knocked out of sensors activation
place, and ability to deactivate the function. Mechanical
reset of the unit (opto OFF). +o– **O F F** enter
sensors deactivation

+o– **LA MP** **lamp control** enter +o– **S T R D** enter
Lamp On/Off control via DMX signal or lamp always lamp control via DMX 512
on. +o– **O N** enter
lamp always on

+o– **F A N S** **fans control** enter +o– **O N** enter
Fans always on (On) or fans function controlled through fan always on
PCB (Stud). +o– **S T U D** enter
automatic control

+o– **D IS P** **reverse display** enter +o– **A A** enter
Reverse reading display (base downwards or base base downwards
upwards) +o– **∀∀** enter
reversed, base upwards

+o– **L E D** **display control** enter +o– **O F F** enter
To disable display visualisation to switch the display Off (☞
any key to switch it On)

+o– **D MX** **DMX chart** enter +o– **S T R D** enter
To select function mode on DMX data reception standard 16 channels
(see diagram)

+o– **E MU L** enter
ProWash emulation
(not LX version - see diagram)

A001 menu ☞ +o− ☞ **DEMO** **demo program**
short demo of unit's functions
enter ☞ ────── **DEMO**
flashing, it runs the demo (☞ any key to stop)
N.B.: lamp status depends on lamp ON/OFF status.

TEMP **temperature**
To measure the internal temperature in C°
Give information in case of anomalies
enter ☞ **58C**
temperature measurement

VOLT **mains voltage**
To measure mains in Volts
enter ☞ **30.0V**
mains voltage measurement

DMIN **DMX value on each channel**
reading of DMX value (0/255), received on each
of the 14 channels on DMX line
enter ☞ **CH01** ☞ enter ── **10**
channel 1 — DMX value reading
+o− ☞ **CH14** ☞ enter ── **255**
to channel 14 — DMX value reading

+o− ☞ **DFSE** **default setting**
put all the functions at original set values but for
the alignments
enter ☞ **SURE**
flashing
☞ enter
to confirm

+o− ☞ **RESE** **reset**
reset of all motors
enter ☞ **────**
reset

+o− ☞ **RATE** **DMX rate**
reading of typical DMX 512 signal value, called
rate
enter ☞ **24.SO**
numeric value reading

+o− ☞ **HOUR** **working time**
working time (in hours)
enter ☞ **LIFE** ☞ enter ── **10**
lamp life after last reset — reading of numeric value
N.B.: reset the **LIFE** value on each lamp changi
LIFS
+o− ☞ life of all lamps used on the unit — enter ☞ **589**
reading of numeric value
UNIT
+o− ☞ unit's life — enter ☞ **1230**
reading of numeric value

11.1. Turning on the ProWash LX without articulated movement

This function may be useful should you need to turn on the **ProWash LX**, whilst it is still in its flight case or located in cramped conditions in order to alter its dmx address setting or adjust some other parameter.

1) Turn on the projector whilst simultaneously holding down the **menu**, **enter** and **−** buttons.
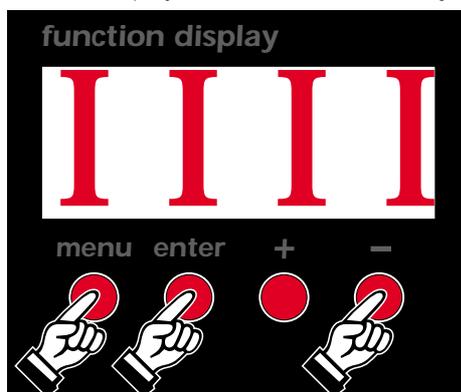
The projector will undertake a reset of all motors except those which govern pan and tilt movement.

2) You may alter the dmx address or any other parameter at this point without any movement occurring.
3) To reactivate the normal functioning of the **ProWash LX**, you need simply to turn the projector off and then on again via its **power** button, or simply perform a reset.
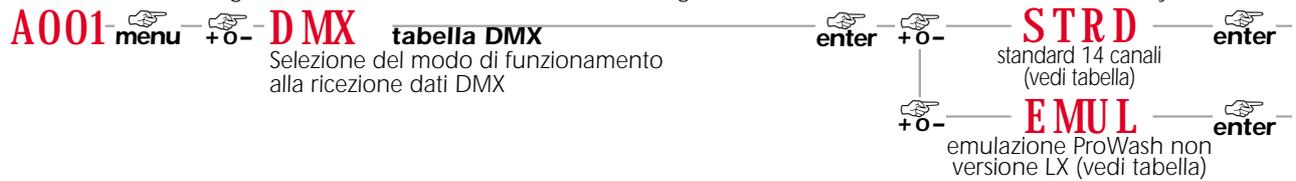
11.2. Resetting the electronic lamp life counter
The electronic lamp life counter should be reset to zero at every lamp change in order to provide accurate lamp life information.
1) Turn off the projector.
2) Power up the **ProWash LX** whilst simultaneously holding down the **+** and **−** buttons.

The projector will have performed a reset of the LIFE counter.
To check that this has occurred you may complete the following steps:
1) Press the **menu** button.
2) Press the **+** or **-** buttons until HOUR is displayed.
3) Press the **+** or **-** buttons until LIFE (for lamp life) is displayed.
4) Press the **enter** button; the display will show 0000 confirming that a reset of the counter has occurred.
N.B. You may also confirm if you choose that the LIFS UNIT and UNIT counters remain unaltered.

11.3. test
This function generates a test signal for each motor so that they can be tested in the absence of any external DMX source.
1) Press the **menu** button.
2) Press the **+** or **-** buttons until TEST (for test) is displayed.
3) Press the **enter** button to confirm your selection; the display will show PAN (for testing the pan movement), press the **+** or **−** subsequent tests, from PAN to YELL.

12. DMX 512 channel functions

If all the procedures have been carried out correctly to this point, your DMX 512 controller will have control over all the functions of the **ProWash LX** as shown in the table below.

channel	function	type of control	effect	decimal
1	**Base (pan) coarse**	proportional	coarse control of the base movement	0-255
2	**Base (pan) fine**	proportional	fine control of the base movement	0-255
3	**Yoke (tilt) coarse**	proportional	coarse control of the Yoke movement	0-255
4	**Yoke (tilt) fine**	proportional	fine control of the Yoke movement	0-255
5	**movement speed**	step	standard (fast)	0-10
		step	Ultra fast movement (best for programming position)	11-25
		proportional	vector mode from fast to slow	26-127
		proportional	Tracking mode (fast to slow)	128-247
		step	Tracking mode (slow)	248-255
6	**dimmer**	step	closed	0-7
		proportional	Gradual adjustment of the dimmer intensity from 0 to 100%	8-255
7	**Shutter, Strobe**	step	Shutter closed	0-9
		proportional	Synchro strobe-effect from slow to fast (max. 10 flashes/second)	10-66
		step	Shutter open	67-68
		proportional	Pulse-effect in sequences, close slow, open fast (adjustement from slow to fast)	69-125
		step	Shutter open	126-127
		proportional	Pulse-effect in sequences, close fast, open slow (adjustement from fast to slow)	128-184
		step	Shutter open	185-187
		proportional	Random strobe-effect from slow to fast	188-244
		step	Shutter open	245-255
8	**Black-out activation when fixture is moving**	step	No effect	0-249
		step	Black-out while PAN,TILT moving or color changes	250-255
9	**filter selection**	proportional	white clear (standard beam size)	0-9
		proportional	beam shape (adjust from 0 to 180°)	10-230
		step	wide angle	231-255
10	**color wheel**	step	Open/white	0-5
		step	colour 1	6-14
		step	coluor 2	15-23
		step	colour 3	24-32
		step	colour 4	33-41
		step	colour 5	42-50
		step	colour 6	51-60
		proportional	From white to colour 6, 360° color positioning	61-127
		proportional	Forwards rainbow effect from fast to slow	128-190
		step	No rotation	191-192
		proportional	Backwards rainbow effect from slow to fast	193-255
11	**cyan**	step	white clear	0-9
		proportional	proportional cyan control from white to cyan	10-255
12	**magenta**	step	white clear	0-9
		proportional	proportional magenta control from white to magenta	10-255
13	**Yellow**	step	white clear	0-9
		proportional	proportional yellow control from white to yellow	10-255
14	**Lamp ON, motor Reset**	step	lamp off	0-19
		step	no effects (idle)	20-100
		step	effects reset (only once), pan/tilt does not move	101-170
		step	all motor reset (only once)	171-200
		step	silent fans (if external temperature allowed)	201-240
		step	Lamp ON	241-255

Back panel can modify function channel (14) (inhibit lamp off)

note 2: function channel (14) has a delay time of 6 second to prevent accidental activation.

note 3 :on/off lamp mode is not affected unless an opposite value is received

ProWash emulation setting

ProWash may operate using a different channel configuration to the standard set up. This function may be useful in situations where you may be using other ProSpot projectors which are not in the LX series or when using various controllers with inflexible channel assignment features. To utilise this altered configuration as shown in the table which follows, you should:
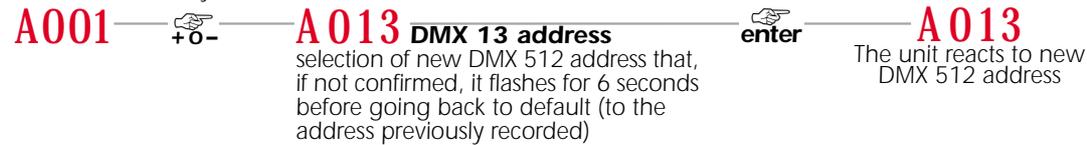
A001 ☞ menu — ☞ +o– DMX **tabella DMX**
Selezione del modo di funzionamento alla ricezione dati DMX

☞ enter ☞ +o– STRD
standard 14 canali (vedi tabella) ☞ enter

☞ +o– EMUL
emulazione ProWash non versione LX (vedi tabella) ☞ enter

Following this procedure, **ProWash LX** will utilise 16 DMX channels and its DMX address should be altered accordingly:

Altering the DMX setting:

When initially powered up, each projector will show **A001** indicating **DMX** address **1**; a projector thus addressed (when in -EMUL- mode) will respond to channels **1** to **16** from the **DMX 512** controller; a second unit should be addressed as **17**, a third as **33** and so on until the final **ProWash LX**, has been addressed.

1) Press the + or – buttons until the desired DMX address is displayed. The display will flash to indicate the selected address is not stored in memory

A001 — ☞ +o– A013 **DMX 13 address**
selection of new DMX 512 address that, if not confirmed, it flashes for 6 seconds before going back to default (to the address previously recorded)

☞ enter A013
The unit reacts to new DMX 512 address

2) Press the enter button to confirm your selection; the display will stop flashing and the projector will now respond to the new DMX 512 setting.

The following table outlines the respective DMX channel functions when in **ProWash**.emulation mode.

channel	function	type of control	effect	decimal
1	Base (pan) coarse	proportional	coarse control of the base movement	0-255
2	Yoke (tilt) coarse	proportional	coarse control of the Yoke movement	0-255
3	Base (pan) fine	proportional	fine control of the base movement	0-255
4	Yoke (tilt) fine	proportional	fine control of the Yoke movement	0-255
5	Speed pan/tilt movement	step	Max speed (tracking mode)	0
		proportional	Max speed from max. to min. vector mode)	1-249
		step	Max. speed, black-out while PAN,TILT moving or color changes (tracking mode)	250-255
6	lamp on/off, reset, fans speed control	step	fan max. speed	0
		proportional	Fan min. speed (silent operation) from 0 to 127 decreasing fan speed	1-127
		step	Lamp ON, reset, open position	128-139
		step	No function	140-229
		step	Lamp Off, 3 sec. delay	230-239
		step	No function	240-255
7	colours	proportional	Open/white	0-17
		proportional	colour 1	18-35
		proportional	coluor 2	36-53
		proportional	colour 3	54-72
		proportional	colour 4	73-90
		proportional	colour 5	91-108
		proportional	colour 6	109-127
		proportional	Forwards rainbow effect from fast to slow	128-190
		step	No rotation	191-192
		proportional	Backwards rainbow effect from slow to fast	193-255
8	cyan	proportional	proportional cyan control from white to cyan	0-255
9	magenta	proportional	proportional magenta control from white to magenta	0-255
10	yellow	proportional	proportional yellow control from white to yellow	0-255
11	CMY and dimmer speed control	proportional	from max to min. control speed	0-255

channel	function	type of control	effect	decimal
12	Colour macros	step	control off (no macros)	0-7
		step	macro1	8-15
		step	macro2	16-23
		step	macro3	24-31
		step	macro4	32-39
		step	macro5	40-47
		step	macro6	48-55
		step	macro7	56-63
		step	macro8	64-71
		step	macro9	72-79
		step	macro10	80-87
		step	macro11	88-95
		step	macro12	96-103
		step	macro13	104-111
		step	macro14	112-119
		step	macro15	120-127
		step	macro16	128-135
		step	macro17	136-143
		step	macro18	144-151
		step	macro19	152-159
		step	macro20	160-167
		step	macro21	168-175
		step	macro22	176-183
		step	macro23	184-191
		step	macro24	192-199
		step	macro25	200-207
		step	macro26	208-215
		step	macro27	216-223
		step	macro28	224-231
		step	macro29	232-239
		step	macro30	240-247
		step	macro31	248-255
13	effect-wheel	step	standard beam size	0-70
		proportional	beam shape (adjust from 0 to 180°)	71-180
		step	wide angle	181-255
14	no function		no function	0-255
15	Shutter, Strobe	step	Shutter closed	0-31
		step	No function (Shutter open)	32-63
		proportional	Strobe-effect from slow to fast (max. 10 flashes/second)	64-95
		step	No function (Shutter open)	96-127
		proportional	Pulse-effect in sequences	128-159
		step	No function (Shutter open)	160-191
		proportional	Random strobe-effect from slow to fast	192-223
		step	No function (Shutter open)	224-255
16	Dimmer intensity	proportional	Gradual adjustment of the dimmer intensity from 0 to 100%	0-255

13. Aligning the lamp in the optical system

Alignment is necessary to compensate for the slight variations in the mechanical construction of respective lamps due to the fact that may discharge lamps are still partly constructed manually.

The procedure should be undertaken to properly align the lamp in the optical system, thus avoiding the possible overheating of internal components due to incorrect focusing of the beam onto components which are not designed to be exposed to this.

Alignment procedure
Alignment is effected by manipulating the 3 adjusters, **A**, **B** and **C** simultaneously; with the lamp on and blackout shutter dimmer and no filters placed in the optical path.
The procedure centres any hotspots (adjuster **B**) and then flattens the beam to produce and even beamspread (adjusters **A** and **C**).

Vertical adjustment
Adjuster (**B**) acts on a lever and spring assembly to position the lamp vertically within the reflector. Rotate the adjuster (**B**) until the beam produced is as required.

Horizontal adjustment
Adjusters (**A**) and (**C**) act on a lever and spring assembly to position the lamp horizontally withing the reflector. Rotate the adjusters until the beam produced is as required.

Axial adjustment
The net effect of moving all three adjusters (**A**), (**B**) and (**C**) is to position the lamp axially within the reflector.
Rotate the adjusters (until the beam produced is flat and even.

14. Automatic repositioning features

An encoder system based on 4 position indicators allows the **ProWash LX** to return to its correct position if it is accidentally moved during operation.

This is particularly useful if the projector is to be mounted on the floor in a position where the performer or artist or technician may accidentally bump the unit..

A001 menu +O- OPTO **optic sensor deactivation** enter +O- ON enter
sensors activation
Return in position of the unit if accidentally knocked out of place and ability to deactivate the function. Mechanical reset of the unit (opto OFF). +O- OFF enter
sensors deactivation

15. Adjusting the beam angle

To vary the beam angle output of the **ProWash LX,** it is possible to adjust the distance between the Fresnel lense and the lamp.

Adjustment procedure

1) Using the two latches on the head of the unit, remove the top housing as shown in the following diagram.
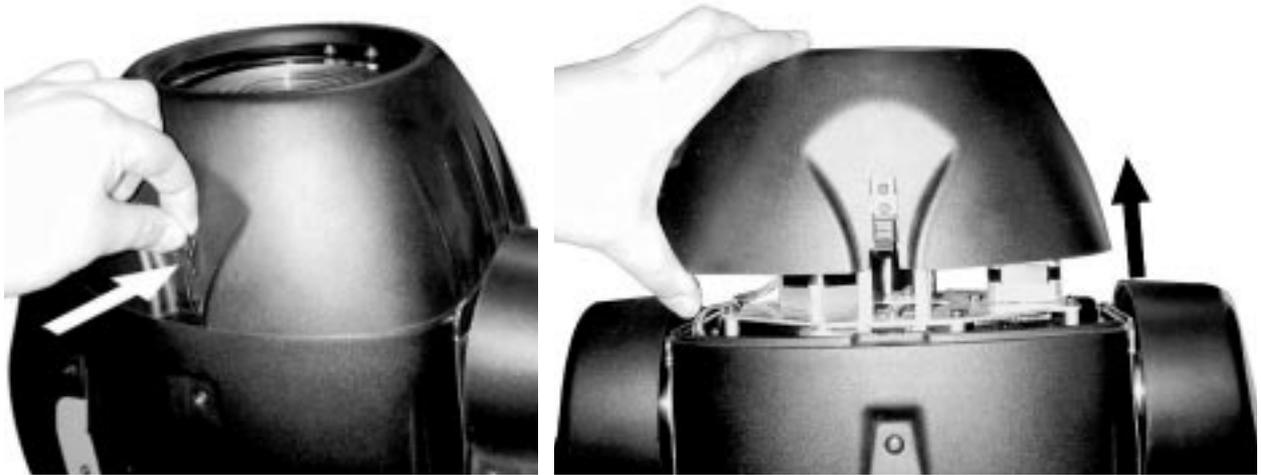
2) Locate the lense adjustment thumbscrews, located on the lense assembly itself.
3) Loosen the thumbscrews and hence adjust the lense to produce the required beam angle.
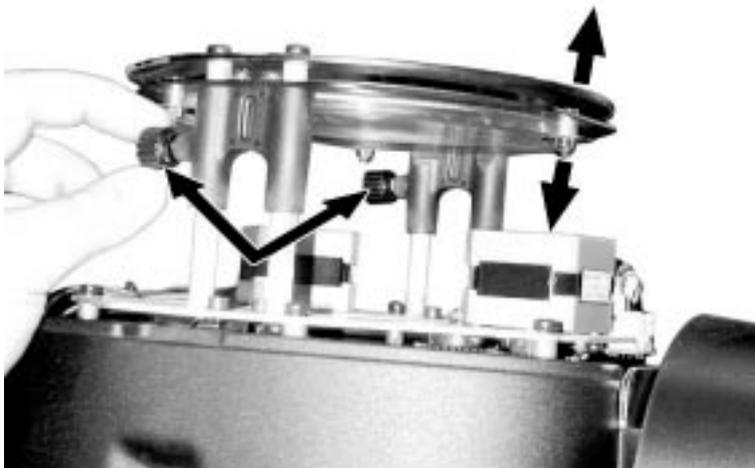
4) Tighten the thumbscrews in position.
5) Reposition and fasten the **ProWash LX** top housing.

## 16. Altering the operating voltage and frequency (Reserved for technical staff only)

If the operating voltage and frequency as preset by coemar does not correspond to that of the country in which you are operating, you may alter the preset by following the instructions in the paragraphs which follow.
An error in voltage or frequency selection may seriously compromise the correct functioning of the projector.

16.1 Selecting the voltage on the autotransformer
1) Using a Philips head screwdriver, remove the 6 screws (**A**) on the lateral cover of the fixtures base as shown in the diagram below, thereby removing the cover and obtaining access to the internal features of the **ProWash LX** base.
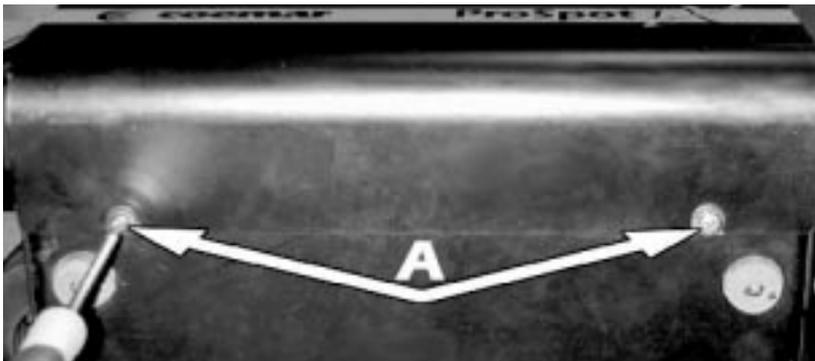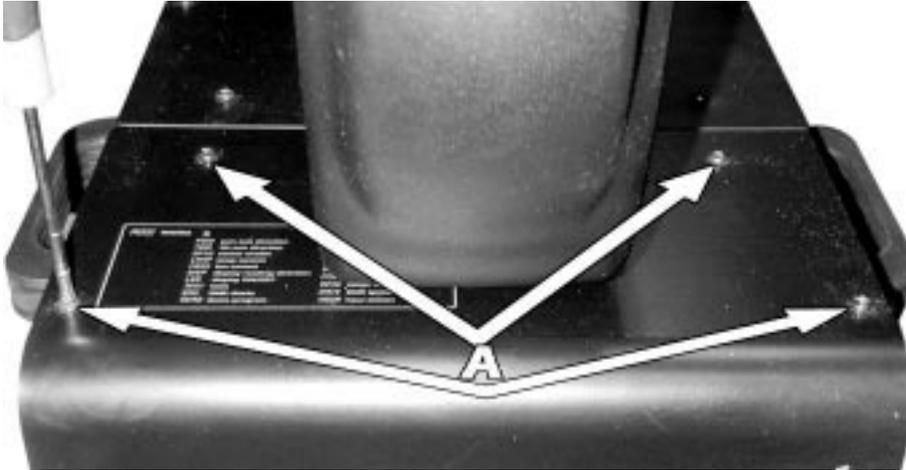
2) Locate the autotransformer (B) on the right of the base
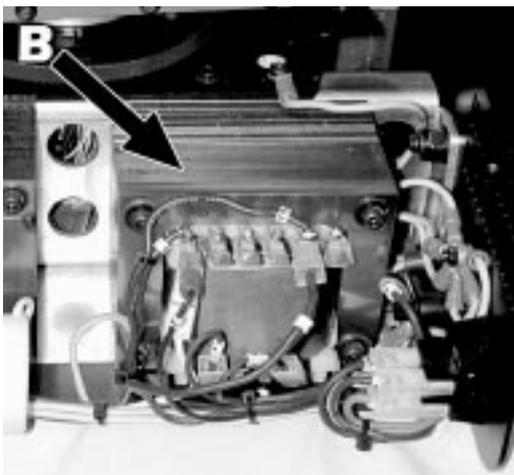
3) Select the operating voltage from the 100, 115, 208, 230 and 245V options by moving the cable n° 7 to the required voltage. To ensure correct positioning of the cable, refer to the label located on the transformer.

4) If the voltage is altered to either 100 or 115V replace the current fuse rated at 5 Amps T, which is suitable for 208/230/245 V, with a fuse rated at 8 Amps T. The fuse 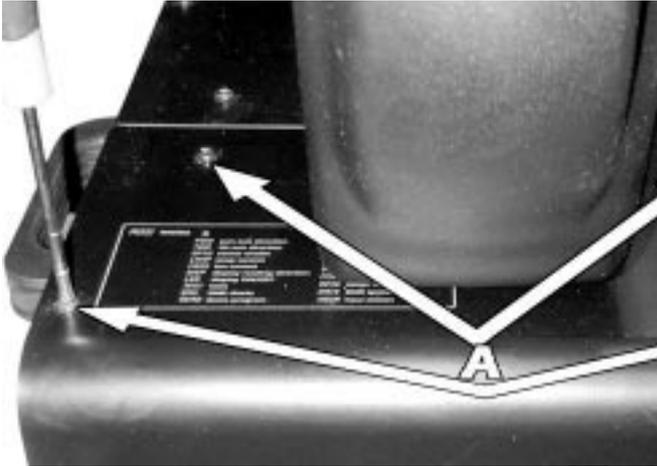holder is located on the side of the base of the unit. The reverse should be undertaken if the voltage is being increased to the latter range.

5) Proceed to the selection of the proper frequency, as described in the following section, and then replace the cover and refasten the screws (A).

16.2 Selecting the frequency on the power supply of the ProWash LX

1) Locate the power supply (A) locate in the base of the unit.
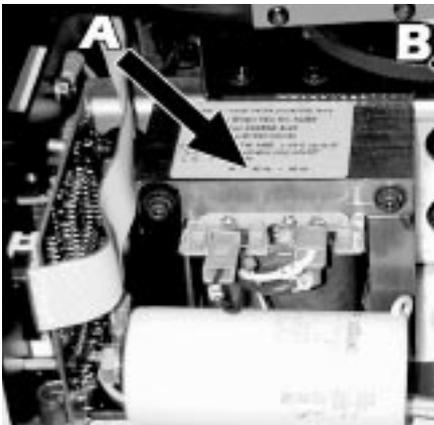
2) Select the required frequency from between 50 and 60Hz by moving cable n° 11 to the correct option. To ensure correct positioning of the cable, refer to the label located on the power supply.
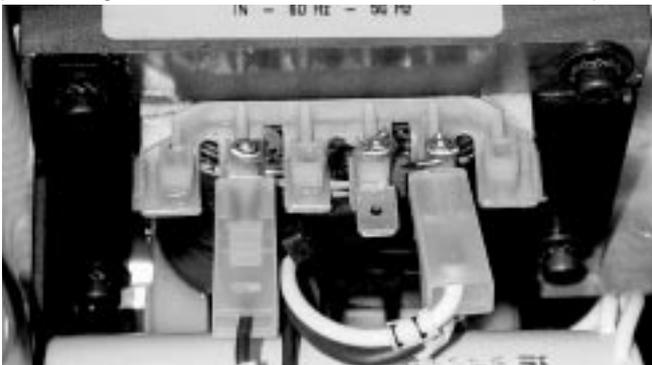
3) Replace the cover and refasten the screws (**A**).

17. Maintenance

Whilst every possible precaution has been taken to ensure the trouble-free operation of your **ProSpot LX**, the following periodic maintenance is highly recommended. Prior to undertaking any maintenance procedure, make sure the fixture is disconnected from mains power.

Attention
Disconnect mains power prior to opening the housing!

Opening the housing:
1) Unclip the front cover.

2) Using a Philips head screwdriver, remove the 6 screws which hold the left and right housings in place.

Fuse replacement
Locate the 3 protection fuses:
Two are located on the master circuit board and protect the lamp circuit and the electronics. A third is located externally on the side of the base of the projector and offers protection to the entire projector.
Use a multimeter to check the condition of the fuses, replacing them with fuses of similar value if required.

Periodic cleaning
Lenses and reflectors
Even a fine layer of dust can reduce the luminous output substantially. Regularly clean all lenses and the reflector using a soft cotton cloth, dampened with a specialist cleaning solution.

Fans and air passages
The fans and air passages must be cleaned approximately every 6 weeks; the period for this cleaning will depend, of course, upon the conditions in which the projector is operating. Suitable instruments for performing this type of maintenance are a brush and a common vacuum cleaner or an air compressor.

Periodic maintenance
Lamp
The lamp should be replaced if there is any observable damage or deformation due to heat. This will avoid the danger of the lamp exploding.

Mechanicals
Periodically check all mechanical devices for wear and tear; gears, guides, belts, etc, replacing them if necessary. Periodically check the lubrication of all components, particularly the parts subject to high temperatures. If necessary, lubricate with a suitable lubricant, available from your coemar distributor.

Electrical components
Check all electrical components for correct earthing and proper attachment of all connectors, refastening if necessary.

18. Electronic alignment of motors

Attention
These procedures should only be carried out by qualified technicians or other specialists

The display panel on the **ProWash LX** allows for the electronic alignment of the projector's motors. This procedure is performed by **coemar** at the factory. It may be useful to perform this procedure in the case of internal components being replaced. Altering the factory settings may radically alter the functioning of the projector. Carefully read all of the following prior to attempting any changes.

A001

☞ **menu**

☞ **+ o –**

simultaneously
during reset

RESE
reset
motors reset

☞ **enter** ☞ **menu**

☞ **+ o –** **PNAL pan**
pan motor setting
enter **0128** ☞ **+ o –** es. **0120** ☞ enter

☞ **+ o –** **TLAL tilt**
tilt motor setting
enter **0128** ☞ **+ o –** es. **0120** ☞ enter

☞ **+ o –** **SHAL shutter**
dimmer motor setting
enter **0128** ☞ **+ o –** es. **0120** ☞ enter

☞ **+ o –** **SRAL shutter right**
dimmer motor setting
enter **0128** ☞ **+ o –** es. **0140** ☞ enter

☞ **+ o –** **FOAL focus**
focusing motor reset
enter **0128** ☞ **+ o –** es. **0130** ☞ enter

☞ **+ o –** **GOAL gobo wheel**
gobos positioning motor reset
enter **0128** ☞ **+ o –** es. **0125** ☞ enter

☞ **+ o –** **GRAL gobo rotation**
gobos rotation motor reset
enter **0128** ☞ **+ o –** es. **0135** ☞ enter

☞ **+ o –** **PRAL prism**
prisms positioning motor reset
enter **0128** ☞ **+ o –** es. **0132** ☞ enter

☞ **+ o –** **COAL colors**
colors positioning motor reset
enter **0128** ☞ **+ o –** es. **0127** ☞ enter

☞ **+ o –** **END end**
to end setting procedure, to record and
to go back to standard function mode
A001

simultaneously

☞ **+** ☞ **–** **0128**

NOTE:
To speed up setting/alignment procedure, press simultaneously keys **+** and **-**; the display will automatically go to 128

19. Error messages

MBER: **COMMUNICATION error**
This message indicates that the motherboard within the unit is not communicating properly with the control source. Check the connectors located on both boards.

OPER: **PAN ENCODER error**
This message indicates that there is a problem with the PAN encoders. Check the sensors on the encoder wheel located near the pan movement motor, as well as the relevant cabling.

OTER: **TILT ENCODER error**
This message indicates that there is a problem with the TILT encoder locate on the fixture yoke. Check the sensors on the encoder wheel located near the pan movement motor, as well as the relevant cabling.

SNER: **LINE SYNCHRONISATION error**
Check and replace opto-isolator U9.

LAER: **LAMP error**
The lamp has turned off unexpectedly, without any signal from the controller to do so.
The system may have exceeded the allowable number of attempts to ignite the lamp (7) after which number the system is designed to protect ignitor, cabling and the lampholder by reducing the incidence of lamp ignition voltages to these components. Check and eventually replace the lamp if it is faulty, damaged, or has exceeded its lamp life.

EPER: **EEPROM error**
The EEPROM is either defective or absent; refer to your coemar service centre for a replacement component.

DTER: **DATA error**
The initial parameter settings are incorrect or corrupt; the projector has reloaded its factory default settings. Turn the projector off and on again. Should the error reoccur, refer the unit to your authorised coemar service centre to have the EEPROM check and possibly replaced.

SRER: **RESET SENSOR CIRCUIT error**
Check the cabling and sensors on the COLOUR and EFFECT wheels; the sensor and circuit board indicate an error.

COER: **COLOUR WHEEL POSITION error**
Check the functioning and correct positioning of the magnetic colour wheel sensor.

EFER: **DIFFUSION FILTER WHEEL POSITION error**
Check the functioning and correct positioning of the magnetic effects wheel sensor.

ER20 ÷ ER99: **SYSTEM errors**
Turn the unit off and on again. If the error persists, contact your authorised coemar service centre.

HEAT: **LAMP OVERHEAT indicator**
The projector is attempting to ignite a lamp which is still too hot to strike. Wait until the lamp has cooled further and then attempt to reignite the lamp.

20. Spare parts

All the components of the **ProWash LX** are available as replacement parts from your authorised **coemar**.sales agent. Accurate description of the fixture, model number, and type will assist us in providing for your requirements in an efficient and effective manner.