

User's Manual Rel 1.2 GB

Jack



The Lighting Company

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1- SYMBOLS

Graphic symbols used on this manual



THIS SYMBOL INDICATES A HOT SURFACE



THIS SYMBOL INDICATES ELECTRIC SHOCK RISK



THIS SYMBOL INDICATES GENERAL RISK



THIS SYMBOL MEANS “DO NOT PLACE THE UNIT ON INFLAMMABLE SURFACES”



THIS SYMBOL MEANS “RADIATION FROM THIS LAMP CAN CAUSE DAMAGE TO EYES AND SKIN”



THIS SYMBOL INDICATES THE MINIMUM DISTANCE TO BE KEPT BETWEEN THE DEVICE AND THE LIT OBJECT

2- GENERAL WARNING

Read the instruction contained in this user manual carefully, as they give important information regarding safety during installation , use and maintenance.

The device is not for domestic use and must be installed by a qualified electrician or experienced person.

Always disconnect the device from the mains before replacing the lamp.

The lamp must be replaced if it has been damaged or deformed by prolonged use or overheating.

The device must always be equipped with an efficient ground connection.

3- GENERAL WARRANTY CONDITIONS

The unit is guaranteed for 36 months from the date of purchase against manufacturing material defects.

4- TECHNICAL FEATURES

The JACK is a high-power, compact, lightweight moving head.

JACK features a wide excursion motorized zoom allowing any application from long-throw projections to large wall washing.

Beam opening is:

1° - 2,5° 'Beam' projection;

2,5° - 37° 'Spot' projection;

38° - 46° 'Wash' projection.

JACK generates a huge luminosity and extremely uniform projection using only a 189 W lamp; power consumption is just 230W.

Also, JACK comes equipped with the 'FPR' ('Free Pan Rotation' - patent pending) system, which allows limitless pan rotation, in either direction, never having to reverse motion (Cod. 03.MS012.EBLFP).

JACK is the perfect moving head for rental companies – who want a quick and easy to install unit – thanks to its compactness and light weight (only 11,9 Kg).

JACK is suitable for any professional applications.

JACK

(Cod. 03.MS012.EB.L)

- Electronic ballast 90-260V 50/60 Hz • Black finish

Also available with white finish (RAL 9003) on demand (03.MS012.EB.03.L)

(Cod. 03.MS012.EBLFP)

- Electronic ballast 90-260V 50/60 Hz • FPR (Free Pan Rotation) Black finish

Also available with white finish (RAL 9003) on demand (03.MS012.EB03LFP)

Lamp

MSD Platinum 5R 189W (7.950 Lumens)

Colour temperature: 8.000°K

Type of connection: PINS 2,8x 0,8mm

Optical group

- * 50,000 Lux at 5 m (2,5°)

- * Improved optical group made with 11 coated lenses combined with a dichroic glass reflector

- * 16-bit motorized linear zoom (2,5°- 46°)

- * Beam opening: 1°- 46°

- * 16-bit motorized focus

- * Motorized iris

- * Linear dimmer / shutter / strobe (0,85 flash/sec to 10 flash/sec)

Colour generation

- * 18-colour wheel with linear selection for perfect 2-colour beams

Dynamic effects

Overlapping wheels for multiple effects:

- * Customizable rotating gobo wheel (9 gobos)

- * Customizable fixed gobo wheel (10 gobos)

- * 4-facet rotating prism

4- TECHNICAL FEATURES

Interface / Control / Programming

- * LCD graphic display (control / management / monitoring of the main parameters)
- * 4 soft-keys (control / management / monitoring of the main parameters)
- * Controlled via DMX 512 standard digital communication protocol
- * RDM
- * ARTNET (available on request)
- * Wireless ready
- * Internal operating system updatable via D.T.S. RED BOX interface and hyperterminal program on windows based PC

DMX

25 DMX channels (default) or 17 DMX channels

Pan & Tilt

Jack FPR (Cod. 03.MS012.EBLFP)

- * 'FPR': limitless pan rotation, in either direction, never having to reverse motion
- Tilt 270° (1,5 sec.)

Jack (Cod. 03.MS012.EB.L)

- * Pan 540° (2,5 sec.); Tilt 270° (1,5 sec.)

- * New Tri-phase stepper motor technology for ultra-fast and silent Pan &Tilt movements
- * 16-bit movement resolution
- * Selectable speed ranges

Power supply

- * Electronic ballast; 90-260 V 50/60 Hz
- * Power consumption: 230 W with PFC

Energy saving

- * Power saving mode (the lamp dims to 80% after shutter closure)

Connectors

- * DMX: 4 XLR connectors (3-pole In and Out; 5-pole In and Out) by Neutrik;
- * Power supply: powerCON connectors (Power In / Power Out) by Neutrik

Operating ambient temperature

-10° / 40°

Weight

11,9 Kg

Internal safety devices

- * Overvoltage circuit protection and overtemperature circuit protection

International certifications

Safety: EN 60598-1: 1993

EN 60598-2-17: 1989

A1-A3: 1993

EMC: EN 55015

4- TECHNICAL FEATURES

Dimensions

Packaging Dimensions (LxWxH)

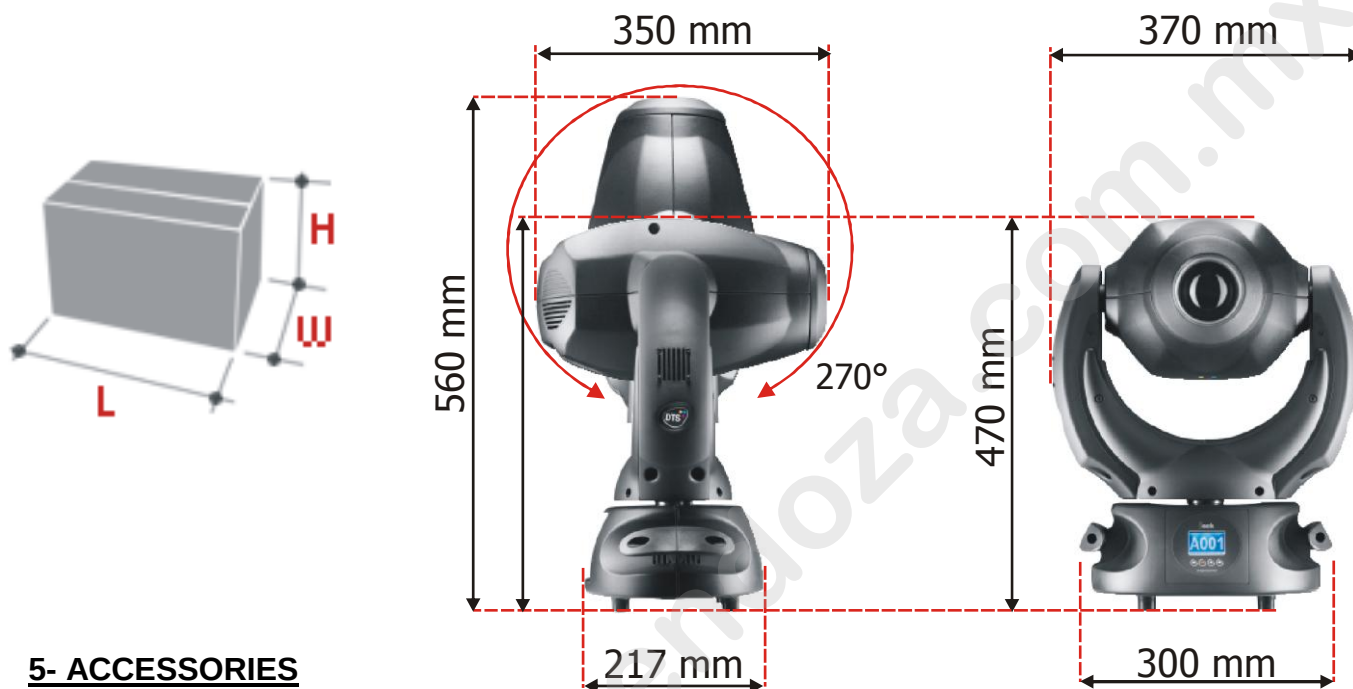
532 x 430 x 414 mm

Weight: 14,4 Kg

Unit Dimensions (LxWxH)

350x370x560mm

Weight: 11,9 Kg



5- ACCESSORIES

As standard

- * 1 x MSD Platinum 5R 189W (cod. 0505S034)
- * 1 x powerCON male cable connector (cod. 0520P014)
- * 1 x XLR 5 Pins male cable connector (cod. 0508B028)
- * 1 x XLR 5 Pins female cable connector (cod. 0508B027)
- * "C" Clamp G QUICK with "Fast Lock" connection 1/4 turn (one piece) (cod. 0521A014)
- * Rotating Gobo Dicro (D.T.S. Code: 0516G063)
- * User's manual

Optional (on request)

- Professional Flight case for 4 units; compartment for accessories, swivel wheels, cover with hinges with-stay, dishes on cover for piling, butterfly closures, 8 handles (2 each side) (cod. 0521C052.1)
- Wireless DMX Receiver Kit (cod. 03.LA.126) with INDOOR IP20 omnidirectional 2dBi antenna included. **Available only for units with FPR on board**
- "C" Clamp G60 black (max. load 50Kg) (cod. 0521A004)
- "C" Clamp G60 chrome (max. load. 50Kg) (cod. 0521A004.20)
- "C" Clamp GQUICK with "Fast Lock" connection 1/4 turn (max. load. 80Kg) (cod. 0521A014)
- "C" Clamp G100 black / professional (max. load. 200Kg) (cod. 0521A015)
- Omega clamp with "Fast Lock" connection 1/4 turn 1 couple (2 pieces) (cod. 02K00467)
- Safety wire (3mm x 60 cm), ring spring catch, max. capacity load 60Kg (cod. 0521A010)

6- IMPORTANT SAFETY INFORMATION

6.1 Fire prevention:

JACK uses a MSD Platinum 5R 189W lamp.

The use of any other alternative lamp is not recommended and will null and void the fixture's warranty.

- Never locate the fixture on any flammable surface. 
 - Minimum distance from flammable materials: 1 MT.
 - Minimum distance from the closest illuminable surface: 2 MT. 
 - Replace any blown or damaged fuses only with those of identical value.
- Refer to the wiring diagram if there is any doubt.
- Connect the projector to mains power via a thermal magnetic circuit breaker.

6.2 Prevention of electric shock:



-High voltage is present inside the unit.

Unplug the unit prior to performing any function which involves touching the inside of the moving head, including lamp replacement.

-The level of technology inherent in the JACK requires the assistance of specialised personnel for all servicing. Please refer to an authorised D.T.S. service centre.

-A good earth connection is essential for proper functioning of the projector.

-Never connect the unit without proper earth connection.

-The fixture should be located in places with a good air ventilation.

6.3 Protection against ultraviolet radiation:



-Never turn on the lamp if any of the lenses, filters or ABS covering are damaged. Their respective shielding functions will only operate efficiently if they are in perfect working order.

-Never look directly the lamp when it is on.

6.4 Safety:



-The projector should always be installed with bolts, clamps and other tools that are capable of supporting the weight of the unit.

-Always use a second safety cable to sustain the weight of the unit in case of the failure of the main fixing point.

-The external surface of the unit, at various points, may exceed 70°C. Never handle the unit until at least 10 minutes have elapsed since the lamp was turned off. 

-Always replace the lamp if any physical damage is evident.

-Never install the fixture in an enclosed area lacking sufficient air flow.

The ambient temperature should not exceed 40°C.

-A hot lamp may explode, so always wait for at least 10 minutes prior to attempting to replace the lamp.

-Always wear suitable hand protection when handling the lamp.

6.5 Level of protection against the penetration of solid and liquid objects:



-The projector is classified as an ordinary appliance and its protection level against the penetration of solid and liquid objects is IP 20.

For outdoor use, D.T.S. recommend the use of the dedicated raincovers.

7- MOUNTING / REPLACING THE LAMP AND LAMP ALIGNMENT

Warning: Switch off the unit before replacing the lamp.



MSD Platinum 5R
 Power 189W
 Luminous flux 7950 lm
 Colour temperature 8.000°K
 Type of connection: PINS 2,8 x 0,8 mm
 Rated life 2000 hours

- 1) Loosen the 2 “1/4 turn” screws which fix the head covers (photo 1) .
- 2) Once loosen the screws, simply lift the covers to access the internal components (photo 2 and 3).



Photo 1



Photo 2



Photo 3

- 3) Using a Philips screwdriver, loose the 2 screws A, B, (photo 4), unplug the fan connector (photo 5) and remove the lamp fan assembly (photo 6).

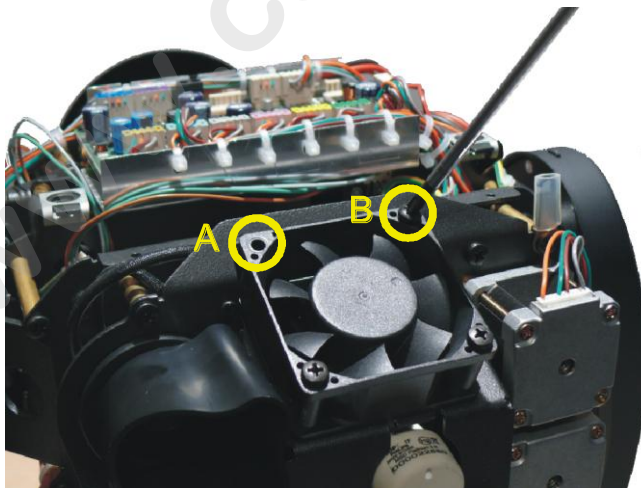


Photo 4

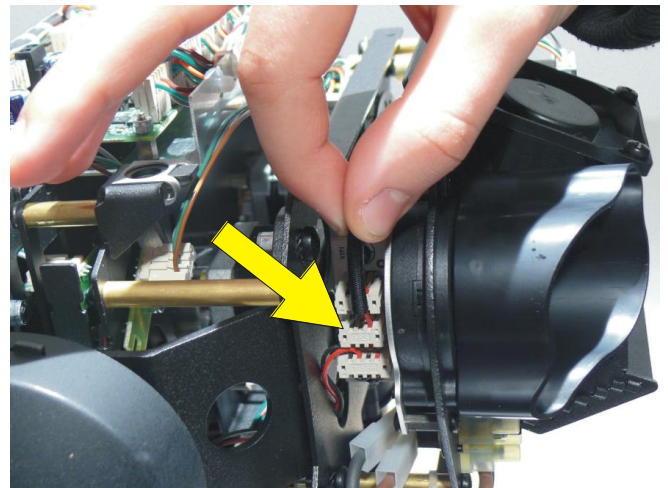


Photo 5

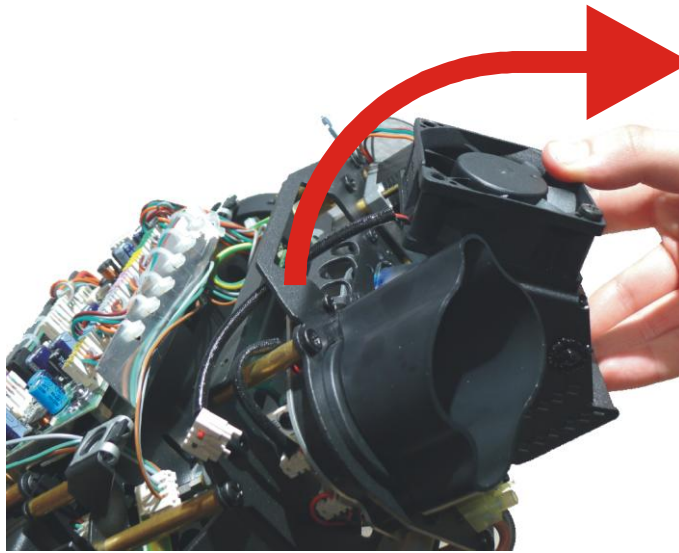


Photo 6

4) Loose the four screws which fix the lamp (photo 7), unplug the two fast-on cable connectors (photo 8) and remove the old lamp.

5) Put in place the new lamp and push it toward the three mechanical ends D, E, F (photo 9) on the lamp support; this let you have the lamp properly aligned on the optical system.

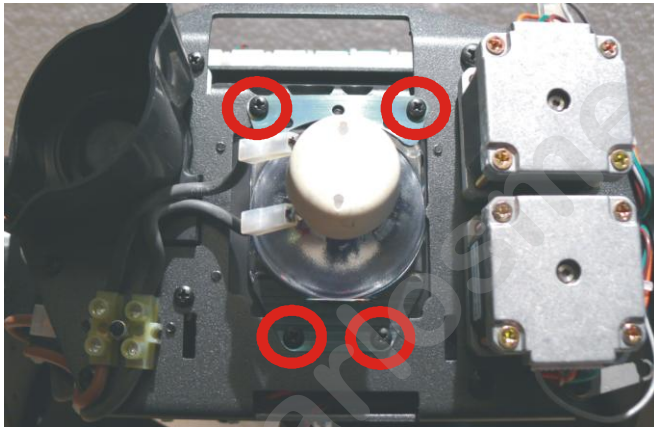


Photo 7

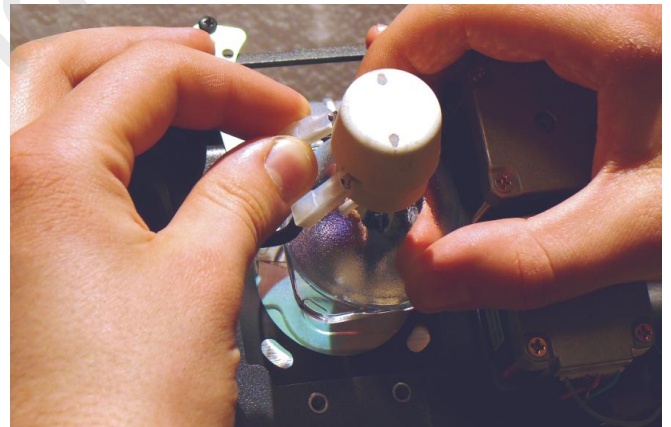


Photo 8

**WARNING:**

Never look directly at the lamp when it's lit.
Discharge lamps emits UV rays;
radiation from this lamp can cause
damage to eyes and skin.

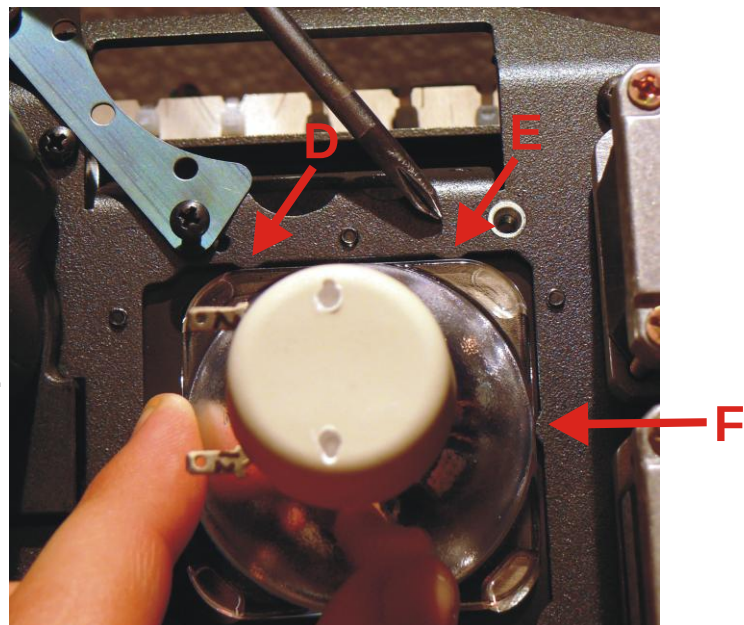


Photo 9

8- VOLTAGE AND FREQUENCY

The JACK with electronic ballast can operate at 90-260 VOLT 50 or 60 Hz.

9- INSTALLATION

JACK may be either floor or ceiling mounted.

For floor mounting installations, the JACK is supplied with four rubber mounting feet on the base.

For ceiling mounted installations, we recommend the use of appropriate clamps to fix the unit to the mounting surface.

The supporting structure from which the unit is hung should be capable of bearing the weight of the unit, as should any clamps used to hang it.

The structure should also be sufficiently rigid so as not to move or shake whilst the JACK is moving.

Four 1/4 turn Fast Locks connections placed in the base of the unit allow to hang the JACK by using the Fast Lock "C" clamps provided in the box.



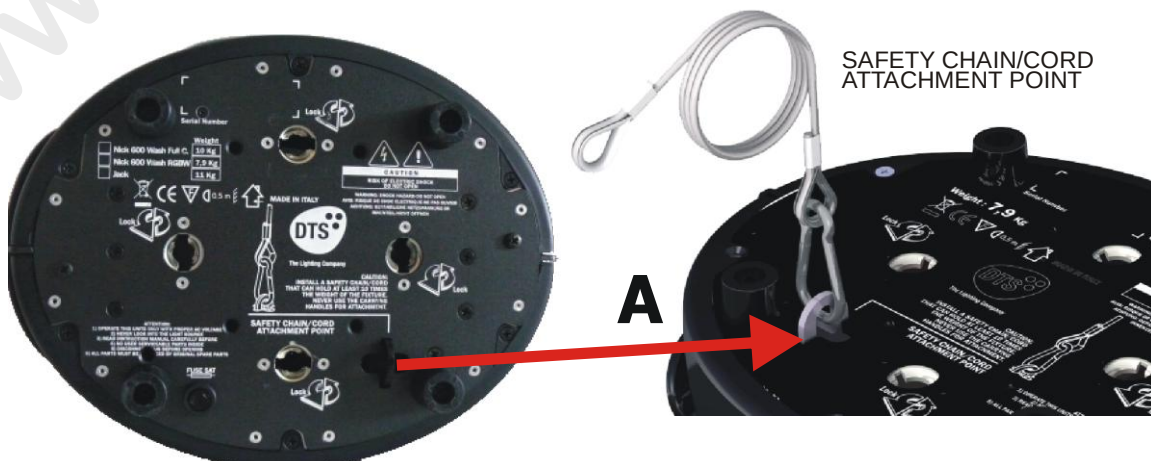
9.1- Safety cable



We recommend the use of a safety cable or chain connected to the JACK and to the suspension truss in order to avoid the fixture accidentally falling should the main fixing point fail.

Make sure that the iron cable or chain can bear the weight of the entire unit.

You may attach the safety chain/cord to the attachment point (A) located on the base of the fixture, as shown in the picture below.



9.2 Protection against liquids

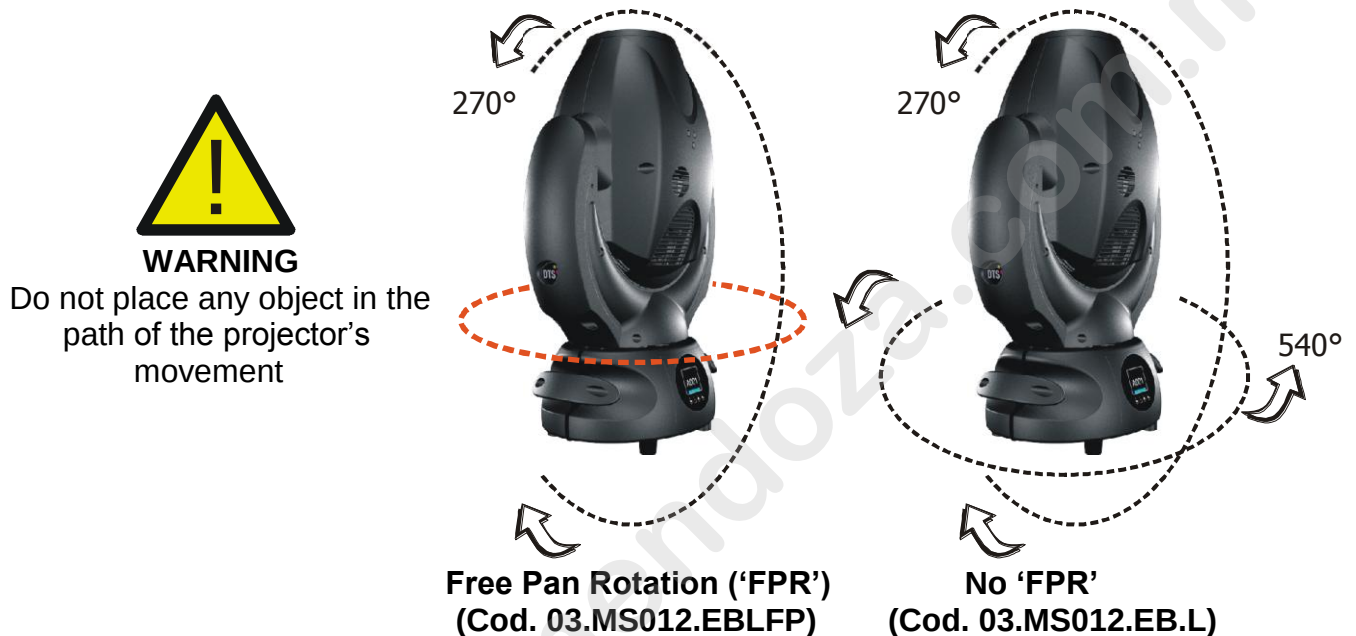
The projector contains electric and electronic components which should under no circumstances come into contact with oil, water or any other liquid.
The proper unit functioning would be compromised should this occur.

9.3- Movement

JACK FPR (Cod. 03.MS012.EBLFP) Unlimited Pan rotation; Tilt 270° (1,5 sec.)

JACK (Cod. 03.MS012.EB.L) Pan 540° (2,5 sec.), Tilt 270° (1,5 sec.)

DO NOT place any obstructions in the path of the projector's movement.



Please Note: If two different JACK model (with and without FPR) are controlled at the same time via DMX controller, be shure that channel 6 (PAN FAR) is set to value 0. In this way, the JACK with FPR will react to DMX same as JACK with no FPR function.

9.4- Risk of fire

Each fixture produces heat and must be installed in a well-ventilated place.
The minimum recommended distance from flammable material is 1 MT.

Minimum distance from the object being illuminated is 2 MT.



9.5- Forced ventilation

You will note, on inspection, that the unit features various air inlets and cooling fans located on both the base and head of the fixture.

These should, under no circumstances, be blocked or obstructed whilst the projector is in operation. Doing so could cause the fixture to seriously overheat thereby compromising its proper operation.

9.6- Ambient temperature

The projector should never be installed in places that lack a constant air flow.
The ambient temperature should NOT exceed 40°C.

10- MAINS CONNECTION

JACK with electronic ballast operate at 90-260 VOLT 50-60 Hz.

Prior to connecting the unit to your mains supply, ensure that the model in your possession correctly matches the mains supply available.

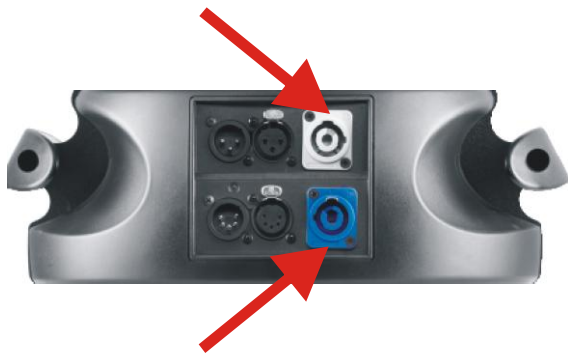
For connection purposes, ensure that your plug is capable of supporting 1,5 amps at 230 VOLT, or 3 amps at 90 VOLT.

Strict adherence to regulatory norms is strongly recommended.

MAINS AC OUTPUT 90-260V 50/60 Hz (16A Max)

MAX 12 JACK UNITS @ 230V

MAX 6 JACK UNITS @ 120V



(Cod. 03.MS012.EBLFP)

(Cod. 03.MS012.EB.L)

MAINS AC INPUT 90-260V 50/60 Hz

Wireless DMX Receiver Retrofit (Cod. 03.LA.126)



Available only for units with FPR on board



FUSE 5A T 5X20

10.1- Protection



The use of a thermal magnetic circuit breaker is recommended for each JACK.
A good earth connection is essential for the correct operation of the projector.

11- DMX SIGNAL CONNECTION

The unit operates using the digital DMX 512 (1990) signal.

Connection between the mixer and the projector or between projectors must be carried out using a two pair screened $\varnothing$ 0.5 mm cable and a XLR 5 or 3 pins connector.

Ensure that the conductors do not touch each other.

Do not connect the cable ground to the XLR chassy.

The plug housing must be isolated. Connect the mixer signal to the DMX IN projector plug and connect it to the next projector by connecting the DMX OUT plug on the first projector to the DMX IN plug of the second one.

This way, all the projectors are cascade connected.

NB. If the display showing the DMX address flashes, then one of the following errors has occurred:

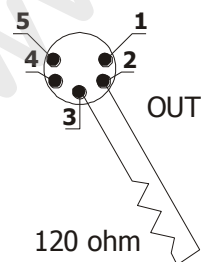
- DMX signal not present
- DMX address not valid
- DMX reception problem



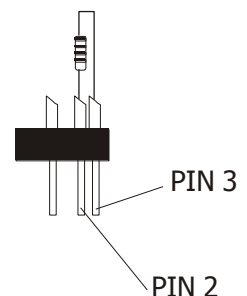
For Installations where long distance DMX cable connections are needed, we suggest to use a DMX terminator.

The DMX terminator is a male XLR 3-5 pins connector with a 120 ohm resistor between pin 2 and 3.

The DMX terminator must be plugged into the last unit (DMX out panel connector) of the DMX line.



PLACE A 120 OHM RESISTOR BETWEEN PIN 2 AND 3 OF A MALE XLR CONNECTOR AND PLUG IT INTO THE DMX OUT PANEL CONNECTOR OF THE LAST UNIT CONNECTED TO THE DMX LINE



11.1-DMX Addresses

JACK can be used in 2 different DMX modes: 25 DMX control channels (Default) or 17 DMX control channels.

Here below is described the DMX channels addressing for the controller when JACK is set to 25 and 17 DMX control channels:

25 channels mode (Default)

Projector 1 A001

Projector 2 A026 If you want to select the next projector, just add "25"

Projector 3 A051

..... A....

projector 6 A126

17 channels mode

Projector 1 A001

Projector 2 A018 If you want to select the next projector, just add "17"

Projector 3 A035

..... A....

projector 6 A086

11.2-Selecting the DMX address

1) Press the UP-DOWN key until you reach the required DMX channel. The numbers on the display will start to flash (but the new DMX address hasn't yet been set).

2) Press ENTER to confirm your selection. The numbers on the display will stop flashing and the projector is now setted to the new DMX address.

TRICKS:

If you keep pushed the UP or DOWN keys, the channels are calculated more quickly and you get a faster selection.

12- FIRMWARE UPDATING

Warning:

This procedure require a base knowledge of computer applications and Windows Hyperterminal program. **Please refer to an authorised D.T.S. service centre.**



To update the software version of the JACK you need:

D.T.S. RED BOX interface (D.T.S. Code: 03.LA.008).

USB-DMX Driver for the D.T.S. RED BOX interface.

(The driver and the installation procedure are available in our web site www.dts-lighting.it)

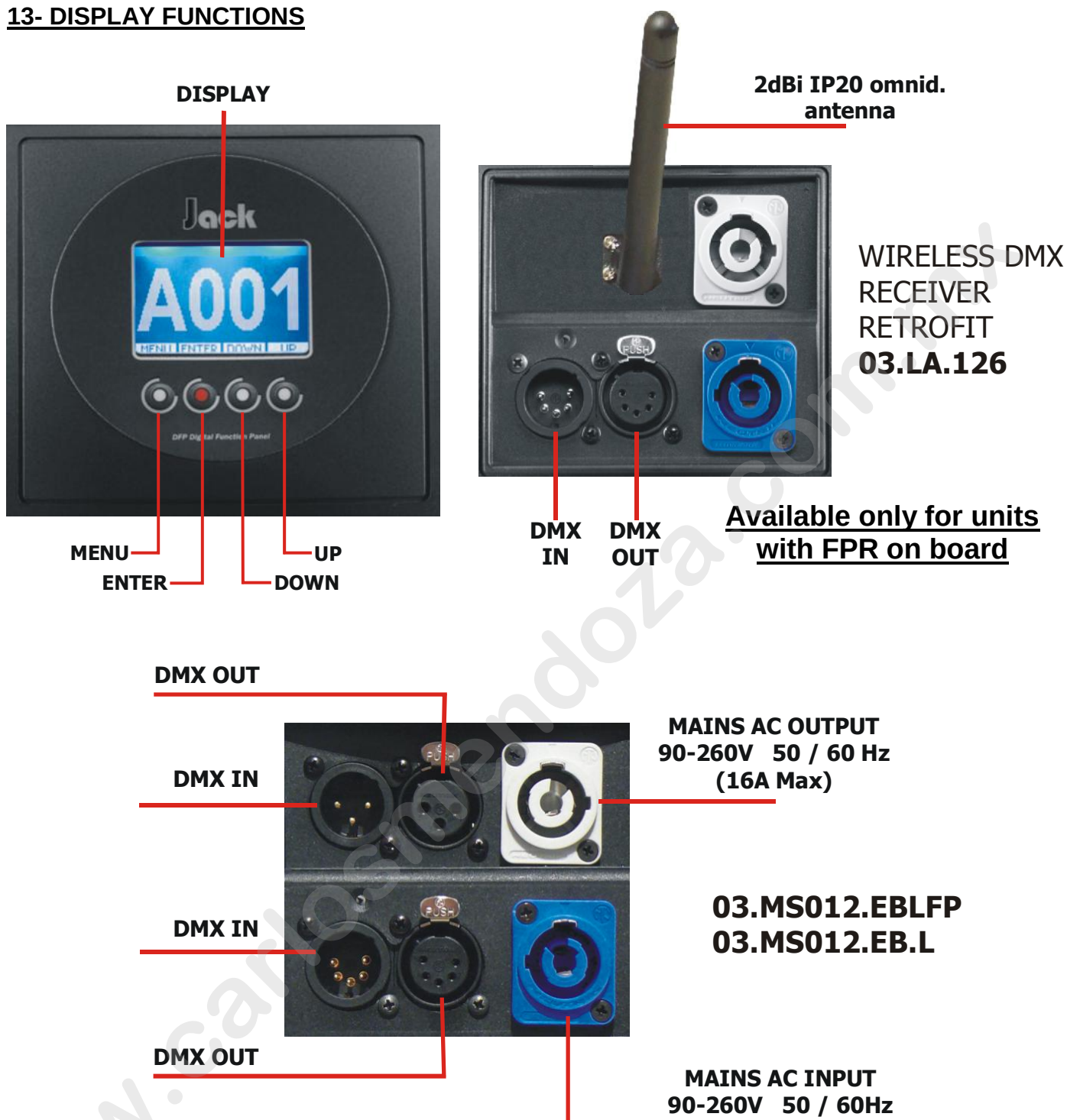
Updating the software version.

Please follow the procedure below to perform the update:

1. Install the D.T.S. RED BOX USB-DMX driver on the PC you will use to update the unit software.
2. Connect the D.T.S. RED BOX interface to the PC by using a USB cable.
3. Connect the D.T.S. RED BOX interface to the fixture by using a DMX cable.
4. Download the new software version into the unit by using Windows Hyperterminal program.

It will be possible to download the software from the reserved area of D.T.S. web site: www.dts-lighting.it.

13- DISPLAY FUNCTIONS



DISPLAY FUNCTIONS

The JACK display panel shows all the available functions. Using these functions, it is possible to change some of the parameters and add some functions. Changing the D.T.S. setting can vary the functions of the unit so that it does not respond to the DMX 512 used to control it. Carefully follow the instructions below before carrying out any variations or selections.

NOTE: the symbol  shows which key has to be pushed to obtain the desired function.

13- DISPLAY FUNCTIONS

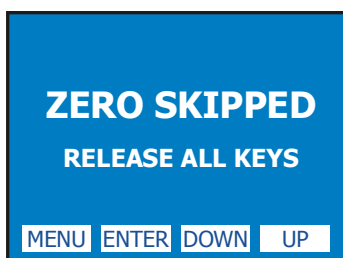
Software Version: 47.35

PS: on software version 47.35, has been added a new function called “ZERO SKIP”. “ZERO SKIP” function can be activated by pressing at the same time the “MENU” + “UP” buttons on unit display during initial reset.

This function let you have the unit display ON and internal motors (Pan&Tilt + head motors) OFF.

Usefull when the unit is still in the flight case and DMX address or internal unit parameters need to be set.

“ZERO SKIP” FUNCTION:



Pan Direction

PAN DIRECTION
This menu allows to set the Pan movement Normal or Reversed



Pan movement
Normal or Reversed
Default = Normal



Tilt Direction

TILT DIRECTION
This menu allows to set the Tilt movement Normal or Reversed

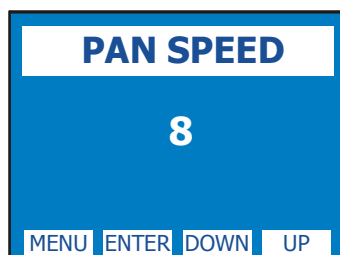


Tilt movement
Normal or Reversed
Default = Normal



Pan Speed

PAN SPEED
Pan Speed control (1-8)

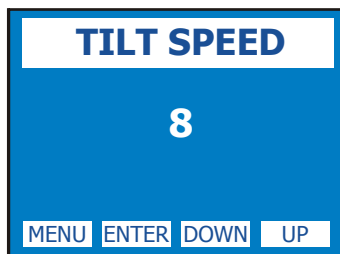


Pan Speed control
(1-8)



Tilt Speed

TILT SPEED
Tilt Speed control (1-8)



Tilt Speed control
(1-8)



13- DISPLAY FUNCTIONS



Display

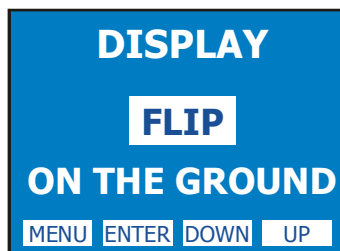


DISPLAY FLIP / STAND BY / CONTRAST

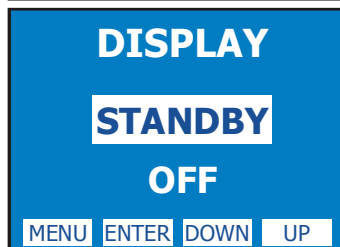
Display Flip:
Reverses display's reading depending on the mounting position
(On the ground or suspended).

Display Standby:
To turn off the display (after 5 seconds) or leave it always on.

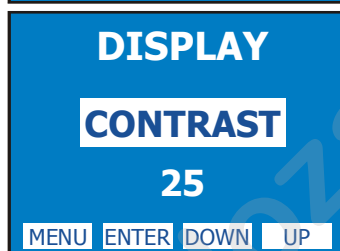
Display Contrast:
Display contrast regulation (1-32)



Display Flip
ON THE GROUND (Default)
SUSPENDED



Display Standby
OFF = Display Standby disabled (Default)
ON = Display goes OFF after 5 seconds



Display Contrast
1-32 (Default = 25)



DMX Mode



DMX MODE
To select DMX mode :
17 channels or 25 channels (default)



DMX Mode
17 channels
25 channels (Default)

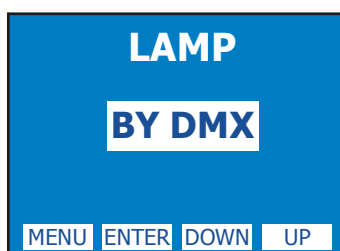


Lamp



LAMP
Lamp always ON, always OFF,
lamp ON-OFF selectable via DMX
and lamp life time reset

ADJUST
To adjust the lamp with no mixer connected.
It's possible to set the parameters for PAN-TILT, FOCUS and ZOOM



BY DMX = Lamp ON / OFF via DMX (Default)
ALWAYS ON = Forced ON
ALWAYS OFF = Forced OFF
RESET COUNTER = Lamp life time reset



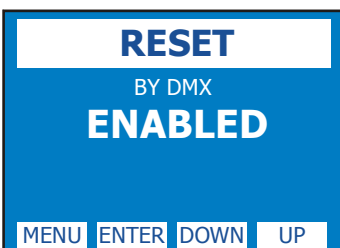
LAMP ADJUST = To adjust the lamp with no mixer connected.
It's possible to set the parameters for PAN-TILT, FOCUS and ZOOM



Reset



RESET
Reset via DMX ENABLED / DISABLED
And unit reset



ENABLED = Reset via DMX enabled (Default)
DISABLED = Reset via DMX disabled
NOW = Unit motors reset



13- DISPLAY FUNCTIONS



Base Fans

BASE FANS
Base Fans speed control



BASE FANS

1=13V 12=24V
4

MENU ENTER DOWN UP

Base Fans speed control
1-12 (Default = 4)



Lamp Fans

LAMP FANS
Lamp Fans speed control



LAMP FANS

1=13V 12=24V
5

MENU ENTER DOWN UP

Lamp Fans speed control
1-12 (Default = 5)



Gobo Rotation

GOBO ROTATION
Gobo rotation during gobo scrolling
for rotating gobo wheel



GOBO ROTATION

During gobo scrolling
OFF

MENU ENTER DOWN UP

ON
OFF = (Default)



Auto Focus

AUTO FOCUS
Automatic focusing



AUTO FOCUS

OFF

MENU ENTER DOWN UP

ON
OFF = (Default)
(Auto focus function
not yet implemented)



System info

SYSTEM INFO
Lamp life time, lamp strikes,
unit life time, 9 motors card
software version, Pan&Tilt card
software version and unit model



SYSTEM INFO

LAMP LIFE:0087H STRIKE:045
UNIT LIFE: 0099H
9M R.47
PT R.35
MODEL: JACK

MENU ENTER DOWN UP

SYSTEM INFO
Lamp life time, lamp strikes,
unit life time, 9 motors card
software version, Pan&Tilt
card software version and
unit model



Reserved

RESERVED
(Code = 100)
Pan lock-Tilt lock
Pan free-Tilt free
Lock Detector
System Reboot
Exit To Main



RESERVED

ENTER CODE
000

MENU ENTER DOWN UP

Pan Lock = Lock the Pan
to the desired value

Tilt Lock = Lock the Tilt
to the desired value



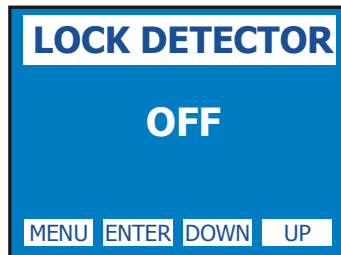
PAN LOCK

NO

MENU ENTER DOWN UP

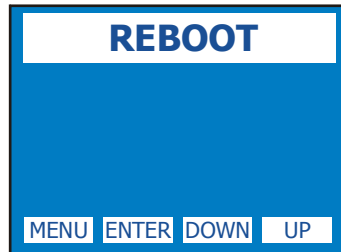
Pan Free = Remove power
to Pan motor

Tilt Free = Remove power
to Tilt motor



Lock Detector OFF = Default
 Lock Detector ON : This function let the user to activate the Lock detector on Pan and Tilt.

When Lock detector is set to ON, the unit start the Pan&Tilt motors reset normally, but if for any reason there is something blocking the movement for Pan&Tilt motors during the initial reset (example unit into the fly case and power connected), it automatically will stop to reset Pan&Tilt motors after 5 seconds from the startup and a warning message (Pan Locked-Tilt locked) will appear on unit display .



System Reboot = Unit Reboot without needing of turning OFF the unit



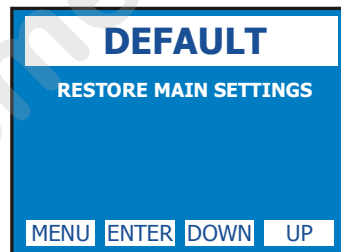
Exit To Main = Exit from Reserved menù



Default



DEFAULT
 To restore main settings



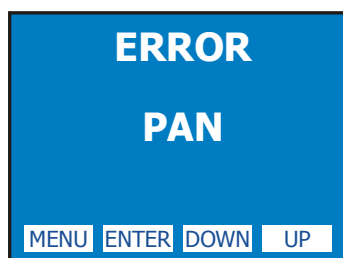
Default

To restore main settings

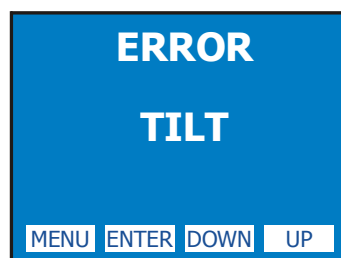


14- ERROR MESSAGES

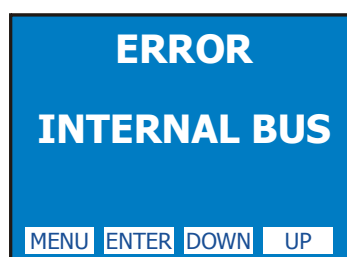
COLOUR WHEEL
POSITION ERROR



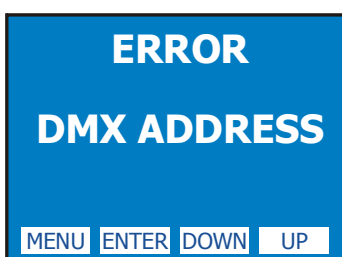
PAN REPOSITIONING
ENCODER ERROR



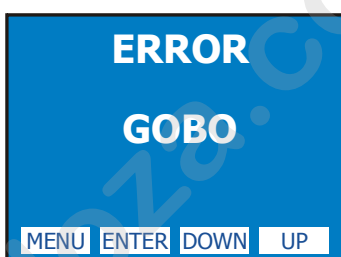
TILT REPOSITIONING
ENCODER ERROR



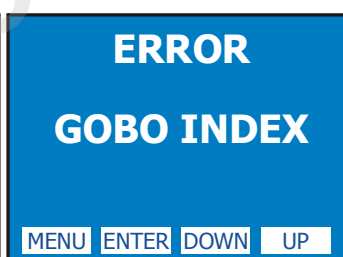
COMMUNICATION
PROBLEM BETWEEN
9 MOTORS CARD AND
PAN&TILT CARD



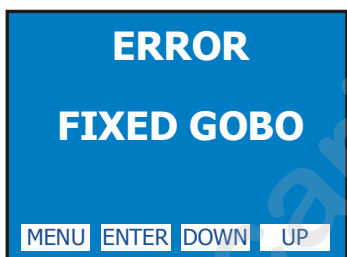
DMX ADDRESS
ERROR



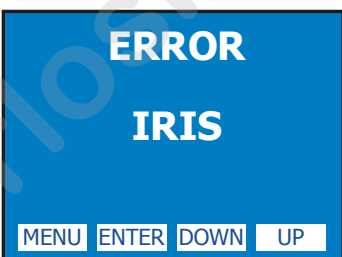
GOBO WHEEL
ERROR



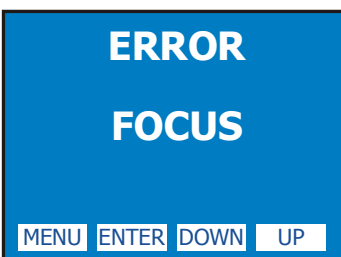
GOBO POSITION
ERROR



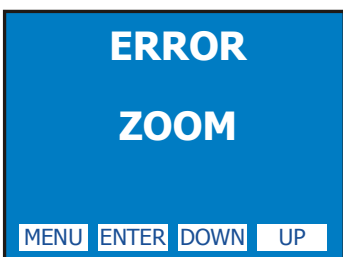
FIXED GOBO WHEEL
ERROR



IRIS ERROR



FOCUS ERROR



ZOOM ERROR

15- HIDDEN MENU

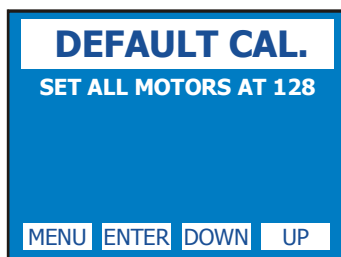
For technical personnel only.

To operate this menu:

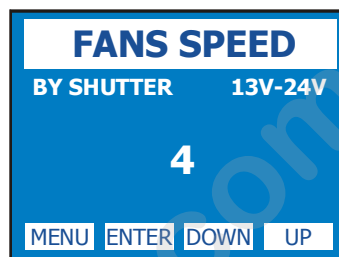
- Connect the projector to the DMX controller (DMX SIGNAL MUST BE CORRECTLY RECEIVED)
- Reset the JACK (reset from the MENU, not from the DMX controller!).
- While reset is running, press the MENU and ENTER keys at the same time.



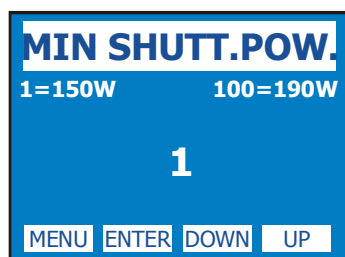
ELECTRONIC
CALIBRATION OF
THE MOTORS



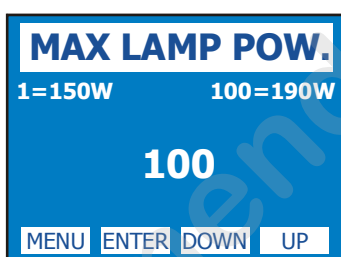
RESET EEPROM
RESET ALL SETTINGS
TO 128 VALUE



FAN SPEED WHEN
DIMMER CLOSED



SHUTTER POWER WHEN
DIMMER CLOSED



LAMP POWER WHEN
DIMMER CLOSED

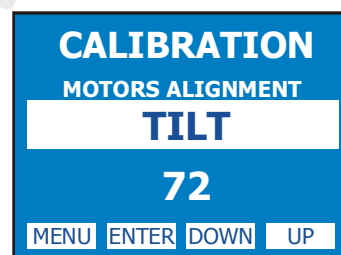


EXIT FROM HIDDEN
MENU

15.1 Calibration mode



PAN ALIGNMENT
To align Pan position



TILT ALIGNMENT
To align Tilt position



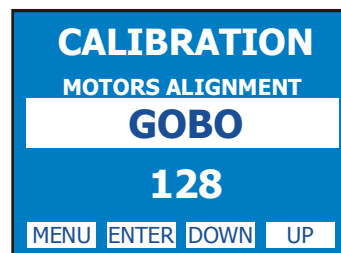
SHUTTER ZERO ALIGNMENT
Shutter zero position setting



SHUTTER PATH ALIGNMENT
Shutter excursion setting

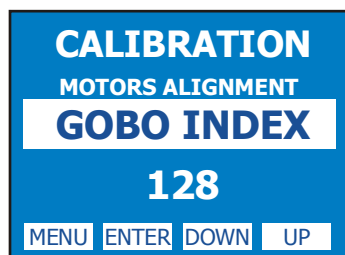


COLOUR WHEEL ALIGNMENT
To align Colour wheel



GOBO WHEEL ALIGNMENT
To align Gobo wheel

15.1 Calibration mode



GOBO WHEEL INDEX
ALIGNMENT
To align Gobo wheel index



GOBO FIXED WHEEL
ALIGNMENT
To align Gobo fixed wheel



IRIS ZERO ALIGNMENT
Iris zero position setting



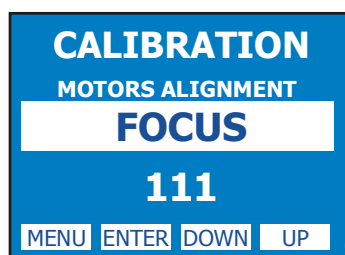
IRIS PATH ALIGNMENT
Iris excursion setting



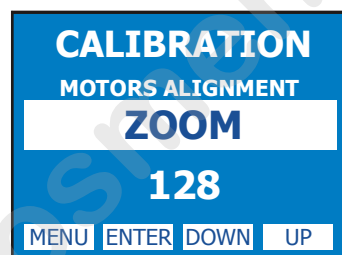
PRISM ZERO ALIGNMENT
Prism zero position setting



PRISM PATH ALIGNMENT
Prism excursion setting



FOCUS ALIGNMENT
To align FOCUS



ZOOM ALIGNMENT
To align ZOOM

16- PAN SPEED & TILT SPEED

You can set the PAN and TILT motors at high speed on your JACK.
Press menu until you see PAN SPEED/TILT SPEED.
Press ENTER and select a speed with UP-DOWN (there are 8 speeds).
Confirm by pressing ENTER.

17- BASE FANS SPEED AND LAMP FANS SPEED

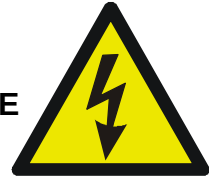
Base Fans speed and Lamp Fans speed regulation makes it possible to reduce fan noise.

However, the ambient temperature must be less than 35° C.

18- OPENING THE PROJECTOR HOUSING

It is possible to inspect the inside of the projector by removing the cover as indicated below.

ATTENTION
REMOVE MAINS POWER PRIOR TO ACCESSING THE PROJECTOR'S INTERNAL COMPONENTS.



- 1) Loosen the 2 screws which fix the head covers (photo 1) .
- 2) Once unscrewed, simply lift the covers to access the internal components (photo 2 and 3).



Photo 1



Photo 2

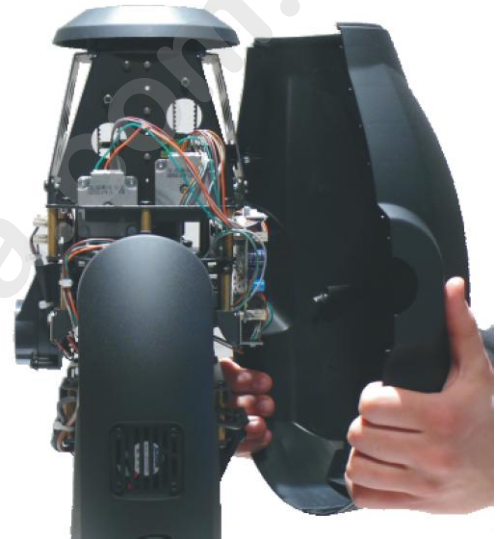


Photo 3

19- REPLACING GOBOS

JACK uses a mechanical system which allows the fixture's gobos to be removed without the use of special tools.

Replacement gobos should be made of either heat resistant glass or metal.

An ever-increasing range of gobos is available from your D.T.S. sales network.

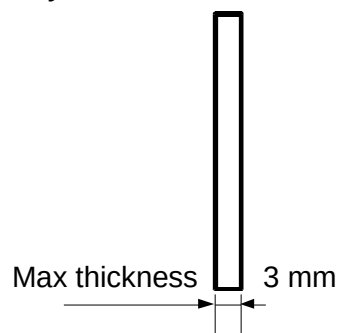
Gobo dimensions are as follows:

Rotating gobo wheel

ø external (ED) = 14.0 mm + 0 / - 0,1 mm

ø of image with defined edge (ID) = 6.0 mm

thickness = from 0.2 to 3 mm (see catalogue)

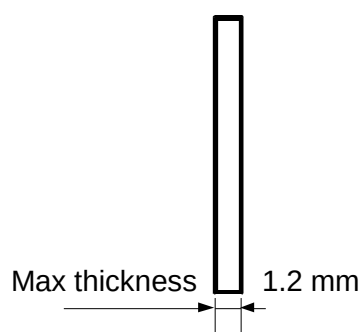


Fixed gobo wheel

ø external (ED) = 14.0 mm + 0 / - 0,1 mm

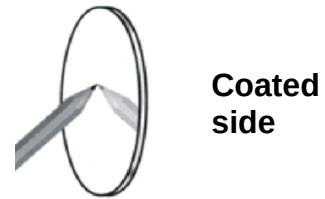
ø of image with defined edge (ID) = 6.5 mm

thickness = from 0.2 to 1.2 mm (see catalogue)



Coated side

When an object is held up the coated side of the glass gobo there is no space between the object and its reflection.



Coated side

Uncoated side

When an object is held up the uncoated side of the glass gobo there is a space between the object and its reflection.



Uncoated side

Load with coated surface toward the light source.**Replacing gobos on the rotating gobo wheel**

When replacing gobos, ensure that the projector is switched off.

- 1) Open the projector housing as described on page 23.
- 2) Remove the gobo holder to allow easier access to the gobo (photo 1).
- 3) Release the gobo retaining spring and carefully remove the gobo (photo 2).
- 4) Reverse the procedure to install a replacement gobo.

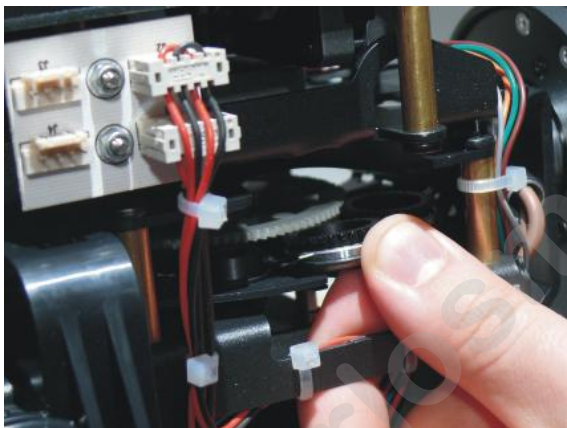


Photo 1



Photo 2

20- PERIODIC CLEANING**20.1- 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 lens cleaning solution.

20.2- Fans and air passages

The fans and air passages must be cleaned approximately every 6 weeks.

This periodic cleaning will depend of course, on 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.

If necessary, clean the fans and air passages more frequently.

21- PERIODIC CONTROLS

Attention



Disconnect mains power prior to removing the projector housing.

Lamp



The lamp should be replaced if there is any visible damage or deformation due to heat. This will help to avoid the danger of the lamp exploding.

JACK lamp lifespan is about 2000 hours, then it is necessary to replace it.

Mechanical parts

Periodically check all mechanical parts, gears, guides, belts, etc. for wear and tear, replacing them if necessary.

Periodically check the lubrication of all components, particularly the parts subject to high temperatures.

If necessary, lubricate with suitable lubricant, available from your D.T.S. distributor. Check the tension of the belts and adjust it if necessary.

Electrical components



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

Fuse replacement

Locate the fuse, which protects the lamp and electronics, in the base of the JACK.

Using a multimeter, test the condition of the fuse, replacing it with one of equivalent type if necessary.

22- DMX PROTOCOL**25 CHANNELS MODE (DEFAULT)**

- 1 PAN msb
- 2 PAN lsb
- 3 TILT msb
- 4 TILT lsb
- 5 SPEED MOVEMENT
- 6 PAN FAR (Active only on Jack FPR Cod. 03.MS012.EBLFP)
- 7 DIMMER
- 8 SHUTTER
- 9 COLOUR
- 10 COLOUR MODE
- 11 GOBO
- 12 GOBO MODE
- 13 GOBO ROTATION / INDEX – PRISM ROTATION
- 14 GOBO INDEX FINE
- 15 GOBO SHAKE
- 16 FIXED GOBO
- 17 FIXED GOBO SHAKE
- 18 IRIS
- 19 MACROS
- 20 MACROS MODE
- 21 PRISM
- 22 FOCUS
- 23 FOCUS FINE
- 24 ZOOM
- 25 RESET + LAMP

DMX CHANNEL	1	Parameter: PAN msb
-------------	---	--------------------

DMX CHANNEL	2	Parameter: PAN lsb
-------------	---	--------------------

DMX CHANNEL	3	Parameter: TILT msb
-------------	---	---------------------

DMX CHANNEL	4	Parameter: TILT lsb
-------------	---	---------------------

DMX CHANNEL	5	Parameter: SPEED MOVEMENT
-------------	---	---------------------------

DMX value	Function
000-010	Standard
011-025	Fast movement
026-127	Vector mode from fast to slow
128-247	Variable time reaction to DMX signal (fast to slow)
248-255	Silent movement

DMX CHANNEL	6	Parameter: PAN FAR (Active only on Jack FPR Cod. 03.MS012.EBLFP)
-------------	---	--

DMX value	Function
000-010	Position mode 540° (standard path)
011-020	Position mode 360° (1 turn)
021-030	Position mode 720° (2 turns)
031-040	Position mode 1080° (3 turns)
041-050	Position mode 1440° (4 turns)
051-060	Position mode 1800° (5 turns)
061-070	Position mode 2160° (6 turns)
071-080	Position mode 2520° (7 turns)
081-090	Position mode 2880° (8 turns)
091-100	Position mode 3240° (9 turns)
101-110	Position mode 3600° (10 turns)
111-120	Position mode 360° smart path
121-182	Forward spin rotation speed from max to min
183-193	Stop
194-255	Reverse spin rotation speed from min to max

DMX CHANNEL	7	Parameter: DIMMER
-------------	---	-------------------

DMX value	Function
000-007	Black-out
008-255	Proportional dimmer

DMX CHANNEL	8	Parameter: SHUTTER
-------------	---	--------------------

DMX value	Function
000-019	Black-out
020-039	Open
040-059	Black-out
060-079	Strobe random speed
080-089	Strobe speed 1
090-099	Strobe speed 2
100-109	Strobe speed 3
110-119	Strobe speed 4
120-129	Strobe speed 5
130-139	Strobe speed 6
140-149	Flash open speed 1
150-159	Flash open speed 2
160-169	Flash open speed 3
170-179	Flash open speed 4
180-189	Flash closed speed 1
190-199	Flash closed speed 2
200-209	Flash closed speed 3
210-219	Flash closed speed 4
220-227	Colours / Gobo in black-out
228-233	Pan / Tilt in black-out
234-255	Open

DMX CHANNEL	9	Parameter: COLOUR
-------------	---	-------------------

IF CHANNEL 10 = FULL COLOUR (DMX range value 0-63)

DMX value	Function
000-013	Colour 1
014-027	Colour 2
028-041	Colour 3
042-055	Colour 4
056-069	Colour 5
070-083	Colour 6
084-097	Colour 7
098-111	Colour 8
112-125	Colour 9
126-139	Colour 10
140-153	Colour 11
154-167	Colour 12
168-181	Colour 13
182-195	Colour 14
196-209	Colour 15
210-223	Colour 16
224-237	Colour 17
238-255	Colour 18

IF CHANNEL 10 = HALF COLOUR (DMX range value 64-127)

DMX value	Function
000-012	Colour 1
013-025	Colour 1-2
026-038	Colour 2-3
039-051	Colour 3-4
052-064	Colour 4-5
065-077	Colour 5-6
078-090	Colour 6-7
091-103	Colour 7-8
104-116	Colour 8-9
117-129	Colour 9-10
130-142	Colour 10-11
143-155	Colour 11-12
156-168	Colour 12-13
169-181	Colour 13-14
182-194	Colour 14-15
195-207	Colour 15-16
208-220	Colour 16-17
221-233	Colour 17-18
234-255	Colour 18-1

IF CHANNEL 10 = PROPORTIONAL COLOUR (DMX range value 128-191)

DMX value	Function
000-010	No Colour
011-255	Proportional Colour

IF CHANNEL 10 = RAINBOW (DMX range value 192-255)

DMX value	Function
000-009	No Colour
010-127	Right rotation speed from max to min
128-137	Stop
138-255	Left rotation speed from min to max

DMX CHANNEL	10	Parameter: COLOUR MODE
-------------	----	------------------------

DMX value	Function
000-063	Full Colour
064-127	Half Colour
128-191	Proportional Colour
192-255	Rainbow

DMX CHANNEL	11	Parameter: GOBO
-------------	----	-----------------

DMX value	Function
000-020	Open
021-041	Gobo 1
042-062	Gobo 2
063-083	Gobo 3
084-104	Gobo 4
105-125	Gobo 5
126-146	Gobo 6
147-167	Gobo 7
168-188	Gobo 8
189-207	Gobo 9
208-213	Speed rotation 1 min
214-219	Speed rotation 2
220-225	Speed rotation 3
226-231	Speed rotation 4
232-237	Speed rotation 5
238-243	Speed rotation 6
244-249	Speed rotation 7
250-255	Speed rotation 8 max

DMX CHANNEL	12	Parameter: GOBO MODE
-------------	----	----------------------

DMX value	Function
000-127	Gobo Rotation Mode
128-255	Gobo Index Mode

DMX CHANNEL	13	Parameter: GOBO ROTATION / INDEX – PRISM ROTATION
-------------	----	---

GOBO MODE ROTATION

DMX value	Function
000-009	Stop
010-127	Left rotation (max to min)
128-137	Stop
138-255	Right rotation (min to max)

GOBO MODE INDEX

DMX value	Function
000-255	Gobo Index Coarse

DMX CHANNEL	14	Parameter: GOBO INDEX FINE
-------------	----	----------------------------

DMX value	Function
000-255	Gobo Index Fine

DMX CHANNEL	15	Parameter: GOBO SHAKE
-------------	----	-----------------------

DMX value	Function
000-009	Stop
010-022	Gobo shake R-L speed 1
023-035	Gobo shake R-L speed 2
036-048	Gobo shake R-L speed 3
049-061	Gobo shake R-L speed 4
062-074	Gobo shake R-L speed 5
075-087	Gobo shake R-L speed 6
088-100	Gobo shake R-L speed 7
101-113	Gobo shake R-L speed 8
114-126	Gobo shake R-L speed 9
127-138	Stop
139-151	Gobo shake L-R speed 1
152-164	Gobo shake L-R speed 2
165-177	Gobo shake L-R speed 3
178-190	Gobo shake L-R speed 4
191-203	Gobo shake L-R speed 5
204-216	Gobo shake L-R speed 6
217-229	Gobo shake L-R speed 7
230-242	Gobo shake L-R speed 8
243-255	Gobo shake L-R speed 9

DMX CHANNEL	16	Parameter: FIXED GOBO
-------------	----	-----------------------

DMX value	Function
000-018	Open
019-037	Gobo 1
038-056	Gobo 2
057-075	Gobo 3
076-094	Gobo 4
095-113	Gobo 5
114-132	Gobo 6
133-151	Gobo 7
152-170	Gobo 8
171-189	Gobo 9
190-207	Gobo 10
208-213	Speed rotation 1 min
214-219	Speed rotation 2
220-225	Speed rotation 3
226-231	Speed rotation 4
232-237	Speed rotation 5
238-243	Speed rotation 6
244-255	Speed rotation 7 max

DMX CHANNEL	17	Parameter: FIXED GOBO SHAKE
-------------	----	-----------------------------

DMX value	Function
000-009	Stop
010-022	Gobo shake R-L speed 1
023-035	Gobo shake R-L speed 2
036-048	Gobo shake R-L speed 3
049-061	Gobo shake R-L speed 4
062-074	Gobo shake R-L speed 5
075-087	Gobo shake R-L speed 6
088-100	Gobo shake R-L speed 7
101-113	Gobo shake R-L speed 8
114-126	Gobo shake R-L speed 9
127-138	Stop
139-151	Gobo shake L-R speed 1
152-164	Gobo shake L-R speed 2
165-177	Gobo shake L-R speed 3
178-190	Gobo shake L-R speed 4
191-203	Gobo shake L-R speed 5
204-216	Gobo shake L-R speed 6
217-229	Gobo shake L-R speed 7
230-242	Gobo shake L-R speed 8
243-255	Gobo shake L-R speed 9

DMX CHANNEL	18	Parameter: IRIS
-------------	----	-----------------

DMX value	Function
000-009	Open
010-246	Linear iris from open to closed
247-255	Closed

DMX CHANNEL	19	Parameter: MACROS
-------------	----	-------------------

IF CHANNEL 20 = IRIS MACROS (DMX range value 0-63)

DMX value	Function
000-009	No effect
010-063	Iris pulse at different speed from min to max
064-117	Iris pulse with flash closing from min to max
118-171	Iris pulse with flash opening from min to max
172-213	Iris pulse with flash closing combined with zoom from min to max
214-255	Iris pulse with flash opening combined with zoom from min to max

IF CHANNEL 20 = BEAM MACROS (DMX range value 64-127) BEAM Macros not yet implemented

DMX value	Function
000-009	No effect
010-063	BEAM macros 1
064-117	BEAM macros 2
118-171	BEAM macros 3
172-213	BEAM macros 4
214-255	BEAM macros 5

IF CHANNEL 20 = WASH MACROS (DMX range value 128-191) WASH Macros not yet implemented

DMX value	Function
000-009	No effect
010-063	WASH macros 1
064-117	WASH macros 2
118-171	WASH macros 3
172-213	WASH macros 4
214-255	WASH macros 5

IF CHANNEL 20 = SPOT MACROS (DMX range value 192-255) SPOT Macros not yet implemented

DMX value	Function
000-009	No effect
010-063	SPOT macros 1
064-117	SPOT macros 2
118-171	SPOT macros 3
172-213	SPOT macros 4
214-255	SPOT macros 5

DMX CHANNEL	20	Parameter: MACROS MODE
-------------	----	------------------------

DMX value	Function
000-063	IRIS macros
064-127	BEAM macros (BEAM Macros not yet implemented)
128-191	WASH macros (WASH Macros not yet implemented)
192-255	SPOT macros (SPOT Macros not yet implemented)

DMX CHANNEL	21	Parameter: PRISM
-------------	----	------------------

DMX value	Function
000-127	No Effect
128-255	Prism Inserted

DMX CHANNEL	22	Parameter: FOCUS
-------------	----	------------------

DMX value	Function
000-255	Linear focus (0-95)%

DMX CHANNEL	23	Parameter: FOCUS FINE
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DMX value	Function
000-255	Linear focus (95-100)%

DMX CHANNEL	24	Parameter: ZOOM
-------------	----	-----------------

DMX value	Function
000-255	Linear zoom

DMX CHANNEL	25	Parameter: RESET + LAMP
-------------	----	-------------------------

DMX value	Function
000-009	No effect
010-060	Lamp OFF (3 sec)
061-129	No effect
130-179	Lamp ON (3 sec)
180-200	No effect
201-239	Internal motor reset
240-255	Total reset

22- DMX PROTOCOL**17 CHANNELS MODE**

- 1 PAN msb
- 2 PAN lsb
- 3 TILT msb
- 4 TILT lsb
- 5 SPEED MOVEMENT
- 6 PAN FAR (Active only on Jack FPR Cod. 03.MS012.EBLFP)
- 7 DIMMER
- 8 SHUTTER
- 9 COLOUR
- 10 GOBO
- 11 GOBO ROTATION / INDEX – PRISM ROTATION
- 12 FIXED GOBO
- 13 IRIS
- 14 PRISM
- 15 FOCUS
- 16 ZOOM
- 17 RESET + LAMP

DMX CHANNEL	1	Parameter: PAN msb
-------------	---	--------------------

DMX CHANNEL	2	Parameter: PAN lsb
-------------	---	--------------------

DMX CHANNEL	3	Parameter: TILT msb
-------------	---	---------------------

DMX CHANNEL	4	Parameter: TILT lsb
-------------	---	---------------------

DMX CHANNEL	5	Parameter: SPEED MOVEMENT
-------------	---	---------------------------

DMX value	Function
000-010	Standard
011-025	Fast movement
026-127	Vector mode from fast to slow
128-247	Variable time reaction to DMX signal (fast to slow)
248-255	Silent movement

DMX CHANNEL	6	Parameter: PAN FAR (Active only on Jack FPR Cod. 03.MS012.EBLFP)
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DMX value	Function
000-010	Position mode 540° (standard path)
011-020	Position mode 360° (1 turn)
021-030	Position mode 720° (2 turns)
031-040	Position mode 1080° (3 turns)
041-050	Position mode 1440° (4 turns)
051-060	Position mode 1800° (5 turns)
061-070	Position mode 2160° (6 turns)
071-080	Position mode 2520° (7 turns)
081-090	Position mode 2880° (8 turns)
091-100	Position mode 3240° (9 turns)
101-110	Position mode 3600° (10 turns)
111-120	Position mode 360° smart path
121-182	Forward spin rotation speed from max to min
183-193	Stop
194-255	Reverse spin rotation speed from min to max

DMX CHANNEL	7	Parameter: DIMMER
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DMX value	Function
000-007	Black-out
008-255	Proportional dimmer

DMX CHANNEL	8	Parameter: SHUTTER
-------------	---	--------------------

DMX value	Function
000-019	Black-out
020-039	Open
040-059	Black-out
060-079	Strobe random speed
080-089	Strobe speed 1
090-099	Strobe speed 2
100-109	Strobe speed 3
110-119	Strobe speed 4
120-129	Strobe speed 5
130-139	Strobe speed 6
140-149	Flash open speed 1
150-159	Flash open speed 2
160-169	Flash open speed 3
170-179	Flash open speed 4
180-189	Flash closed speed 1
190-199	Flash closed speed 2
200-209	Flash closed speed 3
210-219	Flash closed speed 4
220-227	Colours / Gobo in black-out
228-233	Pan / Tilt in black-out
234-255	Open

DMX CHANNEL	9	Parameter: COLOUR
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DMX value	Function
000-004	Colour 1
005-009	Colour 1-2
010-014	Colour 2
015-019	Colour 2-3
020-024	Colour 3
025-029	Colour 3-4
030-034	Colour 4
035-039	Colour 4-5
040-044	Colour 5
045-049	Colour 5-6
050-054	Colour 6
055-059	Colour 6-7
060-064	Colour 7
065-069	Colour 7-8
070-074	Colour 8
075-079	Colour 8-9
080-084	Colour 9
085-089	Colour 9-10
090-094	Colour 10
095-099	Colour 10-11
100-104	Colour 11
105-109	Colour 11-12
110-114	Colour 12
115-119	Colour 12-13
120-124	Colour 13
125-129	Colour 13-14
130-134	Colour 14
135-139	Colour 14-15
140-144	Colour 15
145-149	Colour 15-16
150-154	Colour 16
155-159	Colour 16-17
160-164	Colour 17
165-169	Colour 17-18
170-174	Colour 18
175-197	Colour 18-1
198-200	Right rotation speed 9 max
201-203	Right rotation speed 8
204-206	Right rotation speed 7
207-209	Right rotation speed 6
210-212	Right rotation speed 5
213-215	Right rotation speed 4
216-218	Right rotation speed 3
219-221	Right rotation speed 2
222-224	Right rotation speed 1 min
225-228	Stop
229-231	Left rotation speed 1 min
232-234	Left rotation speed 2
235-237	Left rotation speed 3
238-240	Left rotation speed 4
241-243	Left rotation speed 5
244-246	Left rotation speed 6
247-249	Left rotation speed 7
250-252	Left rotation speed 8
253-255	Left rotation speed 9 max

DMX CHANNEL	10	Parameter: GOBO
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DMX value	Function
000-020	Open
021-041	Gobo 1
042-062	Gobo 2
063-083	Gobo 3
084-104	Gobo 4
105-125	Gobo 5
126-146	Gobo 6
147-167	Gobo 7
168-188	Gobo 8
189-207	Gobo 9
208-213	Speed rotation 1 min
214-219	Speed rotation 2
220-225	Speed rotation 3
226-231	Speed rotation 4
232-237	Speed rotation 5
238-243	Speed rotation 6
244-249	Speed rotation 7
250-255	Speed rotation 8 max

DMX CHANNEL	11	Parameter: GOBO ROTATION / INDEX – PRISM ROTATION
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DMX value	Function
000-127	Proportional index 0°-360°
128-180	Left rotation (max to min)
181-202	Stop
203-255	Right rotation (min to max)

DMX CHANNEL	12	Parameter: FIXED GOBO
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DMX value	Function
000-018	Open
019-037	Gobo 1
038-056	Gobo 2
057-075	Gobo 3
076-094	Gobo 4
095-113	Gobo 5
114-132	Gobo 6
133-151	Gobo 7
152-170	Gobo 8
171-189	Gobo 9
190-207	Gobo 10
208-213	Speed rotation 1 min
214-219	Speed rotation 2
220-225	Speed rotation 3
226-231	Speed rotation 4
232-237	Speed rotation 5
238-243	Speed rotation 6
244-255	Speed rotation 7 max

DMX CHANNEL	13	Parameter: IRIS
-------------	----	-----------------

DMX value	Function
000-009	Open
010-124	Linear Iris from open to closed
125-132	Closed
133-159	Iris pulse at different speed from min to max
160-186	Iris pulse with flash closing from min to max
187-213	Iris pulse with flash opening from min to max
214-234	Iris pulse with flash closing combined with zoom from min to max
235-255	Iris pulse with flash opening combined with zoom from min to max

DMX CHANNEL	14	Parameter: PRISM
-------------	----	------------------

DMX value	Function
000-127	No effect
128-255	Prism inserted

DMX CHANNEL	15	Parameter: FOCUS
-------------	----	------------------

DMX value	Function
000-255	Linear focus

DMX CHANNEL	16	Parameter: ZOOM
-------------	----	-----------------

DMX value	Function
000-255	Linear zoom

DMX CHANNEL	17	Parameter: RESET + LAMP
-------------	----	-------------------------

DMX value	Function
000-009	No effect
010-060	Lamp OFF (3 sec)
061-129	No effect
130-179	Lamp ON (3 sec)
180-200	No effect
201-239	Internal motor reset
240-255	Total reset

23- 9 MOTORS CONTROL CARD

D.T.S. Code: 0514T023

ROTATING GOBO

GOBO / PRISM
ROTATION

IRIS

PRISM

FIXED GOBO

COLOUR

SHUTTER

FOCUS

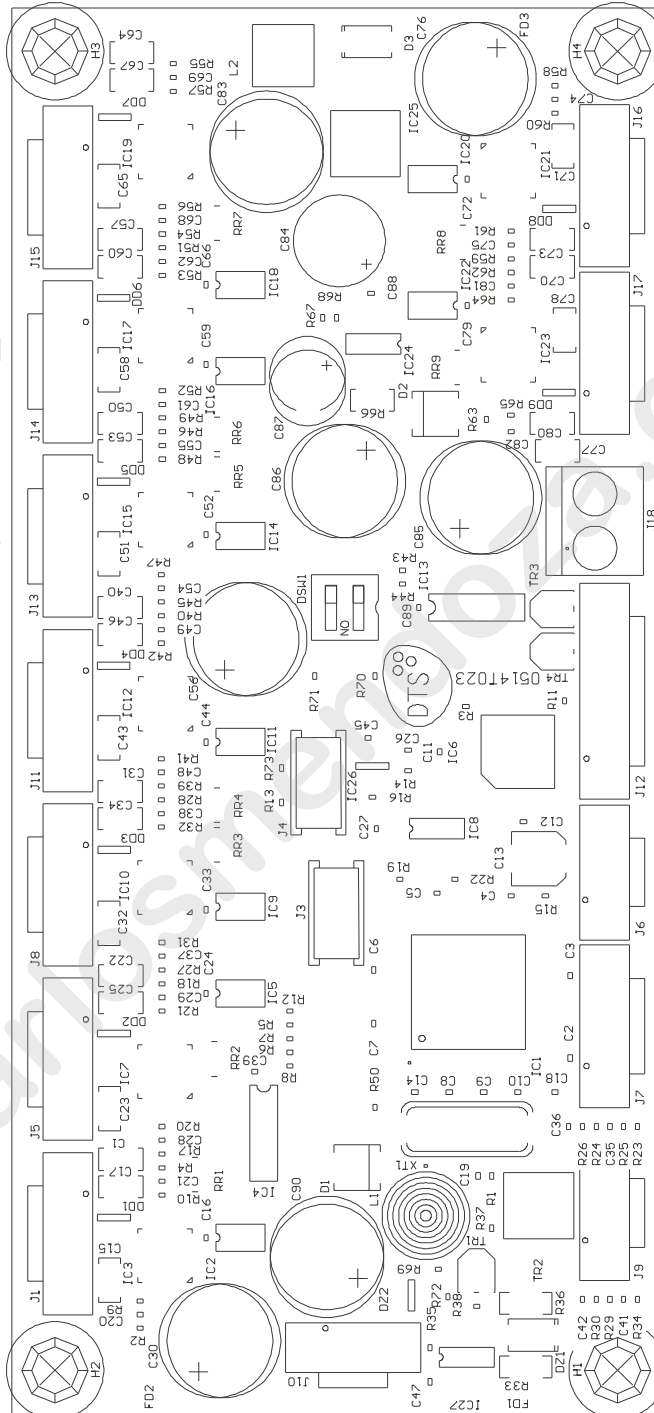
ZOOM

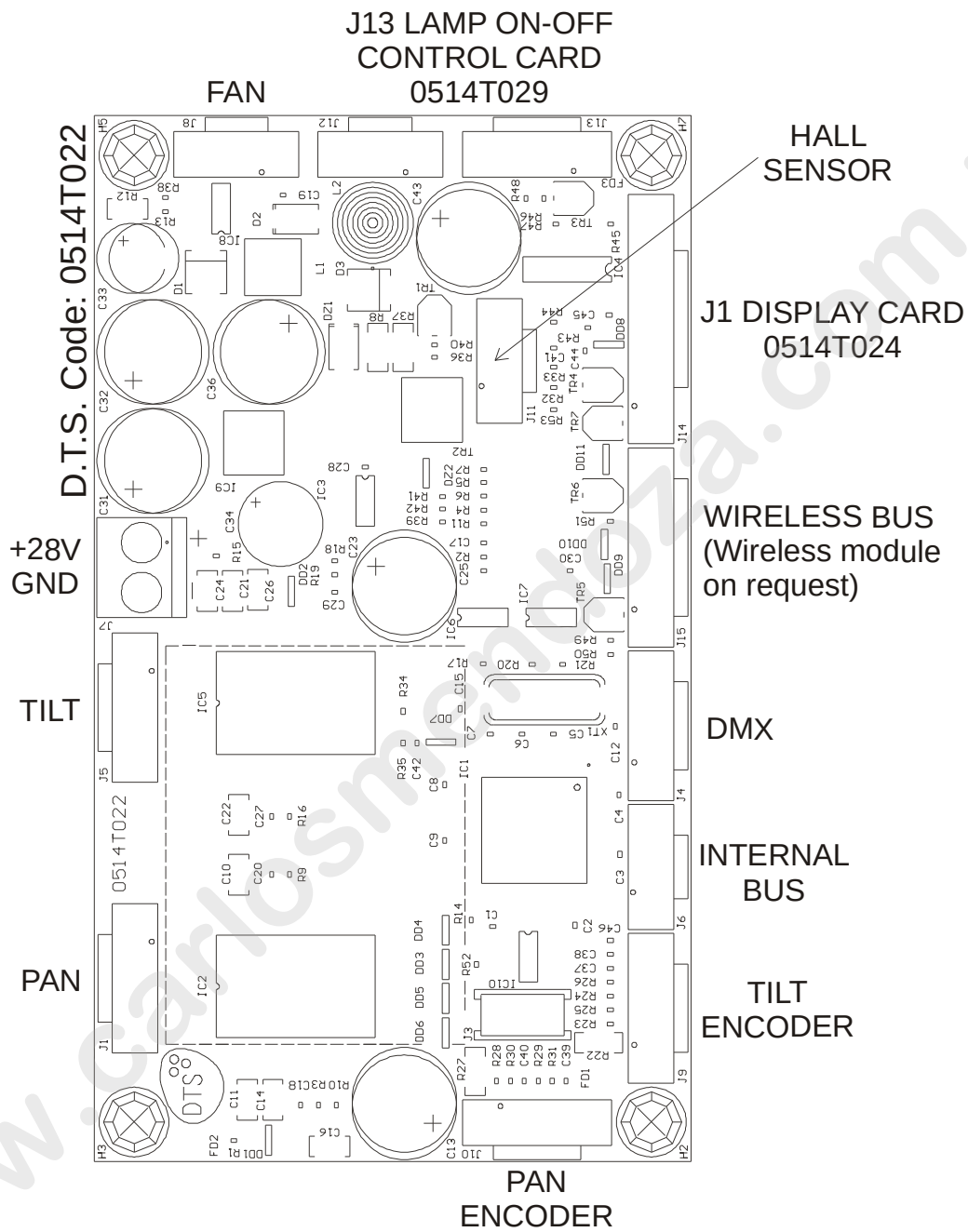
GND
+28V

BUS

HALL EFFECT
LINE 1, LINE 2

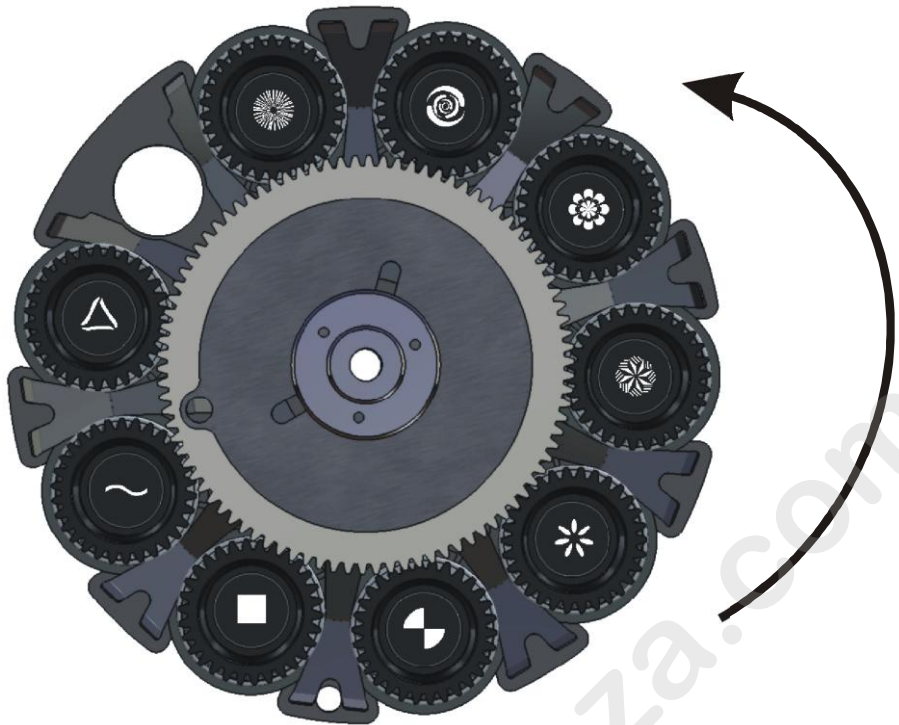
FAN



24- PAN & TILT CARD

D.T.S. Code: 0514T029

27- ROTATING GOBO WHEEL



GOBO 1 DICRO
RAYS



D.T.S. Code:
0516G054

GOBO 2 DICRO
VERTIGO



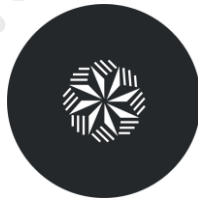
D.T.S. Code:
0516G055

GOBO 3 DICRO
VERBENA



D.T.S. Code:
0516G056

GOBO 4 DICRO
PINWHEEL



D.T.S. Code:
0516G057

GOBO 5 DICRO
DAISY



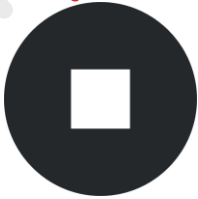
D.T.S. Code:
0516G058

GOBO 6 DICRO
PIE SLICES



D.T.S. Code:
0516G059

GOBO 7 DICRO
SQUARE



D.T.S. Code:
0516G060

GOBO 8 DICRO
WAVE



D.T.S. Code:
0516G061

GOBO 9 DICRO
TRIANGLE



D.T.S. Code:
0516G062

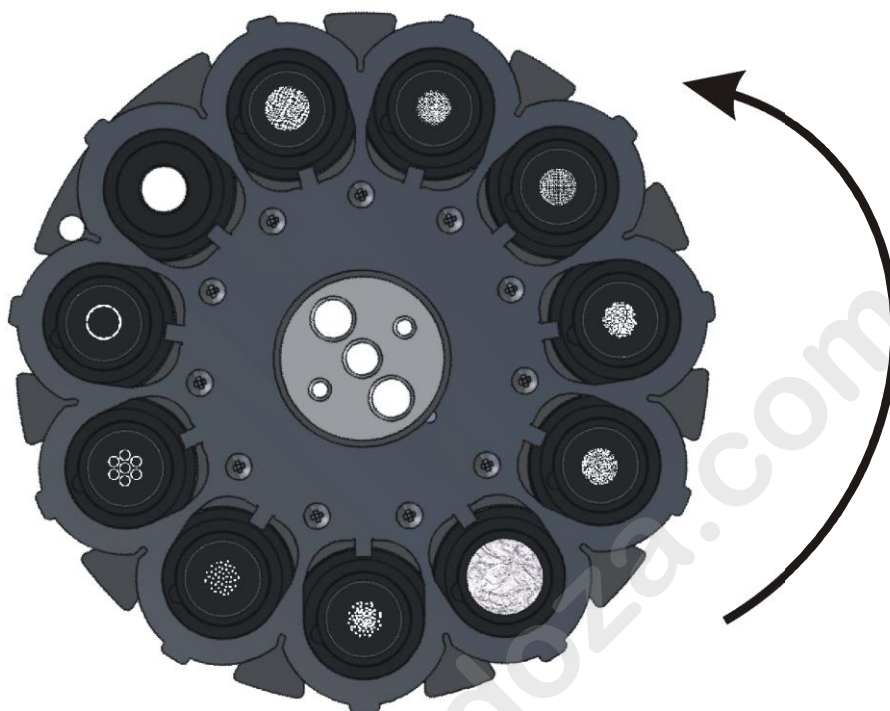
28- ROTATING GOBO PROVIDED INTO THE UNIT BOX

GOBO 10 DICRO



D.T.S. Code:
0516G063

29- FIXED GOBO WHEEL

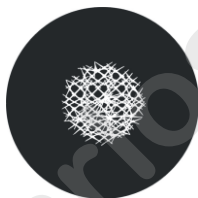


**GOBO 1 DICRO
DISTORTION**



D.T.S. Code:
0516G064

**GOBO 2 DICRO
SCRATCHES**



D.T.S. Code:
0516G065

**GOBO 3 DICRO
SPHERE**



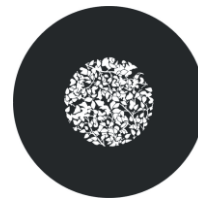
D.T.S. Code:
0516G066

**GOBO 4 DICRO
STONES**



D.T.S. Code:
0516G067

**GOBO 5 DICRO
LEAVES**



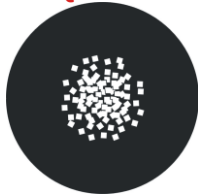
D.T.S. Code:
0516G068

**GOBO 6 GLASS
ICE**



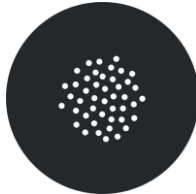
D.T.S. Code:
0516G069

**GOBO 7 DICRO
SQUARES**



D.T.S. Code:
0516G070

**GOBO 8 DICRO
DOTS**



D.T.S. Code:
0516G071

**GOBO 9 DICRO
CIRCLES**

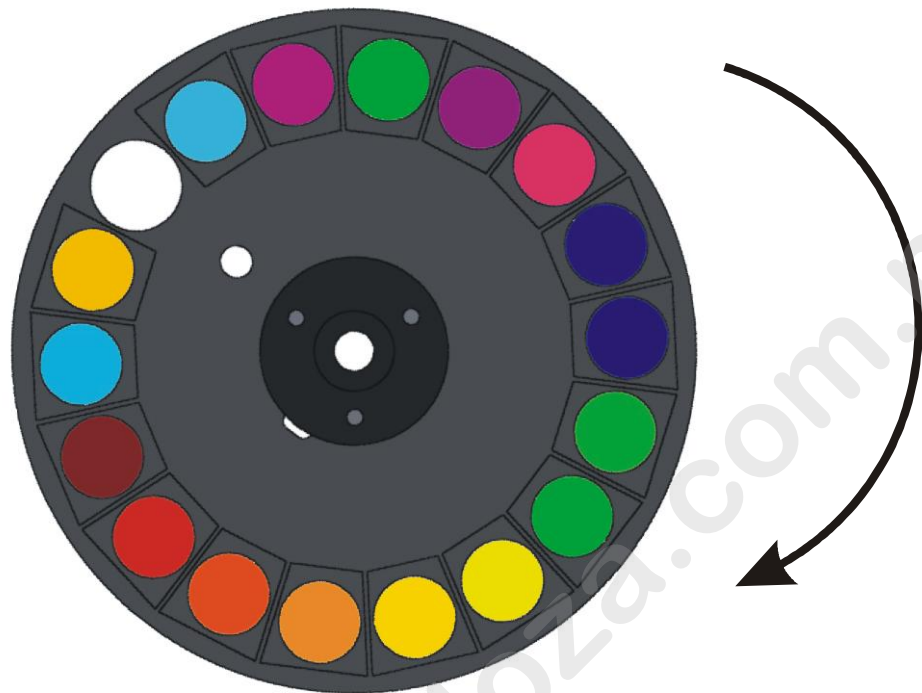


D.T.S. Code:
0516G072

**GOBO 10 DICRO
TUNNEL**



D.T.S. Code:
0516G073

30- COLOUR WHEEL

COLOUR 1 FULL CTO FILTER  D.T.S. Code: (0507C061.D14)	COLOUR 2 FULL CTB FILTER  D.T.S. Code: (0507C060.D14)	COLOUR 3 RED  D.T.S. Code: (0507C059.D14)	COLOUR 4 LIGHT RED  D.T.S. Code: (0507C062.D14)	COLOUR 5 ORANGE  D.T.S. Code: (0507C063.D14)	COLOUR 6 AMBER  D.T.S. Code: (0507C064.D14)
COLOUR 7 YELLOW 1  D.T.S. Code: (0507C065.D14)	COLOUR 8 YELLOW 2  D.T.S. Code: (0507C066.D14)	COLOUR 9 DARK GREEN  D.T.S. Code: (0507C067.D14)	COLOUR 10 GREEN  D.T.S. Code: (0507C068.D14)	COLOUR 11 DARK BLUE  D.T.S. Code: (0507C069.D14)	COLOUR 12 BLUE  D.T.S. Code: (0507C070.D14)
COLOUR 13 PINK  D.T.S. Code: (0507C071.D14)	COLOUR 14 PURPLE  D.T.S. Code: (0507C072.D14)	COLOUR 15 LIGHT GREEN  D.T.S. Code: (0507C073.D14)	COLOUR 16 MAGENTA  D.T.S. Code: (0507C074.D14)	COLOUR 17 LIGHT BLUE  D.T.S. Code: (0507C075.D14)	

NOTES

www.carlosmendoza.com.mx

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The Lighting Company

ISO 9001:2008

D.T.S. quality system
is certified to the
ISO 9001:2008 standard



D.T.S. products are designed
and manufactured at the D.T.S.
plants in Italy



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