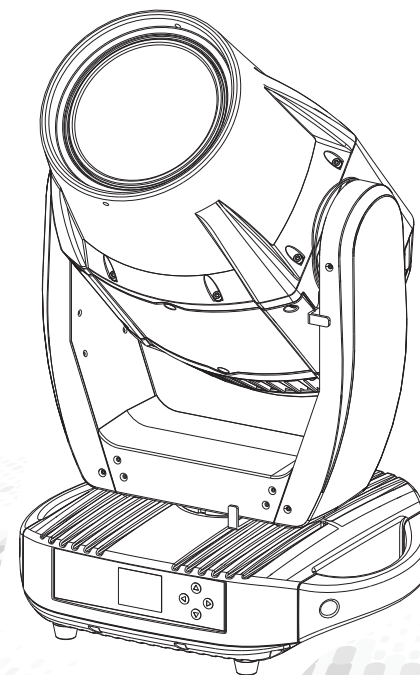


Tornado 400 Hybrid

USER MANUAL

arctik[®] Tornado 400 Hybrid
ARCHITECTURAL TECHNOLOGY AF1971



— Since 1985 —

MODEL:AF1971SCT

Guangzhou Yajiang Photoelectric Equipment Ltd.

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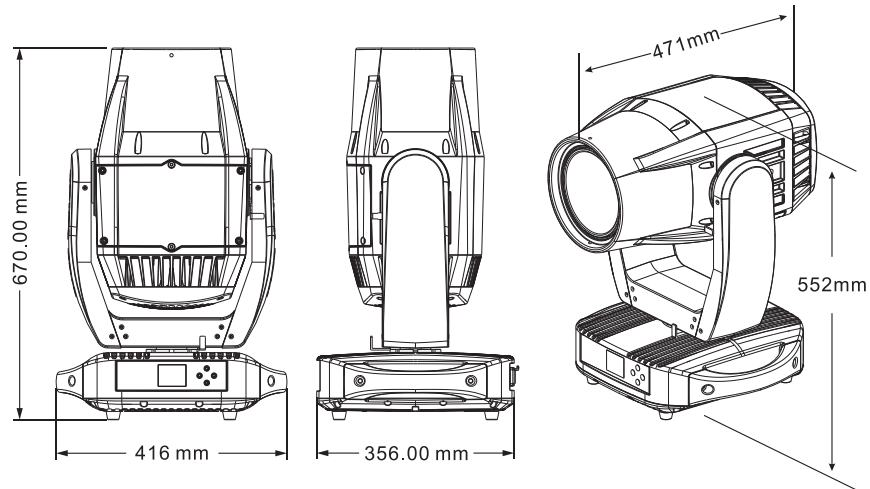
Website: www.yajiang.cn

RD-AF1971-SM-01(ARC-1)

1 Product Introduction

1.1 Specification

Product Code	Tornado 400 Hybrid
Dimension	416 × 356 × 670(mm)
Weight	34KG
Rated Power	400W
Input Voltage	AC100~240VAC,50/60Hz
Frequency Range	5A
Ambient Temperature	-20°C~45°C
Beam Angle	3° ~30°
Control Model	DMX512/RDM



1.2 Safety warning

IMPORTANT

Always read the user manual before operation.

Please confirm that the power supply stated on the product is the same as the mains power supply in your area.

- This product must be installed by a qualified professional.
- Always operate the equipment as described in the user manual.
- A minimum distance of 0.5m must be maintained between the equipment and combustible surface.
- The product must always be placed in a well ventilated area.
- Always make sure that the equipment is installed securely.
- Do not stand close to the equipment and stare directly into the LED light source.
- Always disconnect the power supply before attempting and maintenance.
- Always make sure that the supporting structure is solid and can support the combined weight of the products.
- The earth wire must always be connected to the ground.
- Do not touch the power cables if your hands are wet.
- Please protect the fixture and avoid destroy during transport and installation. If there is any damage of the coating, that will influence the sea-salt and waterproof function.
- The minimum ambient temperature (Ta min.): -40°C.
- When the temperature reaches the above upper limit, the fixture regulates output to protect from overheating

ATTENTION



- This product left the place of manufacture in perfect condition. In order to maintain this condition and for safe operation, the user must always follow the instructions and safety warnings described in this user manual.
- Avoid shaking or strong impacts to any part of the equipment.
- Make sure that all parts of the equipment are kept clean and free of dust.
- Always make sure that the power connections are connected correct and secure.
- If there is any malfunction of the equipment, contact your distributor immediately.
- When transferring the product, it is advisable to use the original packaging in which the product left the factory.
- Shields, lenses or ultraviolet screens shall be changed if they have become damaged to such an extent that their effectiveness is impaired.
- The lamp (LED) shall be changed if it has become damaged or thermally deformed.



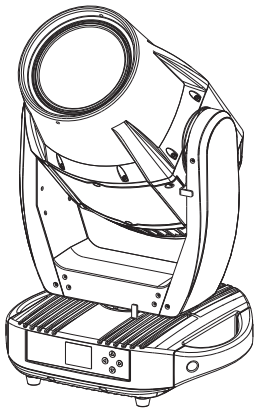
Caution, risk of electric shock
The light source contained in this luminaire shall only be replaced by the manufacturer or his service agent or a similar qualified person.

2 Installation

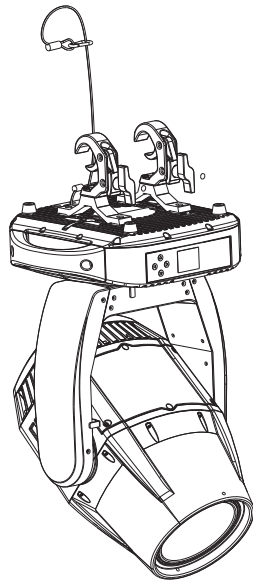
2.1 Mounting

The fixture can be mounted in any position.
Always ensure that mounting surface can withstand 10 times the weight of the fixture.

Always use a safety cable when mounting the fixture in any elevated position.



UPRIGHT



HANGING

BASIC (21CH)	STANDARD (25CH)	EXTEND (29CH)	VALUE	FUNCTION
			161~170	2400Hz
			171~180	4000Hz
			181~190	6000Hz
			191~200	25000Hz
			201~210	ALL RESET
			211~220	XY RESET
			221~230	COLOR SYSTEM RESET
			231~240	GOBO RESET
			241~255	FOCUS\ZOOM\PRISM RESET

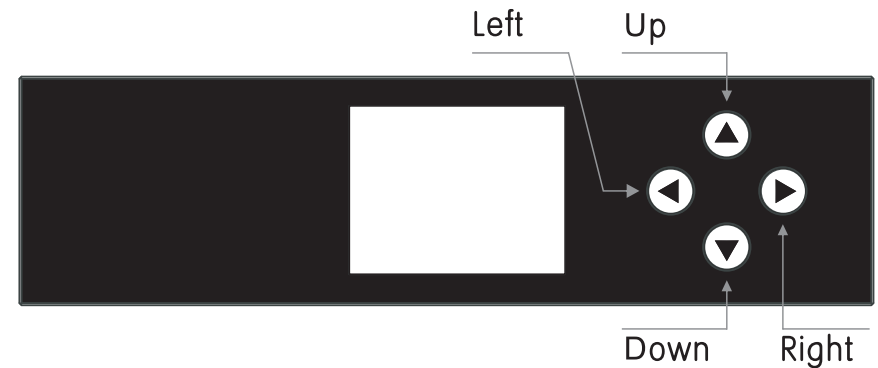
2.2 Power connections

This product uses input and output power cable is 1.5 square mm copper wire
Note:

If the signal cable is over 60m between the DMX512 controller and fixture or between two fixtures, then a DMX signal amplifier is needed as well.

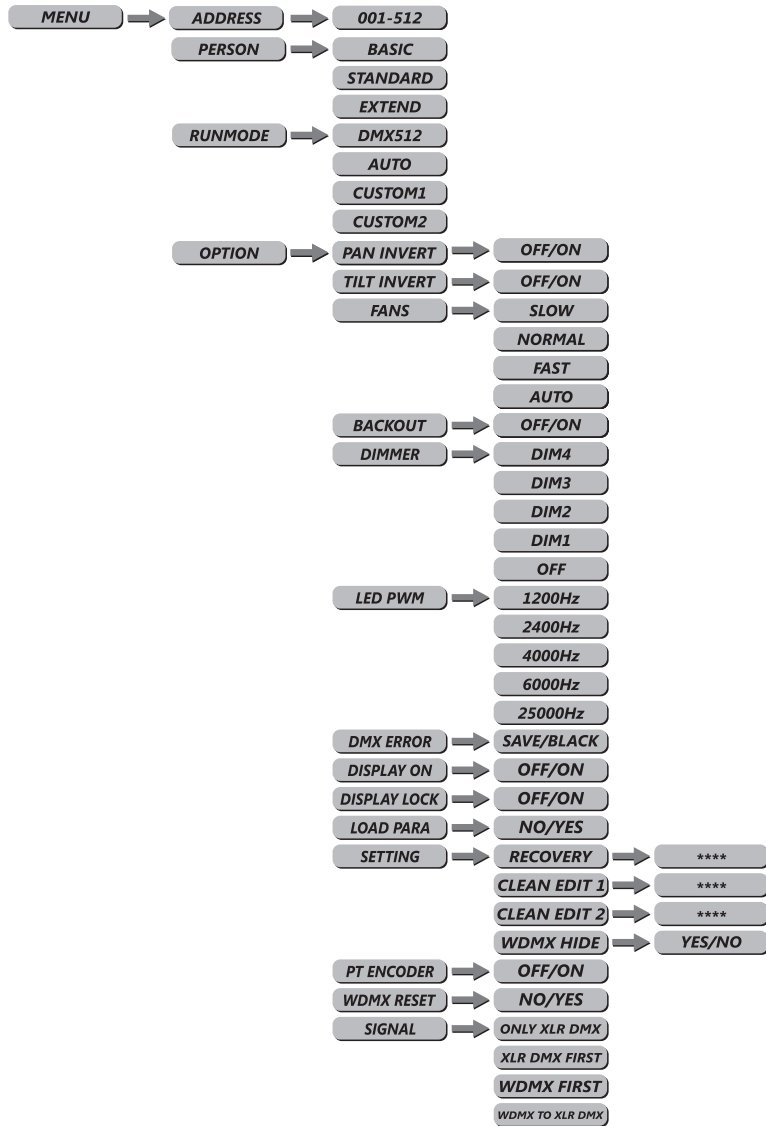
3 Display panel operation

3.1 Display operation



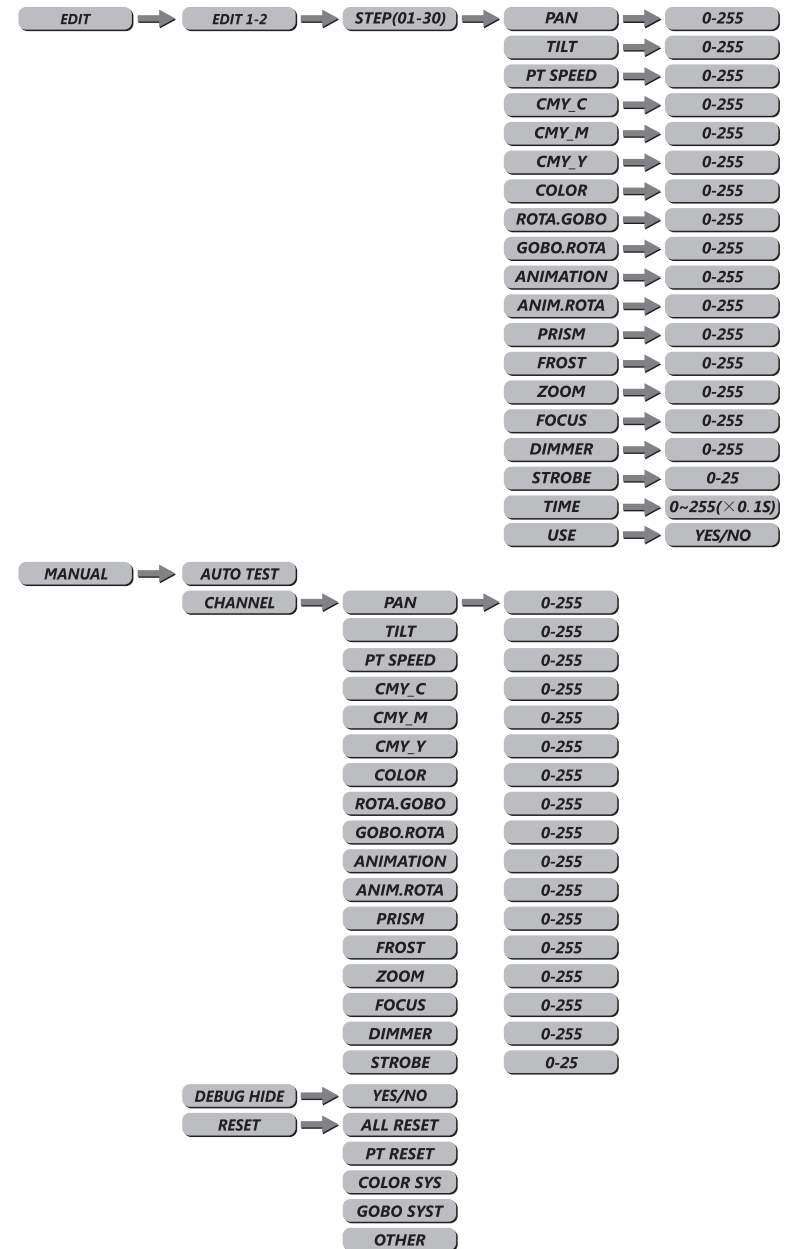
- Up: Scroll 'UP' through the menu list or increase the value of the current function.
- Down: Scroll 'DOWN' through the menu list or decrease the value of the current function.
- Left(Back): Scroll through the main menu.
- Right(Enter): Enter the currently selected menu or confirm the current function value.
- When the display locked, please unlock the display as below:
 1. Keep pressing BACK around 5sec, until the display shows inset password.
 2. Press "up down up down, enter" to unlock.

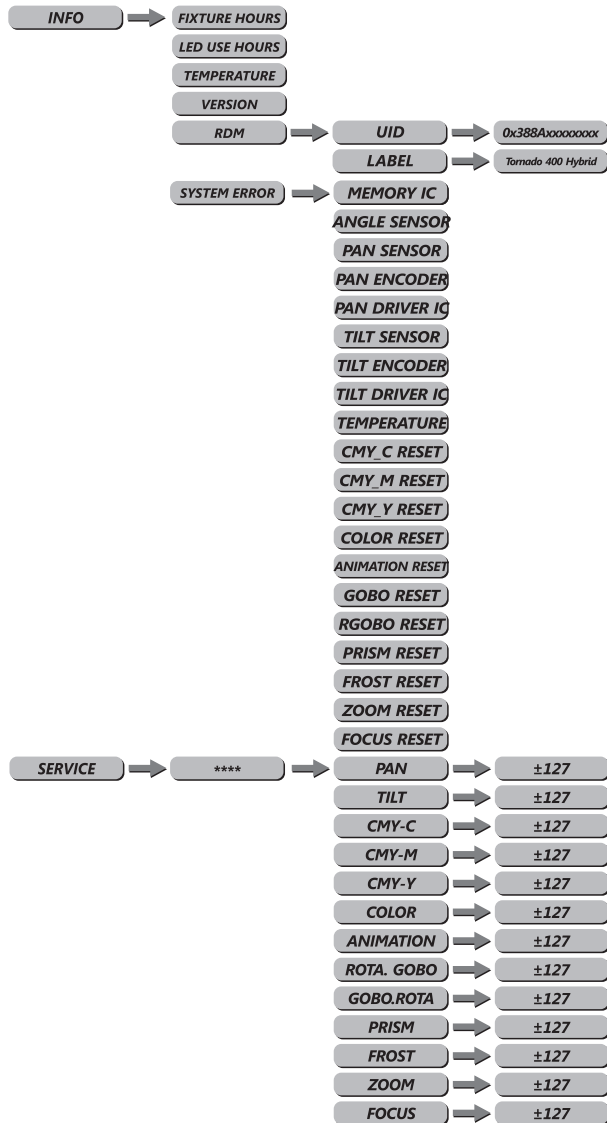
3.2 Menu



BASIC (21CH)	STANDARD (25CH)	EXTEND (29CH)	VALUE	FUNCTION
CH.18	CH.19	CH.24	040-066	7 METER
			067-093	9 METER
			094-120	11 METER
			121-147	13 METER
			148-174	15 METER
			175-201	17 METER
			202-228	19 METER
			229-255	21 METER
-	-	CH.25	000-255	AUTO FOCUS FINE
CH.19	CH.22	CH.26	000-255	DIMMER
-	CH.23	CH.27	000-255	DIMMER FINE
CH.20	CH.24	CH.28	STROBE	
			000-009	NO FUNCTION
			010-099	STROBE (FROM SLOW TO FAST)
			100-109	NO FUNCTION
			110-179	LIGHTNING STROBE
			180-189	NO FUNCTION
			190-255	RANDOM SROBE
CH.21	CH.25	CH.29	CONTROL	
			000-010	NO FUNCTION
			011-020	PAN/TILT BLACK ACTIVATED
			021-030	PAN/TILT BLACK DEACTIVATED
			031-040	PAN INVERT
			041-050	TILT INVERT
			051-060	PAN/TILT INVERT OFF
			061-070	FAN SLOW
			071-080	FAN NORMAL
			081-090	FAN FAST
			091-100	FAN AUTO
			101-110	DIM4
			111-120	DIM3
			121-130	DIM2
			131-140	DIM1
141-150	DIM0			
151-160	1200Hz			

BASIC (21CH)	STANDARD (25CH)	EXTEND (29CH)	VALUE	FUNCTION
			128-190	ROTATING GOBO FLOWING WATER EFFECT (SPEED 100 → 1%)
			191-192	STOP WATER EFFECT
			193-255	ROTATING GOBO FLOWING WATER EFFECT (SPEED 1 → 100%)
CH.11	CH.13	CH.14	GOBO ROTATING	
			000-120	ROTATING GOBO ANGLE ADJUSTMENT (0 → 360°)
			121-125	STOP
			126-165	ROTATING GOBO SHAKE (SPEED 1 → 100%)
			166-170	STOP
			171-210	ROTATING GOBO POSITIVE ROTATION (SPEED 100% → 1)
			211-215	STOP
			216-255	ROTATING GOBO REVERSE ROTATION (SPEED 1 → 100%)
-	CH.14	CH.15	000-255	GOBO ROTATING FINE
CH.12	CH.15	CH.16	000-255	Insert effect wheel
CH.13	CH.16	CH.17	ANIMATION DISC ROTATION	
			0-10	WHITE
			11-127	Animation Insertion CW Rotate Slow to Fast
			128-138	Rotation STOP
			139-255	Animation Insertion CCW Rotate Fast to Slow
CH.14	CH.17	CH.18	PRISM	
			000-010	WHITE
			011-145	PRISM INSERT AND ADJUST THE ANGLE (0 → 360°)
			146-150	STOP
			151-200	PRISM INSERT AND POSITIVE ROTATION (SPEED 100% → 1)
			201-205	STOP ROTATION
CH.15	CH.18	CH.19	FROST	
			0-10	WHITE
			11-255	LINEAR CUT (0-100%)
CH.16	CH.19	CH.20	0-255	ZOOM
-	-	CH.20	0-255	ZOOM FINE
CH.17	CH.20	CH.22	0-255	FOCUS
-	-	CH.23	0-255	FOCUS FINE
			AUTO FOCUS	
			000-012	NO FUNCTION
			013-039	5 METER





BASIC (21CH)	STANDARD (25CH)	EXTEND (29CH)	VALUE	FUNCTION
CH.8	CH.10	CH.10	000~255	CMY SPEED(SPEED 100%→>1)
CH.9	CH.11	CH.11	COLOR WHELL1 8+1	
			000~007	WHITE
			008~014	COLOR 1
			015~021	COLOR 2
			022~028	COLOR 3
			029~035	COLOR 4
			036~042	COLOR 5
			043~049	COLOR 6
			050~056	COLOR 7
			057~063	COLOR 8
			064~191	COLOR WHELL1 0~360°
			192~222	COLOR WHELL1 RAINBOW EFFECT(SPEED 100%→>1)
223~224	STOP			
225~255	COLOR WHELL1 RAINBOW EFFECT(SPEED 1→>100%)			
—	—	CH.12	000~255	COLOR WHELL FINE
CH.10	CH.12	CH.13	ROTATING GOBO 8+1	
			000~010	ROTATING WHITE
			011~016	ROTATING GOBO 1
			017~022	ROTATING GOBO 2
			023~028	ROTATING GOBO 3
			029~034	ROTATING GOBO 4
			035~040	ROTATING GOBO 5
			041~046	ROTATING GOBO 6
			047~052	ROTATING GOBO 7
			053~058	ROTATING GOBO 8
			059~066	ROTATING GOBO 1 SHAKE (SPEED 1 → 100%)
			067~074	ROTATING GOBO 2 SHAKE (SPEED 1 → 100%)
			075~082	ROTATING GOBO 3 SHAKE (SPEED 1 → 100%)
			083~090	ROTATING GOBO 4 SHAKE (SPEED 1 → 100%)
			091~098	ROTATING GOBO 5 SHAKE (SPEED 1 → 100%)
			099~106	ROTATING GOBO 6 SHAKE (SPEED 1 → 100%)
			107~114	ROTATING GOBO 7 SHAKE (SPEED 1 → 100%)
115~122	ROTATING GOBO 8 SHAKE (SPEED 1 → 100%)			
123~127	WHITE			

4 Using a DMX512 Controller

4.1 Channel Assignment

Note: this product have DMX512 channel configuration: [BASIC], [STANDARD], [EXTEND].

BASIC (21CH)	STANDARD (25CH)	EXTEND (29CH)	VALUE	FUNCTION
CH.1	CH.1	CH.1	000~255	PAN 0~540°
-	CH.2	CH.2	000~255	PAN FINE
CH.2	CH.3	CH.3	000~255	TILT 0~270°
-	CH.4	CH.4	000~255	TILT FINE
CH.3	CH.5	CH.5	000~255	PT Speed
CH.4	CH.6	CH.6	000~255	CYAN
CH.5	CH.7	CH.7	000~255	MAGENTA
CH.6	CH.8	CH.8	000~255	YELLOW
CH.7	CH.9	CH.9	COLOUR MACRO	
			0~10	No Function
			11~20	L106
			21~30	L194
			31~40	L019
			41~50	R08
			51~60	L213
			61~70	R80
			71~80	L202
			81~90	L328
			91~100	R3314
			101~110	L101
			111~120	L768
			121~128	No Function
			129~147	CYAN 100% / MAGENTA UP / YELLOW 0%
			148~166	CYAN DOWN / MAGENTA 100% / YELLOW 0%
			167~185	CYAN 0% / MAGENTA 100% / YELLOW UP
			186~204	CYAN 0% / MAGENTA DOWN / YELLOW 100%
205~223	CYAN UP / MAGENTA 0% / YELLOW 100%			
224~242	CYAN 100% /MAGENTA 0%/YELLOW DOWN			
243~255	CYAN 100%/MAGENTA UP/YELLOW 0%			

3.3 DMX Address



- Enter the [DMX] mode to set the DMX address.
- Enter Up/Down select [1~512] address.
- Enter [MENU] return.

3.4 Personality(Person)



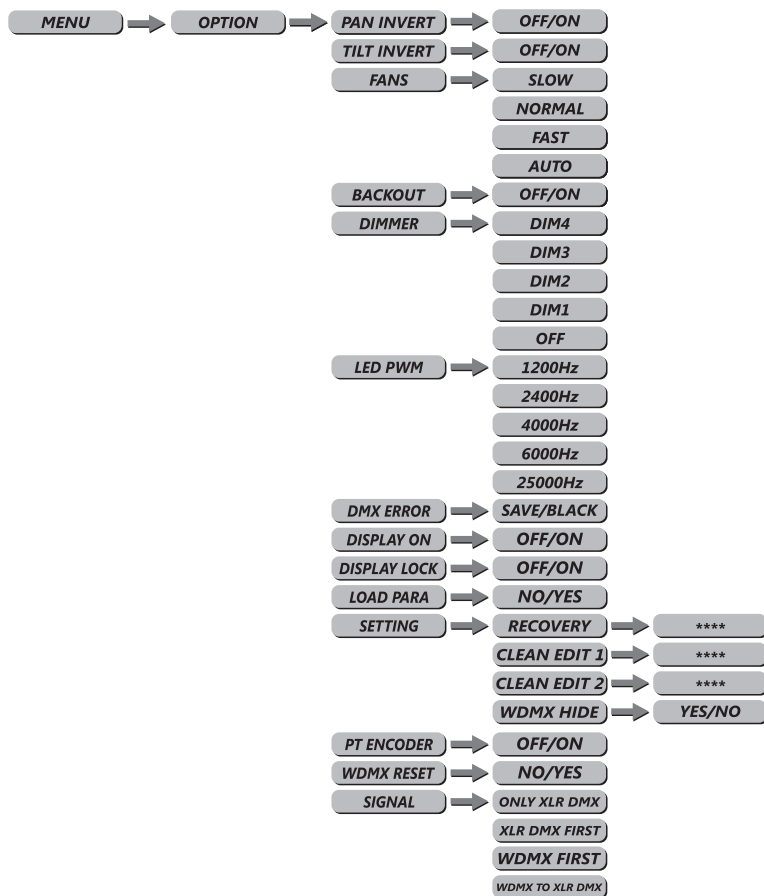
- Enter the [PERSON] mode to select DMX mode: [STANDARD], [BASIC], [EXTEND].

3.5 Runmode



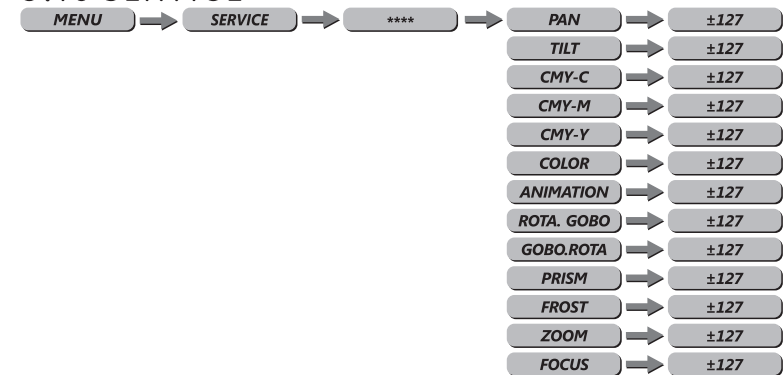
- [RUNMODE] menu, select required run mode. There are six modes inside: [DMX512] DMX512 Mode, [AUTO] Auto run Mode, [CUSTOM1] Customer self-editing scene mode1, [CUSTOM2] Customer self-editing scene mode2 Press [DOWN] / [UP] select mode.
- Press [ENTER] accept, Press [MENU] return.

3.6 Performance(OPTION)



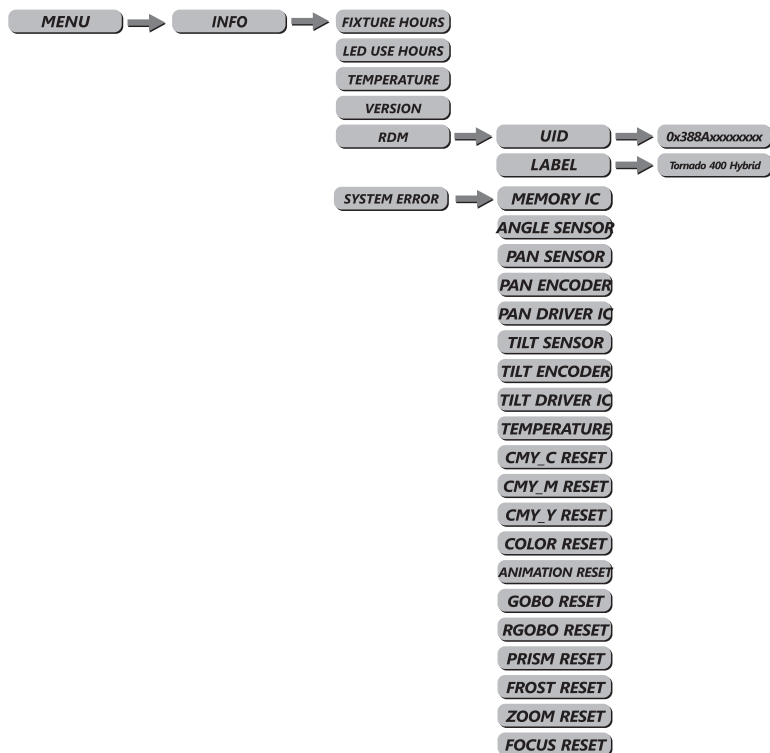
- Enter [OPTION] into the machine set.
- [PAN INVERT] menu, select [NORMAL] for normal direction,select [INVERT] for inverted of the PAN direction.
- [TITL INVERT] menu, select [NORMAL] for normal direction,select [INVERT] for inverted of the TITL direction.
- [FANS] menu, select [Slow/Norm/Fast/Auto] as required fan speed.
- Choose [OFF] and [ON] to close and open the [BLACKOUT] mode.
- [DIMMER] menu for selection of [DIM1/DIM2/DIM3/DIM4/OFF] special dimming

3.10 SERVICE



- Press [ENTER] into [SERVICE] Enter password to enter the options page.
- [PAN] Pan position fine adjustment , Push up and down buttons adjust ± 127 value.
- [TILT] Tilt position fine adjustment , Push up and down buttons adjust ± 127 value.
- [COLOR] Color position fine adjustment , Push up and down buttons adjust ± 127 value.
- [CMY-C] CMY-C position fine adjustment , Push up and down buttons adjust ± 127 value.
- [CMY-M] CMY-M position fine adjustment , Push up and down buttons adjust ± 127 value.
- [CMY-Y] CMY-Y position fine adjustment , Push up and down buttons adjust ± 127 value.
- [ANIMATION] Animation position fine adjustment , Push up and down buttons adjust ± 127 value.
- [ROTA. GOBO] Rotation gobo position fine adjustment , Push up and down buttons adjust ± 127 value.
- [GOBO.ROTA] Gobo self-rotation position fine adjustment , Push up and down buttons adjust ± 127 value.
- [PRISM] Prism position fine adjustment , Push up and down buttons adjust ± 127 value.
- [FROST] FROST position fine adjustment , Push up and down buttons adjust ± 127 value.
- [ZOOM] Zoom position fine adjustment , Push up and down buttons adjust ± 127 value.
- [FOCUS] Focus position fine adjustment , Push up and down buttons adjust ± 127 value.

3.9 INFO

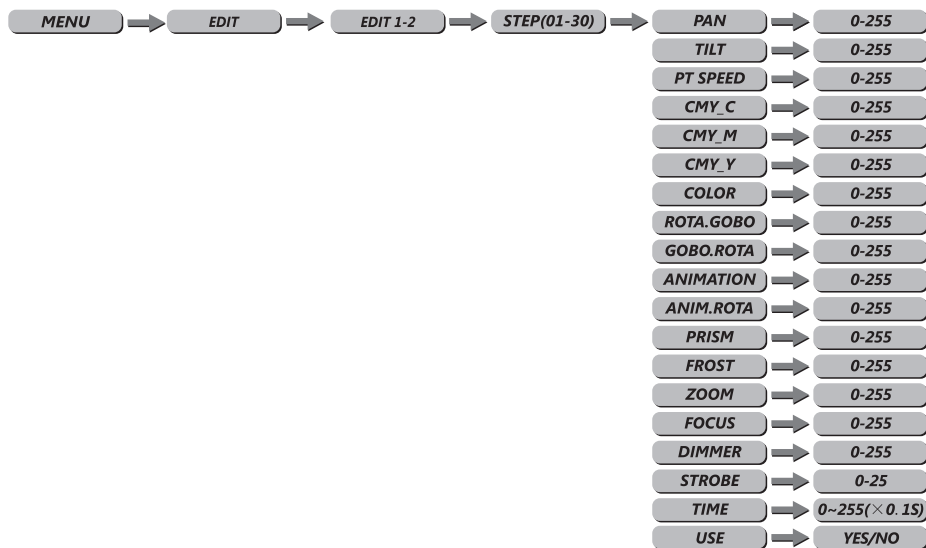


- Press [ENTER] into [INFO] check information,press up and down
 - [FIXTURE HOURS] is hours of fixture use;
 - [LED USE HOURS] is LED use time;
 - [TEMPERATURE] is led temperature.
 - [VERSION] is software versions;
 - [RDM] check fixture's ID.
 - [SYSTEM ERROR] System information error: Memory IC,Angle Sensor,Pan Sensor,Pan Encoder,Pan Drive IC,Tilt Sensor,TiltEncoder,TiltDriveIC,Temperature,CMY-C reset, CMY-M reset, CMY-Y reset,Color reset,animation Reset,Gobo reset,RGobo reset,Prism reset, Frost reset,Zoom reset,Focus reset.

curves.

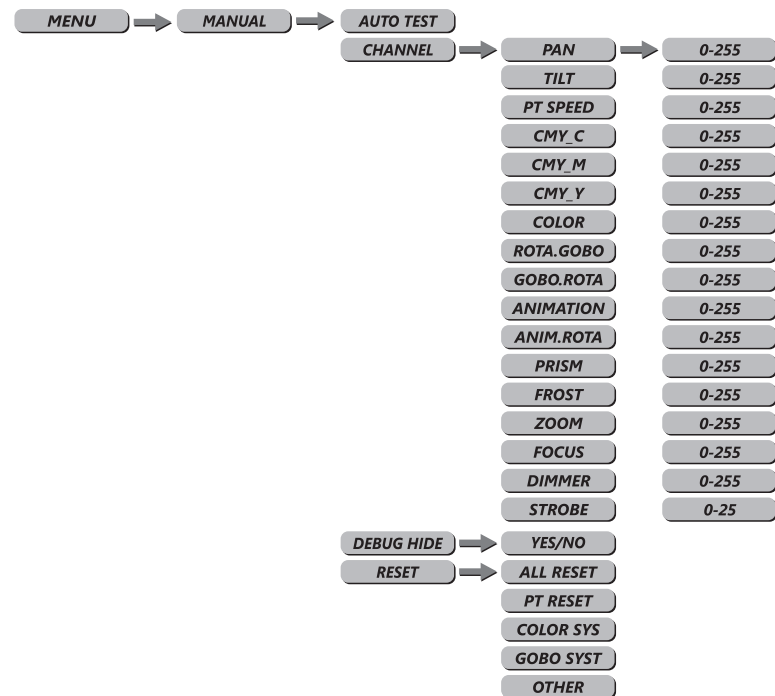
- [LED PWM] is PWM refresh rate bottom, press UP/DOWN to choose <1200Hz>、<2000Hz>、<2400Hz>、<6000Hz>、<25000Hz>;
Attention: The gray level of dimming will be reduced as the refresh rate increases.
- [DMX Error] menu, select [SAVE] to maintain last command in case of DMX error or [BLACK] for blackout.
- Choose [OFF] and [ON] to close and open the display open & close mode in menu [DISPLAY ON]
- Choose [OFF] and [ON] to close and open the screen lock mode in menu [DISPLAY LOCK]
- [LOAD PARA] is Parameter upload Settings, enter [NO] do not upload, enter [YES] upload.
- [SETTING] Maintain Settings, select [RECOVERY] is restore default factory Settings. Press [ENTER] Enter password then press [ENTER] ,if your password correct there will display [OK] .
[CLEAN EDIT1] clean Customer self-editing scene 1, press [ENTER] confirm.
[CLEAN EDIT2] clean Customer self-editing scene 2, press [ENTER] confirm.
[WDMX HIDE] hide wireless mode, WDMX RESET and SIGNAL hide and the default is wired mode only.
- [PT ENCODER] XY Encoder switch, [OFF] is close, [ON] is open.
- [WDMX RESET] wireless resetting,use for patch wireless signal, [YES] is Clear the receiver's message,press again patch wireless signal, [No] do not clear the receiver's message.
- [SIGNAL] is signal setting, ONLY XLR DMX is wire only, XLR DMX FIRST is wire first, ONLY WDMX is wireless only.WDMX FIRS is wireless first , WDMX TO XLR DMX is wireless to wired.

3.7 EDIT



- Enter the [Edit] mode to edit the custom programs by adjusting the value of [PAN], [TILT], [PT SPEED], [CMY-C], [CMY-M], [CMY-Y], [COLOR], [ROTA.GOBO], [GOBO.ROTA], [ANIMATION], [ANIM.ROT], [PRISM], [FROST], [ZOOM], [FOCUS], [DIMMER], [STROBE], [TIME].
- Enter [Use] and select [Yes] to run the steps user need.
- Note:if user want to circulate the created steps,please set the last step' s [TIME] as 0.
For example,there are 3 steps,the setting should be like belowed:
Step 1 [TIME] =4 [Use] =Yes
Step 2 [TIME] =5 [Use] =Yes
Step 3 [TIME] =0 [Use] =Yes

3.8 MANUAL



- Press [ENTER] into [AUTOTEST] at [MANUAL] .
- [PAN] pan set, [TILT] tilt set, [PT SPEED] set the pan & tilt speed, [CMY-C] CMY red, [CMY-M] CMY blue, [CMY-Y] CMY yellow, [COLOR] color temperature, [ROTA.GOBO] set the rotating gobo wheel, [GOBO.ROTA] set the autogiration of gobo wheel, [ANIMATION] set the animation Cut, [ANIM.ROT] set the animation Rotation, [PRISM] set the prism, [FROST] set the FROST, [ZOOM] set the zoom of fixture, [FOCUS] set the focusing, [DIMMER] set the dimmer, [STROBE] set the strobe, push the UP/DOWN to set the value [0~25] .
- [DEBUGHIDE] is the factory testing mode.All stepper motors are not controlled by signal,It only works again after the reset. enter No out、 enter Yes in.
- [RESET] set the reset:
[ALL RESET] menu, select Yes/No to carry out all reset.
[PT RESET] menu, select Yes/No to carry out PAN/TILT reset.
[COLOR SYSTEM] CMY resetting、 CTO, press No do not resetting, press Yes resetting.
[OTHER] zoom、 prism, press No do not resetting, press Yes resetting.