

CAMOS

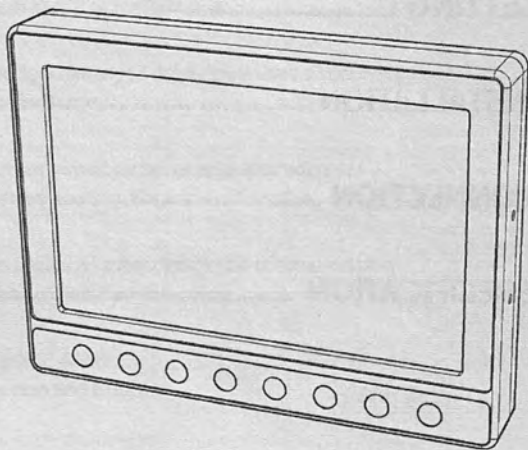


CWM-700

7" WATERPROOF MONITOR

INSTRUCTION MANUAL

Thank you for purchasing this product.
For correct usages and application,
please read this instruction manual thoroughly.



PRINTED IN KOREA ver. 1.0

* Design and specifications are subject to change without notice.



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SAFEGUARD INSTRUCTIONS

7" WATERPROOF MONITOR

Please read the "Safety Rules" carefully before using this product. Following the safety rules prevents users from damages related with the misuse of the product. It is very important to follow these safety rules. We state "Caution" and "Warning" to clarify any potential risk for a damage associated with the misuse of the product.



NOTICE

This information is for user's reference for better usability.



CAUTION

This information is for preventing damage or shortening the life of the product.



WARNING

This information is for preventing bodily harm or even death and use should follow this safety rules.



CAUTION



Install all components while power is off.
- It may cause electronic shock or malfunction.



Do not connect the product directly to the battery, used switched ignition.
- It may cause battery discharge.



Do not use the product with multi socket or extended adaptor.
- It may cause unexpected heating, fire and malfunction.



When product is not in use for an extended period of time - unplug
- It may cause fire by short circuit due to heating.



Do not place near magnetic devices.
- It may cause malfunction and trouble.



Please ensure that the monitor is installed with enough room for heat emission.

WARNING

-  Do not install product in direct sunlight, high temperature of humid areas.
- It may cause to electronic shock or malfunction.
-  Please use this product within the voltage range specified.
- It may cause to electronic shock or malfunction.
-  Do not locate this product where airbag operation may occur.
- It may cause malfunction of air bag or accident, injury due to hitting monitor by air bag.
-  Power socket should be clean at all times.
- It may cause electronic shock and fire by bad connection.
-  When disconnecting power socket please ensure that you disconnect holding each side of the plug. (Not via the cable)
- It may cause cord malfunction, electronic shock and fire.
-  Do not clean the exterior of the monitor using harsh abrasives or solvents.
- It may cause change of surface, fall of paint, malfunction and fire.
-  Do not locate this product in high vibration areas without appropriate mounting.
- It may cause damage or malfunction.
-  Do not put a pin or needle on the hole or crack in the body.
- It may cause electronic shock, fire and malfunction.
-  If the monitor is emitting smoke or a burning smell please disconnect immediately.
- It may cause fire. Stop to use and make inquiries to supplier.
-  Do not disassemble, repair or remodel.
- It may cause malfunction and injury, void warranty.
- Make inquiries to agent for repair and checkup.
-  When the power cable cord touches a metal case, cover it with a friction tape.
- Short circuit or disconnection of wire may cause a fire or accident.
-  After finishing the installation, please check that the break lamp, head lamp and wipers operate properly.

1

FEATURE

7" WATERPROOF MONITOR

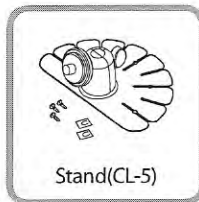
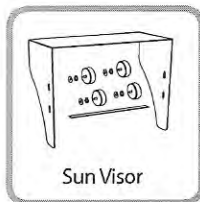
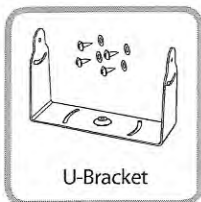
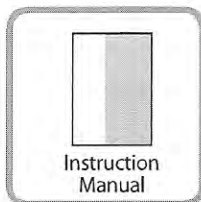
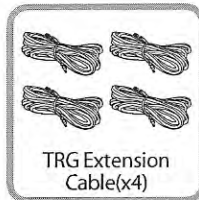
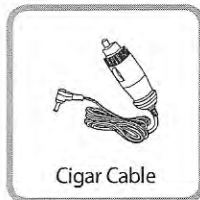
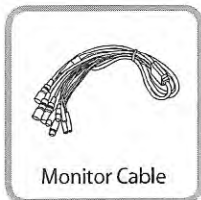
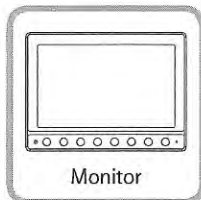
- Water Resistant (IP67), Aluminum housing
- 4 Camera input (NTSC/PAL)
- 2, 3, 4 Split screen function
- Dimmer sensor built in
- 7inch WVGA(800x480) WIDE LCD Panel

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CONTENTS

7" WATERPROOF MONITOR

- Before use this products, please check below contents. If there is something missing parts, please contact sales agent.

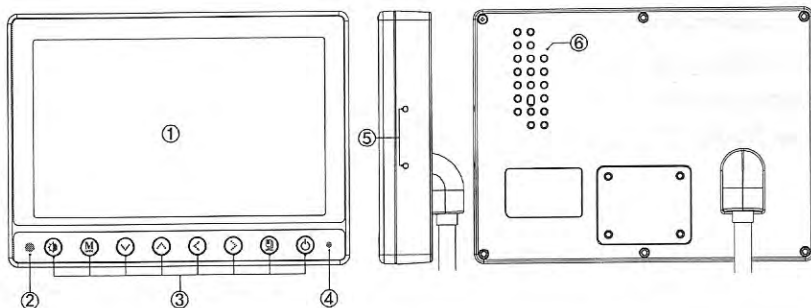


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FUNCTION OF EACH PART

7" WATERPROOF MONITOR



1. LCD SCREEN	WVGA (800x480)
2. DIMMER SENSOR	Automatic brightness control sensor
3. BUTTONS	DIMMER, MODE, UP/DOWN/LEFT/RIGHT, MENU, POWER
4. STAND BY LED	Stand by lamp
5. SUN VISOR HOLE	Sun Visor installation hole
6. SPEAKER HOLE	Speaker hole (Waterproof)

4

FUNCTION

7" WATERPROOF MONITOR

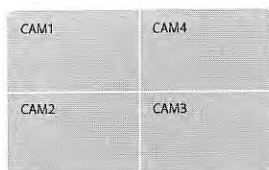
① POWER ON/OFF

Press [⏻] button.

Press [⏻] button again to switch off.

*** If there is no video input, then the camera will be shown Black.**

*** The screen is set 4 split from the factory.**



② VOLUME CONTROL

Press [◀ ▶] button to control volume(0~100).

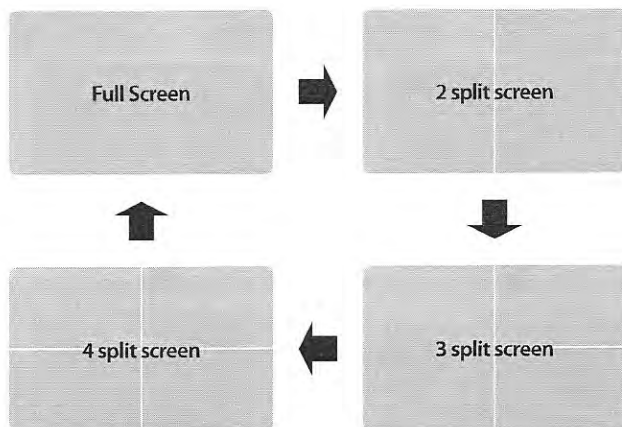
In CAM1 screen, the volume control works.

*** Volume is set 30 from the factory.**



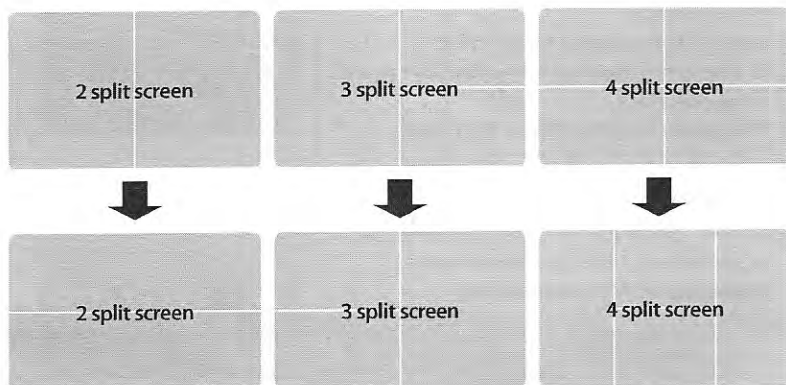
③ SCREEN SWITCH

Press [M] button to switch Full screen → 2 split screen → 3 split screen → 4 split screen → Full screen.



④ 2, 3, 4 SPLIT SCREEN SWITCH

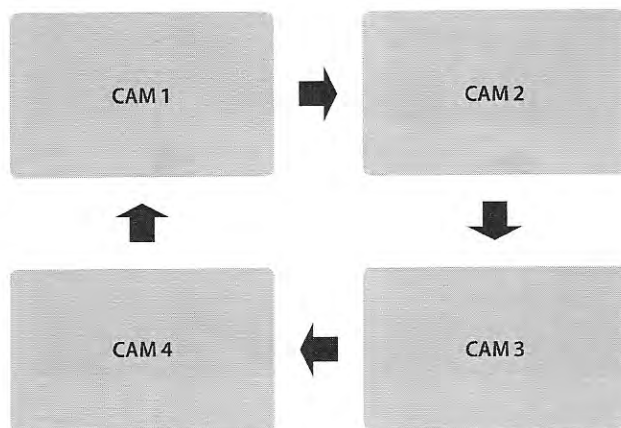
In the split screen, press [ >] button to see the different split like below.



⑤ CAMERA SELECTION

1) In the FULL SCREEN

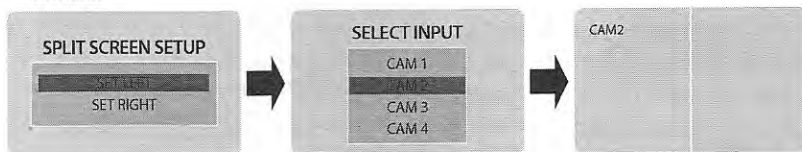
In the full screen, press [ >] button to see CAM1 → CAM2 → CAM3 → CAM4 → CAM1.



Press [>] button, then it displays screen information (Input mode / Volume).

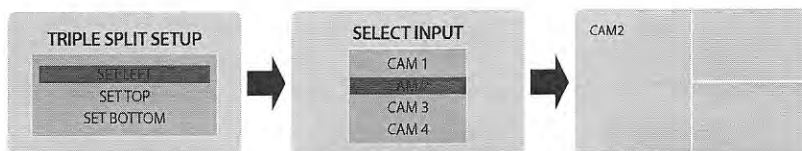
2) In the 2 split screen

In the 2 split screen, press [] button to see the OSD. In the OSD, using with [] button the camera position (Left or Right) could be selected. Then press [] button to select the camera.



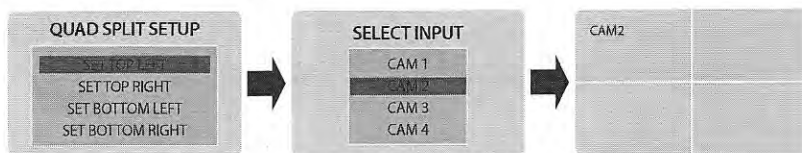
3) In the 3 split screen

In the 3 split screen, press [] button to see the OSD. In the OSD, using with [] button the camera position (Left, Top or Bottom) could be selected. Then press [] button to select the camera.



4) In the 4 split screen

In the 4 split screen, press [] button to see the OSD. In the OSD, using with [] button the camera position (Top left, Top right, Bottom left or Bottom right) could be selected. Then press [] button to select the camera.



⑥ NORMAL / MIRROR VIEW SWITCH

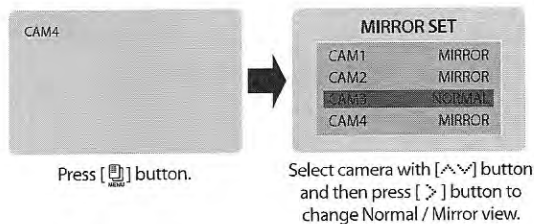
1) CAM1 full screen



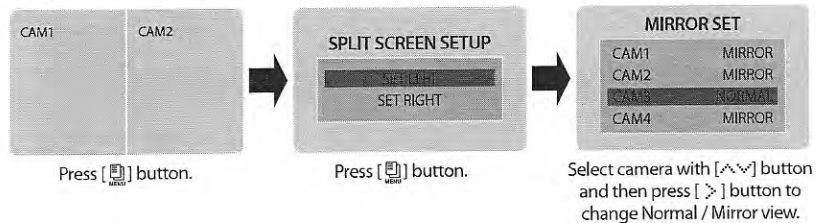
2) CAM2 or CAM3 full screen



3) CAM4 full screen



4) Split screen (2/3/4)



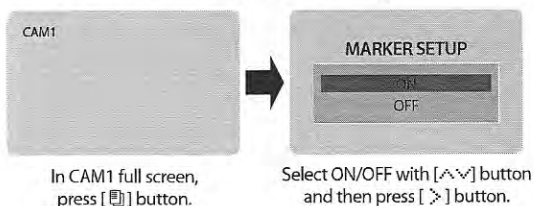
7 ON SCREEN DISTANCE MARKER SETTING

Warning

- The onscreen distance markers should be considered as a general reference to assist the driver in assessing the distances depicted on the screen. The distance markers have been designed based on the "CCD camera installation conditions" listed in the next section, but differences in vehicle design and construction may result in the actual installation condition or location being different from the conditions listed. In such cases, the display location should be set at the closest marker No.
- Distance markers cannot be set if non CAMOS cameras are used.

Caution

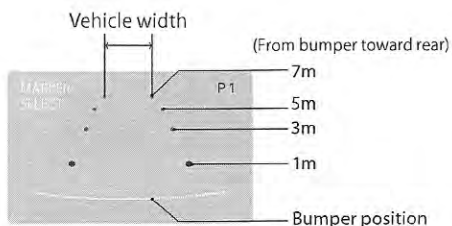
- The markers may not indicate the exact position of the bumper, the vehicle's width or the distance to the rear. Use as a reference only.



1) Marker selection

- Press [F1] button four times, and select MARKER SELECT menu.
- Press [F2] button, and switch marker pattern.

*** Distance marker function setting is only possible when MARKER SETUP ON is selected on CAM1, full screen mode.**



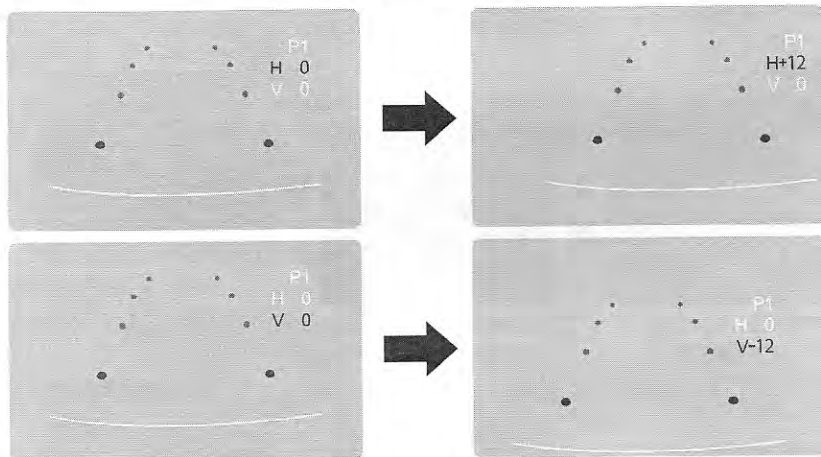
■ CCD camera installation conditions (distance marker input conditions) (Unit : mm)

Marker No. (Pattern)	Camera Install Height	Vehicle Width
P1	2, 000	2, 300
P2	2, 250	
P3	2, 500	
P4	2, 750	
P5	3, 000	
P6	3, 250	2, 500
P7	3, 500	

2) Marker adjustment (Adjusting the bumper position)

- Press [] button five times, and select MARKER ADJUST menu.
- Press [] button, select H / V. (H: horizontal / V: vertical)
- Press [] button, and switch marker pattern.
(H = -12 ~ +12, V = -12 ~ +12, Default setting: H = 0, V = 0)
- After 10 seconds, set up screen disappears, and set up finishes.

*** If there is no button operation, set up screen disappears even during set up process.**

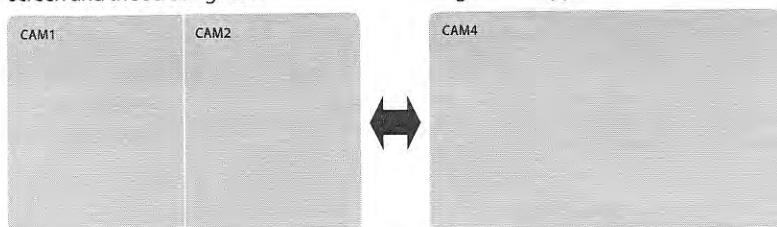


8 SCREEN SWITCH WHILE TRIGGER INPUT

What is <Trigger input> or <Trigger signal>? We call it when a circuit works by a signal for example if driver uses right/left turn signal or reverse gear, the monitor shows connected camera screen on driving mode.

*** Below example is set with TRG1(Rear light)=CAM1 / TRG2(Left signal light)=CAM2 / TRG3(Right signal light)=CAM3 / TRG4(etc.)=CAM4.**

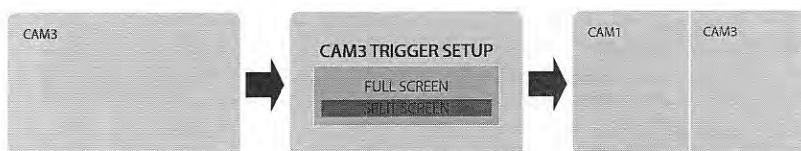
- 1) If there is trigger signal input, the connected screen (Trigger input screen) is display as full screen and the screen goes former one when the signal is disappear.



- 2) In case of TRG2 and TRG3 input, by the OSD, the full or split screen could be selected. If there is the TRG2(3) signal input, then CAM2(CAM3) and CAM1 split screen are shown on the screen. with this function, Left(Right) and Rear side could be checked.

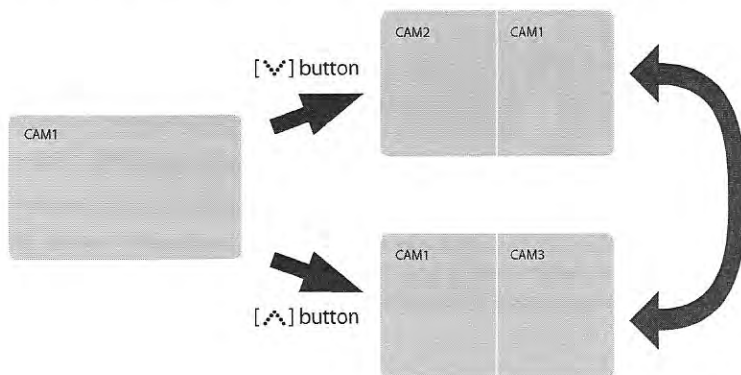


In CAM2 full screen, press [] button to see OSD. Select split screen with [] button and then press [] button. If there is the left signal input(TRG2), then CAM2(Left) in left side and CAM1(Rear) in right side will be shown on the screen.

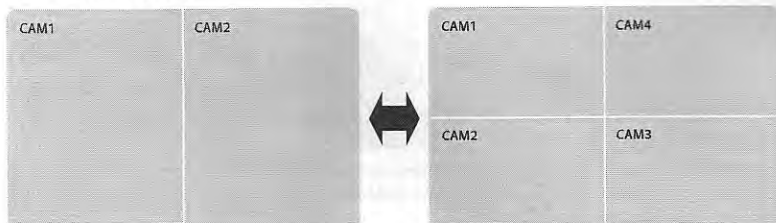


In CAM3 full screen, press [] button to see OSD. Select split screen with [] button and then press [] button. If there is the right signal input(TRG3), then CAM1(Rear) in left side and CAM3(Right) in right side will be shown on the screen.

- 3) When there is the TRG1(Rear light) input, CAM1 video will be shown on the screen. with [] button, the 2 split screen CAM2/CAM1 or CAM1/CAM3 could be displayed.



- 4) In case of light on emergency blinker(TRG2+TRG3), the monitor display CAM1~CAM4 as quad split screen. And the screen goes former one when the signal(light on emergency blinker) is disappeared.



NOTICE

The example is set with TRG1(Rear light)=CAM1 / TRG2(Left signal light)=CAM2 / TRG3(Right signal light)=CAM3 / TRG4(etc)=CAM4.

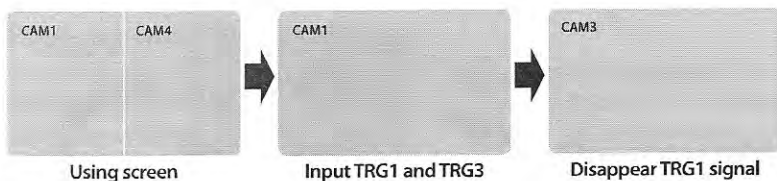
- 5) When there is input signal more than 2 triggers, the monitor display fully connected screen (Trigger input screen) as the priority order. And the screen goes former one when the signal is disappears, the rest will be display as the priority order.



NOTICE

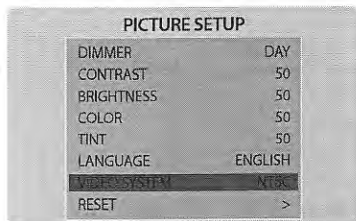
TRIGGER PRIORITY ORDER

TRG1(Rear light) > TRG2+3(Emergency light) > TRG2(Left side light) > TRG3(Right side light) > TRG4



- * If the screen turns by trigger signal, [ ] button doesn't work.
- * In the standby position if the trigger wire is activated the monitor will turn on. The screen will turn off once the power is de-activated to the trigger wire. And the screens turns off when the trigger signal is disappeared.

1 Video standard system, / PAL conversion



- 1) Press [] button until OSD menu [PICTURE SETUP] appears.
- 2) Press [] button to move a place where want to change and choice proper value by pressing [] button.

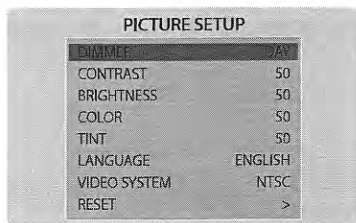
If use PAL system on NTSC system using country, it may cause a malfunction. This products can convert NTSC / PAL system manually but it is not automatic. Before use, Please check and set the system.



NOTICE

NTSC system country : USA, CANADA, JAPAN, KOREA, TAIWAN, MEXICO, etc.
PAL system country : AUSTRALIA, GERMANY, U.K, NETHERLANDS, ITALY, etc.

2 Dimmer sensor setting

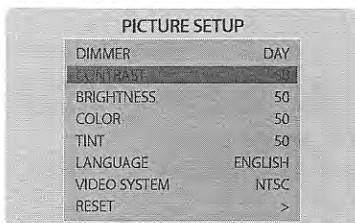


- 1) Press [] button until OSD menu [PICTURE SETUP] appears.
- 2) Press [] button to move a place where want to change and choice proper value, DAY(brighter)/NIGHT(Darker)/AUTO(Sensor) by pressing [] button.

Press [] button to switch DAY → NIGHT → AUTO → DAY.

* Dimmer is set AUTO from the factory.

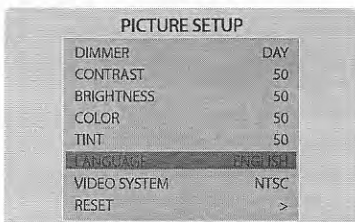
3 Picture setup



- 1) Press [] button until OSD menu [PICTURE SETUP] appears.
- 2) Press [ ] button to move a place where want to change from CONTRAST to TINT and choice proper value by pressing [ ] button.

* Each setting value is set 50 from the factory.

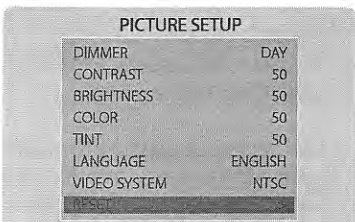
4 Language display selection



- 1) Press [] button until OSD menu [PICTURE SETUP] appears.
- 2) Press [ ] button to move a place where want to change and choice proper value by pressing [ ] button.

* language selection : ENGLISH - FRENCH - GERMAN - ITALIAN - SPANISH

5 Reset



- 1) Press [] button until OSD menu [PICTURE SETUP] appears.
- 2) Press [ ] button to move to RESET and then press [] button.

* All settings are initialized at the factory mode except for the video input.
(NTSC / PAL)

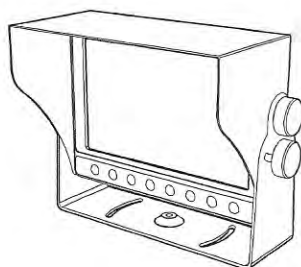
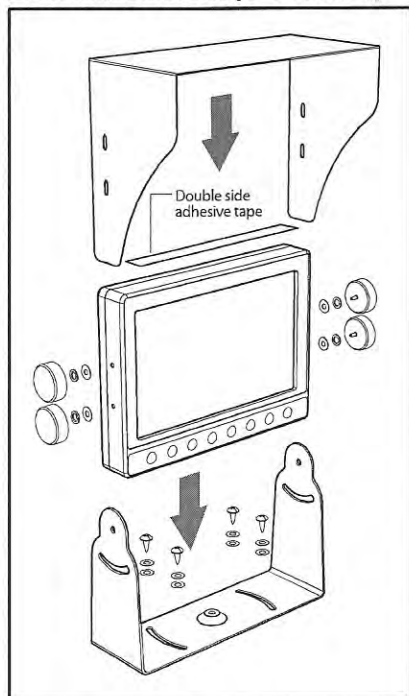
6

INSTALLATION

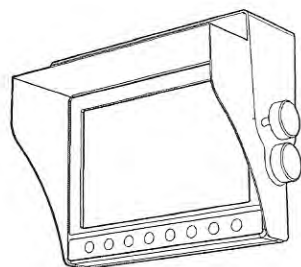
7" WATERPROOF MONITOR

* The drawing is just for reference and it might be different from real product.

INSTALLATION (U-Bracket)

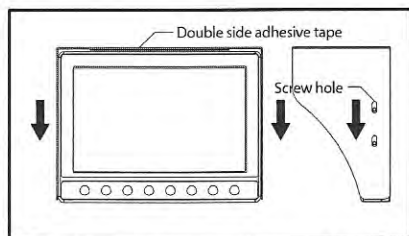


Standard Installation



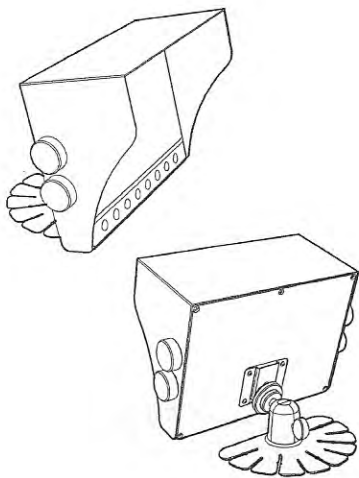
Ceiling Installation

1. Please ensure that the monitor is installed with enough room for heat emission. Install the monitor stand with enclosed screws and double side adhesive tape as the picture.
2. Fix the monitor to the monitor stand firmly.

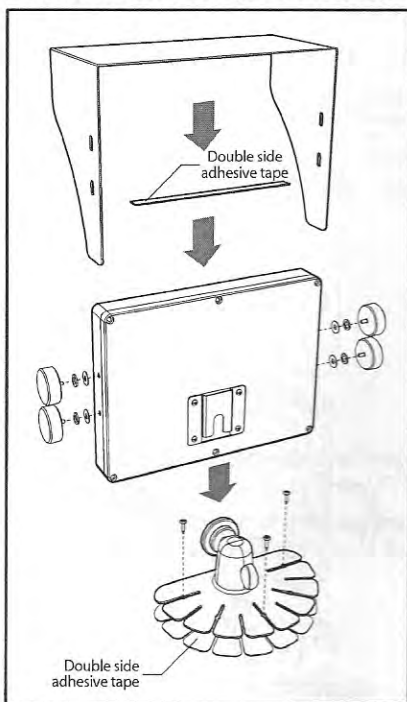


3. Sun Visor should be installed with 4 screws.

■ INSTALLATION (CL-5 stand)



1. Please ensure that the monitor is installed with enough room for heat emission. Install the monitor stand with enclosed screws and double side adhesive tape as the picture.
2. Fix the monitor to the monitor stand firmly.

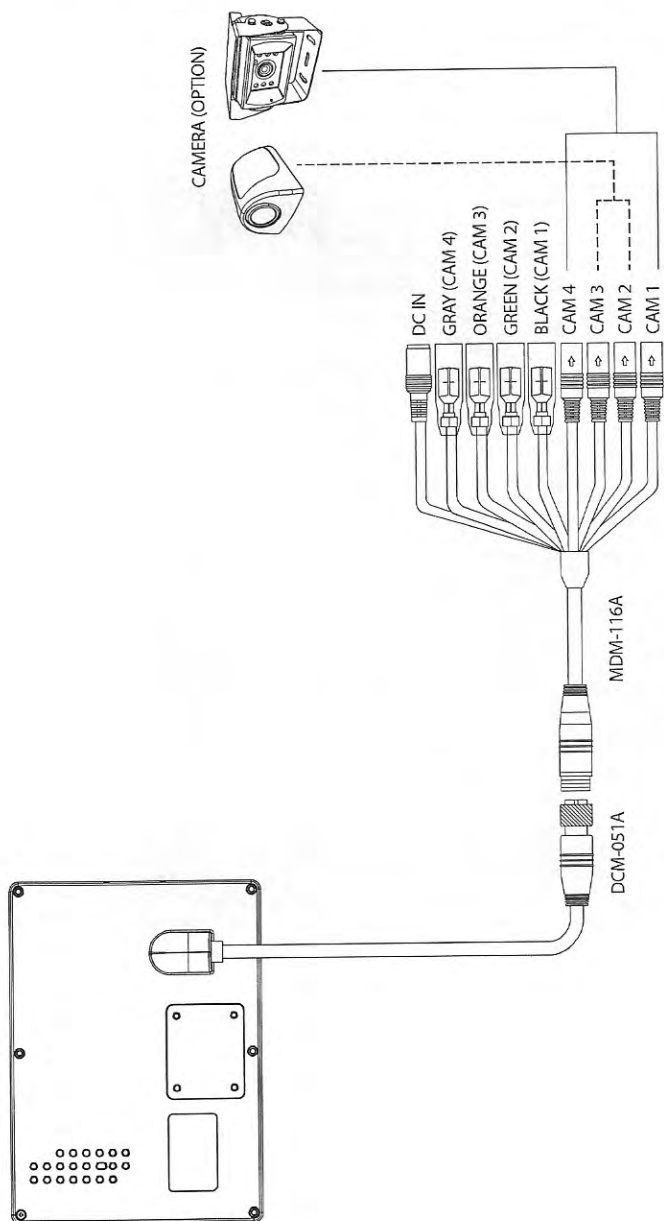


7

CONNECTION

7" WATERPROOF MONITOR

Mini-din A type



LCD Panel	Screen size	7 inch
	Resolution	WVGA (800x480)
	Brightness	400cd/m ²
	Contrast ratio	500:1
	View angle(L/R/U/D)	70° / 70° / 50° / 70°
Power Supply	Voltage	DC 12V ~ 24V
	Current	450mA (DC 12V, monitor set only)
Input System		NTSC / PAL
Frequency	NTSC	H : 15.734 kHz / V : 59.94 Hz
	PAL	H : 15.625 kHz / V : 50 Hz
Input Signal	Video Signal	Composite Video (CVBS)
	Audio Signal	MONO
Speaker		0.5Watt max.
Language display selection		ENGLISH - FRENCH - GERMAN - ITALIAN - SPANISH
User Controls (8 button)		Dimmer, Mode, Down, Up, Left, Right, Menu, Power
Operating temperature		-30°C ~ 70°C
Storage temperature		-40°C ~ 80°C
Dimension		181(W) x 134(H) x 28(D) mm
Weight		780g (monitor only)



NOTICE

If the start-up screen is operated at a lower temperature than specified, the screen may blink for a 2~5 minutes. If the problem continues for more than 5 minutes disconnect power for a period of 10 minutes.