SeaViewer Cameras, Inc.

OFFSHORE CAMERA™

HD - High Definition

User's Manual

Please review this User's Manual carefully to ensure that you can use the device correctly and safely. The contents of this manual are subject to change without notice.

1 Feature

1-1 Characteristic

●Adopt the latest version of EN778 developed by professional R&D team of South Korea.

●Apply CMOS MN34229PL, with the size of 6.4mm (1/2.8 inch) and large pixel of 2.8μm, it possesses output capability of 1080/30pfs, which can display FULL SCREEN 1080P HD pictures. This product owns excellent color restoration due to its high resolution and strong sensitivity, hence it can offer better and clearer visual effect, even can reach 1200 TV lines as analog signal. Also it can be adjusted to a wider color temperature range. Within unique digital processing technology, it aims at improving imaging sensitivity; reduce the imbalance and defection when dealing with optical signals. Equipped with superb low-light-level imaging capacity, it can easily distinguish the appearance and color of the target object under 0.017 Lux environments.

●In order to improving its imaging capability under different weather, such as heavy fog, dust, misty rain, haze, steam and water vapor, we innovatively added defog function to this product. As a consequence, it can clearly restore the original pictures; therefore, it can be applied in monitoring the forest, rivers, sea, coast, frontier, oil field, traffic conditions and vehicles. Furthermore, it also can be used to capture the automobile licenses and to assist in building safer city.

●Format: 1080P Resolution:1920*1080, 720P Resolution: 1280*1024.

●HLI(Light inhibition): Aiming at highlight zone to proceed with compensation in order to make fine exposure.

●Intelligent OSD (Menu) operation system: With strong DSP memory function, data will not lose when come across with outages. Its display and operating method are simple and convenient for users. Besides, abundant of frequently used language are offered.

●Super solar eclipse: Compensation exposure in the light area to achieve in a particular area of the correct exposure.

●BLC(Back Light compensation):While there are bright light on the back of the subject, this product can carry out backlight compensation on the dark part of the subject result from backlighting. This aims at keeping overall brightness at balance.

●Super WDR(Wide Dynamic Range): Within a picture, the bright is under a condition of totally balance, each detail can be clearly seen.

●RS-485 Communicating Function、Motion Detection、Privacy Masking 、Mirror image 、Overturn Image、Digital zoom function, etc.

●OSD Menu offer convenient and simple operation.

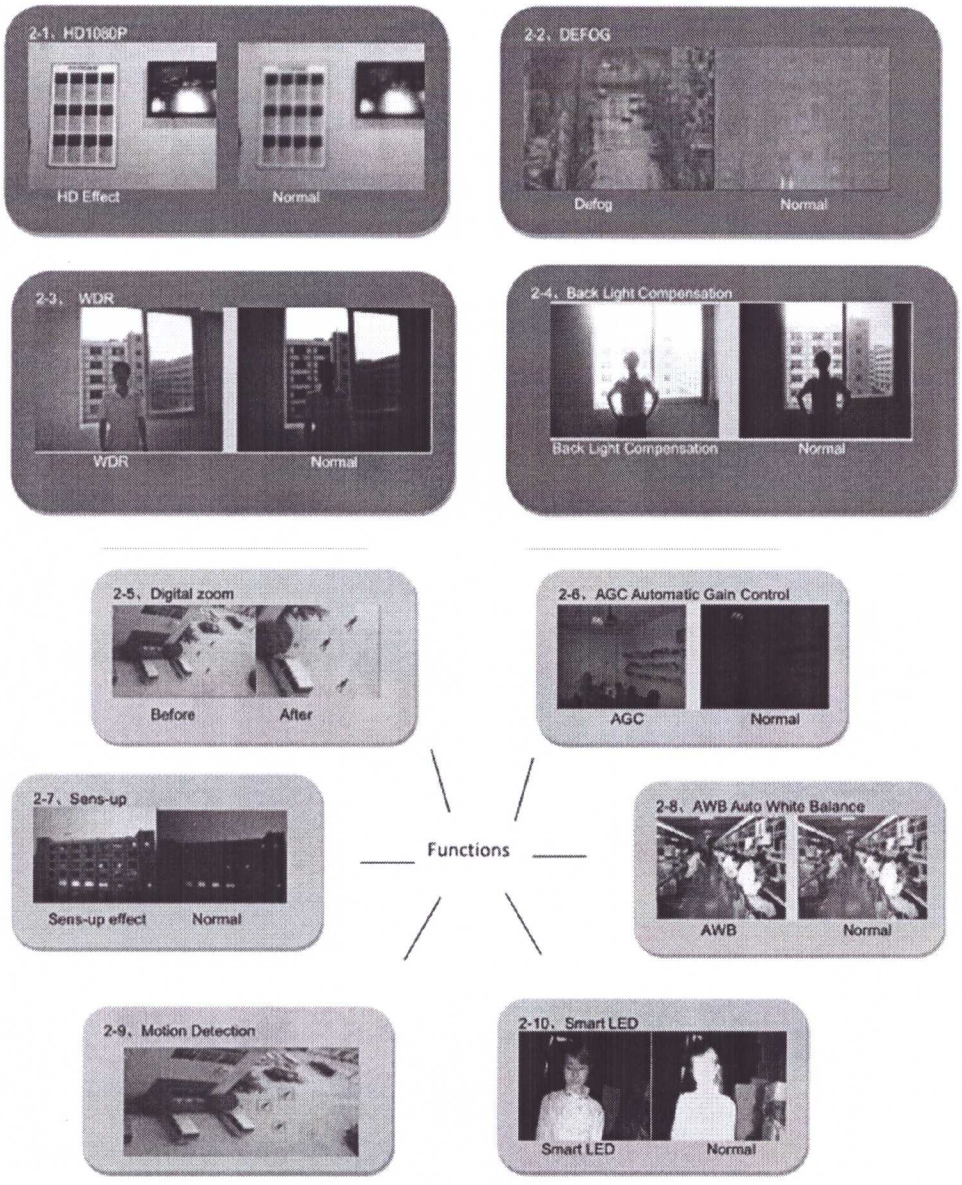
●Support Auto Focus Function(UTC Coaxial Protocol Supported)

●Digital Noise Reduction, Digital Zoom and Sens-up.

●The module support 350m signal transmission, need to work with 500M DVR; If connectwith normal SDI DVR, there must be a repeater(RX) special for this module.

1-2 Comparison of Effect

1080P HD Effect

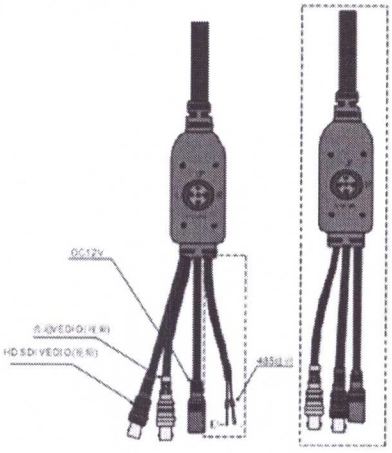


3-2 Connector Introduction

Introduction				
connector	NO.	PIN Name	Description	IN/OUT
CN1	1	+12VDC	Power +12VDC Input	
	2	GND	Ground	
	3	VIDEO	1VP-P composite video signal out (75ohm)	
CN2	1	GND	OSD Control key Ground	
	2	LEFT	OSD Control key (low active ,normal 3.3v	
	3	RIGHT	OSD Control key (low active ,normal 3.3v	
	4	ENTER	OSD Control key (low active, normal 3.3v	
	5	UP	OSD Control key (low active ,normal 3.3v	
	6	DOWN	OSD Control key (low active ,normal 3.3v	
CN3	1	DN-	-DC Motor day and night control signal	
	2	DN+	+ DC Motor day and night control signal	
CN4	1	GND	DC IRIS control :Gnd	
	2	DR+	DC IRIS control :drive+	
	3	DM P -	DC IRIS control :DAMP-	
	4	DM P +	DC IRIS control :DAMP+	
CN5	1	+3.3V	Power 3.3DC Output	
	2	TX	RS485(tx) COM DATA OUT PIN	
	3	RX	RS485(rx) COM DATA IN/ PIN	
	4	GND	Ground	
	5	ALARM	MOTION ALARM	
	6	DC12V	SUPPLY LED	
	7	IR-LED	Smart I R Control	
	8	GND	Ground	
	9	CDS	External day and night control signal input External day and night control signal input , L:CDSLEVE < +1.5V,H:+1.5V ≤ CDS LEVEL≤ +8V (active low) (active low)	
CN6	1	FOCUS-OUT1	FOCUS B-	
	2	FOCUS-OUT2	FOCUS B+	
	3	FOCUS-OUT3	FOCUS A+	
	4	FOCUS-OUT4	FOCUS A-	
CN7	1	ZOOM-OUT1	ZOOM A-	
	2	ZOOM-OUT2	ZOOM A+	
	3	ZOOM-OUT3	ZOOM B+	
	4	ZOOM-OUT4	ZOOM B-	
CN8	1	JTMS	Program Interface	
	2	JTDO		
	3	TJDI		
	4	JTCK		
	5	GND		

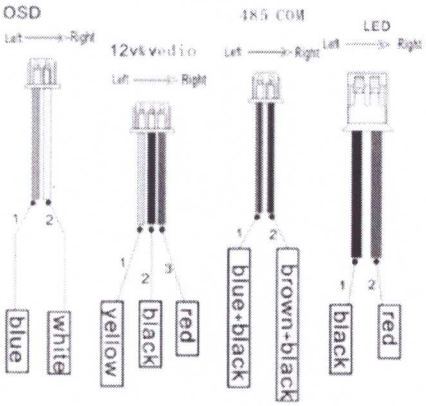
3-3 Output Cable

Keystoke Introduction



OSD Cable Appearance

HD Connector Appearance



OSD wire sequence

RS-485 Controller Connector	Camera RS-485 Connector
(+) Joint Connector (TRX+)	485+
(-) Joint Connector (TRX -)	485-

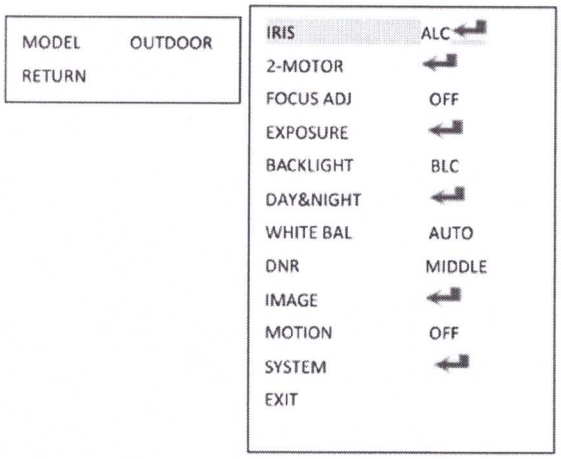
Default RS-485 Communication Settings

485 Connecting Diagram

4 Functions

4-1 OSD Menu

4-1-1. IRIS



DESCRIPTION

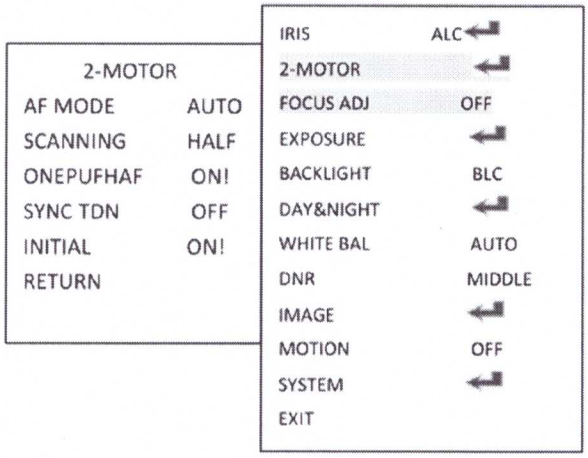
►**ALC MODE**: According to environment to choose mode with auto iris, OUTDOOR / INDOOR / DEBLUR

►**ELC MODE**: According to clearance of image to choose mode with fixed iris, DEBLUR / NORMAL

DESCRIPTION

DESCRIPTION

2 FOCUS ADJ



►**AF MODE**: Automatically adjust the lens (AUTO & Manual)

►**SCANNING**: Lens adjustment range (ALL/HALF)

►**ONEPUSHAF**: Once manually adjust the lens

►**SYNC TDN**: Whether lens will adjust when day & night convert

►**INITIAL**: Reset to avoid error's appearance (multiple times are unavailable)

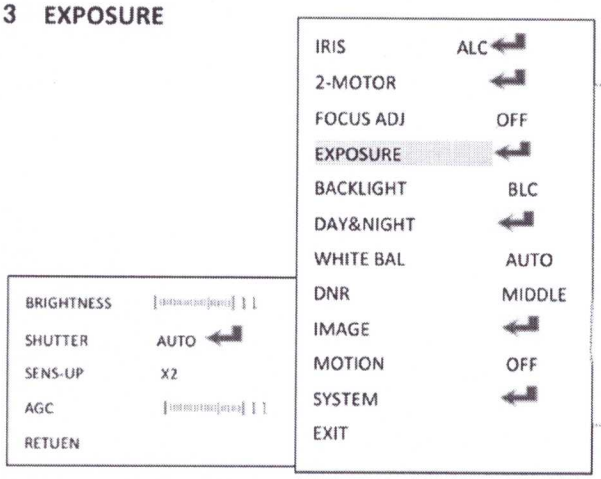
☆AF MODE

MANUAL: Press up/down/left/right to change field angle and focus length

AUTO: Press up/down to change the field angle of Lens. Then, image will become clear automatically with the help of software and sensor.

NOTE: If boards don't support motorized zoom, FOCUS ADJ will replace the position of 2-MOTOR.

3 EXPOSURE



PARAMETRE

►**BRIGHTNESS**: 0-20

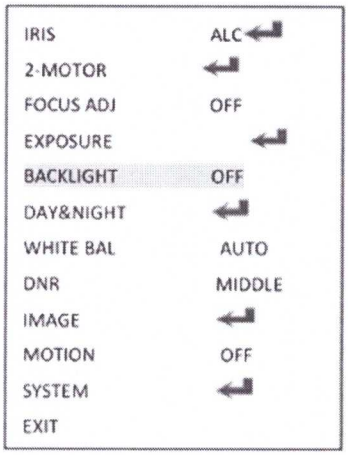
►**SHUTTER**:

AUTO/FLICKER/MANUAL(1/25、1/50、1/100、1/240、1/500、1/1000、1/2000、1/4000、1/8000、1/16000、1/30000、1/60000

►**SENS-UP**: X2、X4、X8

►**AGC**: 0-20

4 BACKLIGHT



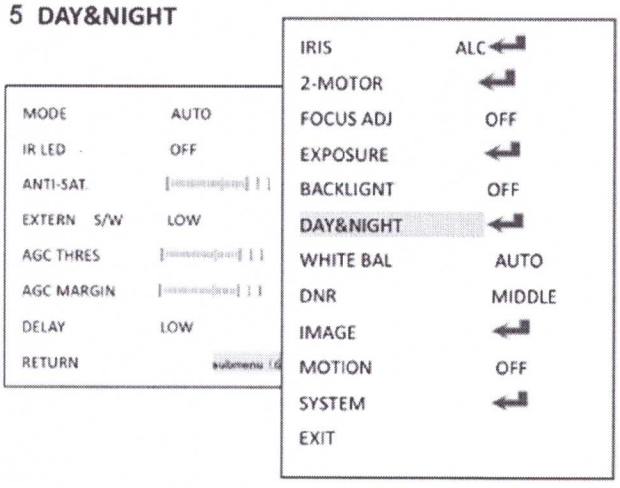
DESCRIPTION

►**BLC**: For back light environments

►**HLC**: For high light environments

►**WDR**: Long wide dynamic range for high contrast environments

5 DAY&NIGHT



DESCRIPTION

►**MODE**: AUTO / COLOR / B&W / EXTERN

►**IR LED**: Directly turn on/off IR LEDs

►**ANTI-SAT**: Control exposure in night mode with LED on

►**EXTERN S/W**: Extern voltage level input, HIGH or LOW

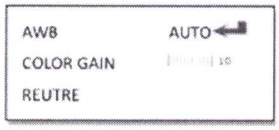
►**AGC THRES**:

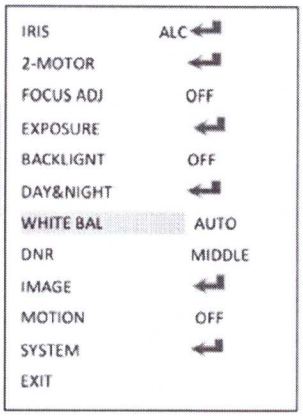
►**AGC MARGIN**: Long wide dynamic range for high contrast environments

►**DELAY**: Control the switching time of Day and Night, when set EXTERN mode.

NOTE: IR LED, ANTI-SAT, AGC THRES, AGC MARGIN, these functions need those IR LED boards, which support real smart IR function.

6 WHITE BAL





DESCRIPTION

►**MODE**: AUTO / AUTO-ext / PRESET / MANUAL

☆AUTO

Automatically make adjustments depending on the reflect of sensor

☆AUTO-ext

Automatically white balance for special functions

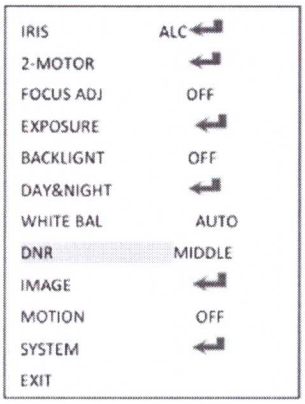
☆PRESET

Return to factory settings

☆MANUAL

User can change the color of image, via KELVIN level, Red gain level, Blue gain level.

7 DNR

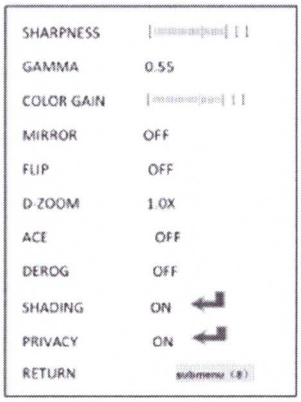


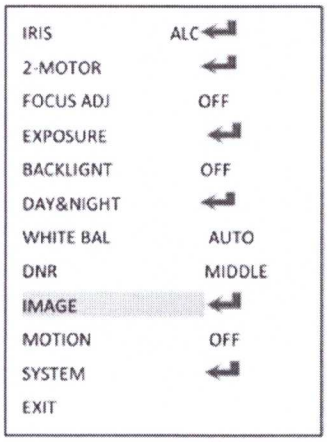
DESCRIPTION

►**DNR**: Reducing the noise signal of output image, have three level LOW / MIDDLE / HIGH.

NOTE: DNR is digital signal processing step, which lead to smearing. The higher the level is, the more seriously the smearing is.

8 IMAGE





DESCRIPTION

►**SHARPNESS**: adjust the clearance of edge of the objects

►**GAMMA**: Match with monitor GAMMA

►**COLOR GAIN**:

►**MIRROR**: Reversing left and right

►**FLIP**: Reversing up and down

►**D-ZOOM**: Digital amplifying

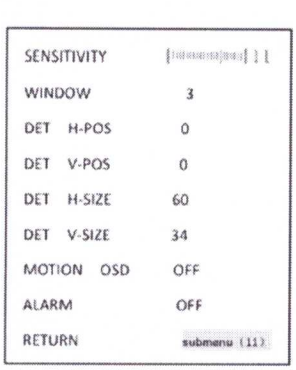
►**ACE**: Adaptive contrast enhancing

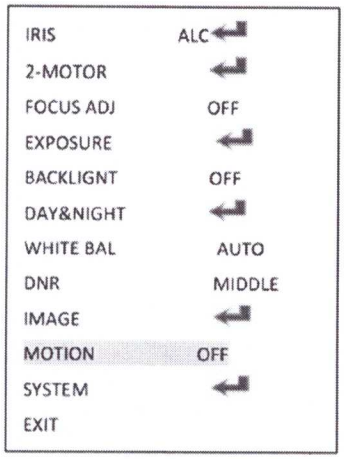
►**DEFOG**: Removing fog function

►**SHADING**: Making compensation for objects under shadow

►**PRIVACY**: Masking the areas in the image to avoid violating personal privacy

9 MOTION





►**WINDOW**: Turn on/off motion detection area

►**H-POS**: Starting horizontal position of detection area

►**V-POS**: Starting vertical position

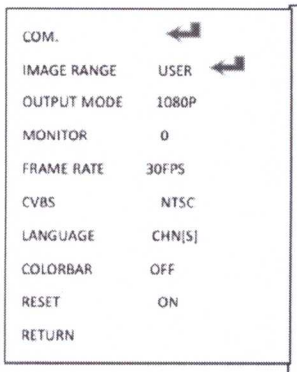
►**H-SIZE**: Ending horizontal position

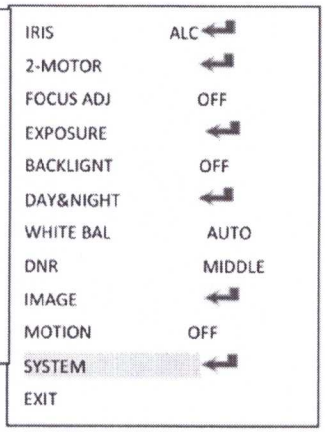
►**V-SIZE**: Ending vertical position

►**MOTION OSD**: Whether show "MOTION" words in monitor when camera detecting motion

►**ALARM**: Turn on/off alarm

10 SYSTEM





DESCRIPTION

►**COMMUNICATION**: RS485 communication protocol settings

►**IMAGE RANGE**: User Screen and Full

►**OUTPUT MODE**:1080P

►**MONITOR**: 4 kinds of colour style

►**FRAME RATE**: 25FPS or 30FPS

►**SIGNAL**: PAL or NTSC

►**LANGUAGES**: 9 languages

►**SETUP**: 9 languages

►**COLOR BAR**: Back to factory settings

►**RESET**: Back to factory settings

⚠

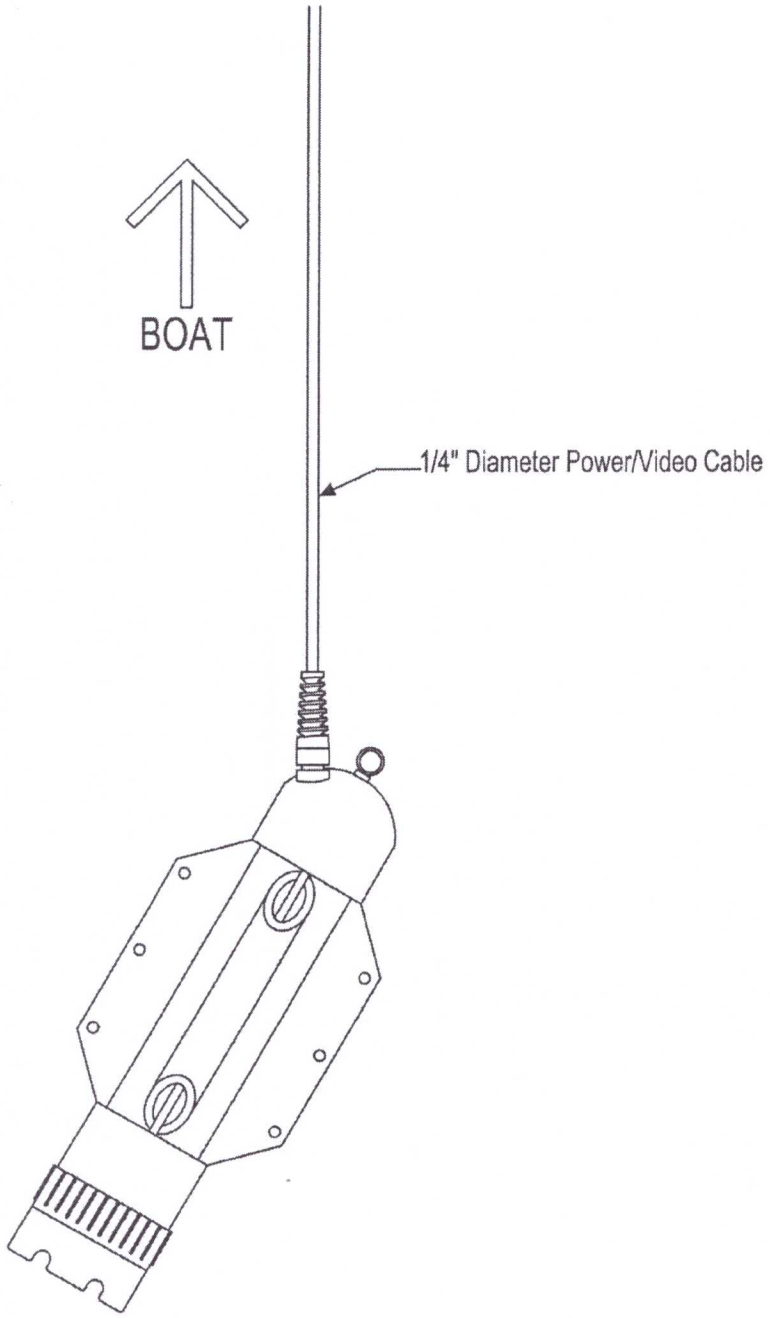
Notes: **When you finish setting OSD functions, it will be stored when main menu exit normally. If cut off power to exit, it can't store the modifications.**

5 Function & Parameter

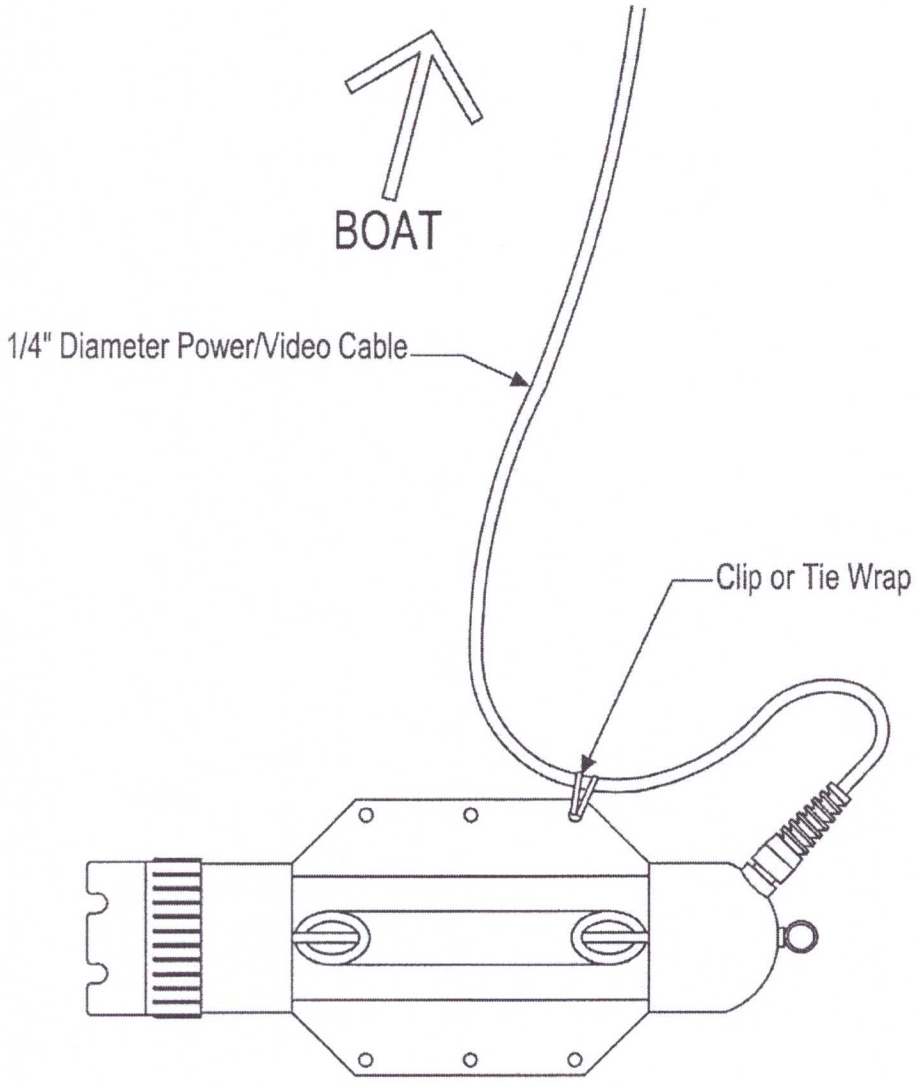
Function &Parameter

MODLE	EN778+MN34229PL
Image Sensor	1/2.8" Panasonic CMOS(MN34229PL)
Total Pixels	2000(H) × 1241(V)Approx. 2.48M pixels
Effective Pixels	1984(H) × 1225(V)Approx. 2.43M pixels
Scanning System	Progressive
Resolution	Digital:1080(30p),720(60p)
Min.Illumination	Color:1.0 lux ,BW: 0.5 lux , Color:DSS:0.017 lux ,BW DSS: 0.0008 lux
Video Output	HD-SDI, Analog: NTSC/PAL CVBS
S/N Ratio	More than 50Db(AGC off)
WDR	HD-SDI WDR
AEC/DWDR	CVBS DWDR
Lens	DC/Manual
Brightness	0-20
AGC	0-20 steps
Sens-up	1x-32x
Shutter Speed	AUTO/MANUAL(1/50\60 ~ 1/30,000 sec)
Digital Slow Shutter	Off/On(x4)
Defog	Off/On
Shading	Off/On
BLC	Off/BLC
HLC	Off/Hlc
Day &Night	Auto*Color/B&W
White Balance	Auto/Auto ext/Pushing/Manual
Focus ADJ	OFF/ON
MONITOR	0/1/2/3
DNR(Digit Noise Reduction)	Off/Low/Middle/High
Mirror	Off/On
H-V-REV	Off/On
Sharpness	0-10steps
Digital Zoom	X1-x10
Motion	Off/on
Privacy Mask	16Masks
Language	Chinese/English polyglot
Power(Max.) supply	DC12V ±10%<1.50W
Video Output	HD-SDI:SMA connector, CVBS :BNC connector
HD-SDI distance	SDI(ND5C-2V 75Ohm)500m
SIZE	38mm*38mm

SeaViewer Offshore Trolling Camera
Still Or Drift Bottom Viewing



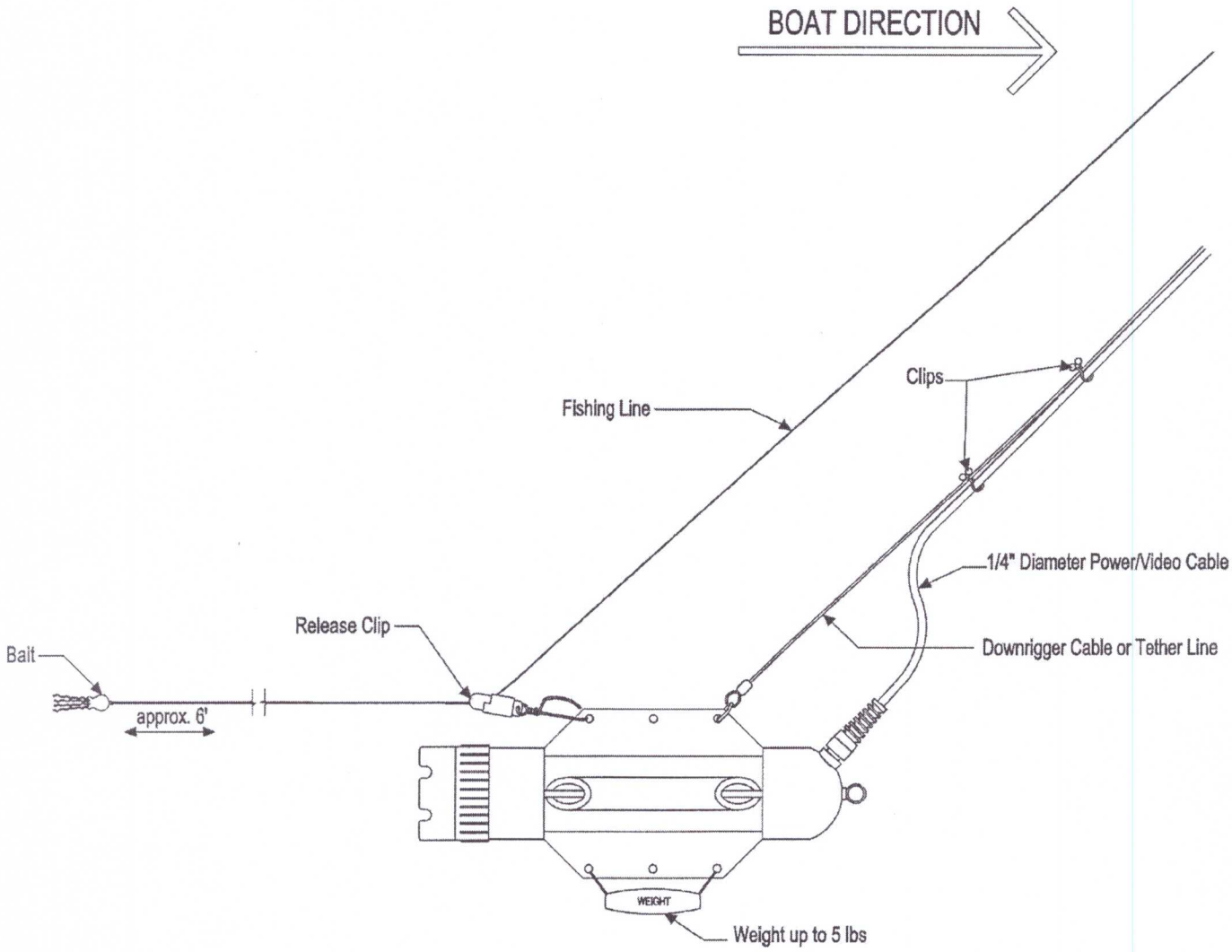
SeaViewer Offshore Trolling Camera
Still Or Drift Horizontal Viewing
Looking Backwards



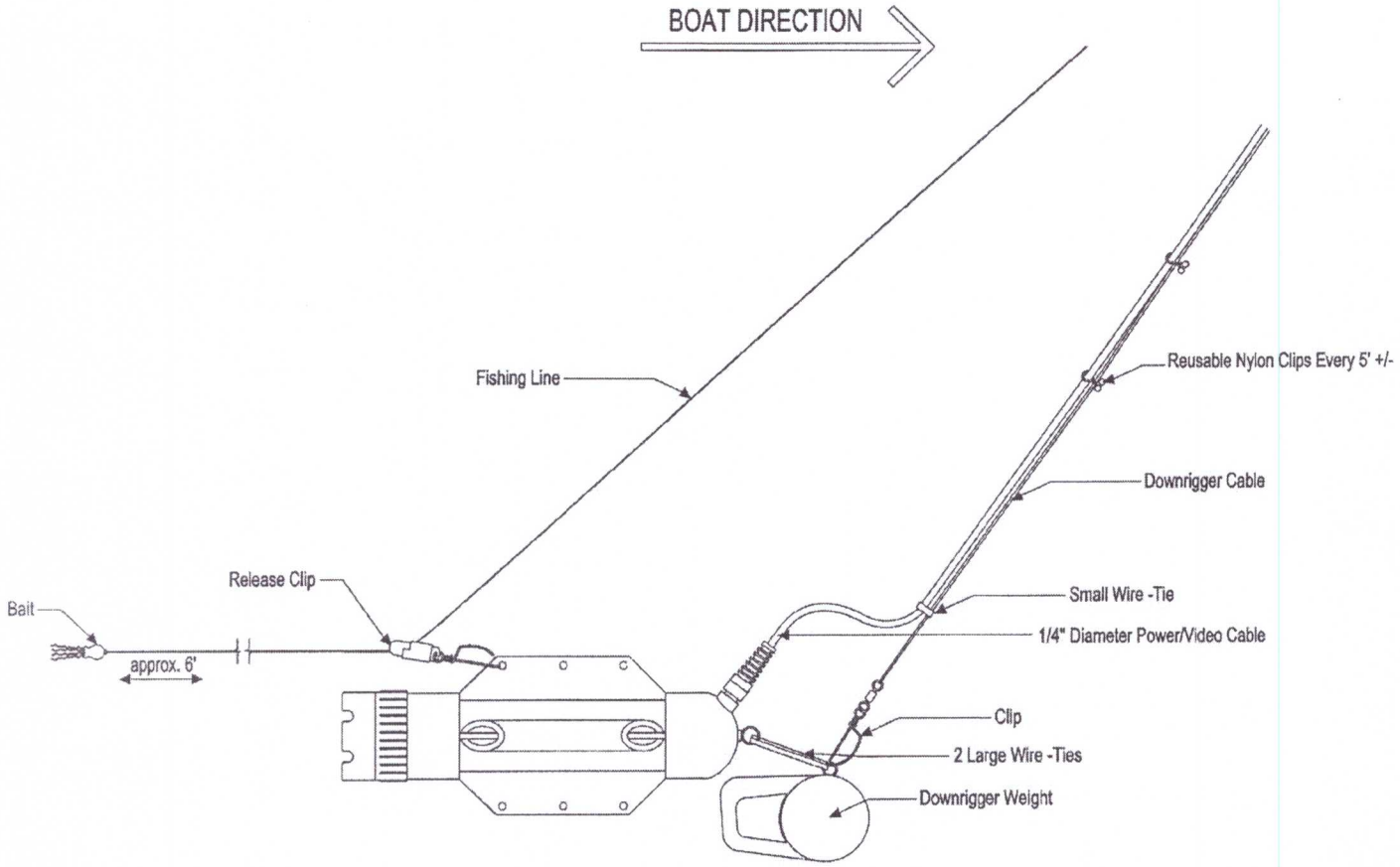
Change Angle By Using Other Grommett Holes

SeaViewer Offshore Trolling Camera

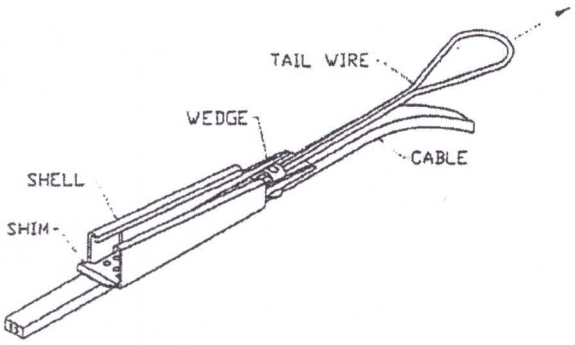
Rigging For Slow to Medium Trolling
Looking Backwards At Bait/Lure



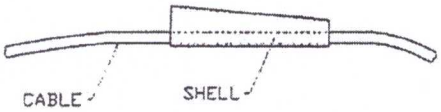
SeaViewer Offshore Trolling Camera
Rigging For Fast Trolling
Looking At Bait/Lure



SeaViewer Cable Clamp

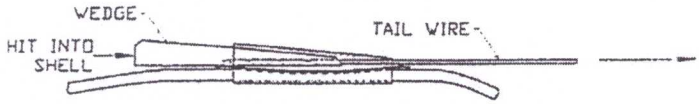


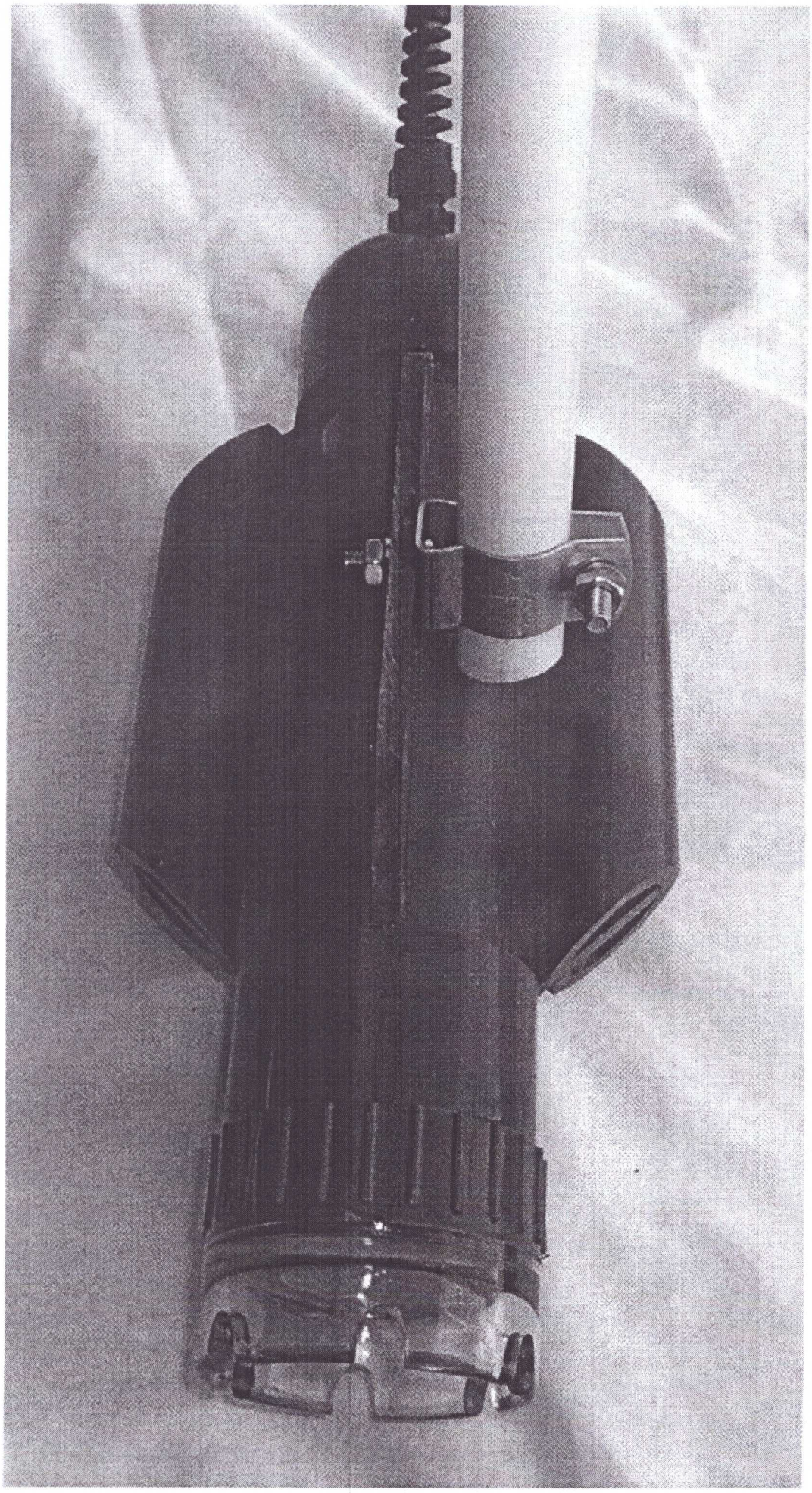
Step 1

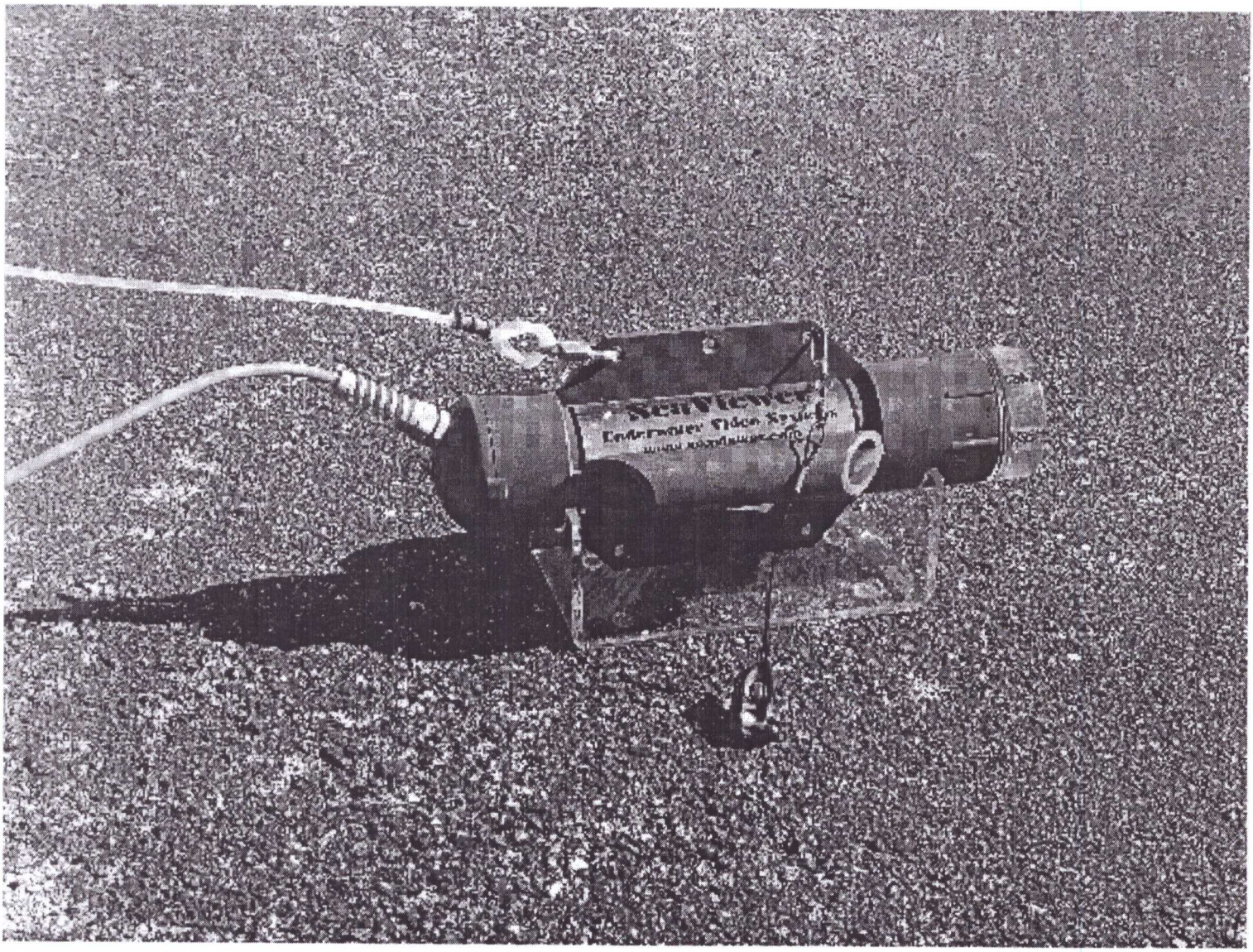


Step 2

Step 3







OFFSHORE CAMERA - SMALL CRAFT SUGGESTED TROLLING DEPLOYMENT

PREPARATION:

A) setup downrigger with steel cable and lead weight (typically 8-13 lbs.)
B) video cable can be coiled into 5-gallon (or larger) pail for easy pay-out. Surface connector end in pail first, but leave out enough tail for power/video hookup. Camera into pail last.
C) Have available 3 wire-ties (NOTE: we use 1/4" wide x 12" long "zip" ties)
D) Have available plastic clips that came with camera

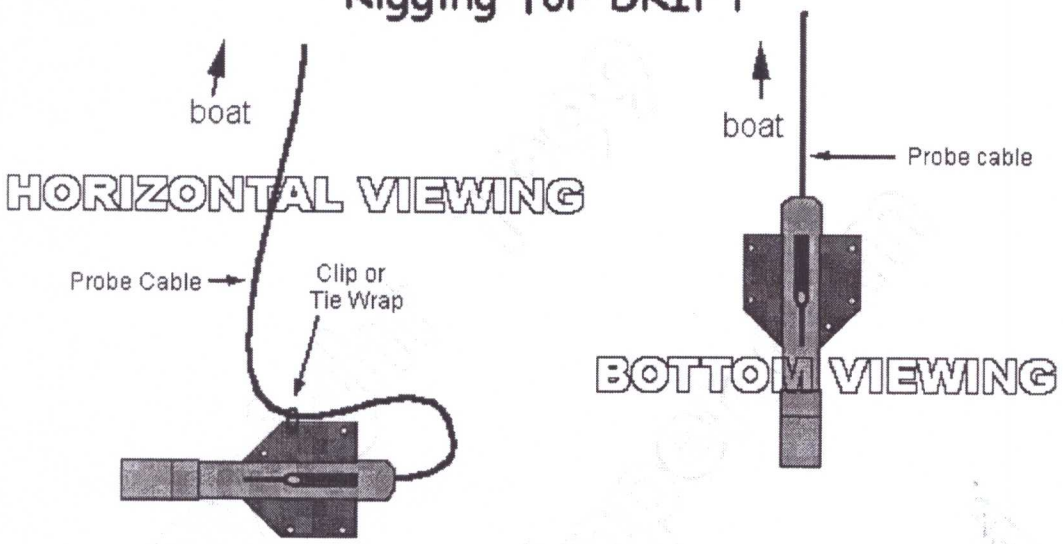
DEPLOYMENT:

1) hang weight overboard (or wait till Step #6)
2) slip "wire-tie" thru eyebolt at top of weight
3) thread same wire-tie thru eyebolt at rear of camera body
4) make-up wire tie, but leave 1"-2" loop between eyes so as not to jam eyes together
5) do same with a 2nd wire-tie for "insurance"
6) hang weight and camera over side (if not done in Step #1)
7) attach steel downrigger cable and video cable together 1'-2' above camera with wire-tie
   (NOTE: leave small loop for slack in video cable, and pull this wire-tie tight)
8) attach release clip (or rubber band) to one of top holes in camera fin
9) attach mono (fishing line) to release clip
10) set fishing pole in rod holder and set drag very, very light
    (NOTE: allow this mono to pay itself out off reel until camera is fully deployed)
11) lower weight and camera down into water
12) attach steel downrigger line to video cable with plastic clip
13) continue paying out downrigger line and video cable, attaching clips every 5-10 feet
14) when camera at desired position, adjust fishing line and reel drag

RETRIEVAL

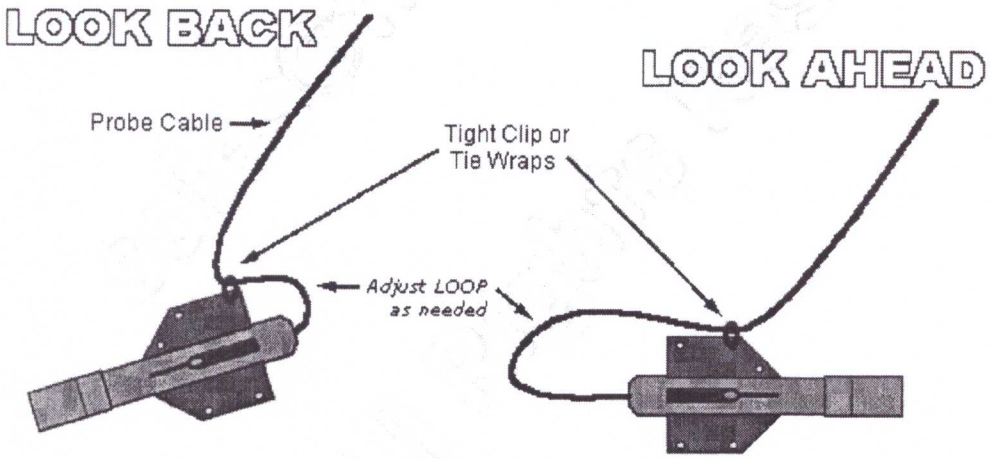
Reverse of above. Video cable can usually be pulled from plastic clips as downrigger cable is raised, with clips all sliding down steel line to weight.

Rigging for DRIFT



Rigging for Slow Troll (< 2 knots)

DO NOT troll over 2 KNOTS using only probe cable for support.
Trolling speed will affect depth and attitude of probe - the alternate Grommets may be used to change orientation.



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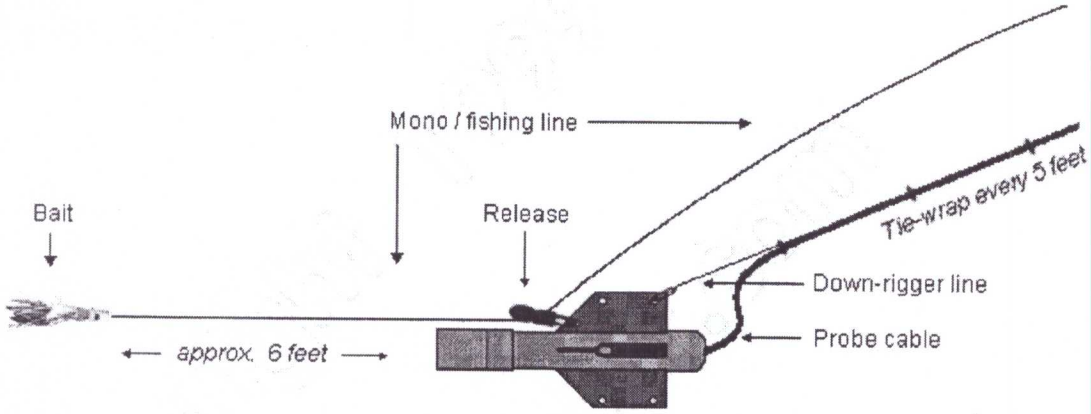
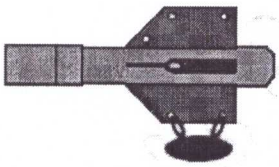
Rigging for Fast Trolling



. . . . to run Deeper . . . .



. . . . attach Weight to Probe at bottom Grommets.

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