

An underwater scene featuring several divers and a Remotely Operated Vehicle (ROV) exploring a rocky seabed. The divers are equipped with scuba gear, including tanks and masks. Bubbles are visible rising from the divers. The ROV is positioned in the center-right of the frame, with its camera and lights directed towards the divers. The overall environment is a deep blue, clear underwater setting with large, dark rocks in the foreground and middle ground.

CHASING

**CHASING Underwater ROV
Scientific Investigation & Environmental
Protection Solutions**



About Chasing Innovation

Shenzhen CHASING Innovation Technology Co., Ltd. is a national high-tech enterprise focusing on R&D, production and global sales of consumer grade underwater drone, light industrial grade professional underwater ROV and portable water intelligent unmanned equipment. The company has 3 self-built factories, among which Ganzhou base is the largest production and manufacturing base of portable underwater ROV in the world.

Since its establishment in 2016, the company has produced and manufactured 7 generations of products and completed 4 rounds of financing. It is a leading enterprise in underwater science and technology industry, awarded as "Top 50 Enterprises with the Most Investment Value in Shenzhen in 2020" and won over 100 awards at all levels. Characterized by low cost, high performance, easy to operate and prominent portability, its series products have been widely used in underwater observation and photography, fisheries aquaculture, underwater emergency rescue, hull inspection, scientific exploration, environmental inspection and water conservancy and hydropower, and been sold in more than 80 countries and regions around the world.

The company is headquartered in Shenzhen and has offices or subsidiaries in Beijing, Chengdu, Kunming, Ningbo, Qingdao, Hainan, Ganzhou and Seattle. With strong strength, its R&D team has reached the international first-class level in many technical fields such as underwater communication, overall design of underwater vehicle, electric power and propulsion systems and navigation control. Our vision is to "Make underwater exploration easier", and our mission is to "Become the best underwater solution expert and provide customers with the most intelligent underwater products and services". We have obtained over 100 inventions, PCT international patents, utility models and design patents, and we will keep building our own technical barriers.

Applications in Scientific Exploration and Environmental Protection Inspection

With continuous climatic deterioration worldwide, the existent environment of underwater creatures and plants has been paid more attentions from major organizations. Researchers need to record the growth of underwater creatures and plants with underwater observation equipment and make investigation and survey based on the specimens. The inspection of underwater sewage pipes is additionally included in the key concerns of the industry inspection to protect the habitations of underwater creatures and plants. Any leakage, rupture or breakage of the pipe will affect the water quality. In scientific exploration and environmental protection, divers are usually required to dive into the water to make observation and recording for a long time. With conventional inspection solutions, the inspection will take a long time and some places with longitudinal and horizontal stands cannot be inspected. CHASING M2 PRO MAX can to a great extent save the inspection time, reduce the inspection cost, increase the inspection coverage area, and improve the accuracy of the inspection report.

Operation Challenges in Scientific Investigation & Environmental Protection



The traditional underwater detections are characterized by **high labor cost and low efficiency**

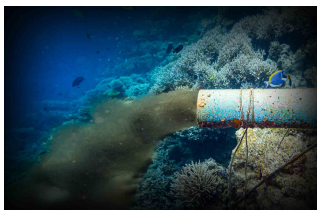


It is hard for artificial inspection to conduct **tracking observation** on the target organism for a long time

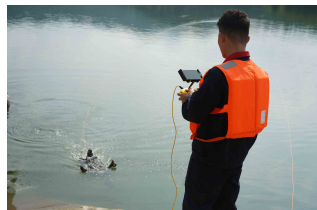


Traditional detection area is limited, **with incomplete detection**

Industry Application of CHASING Scientific Investigation & Environmental Protection



Precisely position underwater source of pollution



24/7 available, without environmental limit

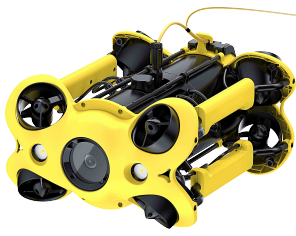


Long-term directional observation of target objects

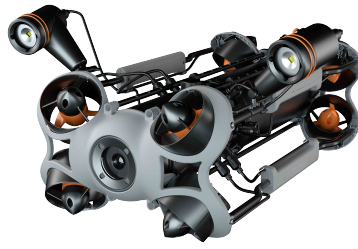


Large detection coverage and high efficiency

CHASING M series solutions



CHASING M2



CHASING M2 PRO MAX



CHASING M2 PRO

ROV Performance Characteristic

8 vectored thrusters, 360° eddy current resistance, maximum navigating speed up to 3 knots (1.5m/s), and compact body

Enter the area with longitudinal and horizontal stands

Replaceable battery, E-Reel vehicle, CHASING AC Power Supply System, CHASING Shore-Based Power Supply System (C-SPSS)

Satisfaction of 24/7 working need

CHASING M2 and CHASING M2 PRO are equipped with 4000 lumens floodlight, while CHASING M2 PRO MAX is equipped with 8000 lumens floodlight

Clear underwater inspection images even in turbid waters

Remote control, real-time image transmission

The staff are allowed to understand the overall situation of the target water the first time

Connection to 3 viewing devices simultaneously

Allowing more people to view the real-time underwater inspection images at the same time

100—200m diving depth, 200—400m working radius

Satisfy the needs of inspection in wide area

Rapid deployment by a single person, easy to operate and use

Greatly reduction of detection and deployment time

ROV supports a variety of accessories

Optionally configured based on actual need

Comparison of ROV Parameters

	CHASING M2	CHASING M2 PRO	CHASING M2 PRO MAX
ROV Size	380×267×165mm	480×267×165mm	608×294×196mm
ROV Weight	5kg	5.7kg	8kg
Max diving depth	100m	150m	200m
Thruster	8	8	8
CMOS	1/2.3	1/2.3	1/2.3
Aperture	F1.8	F1.8	F1.8
Equivalent focal distance	18.18mm	18.18mm	18.18mm
Focal distance	0.3m ~ ∞	0.3m ~ ∞	0.3m ~ ∞
ISO range	100-6400	100-6400	100-6400
Visual field	152°	152°	152°
Max image resolution	12 mega-pixels	12 mega-pixels	12 mega-pixels
Image format	JPEG/DNG	JPEG/DNG	JPEG/DNG
Max video stream	60M	60M	60M
Video format	MP4	MP4	MP4
SD card	64G	128G	128G
Brightness	2 X 2000LM	2 X 2000LM	2 X 4000LM
Color temperature	5000K~5500K	5000K~5500K	5000K~5500K
CRI	85	85	85
Dimming	Adjustable	Adjustable	Adjustable

Accessory Solution for CHASING Scientific Investigation & Environmental Protection



CHASING E-Reel

It can electrically reel in 200 m cables within 200 sec by one key. Automatically release and align the cable. The ROV is equipped with a CHASING E-Reel to reel in and release the tether cable in an orderly manner, preventing the cable from mess-up, and enhancing the efficiency of detection.



CHASING Grabber Arm 2

It is designed with intelligent grip control system and two-claw tool head, featuring efficient grip capacity, stability, and easy to clamp of underwater objects. ROV, together with CHASING grabber arm, is able to take samples from the observed objects.



CHASING Floodlight 2

With 4000 lumens external light source and 0-360° angle adjustable, it can reduce the impact of underwater floating objects to a great extent and improve the clarity of underwater observation images in turbid waters. ROV, together with CHASING floodlight 2, is able to provide clear images in turbid waters.



CHASING Distance Lock Sonar

4 directions (front, left, right, bottom) of ROV can be measured with only one sonar to achieve ranging inspection and automatic collision avoidance. ROV, together with CHASING ranging sonar, is able to conduct pipeline inspection automatically while keeping a fixed inspection distance from blow-off lines to avoid them automatically



CHASING USBL Kit

The underwater location of ROV can be accurately positioned by USBL triangulation positioning system. ROV, together with CHASING USBL kit, is able to accurately position the underwater source of pollution.



CHASING Water Quality Sampler (500ml)

It features super large capacity (500ml), supporting stratified spot sampling and multiple samples detection with one-turn water collection. Environmental protection material, certified by multiple countries. ROV, together with CHASING water quality sampler (500ml), is able to conduct spot sampling and detect target water quality on shore.



CHASING Multiparameter Sonde

It supports multi-spot stratification and simultaneous detection of 5 parameters, providing real-time and accurate data feedback and ensuring accurate detection spot location. ROV, together with CHASING Multiparameter Sonde, is used for data collection of target water quality, including real-time PH, dissolved oxygen, turbidity, conductivity, salinity, etc.



CHASING Shore-Based Power Supply System (C-SPSS)

CHASING Shore-Based Power Supply System is featured by battery compartment design, easy installation and a maximum output power of 1,500W, ensuring that the ROV can work 24/7 at full power without power outage. ROV, together with the C-SPSS, is able to enable the demand of 24/7 detection, without time-consuming operation such as battery replacement, saving time.

Accessories

	CHASING M2	CHASING M2 PRO	CHASING M2 PRO MAX
CHASING E-Reel	●	●	Standard
CHASING Grabber Arm 2	●	●	●
CHASING Floodlight 2	●	●	×
CHASING Distance Lock Sonar	×	●	●
CHASING USBL Kit	×	●	●
CHASING Water Quality Sampler (500ml)	×	●	●
CHASING Multiparameter Sonde	×	●	●
CHASING Shore-Based Power Supply System (C-SPSS)	×	●	●

Note: Support ● Not support ×

*Specific parameters and support accessories are subject to actual delivery of the product

01 CHASING M2 PRO

Detection of Sewage Disposal Facilities at Incheon International Airport, Korea

The facility management team of Incheon International Airport, Korea is required to conduct regular detection on sewage disposal facilities to ensure equipment operation safety and no damage to facilities. CHASING M2 PRO is applied in this management operation of sewage equipment to conduct accurate monitoring and real-time recording of the safety conditions of pipes, water pumps and other facilities in the sewage tank.

Solutions

- CHASING M2 PRO
- CHASING Floodlight 2
- CHASING 200wh backup battery



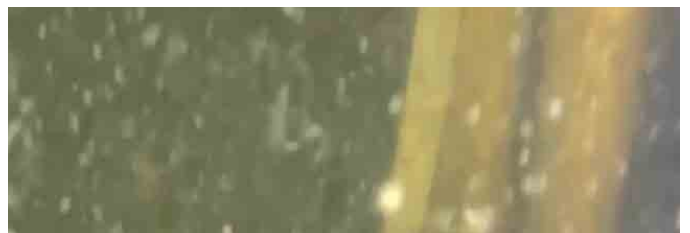
Operation Challenges

In traditional detections, it is needed to invite a commercial diving team and ask frogmen for underwater operation, which takes a long time and costs too much in regular inspection, and fails to enter the area with longitudinal and horizontal stands.



Client Values

1. CHASING M2 PRO is able to stably transmit the monitoring signal and reflect the safety status of pumps in real time, so as to prevent environmental damages caused by leakage.
2. CHASING M2 PRO replaces frogman operation, greatly reducing labor costs, shortening the inspection time, and providing a cost-effective, comprehensive and reliable solution for facility management team at the airport.



02 CHASING M2

Investigation and Observation on Coral Bleaching in Seychelles

With the deterioration of global climate change, corals in Seychelles have been bleached to varying degrees. In order to investigate the bleaching status of corals and further develop the coral ecological and environmental protection plan, the coral rescue team has effectively completed the ecological survey sampling and recording using the CHASING M2.

Solutions

- CHASING M2
- CHASING Floodlight 2



Operation Challenges

The corals to be investigated are located in the sea area with changeable current and high risk factor for artificial diving; There are many fine sands in the investigation waters, which are easy to interfere with the investigation.



Client Values

1. Replace frogmen for shooting and recording, movable in 360°, providing a more comprehensive recording perspective range for corals on the sea floor; 4K EIS camera, clear recording of sample materials, clear investigation image, providing determination assistance; low operation cost and high efficiency.
2. Unlimited operation time, larger coverage of target waters, investigation sampling results with more reference value.



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