

SHL701

WATER-COOLED CAMERA HOUSING HIGH-TEMPERATURE RESISTANT



WARNING

- ◆ Read the instruction book carefully, understand the content, so as to guarantee correct installation, electric connection, operation and maintenance, etc..
- ◆ The instruction book should be kept by users.
- ◆ The instruction book should be kept till the enclosure deposed.
- ◆ The technical specification subject to change without notice.

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1. Brief introduction

1-1 SHL701 water-cooled camera housing is made of dual-layer stainless steel, which achieves cooling by cooling water from interlayer. Its front cap prevents dust by compressing air to form damp sheet. With good corrosion-proof performance, it could be used in the environment with high temperature, large amount of dust and corrosive gas. This kind of product has been widely applied to industries of steel, cement and electrical power for improving production efficiency and working conditions and reducing labor intensity.

1-2 All kinds of CCD camera could be equipped inside the camera housing. It could be mounted on semifixed pan/tilt and 8kg electric remote control pan/tilt.

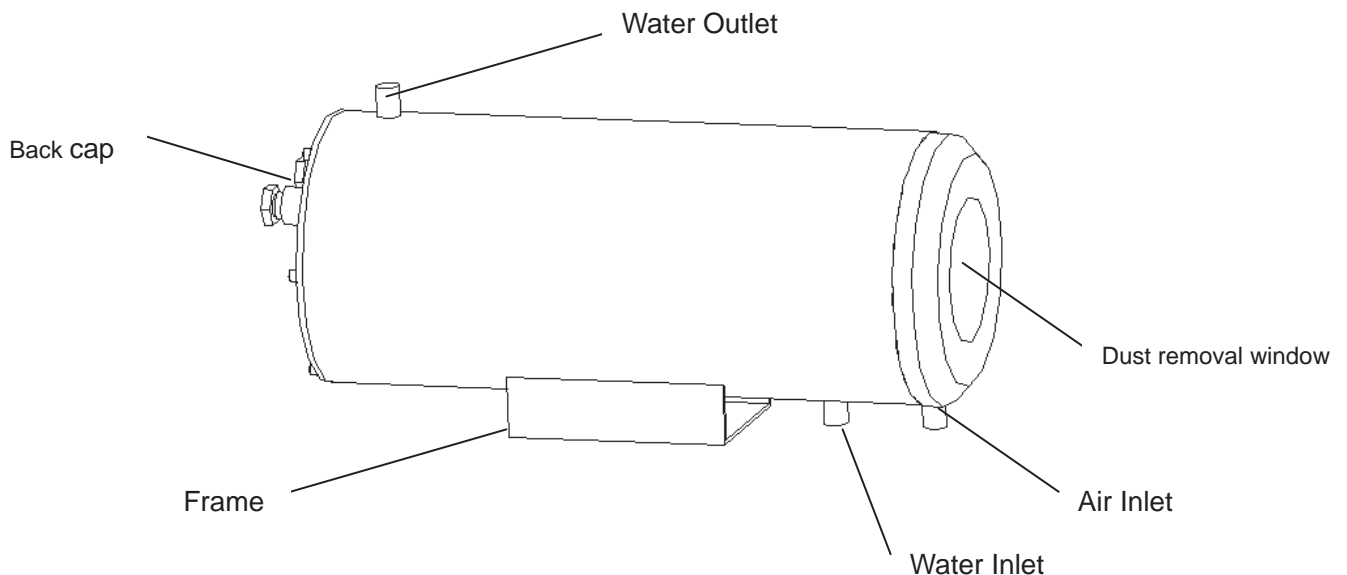
2. Relative items before operation

2-1 Arriving goods check

After receiving the equipments of your order, please open a box of each item with following check, if you find the product with problems or does not go with the specification of your order, please contact with the agent or the neighborhood office.

Check if any damage in the external appearance during the transportation eg. Breakage of the outer shell and the machine body, or machine parts etc..

2-2 Product appearance



Warning contents in English: Forbidden to open the cap when the power is switched on.

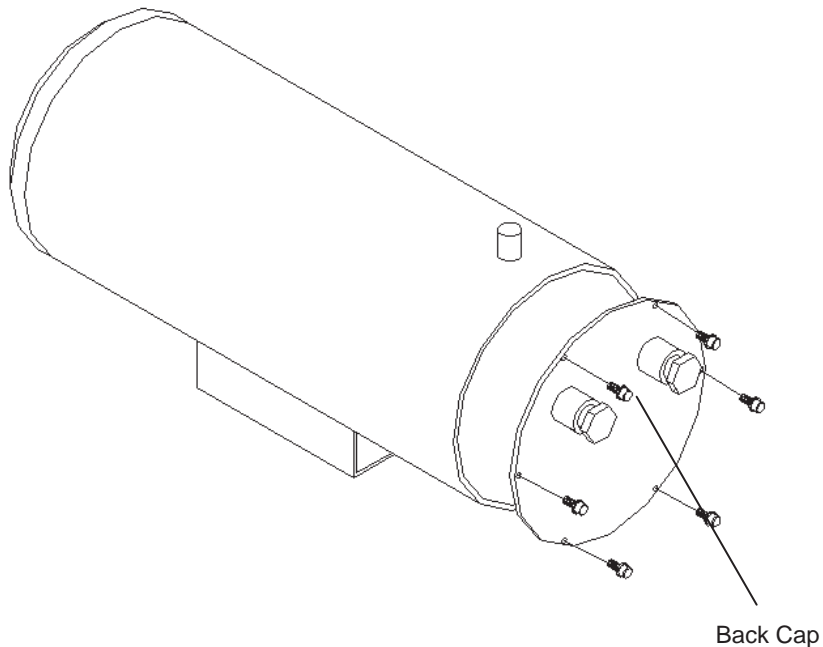
Note:

1. Cooling liquid should be provided for water inlet.
2. High-pressure air should be provided for air inlet.

2-3 Product conduct

(1) Unpack the back cover

Loosen the front / back cap anticlockwise; see the chart below 2-3-1:



2-3-1 Back cover plate

2-4 Transit

You should take the back-cap of enclosure cavity-body, don't withdraw other parts , otherwise may result in the damage or human body injury.

2-5 Storage

Short-term Storing

Sheet 2-5-1 Short-term storing Environment

Sheet 2-5-1 Storing Environment

Item	Specification	
Preservation temperature	0~+50℃	Don't put it in the place where temperature changes rapidly and frozen place.
Keeping temperature <small>Note 1</small>	0~+250℃	
Dust Concentration	≤200 mg / m ³	
Relative humidity	≤80% <small>Note 2</small>	
Environment	Free of steam, condensed water or vibrating place, and avoid the salty environment at the same time.	

Note 1: Preservation temperature means short-term enduring temperature during transit.

Note 2: Such places should also be avoided even if the requirements for humidity are satisfied, or the temperature changes rapidly to form dew and frost.

- ① It should be placed on the appropriate bracket rather than on the ground directly.
- ② If surrounding environment is bad, it should be stored by the package of plastic film.
- ③ If there is damp influence, drier (silica gel etc.) should be put in packing bag of item②.

Long-term storing

Preservation method for long-term shelve, follow the steps:

- ① First, Satisfy short-term storing requirement:

While exceeding 3 months' storing term, the surroundings temperature should be lower than 30°C, because its performance will change if capacitor is stored in the environment without electricity or of high temperature.

- ② Free of damp influence, it should be packed in a seal bag, while drier is to be put in to keep the temperature below 70°C.

- ③ When explosion-proof enclosure is for long-term shelve, particularly in the damp building, it should be dismantled and put in the proper environment meeting the above storing requirement.

- ④ Capacitor' s performance will be deteriorated if it is cold for long. If the storage term is above one year, it must be switched on electricity aging for at least once a year.

3. Installation and connection

3-1 Operation environment

Installation environment requirements as Sheet 3-1-1

Sheet 3-1-1 Operation Environment

Item	Specification
Air pressure	86Kpa ~ 106Kpa
Ambient temperature	-20°C ~ +250°C
Relative humidity	≤ 80% (+40°C)
Dust concentration	≤200 (take cement dust as standard)

3-2 Operating conditions

Operating conditions requirements as Sheet 3-2-1

Sheet 3-2-1 Operating Conditions

Item	Specification
Inlet cooling water temperature	≤3.5°C
Operating hydraulic pressure	≥ 0.1 Mpa
Max. hydraulic pressure	0.8 Mpa
Inlet air-compression temperature	≤3.5°C
Air volume	0.3~0.6 L/S

Inlet air-compression pressure	0.1~0.4 Mpa
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3-3 Connection


3-3-1 Basic connection

Installation of camera (CCD for short) and lens

- a、Screwing out the back cap of enclosure, withdraw bottom plate, and fix the CCD on bottom plate.
- b、link the power and control line of CCD.
- c、Adjust the CCD front and back focus to make sure the scenery on the monitor without dead angle within the max scope of lens change.
- d、Screw on back caps


Attention to the following instructions, do not connect the wrong wire.


- ① The power supply must be connected to the power port of L, N. if a bad connection occurs, other equipments may be damaged. Besides, the grant voltage scope should be confirmed according to the nameplate and power supply requirements of inner equipment should also be confirmed
- ② The earth terminal should be well earthed to avoid electricity attack and fire alarm accident.
- ③ Use the compression terminal and conduct wire to ensure the reliability of connection.
- ④ After finishing the connection, check the following aspects:
 - a. Are all the connections correct?
 - b. Are there any wires leaked to be connected?
 - c. Does short circuit or line-to-ground short circuit occur between terminals and connecting line?
- ⑤ Change to connect line after connecting power supply, cut off power supply first. Moreover, as residual voltage remains in the system, there may be electric sparks when short circuit occurs, thus it's best to do connection work after system power supply is cut off.

 DANGER	<ul style="list-style-type: none"> ● Ground wire must be connected, otherwise electric shock or fire alarm may occur. ● Power supply connection work should be done by professional staff. ● Make sure to begin connection work when power supply is off, otherwise electric shock may occur.
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3-3-2 Main circuit and connection of earth terminal

power input: AC220V, separately connected on L、N. Earth wire should be connected on the earthing screw.

Enclosure earth terminal ( G) , enclosure should be well earthed to avoid electric shock and fire alarm. Metal shell and frame of electric equipment should be earthed to the requirements of national electric regulation. Earth wire should be wide and short, Enclosure system should be connected to special earth electrode.

 NOTICE	<p>Make sure the consistence of the magnitude of input voltage, current and enclosure.</p>
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4. Operation

4-1 Check and preparation before operation

Check the following before operation:

- ① To check If the connection is right.
Especially check whether the output terminal of enclosure could be connected to the power supply and if it is well earthed.
- ② Confirm no short circuit or ground short circuit either among ports or electric nude parts
- ③ Confirm the ports connection, and no loose with insert linker and bolts.
- ④ Before switching on the power supply, make sure that all switches are cut off and no abnormal action with the enclosure when power supply is switched on.
- ⑤ After power supply is switched on, check if there's any noise in the rotating structure of the inner machine.
- ⑥ Check if the equipment was broken during transportation. If it was broke, please contact our factory.

4-2 Spot requirement

- A、Cables and wind hose port laid on the spot are required to be within 7.065m² while water & wind hose port should be left nipple G1/2”.
- B、Water and air should be in accordance with technical requirement.
- C、Spot environment should be in accordance with technical requirement.
- D、Mounting hole of spot mounting plate should be in accordance with requirement shown on 3.2.

4-3 Spot mounting

- A、Take water-cooled camera housing, loosen end plate setscrew and shelf setscrew to take out shelf. Mount camera, connect plugs according to connecting diagram and connect the spot power cables and video cables into relative seal joints on the end plate and then connect the cables into relative ports of end plate. Power on to make the camera work. Align the aim goods and adjust iris and focus of the camera until the image is clear. Then mount the end plate on the shelf side.
- B、Connect G1/2”—G1/4” swing joints to spot wind hose (make wind hose ventilated for some time to clean the emission of the hose), connect spot wind hose to wind inlet interface with G1/4” mental hose.
- C、Connect one end of G1/4” mental hose to water inlet port and the other end to spot water outlet

hose. Connect one end of G1/4" metal hose to water outlet and the other end to connect to the main hose. .

D、 Mount the water-cooled camera housing onto mounting plate on the spot through mounting hole. Fix it and adjust the housing angel with pan/tilt adjusting screw to the best surveillance state.

4-4 Daily use

During daily use, open power supply before connecting cooling water and 2-minute compressing water

5. Maintenance

5-1 Maintenance

5-1-1 If no image and other problems appear, power supply should be cut before checking the damage.

5-1-2 Malfunction analysis of camera、 monitor and controller etc. are shown in their relative chapter of instruction books.

5-1-3 Normally, if image blurs after it is used for some time, front glass may be covered with dusts except other electronic problems. It could be used after loosen front end of dust-proof part to clear dusts and clearing glass filter.

5-2 Maintenance check

Daily and Periodic check should be carried out to ensure the continuous running of the water-cooled enclosure in case of future accident. As usual, check the following items:

5-2-1 Daily check


Don't remove the back cap when the power is still on & in operation,

Eyes-checking the operation of the enclosure through the outside, make sure no abnormality usually check the following items

- ① Running capability is up to standard criterion
- ② Surrounding environment is up to standard criterion
- ③ No noise and vibration in the inner parts of ex-proof enclosure
- ④ No abnormal conditions such as overheating

5-2-2 Periodic check

Stop running, cut off the power and remove the back cover during Periodic check

 DANGER	<ul style="list-style-type: none"> ● Maintenance check and parts changing work can be carried out only by qualified person (put off metallic things such as watch, ring before work, and use insulation tools when working). ● Never allow the transformation of water-cooled enclosure. ● Prevent electric shock and equipment accident.
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Sheet5-2-2 list items of Periodic check

Check parts		Check items	Check methods	Judge standards
Surrounding environment		1) Confirm the surrounding , humidity , vibration and condensed water etc. 2) No tools and dangerous things around	1) By eyes and instruments 2) By eyes	1) Up to the technical requirements
Voltage		Control voltage is normal or not	By eyes and instruments	Up to the technical requirements
Structures such as framework and base plate		1) no abnormal voice & vibration? 2) no loose with bolts? 3) no deformation?	1) by eyes& ears. 2) screw down 3) Eyes-check	1) 、 2) 、 3) no abnormality
Output electric circuit	Public	1) no conduct overheated smell crack in insulation? 2) no wire break-off?	1) screw down 2) by eyes	1) 、 2) no abnormality
	The conductor cables	1) no conduct overheated and deformation? 2) no crack and color change?	1),2) Eyes-checking	1) 、 2) No abnormality.
	Terminal strip	Not broken?	Eyes-checking	no abnormality
Signal electric circuit	The electric appliance conjunction parts	1) no loose with screw and conjunction? 2) no strange smell and color change? 3) no crack, damage, deformation, rust eclipse? 4) No overheating and deformation mark with power module	1) screw down 2) by smell、 eyes 3) by eyes. 4) by eyes and judgment service life according to the maintenance information.	1) 、 2) 、 3) 4) no abnormality..

5-3 Product inquiry and guarantee

(1) Product inquiry

If there's some damaged point, unclear points or failure in our products, please contact with the agent or the office neighborhood.

- a) Water-cooled enclosure model
- b) SER NO
- c) Purchasing date
- d) Content that needs contact (eg. Damaged point and status, unclear points or failure)

(2) Guarantee period

Guarantee period is 12 months but less than 24 months after the manufactured date on nameplate. Repair fee for the fault caused by the following reasons should be paid even if the products are in guarantee period

- ① Misuse, voluntarily repair or transformation without permission etc.
- ② To use beyond the standard criterion
- ① Damage after purchase or during transportation.
- ② earthquake, fire, tornado, abnormal voltage, other natural disasters and twice disasters.

6. Technical criterion

6-1 Technical data

	Model	SHL701
Basic Parameter	Manufacturers Standard	Enterprise Standard
	Configuration Mode	Dual-layer stainless steel
	IP	IP68
	Cable entries	2 water-proof cable entries , inner hole Dia.φ10
	Water inlet / outlet	G1 / 4"
	Dust removal window interface	G1 / 4"
Mechanical Features	Material	304、316、316L stainless steel
	Sight glass dimensions (mm)	Φ75
	Dimensions (LxWxH) mm	300x134x151
	Inside dimensions (mm)	φ100x280
	Weight (kg)	4
Operational Requirement	Operating environment	Applicable to high-temperature、dust and heated splashing material (slag、liquid iron etc.)
	Operating temperature (°C)	0~+250
	Relative Humidity	≤80% (40°C)
	Atmosphere pressure (Kpa)	86~106
	Dust concentration (mg / m ³)	≤200 (take cement dust as standard)
	Inlet water temperature (°C)	≤35
	Flow (L/s)	0.3~0.6
	Inlet hydraulic pressure (Mpa)	0.1
	Air-compression pressure (Mpa)	0.1~0.4
	Flow of air (L/s)	0.3~0.6
Power Supply	Voltage (V)	24V DC/220V AC
	Current (A)	2/0.5
Others	Built-in power supply module	Optional
	Cable requirement	High-temperature-proof cable、hose (function: power supply 2x0.5 mm ² 、data 2x0.3 mm ² 、video 75-5, ±0.4 mm ²)
Hose of water and air	Type	Metal wire net flexible hose
	Material	Heat resistant rubber
	Ambient temperature	≤150 °C
	Connector	Copper
Optional parts		Semi-fixed bracket
		Sunshield

Actual index is in accordance with instruction book. Products design and specifications subject to change without notice.

6-2 Outline dimension

➤ Outline dimension and Mounting dimension shown in 6-2-a

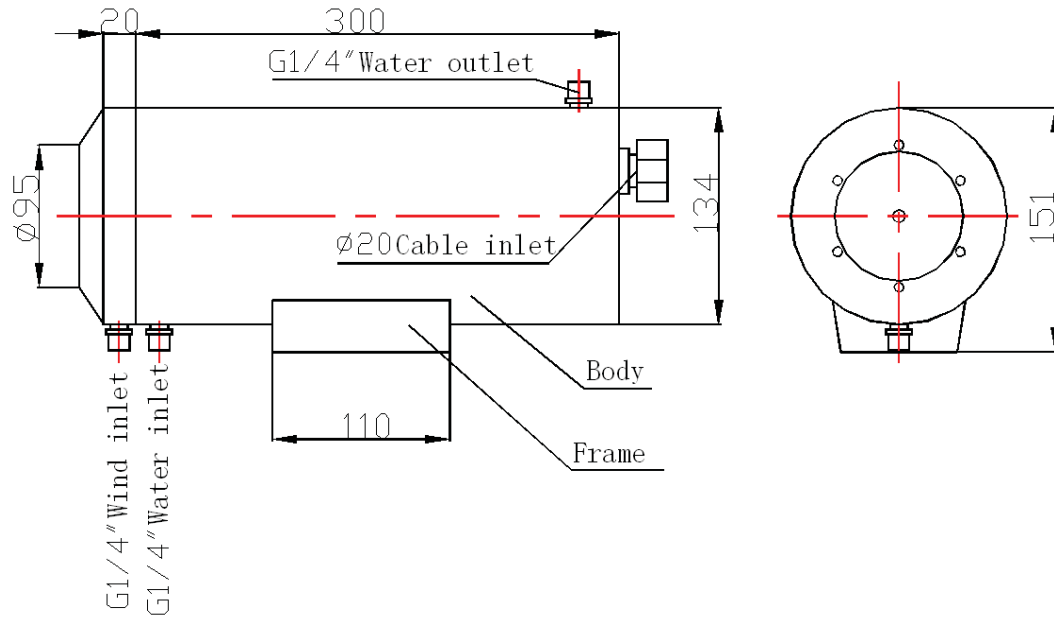
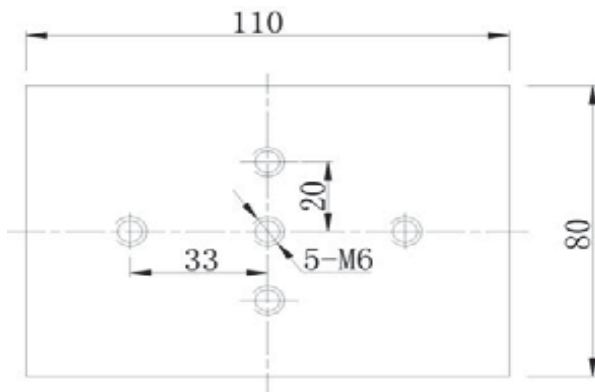


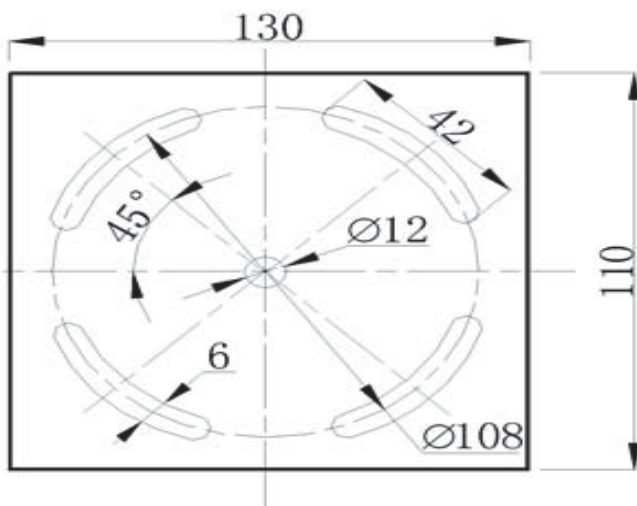
Chart 6-2-a

➤ Inside dimension: φ100 X 280 mm

6-3 Mounting dimensional drawing



6-4 Fixed pan/tilt mounting dimension



7. Appendixes

Assembly Manifest

NO.	NAME	QUANTITY	NOTE
1	Manual	1	
2	G1/2 " –G1/4 " Swing joint	2	
3	G1/4 " (1.5 m) Mental hose (Wind-inlet hose)	1	
4	G1/4 " (1.5 m) Mental hose (Water-inlet hose)	1	
5	G1/4 " (1.5 m) Mental hose (Water-outlet hose)	1	
6	“O” type Joint ring $\Phi 12 \times 2$	6	
7	M6 \times 20 Hex bolts	3	
8	$\Phi 6$ washer	3	

About Guarantee period and after sale service

Thank you for buying our water-cooled camera housing, our products are made under perfect quality system management, however, if you find failure, please read the following explanation:

1、 Guarantee period

Guarantee period is 12 months but less than 24 months after the manufactured date on nameplate. Repair fee for the fault caused by the following reasons should be paid even if the products are in Guarantee period

- 1) Misuse, voluntarily repair or transformation without permission etc.
- 2) To use beyond the standard criterion
- 3) Damage after purchase or during transportation.
- 4) Earthquake, fire, tornado, abnormal voltage, other natural disasters and twice disasters.

2、 After sale service:

- 1) when out of order, check first .Read the instruction book again.
- 2) have you any failure problem, contact with the dealer or “after sale service window、 our company office”.
- 3) repair within guarantee period: free repair for our making problem. However , “Shenghe ex-proof camera housing guarantee book” should be correctly written, or you should pay for it.
- 4) repair exceed guarantee period: pay for the fee on condition that it can maintain function after repair.

Guarantee book of Water-cooled camera housing

Customer		principal		Tel	
Add				Fax	
Type		Factory No			
Shop name		Date	Y	M	D
Add		Failure date	Y	M	D

- Failure status-

usage					
Occur time	Continuous running		when switch on		other ()
state					
Reset running					
Working time				Install place	
Power cut	Yes	No	Others abnormal	Yes	No
				Former fault	Yes (time) No

- Detailed technical data-

1	Power Voltage		6	Surround temp/indoor temp	☒ / ☒
2	Power capacity		7	vibration	Yes No
3	Distance to cotrl chamber		8	Earthing work	Yes No
4	Install seat size		9	Other company failure	Yes No
5	signal wire of cotrl circuit		10	other	

