

# W7602 PS 密封艙(單活塞)

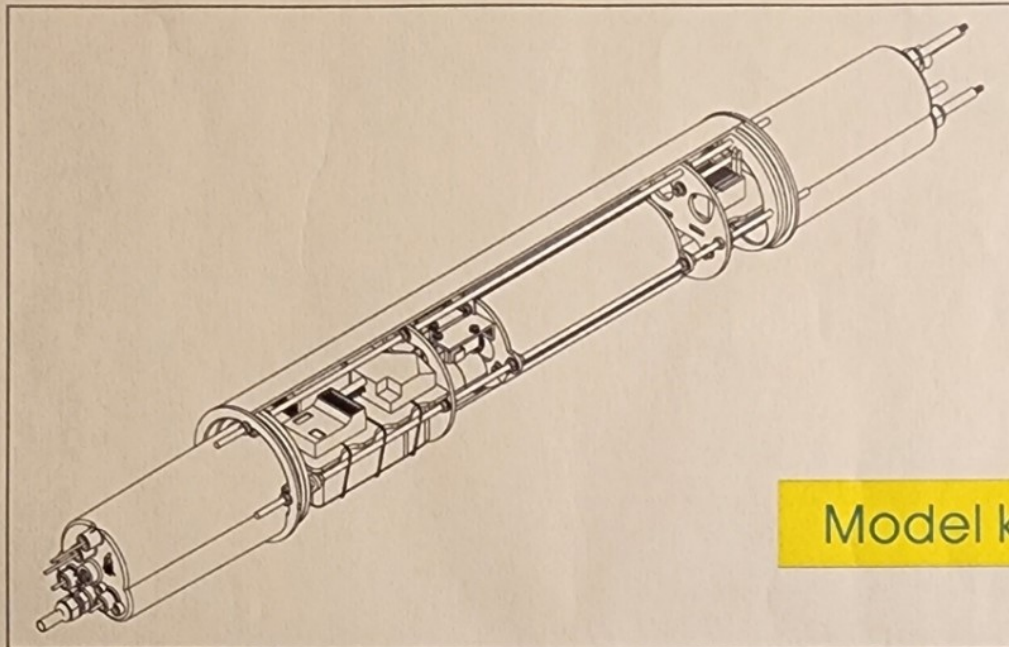
—適配德國VIIC型潛艇

## W7602 PS WTC(PISTON TANK) -FOR GERMANY TYPE VIIC SUBMARINE



ARKMODEL  
ITEM W7602 PS

### INSTRUCTION



Model kit

### A STATIC DIVING RC WTC!

Length--736 Beam--90mm **Water Volume--300ml**

This WTC is for Germany type VIIC submarine. It can also fit in similar size, double shafts submarine hull. This WTC equipped with piston tank ballast system, The WTC has large space, fit with many sockets for function update.

#### Kit intro

All parts made by inject ABS plastic/nylon, easy to assemble.

All metal parts such as running set made by CNC precision sizing.

Kit include all essential electric parts such as Piston tank & solenoid.

Kit include all rubber seal parts.

Kit include illustrated step by step instruction.

Free toolspack for assemble.

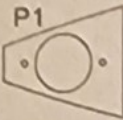
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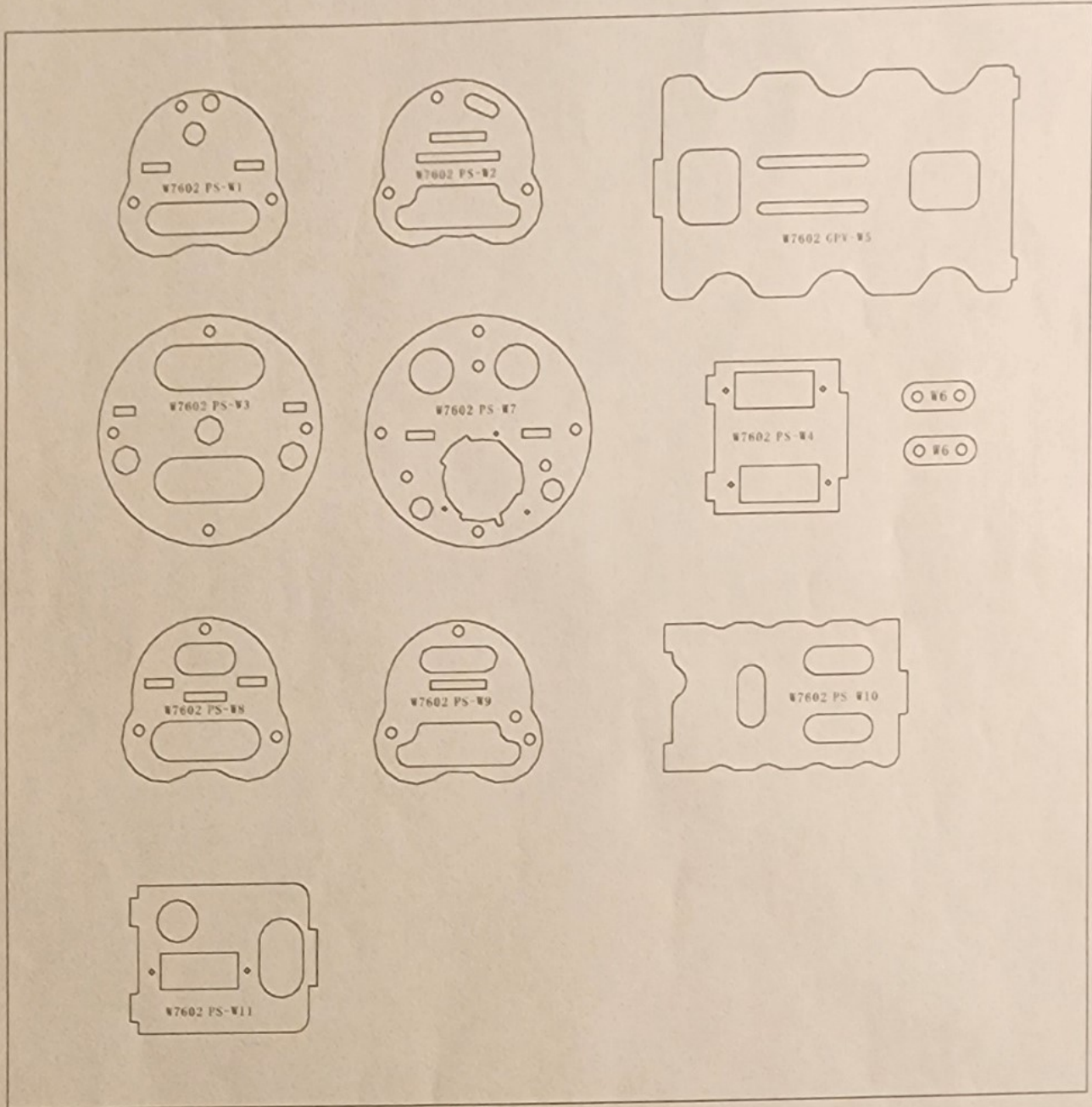
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# W7602 PS密封舱-单活塞水舱版CNC件样板 W7602 PS WTC pistontank CNC Parts





ABS 2.0mm 


ABS 3.0mm





 图标/ICON


 溶剂胶/solvent glue


 密封胶/sealant


 选择/option

 润滑油/grease

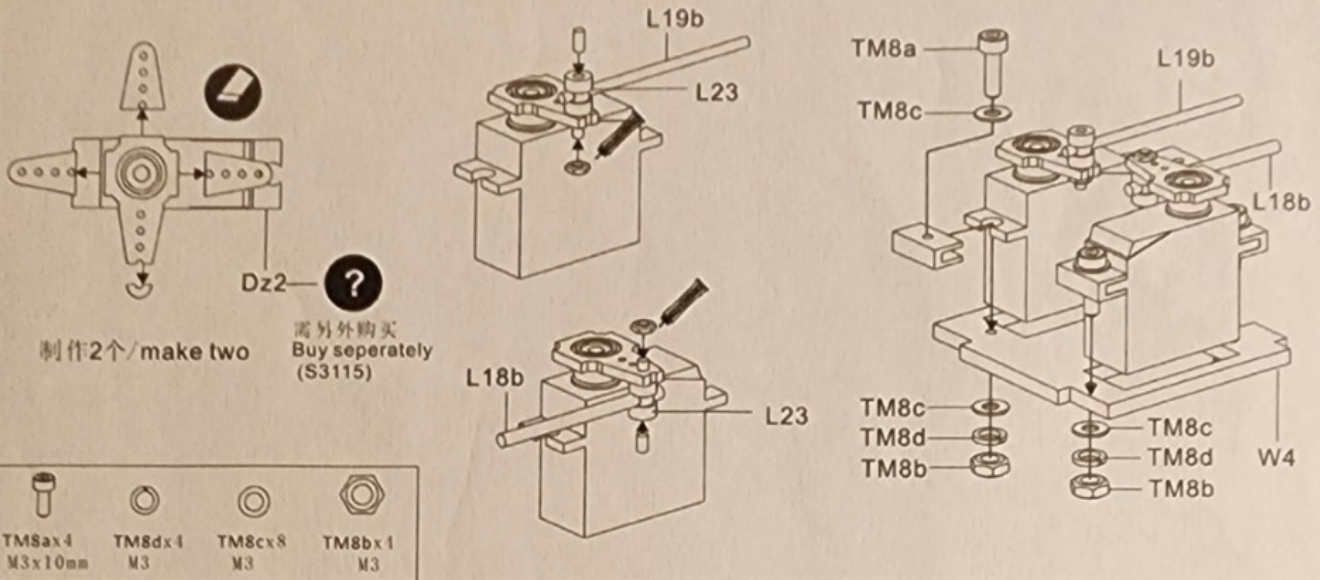
 钻孔/drill

 切除/cut

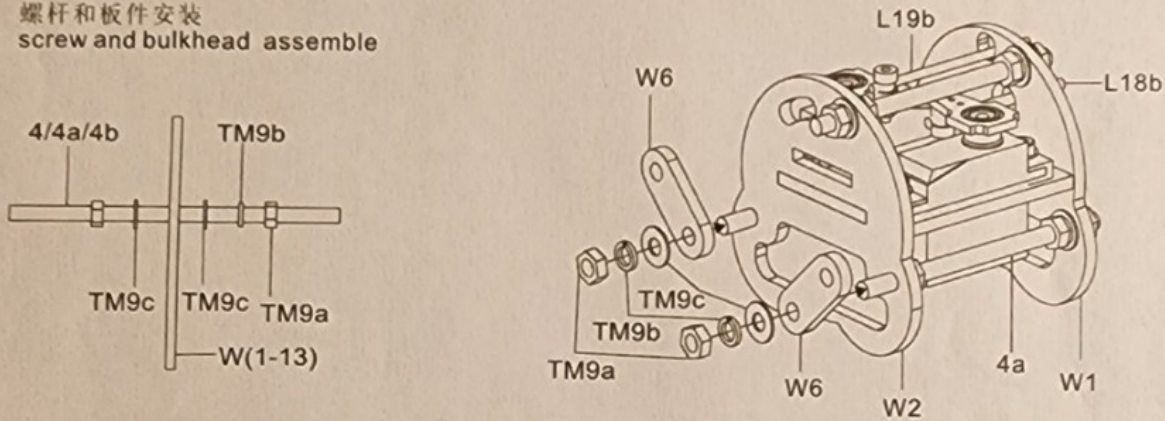
 打磨/file

 螺丝胶/thread lock

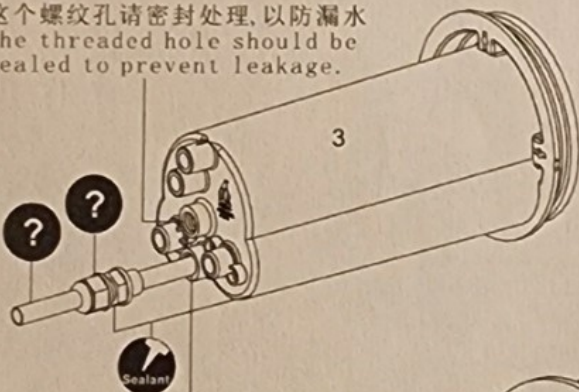
# 1 密封舱尾端盖安装/Assemble of rear endcap



## 螺杆和板件安装 screw and bulkhead assemble

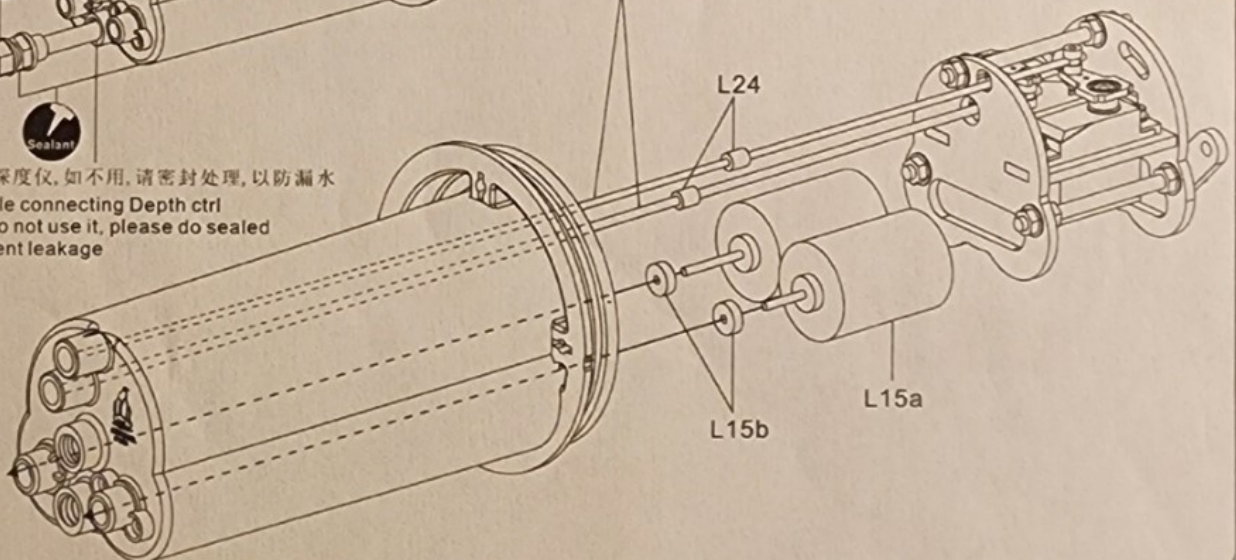


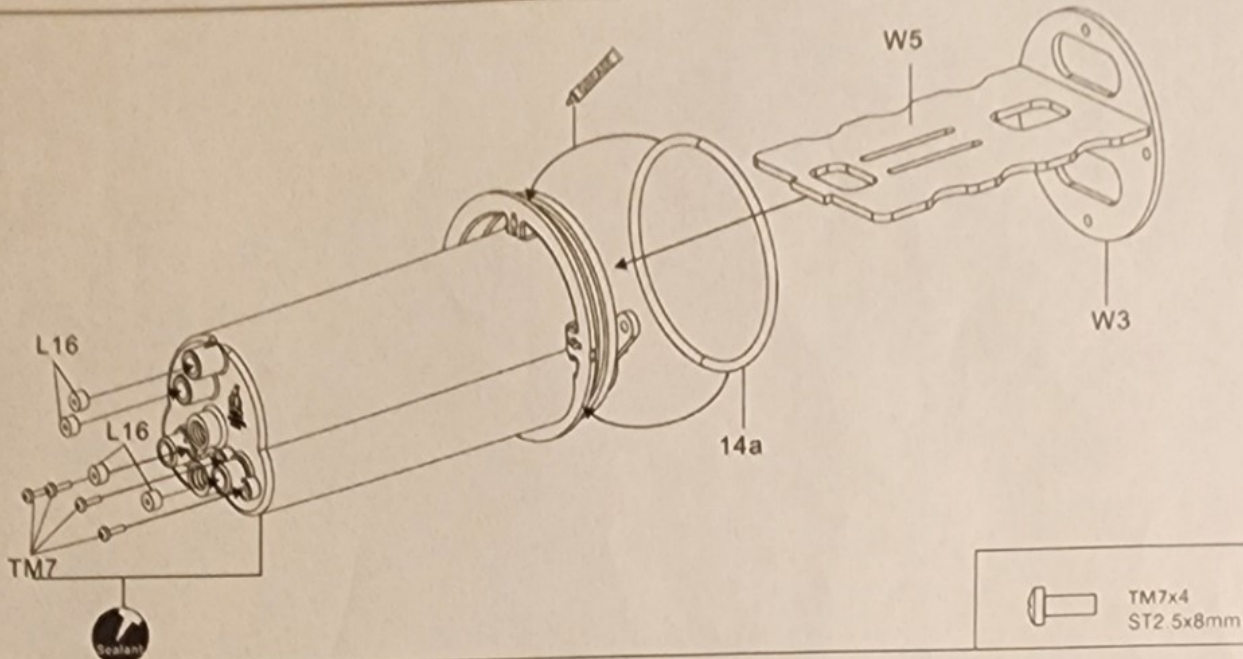
这个螺纹孔请密封处理,以防漏水  
The threaded hole should be sealed to prevent leakage.



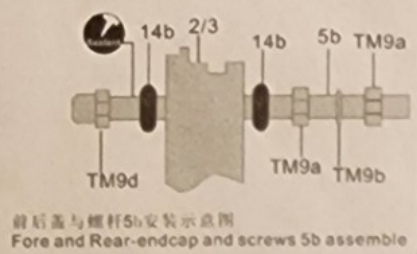
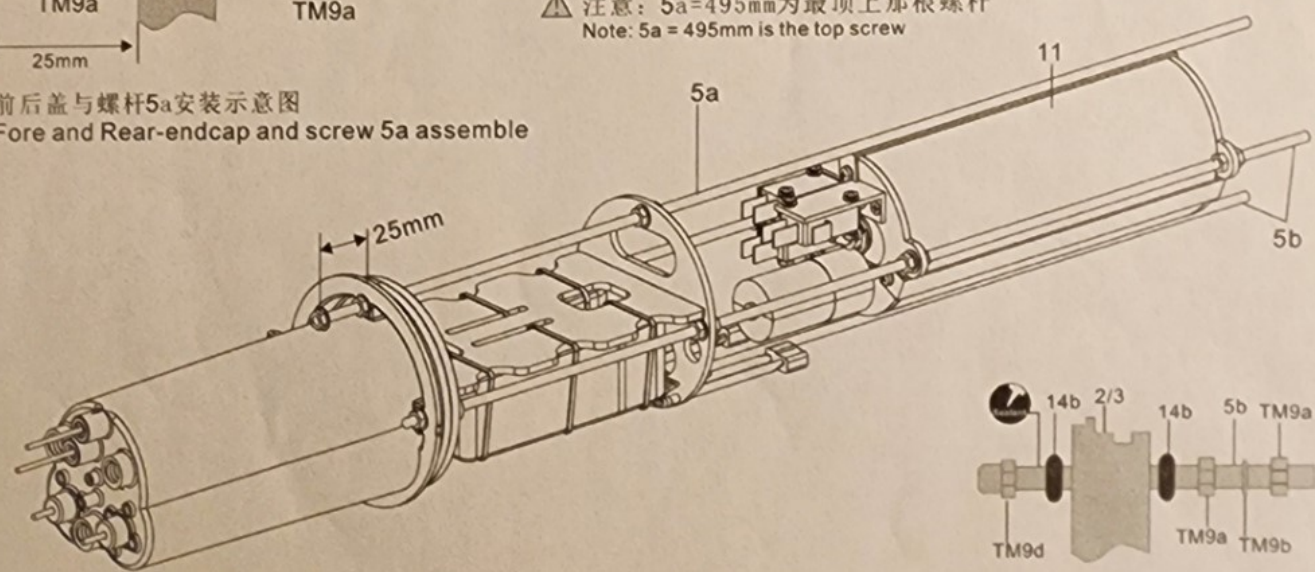
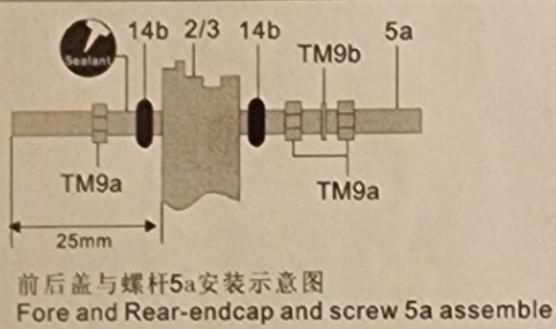
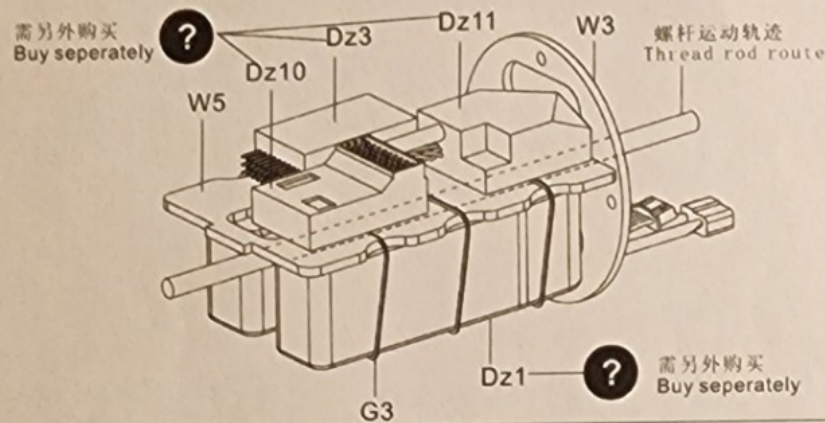
此孔连深度仪,如不用,请密封处理,以防漏水  
This hole connecting Depth ctrl  
If you do not use it, please do sealed  
to prevent leakage

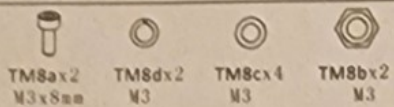
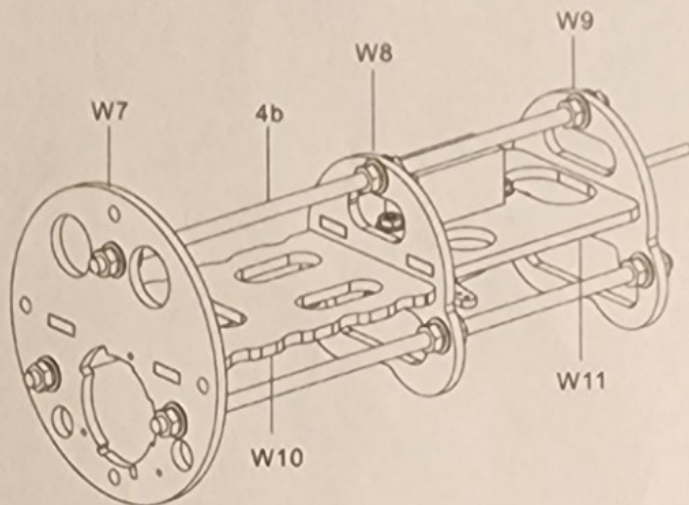
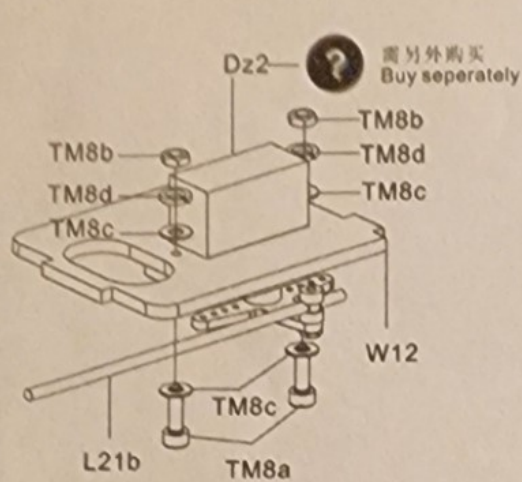
连杆两端需  
锡焊封住  
以防漏水  
The two ends of the  
connecting rod  
used in soldering seal,  
to prevent Water Leakage



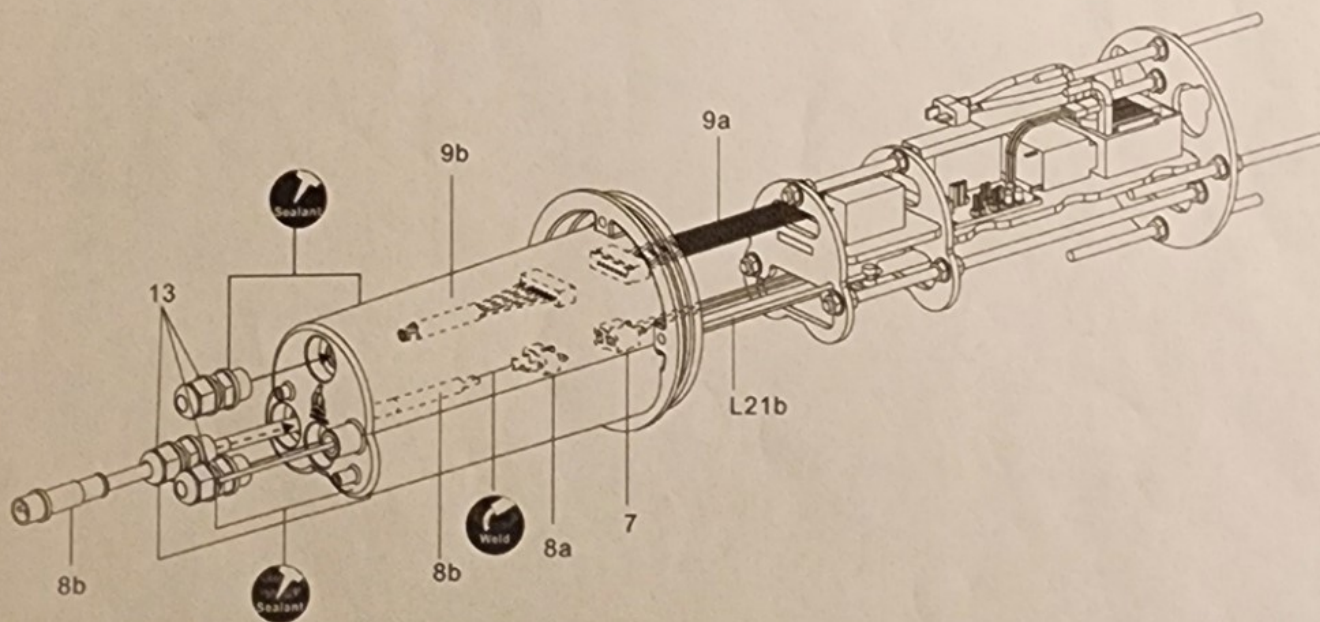
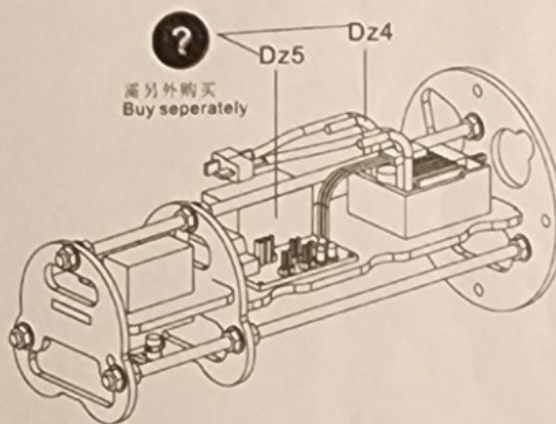
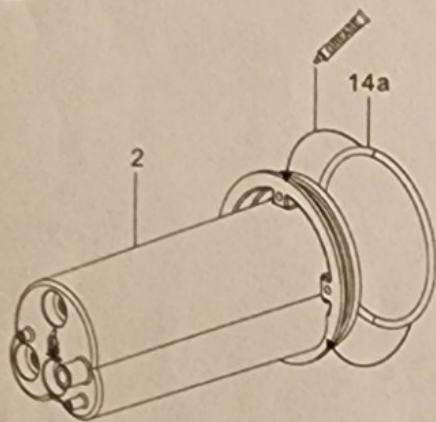


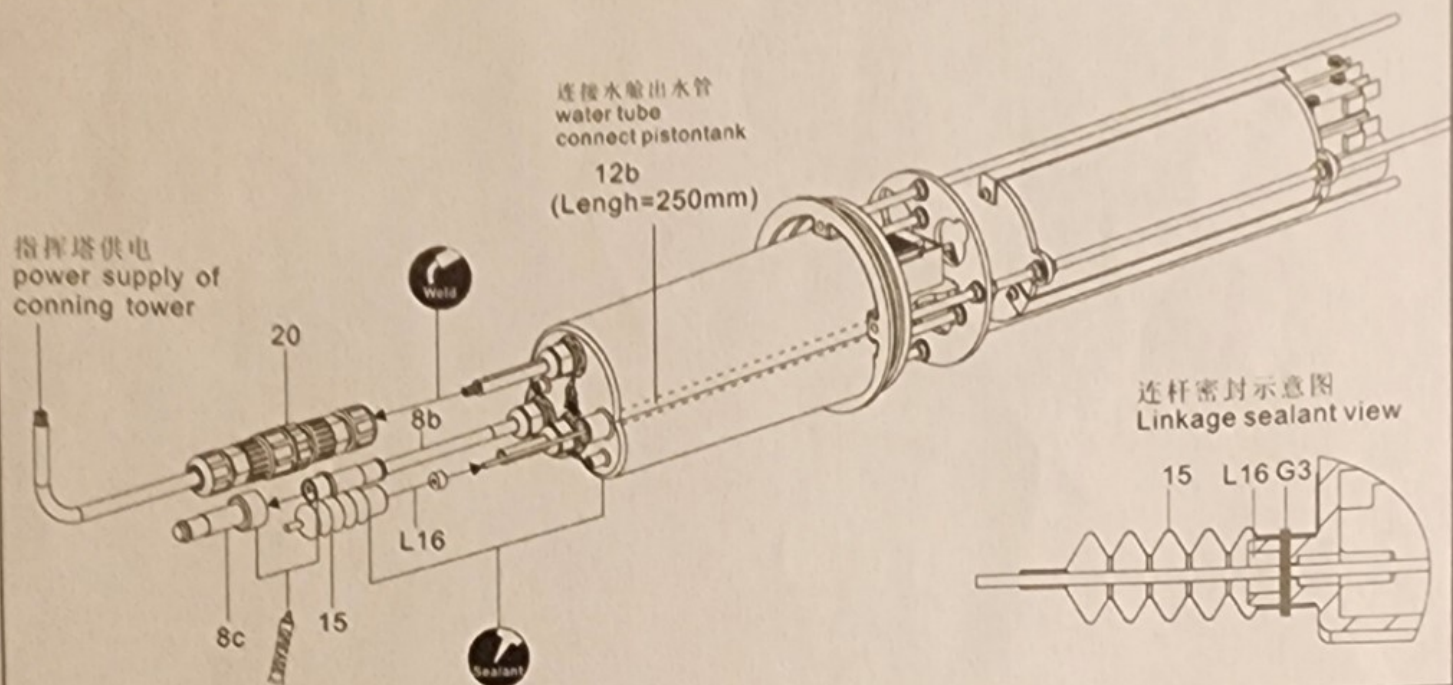
**2** 电池、电子设备安装/Battery, Electronics assemble



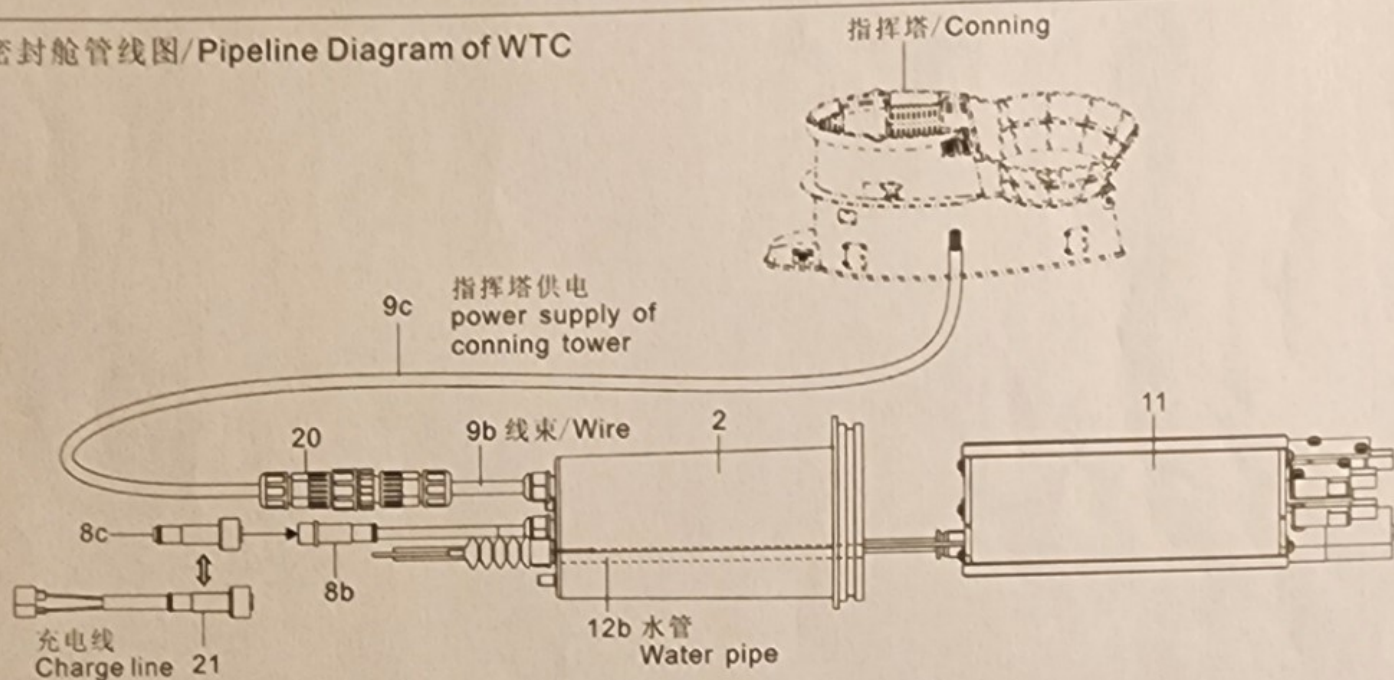


### 3 密封舱前端盖安装/Assemble of fore-endcap





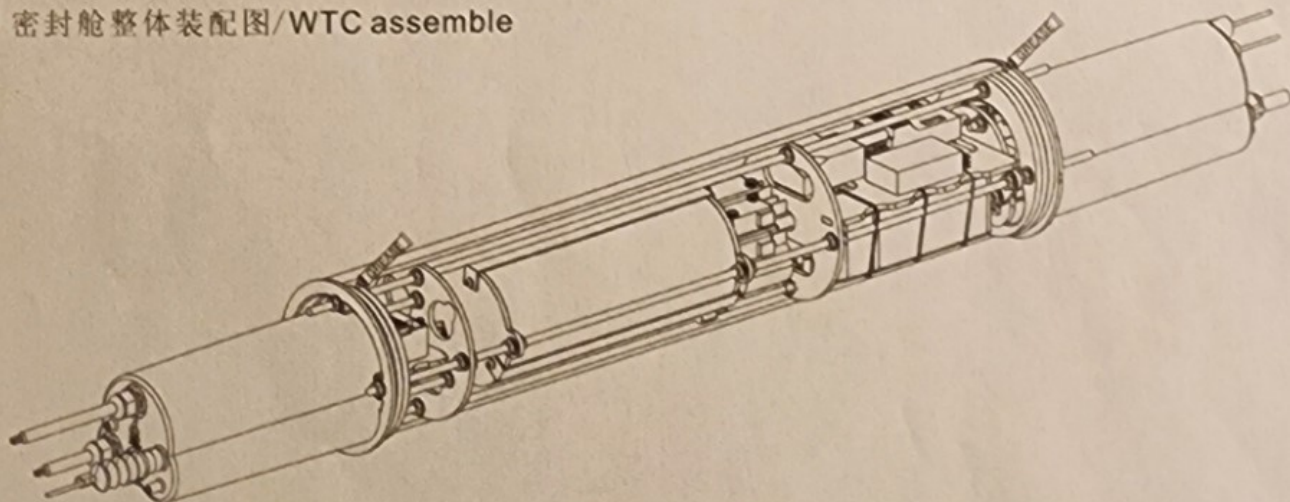
### 密封舱管线图/Pipeline Diagram of WTC



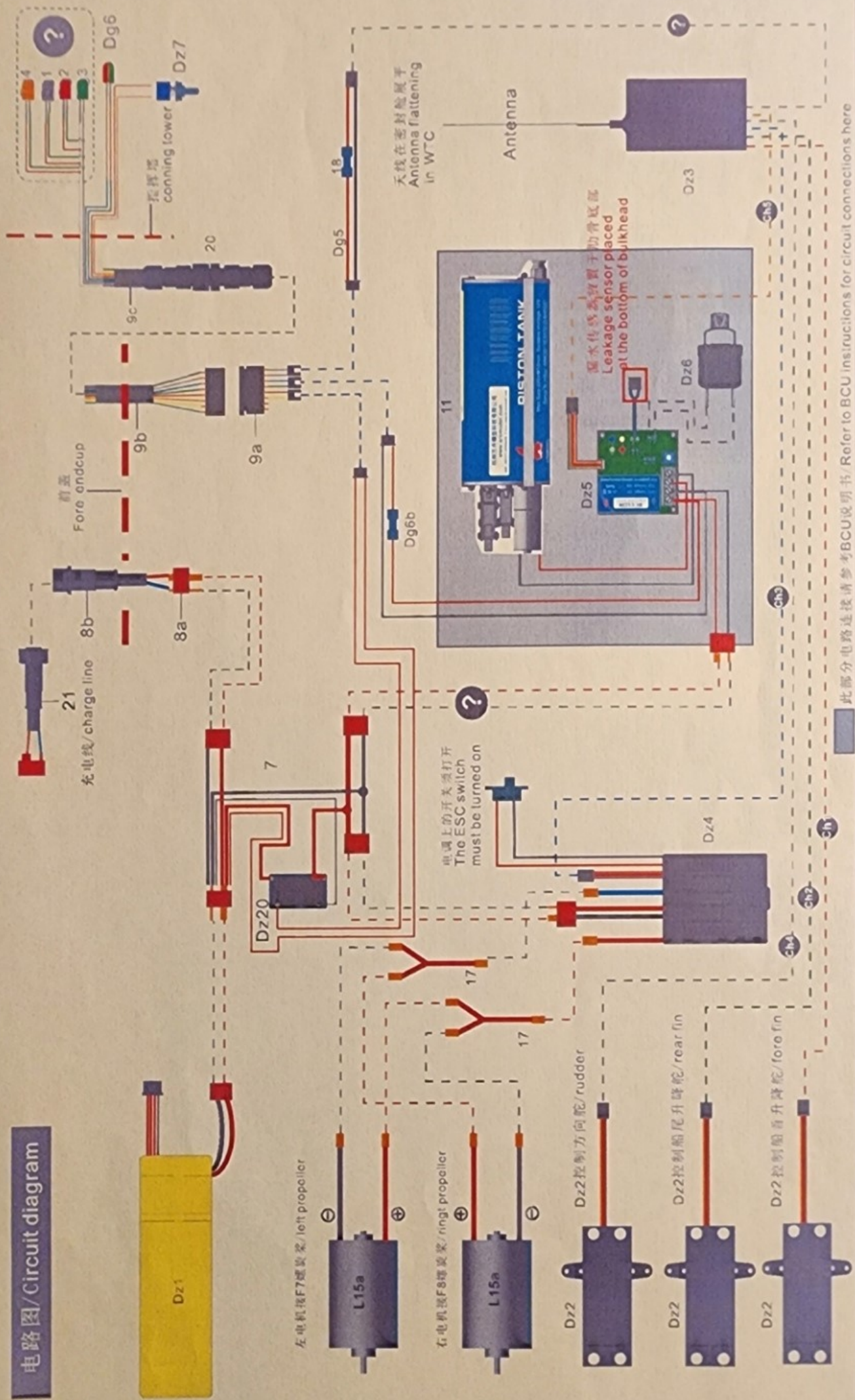
要充电时，请拔开8c，换上充电线21，  
连上充电器。充完电，请换上8c。

To recharge, please unplug 8C and replace charging line 21.  
Connect the charger. After charging, please change to 8C.

### 4 密封舱整体装配图/WTC assemble



# 电路图/Circuit diagram



- L15a 电机/motor
- Dz1 电池/battery
- Dz2 舵机/servo
- Dz3 接收机/RX
- Dz4 双向电源/ESC
- Dz5 BCU
- Dz6 压力传感器/Pressure sensor
- Dz7 防水开关/waterproof switch
- Dz11 防撞水舱/Pistontank
- 7 1档电源转速线/power supply connection
- 17 电机转速线/motor connection
- 18 电阻/resistance
- Dz8 T插头
- 8a 防水连接器/waterproof connector 8 pin
- 8b 充电线/Charge line
- Dz20 舵机/Rc/servo
- 9a 8针排线公头/8 pin plug
- 9b 8针排线母头/8 pin plug
- 9c 8芯线/8 pin
- Dz6 潜水信号灯/LED red
- Dz7 潜水信号灯/LED green
- Dz8 潜水信号灯/LED yellow
- Dz9 LED潜水灯/LED cable

VIIC型密封舱 零件列表/ TYPE VIIC WTC PARTLIST

活塞水舱型/PISTON TANK



SCALE:1/48

ITEM:W7602 PS

编号/No.	名称/Name	规格	材料/Material	工艺/Craft	数量/Qty	检查/Check
<b>印刷类/print</b>						
	BCU说明书/BCU manual			印刷/print	1	[ ][ ][ ][ ]
	WTC说明书/WTC manual			印刷/print	1	[ ][ ][ ][ ]
	包装盒(内尺寸)/box	1000x200x230mm	瓦楞纸板/tile cardboard		1	[ ][ ][ ][ ]
<b>DI 动力系统部分</b>						
L10a	垂直舵摇臂	L型/type L		注塑/inject	1	[ ][ ][ ][ ]
L10b	垂直舵摇臂	I型/type I	ABS	注塑/inject	1	[ ][ ][ ][ ]
L5c	主轴/shaft C	φ4x13mm	不锈钢棒	车削	2	[ ][ ][ ][ ]
L15a	380电机/motor	输出轴长20mm	或型芯齿轮电	定制	2	[ ][ ][ ][ ]
L15b	电机油封/ball bearing	φ2.3xφ9x3mm	滚珠轴承	采购/purchase	2	[ ][ ][ ][ ]
L16	U型密封圈/sealed rubber(U)	φ2xφ7x4mm		采购/purchase	5	[ ][ ][ ][ ]
L17a	万向节a/gimbal a	2.3mm 转 4mm		采购/purchase	2	[ ][ ][ ][ ]
L17b	万向节b/gimbal b	4mm 转 4mm		采购/purchase	2	[ ][ ][ ][ ]
L18a	舵水平舵连杆a/r linkage rod a	φ2 x 100mm	铜棒/brass		1	[ ][ ][ ][ ]
L18b	舵水平舵连杆b/r linkage rod b	φ2 x 280mm	铜棒/brass		1	[ ][ ][ ][ ]
L19a	舵垂直舵连杆a/rudder linkage rod a	φ2 x 150mm	铜棒/brass		1	[ ][ ][ ][ ]
L19b	舵垂直舵连杆b/rudder linkage rod b	φ2 x 270mm	铜棒/brass		1	[ ][ ][ ][ ]
L20	摇臂连杆/arm linkage rod	φ2 x 40mm	铜棒/brass		1	[ ][ ][ ][ ]
L21a	舵水平舵连杆a/fr linkage rod a	φ2 x 100mm	铜棒/brass		1	[ ][ ][ ][ ]
L21b	舵水平舵连杆b/fr linkage rod b	φ2 x 135mm	铜棒/brass		1	[ ][ ][ ][ ]
L22	连杆夹环/linkage rod ring	φ4mm (需3x3紧钉)			3	[ ][ ][ ][ ]
L23	连杆快速接头/linkage rod mount			采购/purchase	7	[ ][ ][ ][ ]
L24	连杆油封/linkage rod bearing	φ5xφ2x6mm	含油轴承	采购/purchase	5	[ ][ ][ ][ ]
<b>1 密封舱/hull main tube</b>						
1	密封舱/hull main tube	φ90x84x440mm	透明管		1	[ ][ ][ ][ ]
<b>2 前舱盖/fr endcap</b>						
2	前舱盖/fr endcap		ABS	注塑inject	1	[ ][ ][ ][ ]
<b>3 后舱盖/r endcap</b>						
3	后舱盖/r endcap		ABS	注塑inject	1	[ ][ ][ ][ ]
<b>4a 螺杆/stand screw</b>						
4a	螺杆/stand screw	Φ4x65mm	不锈钢/s-steel		3	[ ][ ][ ][ ]
<b>4b 螺杆/stand screw</b>						
4b	螺杆/stand screw	Φ4x165mm	不锈钢/s-steel		3	[ ][ ][ ][ ]
<b>5a 螺杆/screw rod</b>						
5a	螺杆/screw rod	Φ4x495mm	不锈钢/s-steel		1	[ ][ ][ ][ ]
<b>5b 螺杆/screw rod</b>						
5b	螺杆/screw rod	Φ4x455mm	不锈钢/s-steel		3	[ ][ ][ ][ ]
<b>7 电源转接线/power supply connect</b>						
7	电源转接线/power supply connect	1转3 含1拖2电池并联线(2公头)	焊接	焊继电器	1	[ ][ ][ ][ ]
<b>8a T插公头</b>						
8a	T插公头		焊接		1	[ ][ ][ ][ ]
<b>8b 防水连接器含线</b>						
8b	防水连接器含线	2芯0.3平方	公头		1	[ ][ ][ ][ ]
<b>8c 防水连接器含线</b>						
8c	防水连接器含线	割掉线密封	当堵头用		1	[ ][ ][ ][ ]
<b>9a 8针排插连排线</b>						
9a	8针排插连排线	L400mm 公头	焊接		1	[ ][ ][ ][ ]
<b>9b 8芯线a连排插</b>						
9b	8芯线a连排插	L400mm 母头	焊接		1	[ ][ ][ ][ ]
<b>9c 8芯软线</b>						
9c	8芯软线	规格8*0.35, 外直径6.15MM				[ ][ ][ ][ ]
<b>11 63活塞水舱/piston tank</b>						
11	63活塞水舱/piston tank	出水口改直头			1	[ ][ ][ ][ ]
<b>12b 水管b/water tube b</b>						
12b	水管b/water tube b	φ6x4xL250mm	透明硬管		1	[ ][ ][ ][ ]
<b>13 M10葛兰头/M10 Waterproof screwlock</b>						
13	M10葛兰头/M10 Waterproof screwlock			采购/purchase	5	[ ][ ][ ][ ]
<b>14a O型圈a/O-ring a</b>						
14a	O型圈a/O-ring a	外径70x线径4	橡胶/rubber	采购/purchase	2	[ ][ ][ ][ ]
<b>14b O型圈b/O-ring b</b>						
14b	O型圈b/O-ring b	外径7x1.9mm	橡胶/rubber	采购/purchase	20	[ ][ ][ ][ ]
<b>15 风琴套/w-seal</b>						
15	风琴套/w-seal		橡胶/rubber	采购/purchase	3	[ ][ ][ ][ ]
<b>16 压载物/ballast</b>						
16	压载物/ballast	60g	锌合金/zin-alloy		14	[ ][ ][ ][ ]
<b>17 电机电源线/motor connect wire</b>						
17	电机电源线/motor connect wire	L350mm	Y线	焊接	2	[ ][ ][ ][ ]
<b>18 1K电阻/resistance</b>						
18	1K电阻/resistance				4	[ ][ ][ ][ ]
<b>20 M14防水航空插头/Waterproof</b>						
20	M14防水航空插头/Waterproof	8芯			1	[ ][ ][ ][ ]
<b>21 防水连接器含线</b>						
21	防水连接器含线	带T插	充电线		1	[ ][ ][ ][ ]
<b>22 螺杆避让管</b>						
22	螺杆避让管	14x12x60mm	PVC		1	[ ][ ][ ][ ]

**CNC切割**

	激光切割(防水开关板)	2MM	ABS	CNC	1	[ ][ ][ ][ ]
W	激光切割	3MM	ABS	CNC	w1-w1	[ ][ ][ ][ ]



B	双O圈贴纸	4MM	ABS				
---	-------	-----	-----	--	--	--	--

TM 紧固标准件							
TM7	电机固定螺丝/screw	2.5x8mm	不锈钢/s-steel	标准件	4		
TM8a	舵机固定螺丝/servo screw	3x10mm内六角	不锈钢/s-steel	标准件	6		
TM8b	舵机固定螺帽/servo nut	3mm	不锈钢/s-steel	标准件	6		
TM8c	舵机固定垫片/servo washer	3mm	不锈钢/s-steel	标准件	12		
TM8d	舵机固定弹簧垫片/servo spring	3mm	不锈钢/s-steel	标准件	6		
TM9a	六角螺帽/nut	4mm	不锈钢/s-steel	标准件	62		
TM9b	弹簧垫片/spring washer	4mm	不锈钢/s-steel	标准件	31		
TM9c	垫片/washer	4x7.8x0.6mm (M4窄边)	不锈钢/s-steel	标准件	62		
TM9d	装饰螺帽	4mm	不锈钢/s-steel	标准件	6		
TM10	防水开关螺丝/switch screw	M2*5mm	盘头自攻		2		
TM12	水舱固定螺丝/screw	ST2.9x6.5			3		

DG 灯光系统/light system							
DG5	灯光系统排线b/LED cable b	L150mm			1		
DG6	潜浮信号灯/submerge indicator		LED3.0	红绿双色	1		
DG6b	潜浮信号灯排线/submerge indicator cable b				1		

DZ 电子设备/ELECTRONICS							
DZ1	电池/battery	11.1V锂电			2		
DZ2	舵机/servo	S3115			3		
DZ3	接收机/RX				1		
DZ4	电调/ESC	华迈双向电调			1		
DZ5	BCU				1		
DZ6	压力传感器/pressure sensor				1		
DZ7	防水开关/waterproof switch				1		
DZ8	鱼雷控制/torpedo controller				1		
DZ9	无刷电调/ESC(for brushless motor)				1		
DZ10	自动水平仪/Pitch Ctrl				1		
DZ11	自动深度仪/Depth Ctrl				1		
DZ12	充电插头/charge socket				1		
DZ13	UBEC				1		
DZ18	失控保护/Failsafe				1		
DZ20	继电器/relay	BCU版用	选用		1		

#### 豪华升级件/LUXURY PACKAGE

	水下摄影系统/under water camera system						
	桅杆升降系统/mast elevation system						

#### TOOLPACK

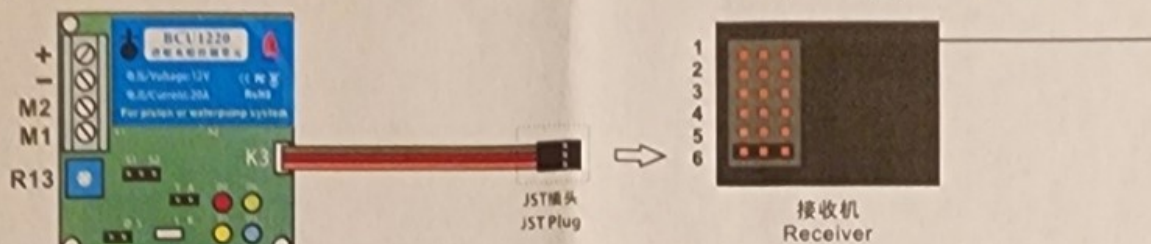
G1	M1.5内六角扳手/1.5mm inner hexagon spanner				1		
G2	M2.5内六角扳手/2.5mm inner hexagon spanner				1		
G3	尼龙扎带/nylon band				若干		
G4	M5.5转7六角扳手/8mm hexagon spanner				1		
	906小包装胶水/906 sealant				1		
	ABS小包装胶水/101 glue				1		

检验员

蓝色区域为可选部件/Blue field is option parts

## ► Connection And Operation Of The Remote Control Device

On the remote control device to select a three-stage switch(stick) corresponding channel (eg.6 channel), the BCU's K3 jack receiver remote control device corresponding jack (such as 6 channel).



- 1. Toggle the three-stage switch(stick) to the top end(empty mode), the water tank is empty and automatic stop in the end.
- 2. Toggle the three-stage switch(stick) to the lower end(filling mode), start filling water tanks.
- 3. Toggle the three-stage switch(stick) to the neutral position(stop mode), water tank motor is stopped, which water can be fill in any percentage.
- 4. Again toggle the three-stage switch(stick) to the lower end(filling mode), start filling water to tank, water fill in to 85% and automatic stop.
- 5. Toggle the three-stage switch(stick) to the neutral position(stop mode).
- 6. Second times toggle the three-stage switch(stick) to the lower end(filling mode). water fill in to 100% and automatic stop.
- 7. Toggle the three-stage switch(stick) to the top end(empty mode), the water tank is empty and automatic stop in the end.

**Notice:** connect S2 jumper, toggle the three-stage switch(stick) from down to up, for the first time will stop at 85%, you need toggle switch to neutral position then to the top end again in order to completely empty the water tank 100%.

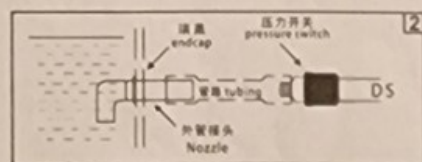
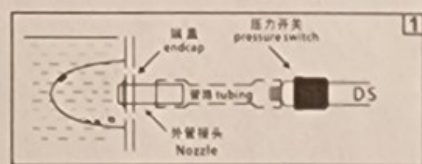
## ► Protection And Lighting Instructions

1. Red LED(D2), indicating that the main 12V low voltage, the voltage threshold can be adjusted by low battery monitor R13. Red LED(D2) more than five seconds, automatically switch to emptying mode, the piston back to 0%, the water tank is empty.
2. Green LED(D6), it means remote control signal is good, when the green LED(D6) is off, the signal is lost, automatically switch to emptying mode, the piston back to 0%, the water tank is empty.
3. Yellow LED(D1) flashing, indicating that the pressure switch DS activated, automatically switches to emptying mode, the piston back to 0%, the water tank is empty.
4. Blue LED(D5) flashing, indicating Leaking Sensor LK activated, automatically switches to emptying mode, the piston back to 0%, the water tank is empty.

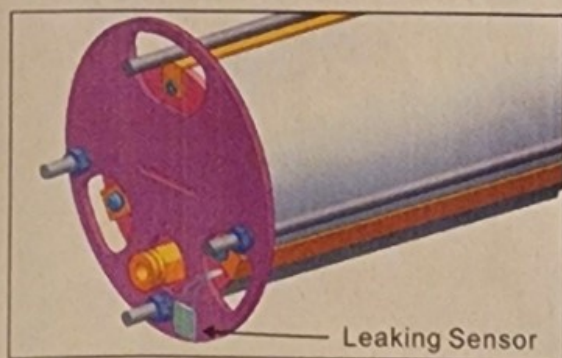


## ► Sensor Installation

1. Pressure switch installation: Pressure switch can be mounted anywhere inside the hull(WTC), let silicone tube be leveled, and the tube is connected to the bow endcap's nozzle, pay attention to water leak at the nozzle. The nozzle should be connect the outside and touch water, so the pressure switch can sense the depth of water pressure. For avoid additional errors pressure (such as head-flow pressure), single hull submarines(without WTC), please using an external elbow, avoid direct water pressure impact pipelines. For a double hull submarine(with WTC) because the internal hull can block the water flow, the nozzle can be directly facing forward.



2. Leaking Sensor Installation: Leaking Sensor can be glued anywhere in the WTC, normally on the bulkhead lower position near the bow), so it can sense inlet water droplets easily.



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