

PEID BY: 15/1/2011  
 WATER BALL SYSTEM Bilge System  
 Lenzenystem  
 SEWAGE SYSTEM Fäkalienystem  
 Fire System  
 SEA COOL WATER SYSTEM Seekühlsystem

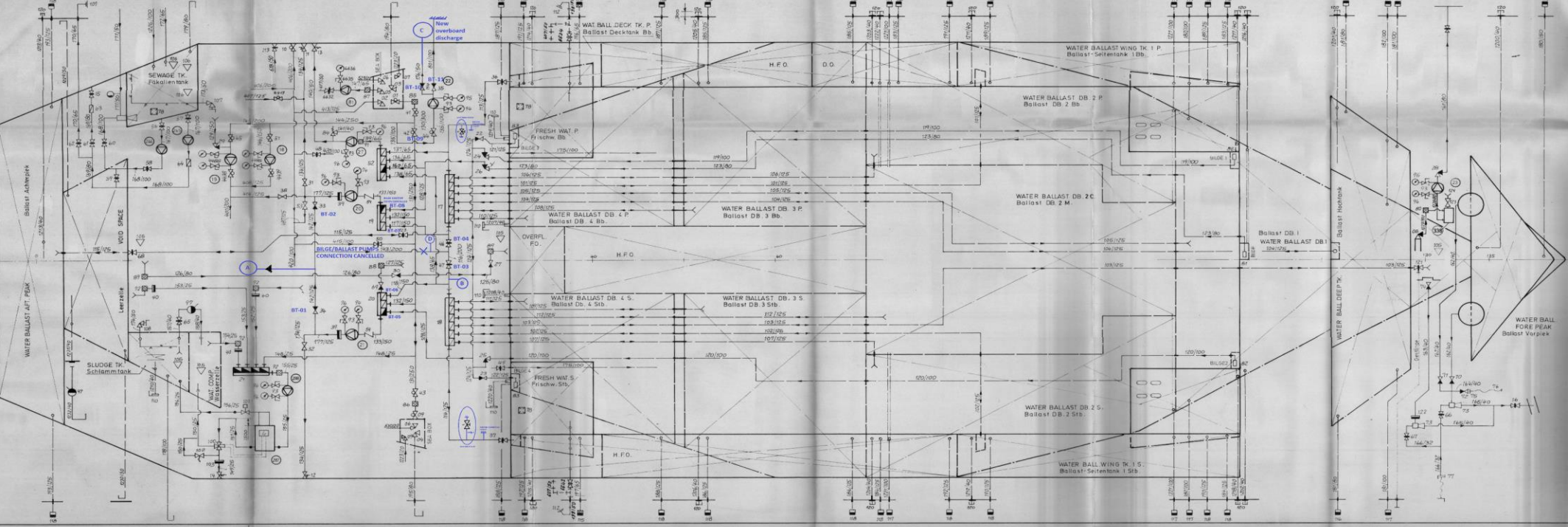
ALL VALVES OF THIS SYSTEM HAVE THE PRE NUMBER IN THE LIST(101,102)  
 Alle Armaturen dieses System haben die Pre-Nummer in der Liste(101,102)  
 nicht aufgeführt werden. 11.11.11 12.11.11

- NUMBER OF ENGINE ROOM ARRANGEMENT Nummer der Maschinenraum-Einrichtung
- CONNECTION POINT Anschlusspunkt
- ▽ LEVEL SENSOR Niveaugeber
- PRESSURE SENSOR Druckgeber

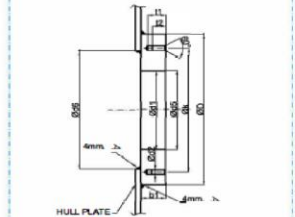
NO	DESCRIPTION	WERT
138	SUCTION PUMP Saugpumpe	
288	BILGE PUMP BW 5 Leertpumpe B.W.E	Ku Wo L10 1,0 m³/h-2,0 bar
289	BILGE WATER SEPARATOR Bilgewater Entleer	Heishm HMS 100 1,0 m³/h
245	SEWAGE PUMP 2 Fäkalienpumpe 2	Her 5,5 4,0 m³/h-1,0 bar
244	Fäkalienpumpe 1	Her 5,5 4,0 m³/h-1,0 bar
81	SEA-WATER TRANSFER PUMP FWG Seewasser Transferpumpe FW E	Aifs CNL 48-10/200
27	BILGE & BALL SUMP PUMP Leert u. Restballastpumpe	Behrens S-575 14 m³/h-2,0 bar
23	FIRE PUMP 1 Feuerlöschpumpe 1	Behrens M-S60-T0 35 m³/h-5,2 bar
22	FIRE PUMP 2 Feuerlöschpumpe 2	Behrens SPN 80A 55 m³/h-5,2 bar
21	BILGE-BALLAST PUMP Leert u. Ballastpumpe	Behrens VWR 3/350 160 m³/h-2,2 bar
20	BILGE-BALL & RES SEA C.W. PUMP Leert-Ballast u. Seewasser Pumpe	Behrens VWR 3/350 210 m³/h-1,5 bar
19	SEA COOL WATER PUMP Seewasserpumpe	Behrens VWR 3/350 210 m³/h-2,2 bar
18	SEA COOL WATER PORT SERVICE PP Seewasser-Hotellieferpumpe	Behrens VWR 3/350 100 m³/h-1,5 bar

APPROVED BY: J. J. SITAS KG  
 DATE: 9.7.1990  
 SCALE: 1:100

SCHEME OF BILGE & BALLAST SYST.  
 129.04-480.01



NEW WELDING FLANGE FOR OUTBOARD CONNECTION  
 DIN 86041



PIPE	FLANGE	SCREWS
DN	d1 D D	s1 d6 k pos. d2 l1 G
DN100	114.3 115.9 220	s1 134.3 180 s 8 M16 23 17

SEA WATER PIPE SCANTLINGS FOR NEW PIPES

NOMINAL DIAMETER	EXTERNAL DIAMETER	NOMINAL THICKNESS	REINFORCED THICKNESS
DN15	21.3	3.2	-
DN20	26.8	3.2	-
DN25	33.7	3.2	-
DN32	42.4	3.6	6.3
DN40	48.3	3.6	6.3
DN50	60.3	4.0	6.3
DN60	76.1	4.5	6.3
DN80	88.3	4.5	7.1
DN100	114.3	4.8	8
DN125	159.7	4.8	8
DN150	188.3	4.8	8.8
DN200	219.1	5.0	8.8
DN250	273.1	6.3	8.8
DN300	323.9	6.3	8.8
DN350	378.6	6.3	8.8

BWT INSTALLATION NOTES:

- By Pass:  
 1. CV102-01 is Man By-Pass valve. This valve is to be open when BWT unit is out of order within the knowledge of port authority or in emergency cases like damage.  
 2. By pass valve CV102-01 open/close signal cables for status information shall be connected to BWT unit control and monitoring system. This is necessary to enable logging and alarm purposes if when BWT is by-passed.  
 Gravity flow and discharge overboard:  
 3. Check valves added for preventing gravity flow.  
 Internal Transfer Mode:  
 4. No internal transfer operation assumed with out using BWT unit.  
 General:  
 5. Only one Ballast pump can be used while ballasting and de-ballasting in order not to exceed the BWT capacity of 130 m³.  
 6. QPIS and if alarm monitoring system is available, connections will be done according to BWT unit design guide.  
 Ballast Pump for Bge Purpose:  
 7. If ballast pump (BEL 119), high-ballast pump (BEL 116), sea ejector of ballast pump (BLE 127) need to be use for bilge purpose for emergency cases, Ballast Water Treatment system is to be by-passed by using valve CV102-01. After the emergency operation flushing must be done before using BWT. For cleaning pipe line run ballast pumps at least 3 minutes from sea chest to overboard by using by pass valve.  
 8. Notes all Item 7 is to be located as a sign near pumps.  
 9. Use bilge ejector (BLE 128) and Hold Ejector lockout tag discharge.

ADDITIONAL LIST OF VALVE FOR BALLAST WATER TREATMENT SYSTEM

CODE	TYPE	DIA	MATERIAL	PRES.	DESCRIPTION
BT-01	DUAL CHECK VALVE	DN25	G225	PN10	
BT-02	DUAL CHECK VALVE	DN25	G225	PN10	
BT-03	DUAL CHECK VALVE	DN25	G225	PN10	
BT-04	DUAL CHECK VALVE	DN25	G225	PN10	
BT-05	DUAL CHECK VALVE	DN150	G225	PN10	
BT-06	DUAL CHECK VALVE	DN150	G225	PN10	
BT-07	DUAL CHECK VALVE	DN150	G225	PN10	
BT-08	DUAL CHECK VALVE	DN150	G225	PN10	
BT-09	DUAL CHECK VALVE	DN80	G225	PN10	
BT-10	DUAL CHECK VALVE	DN60	G225	PN10	
BT-11	GLOBE CHECK VALVE	DN100	G225	PN10	
BT-12	DUAL CHECK VALVE	DN150	G225	PN10	
BT-13	BALL VALVE	DN32	G225	PN10	
BT-14	BUTTERFLY VALVE	DN40	G225	PN10	
BT-15	BUTTERFLY VALVE	DN150	G225	PN10	
BT-16	BALL VALVE	DN25	G225	PN10	
BT-17	BALL VALVE	DN25	G225	PN10	
BT-18	BALL VALVE	DN15	G225	PN10	
BT-19	BALL VALVE	DN15	G225	PN10	
BT-20	BALL VALVE	DN15	G225	PN10	
BT-21	DUAL CHECK VALVE	DN80	G225	PN10	

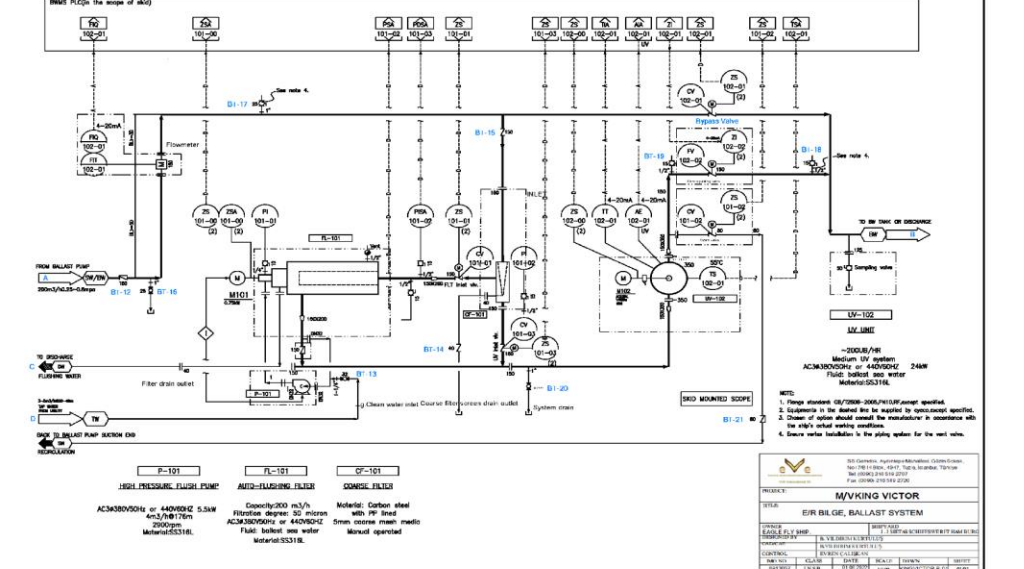
PIPE SCANTLING

PIPE SCANTLING	PIPE SCANTLING
DN	DN
DN15	21.3
DN20	26.8
DN25	33.7
DN32	42.4
DN40	48.3
DN50	60.3
DN60	76.1
DN80	88.3
DN100	114.3
DN125	159.7
DN150	188.3
DN200	219.1
DN250	273.1
DN300	323.9
DN350	378.6

LIST OF SYMBOL

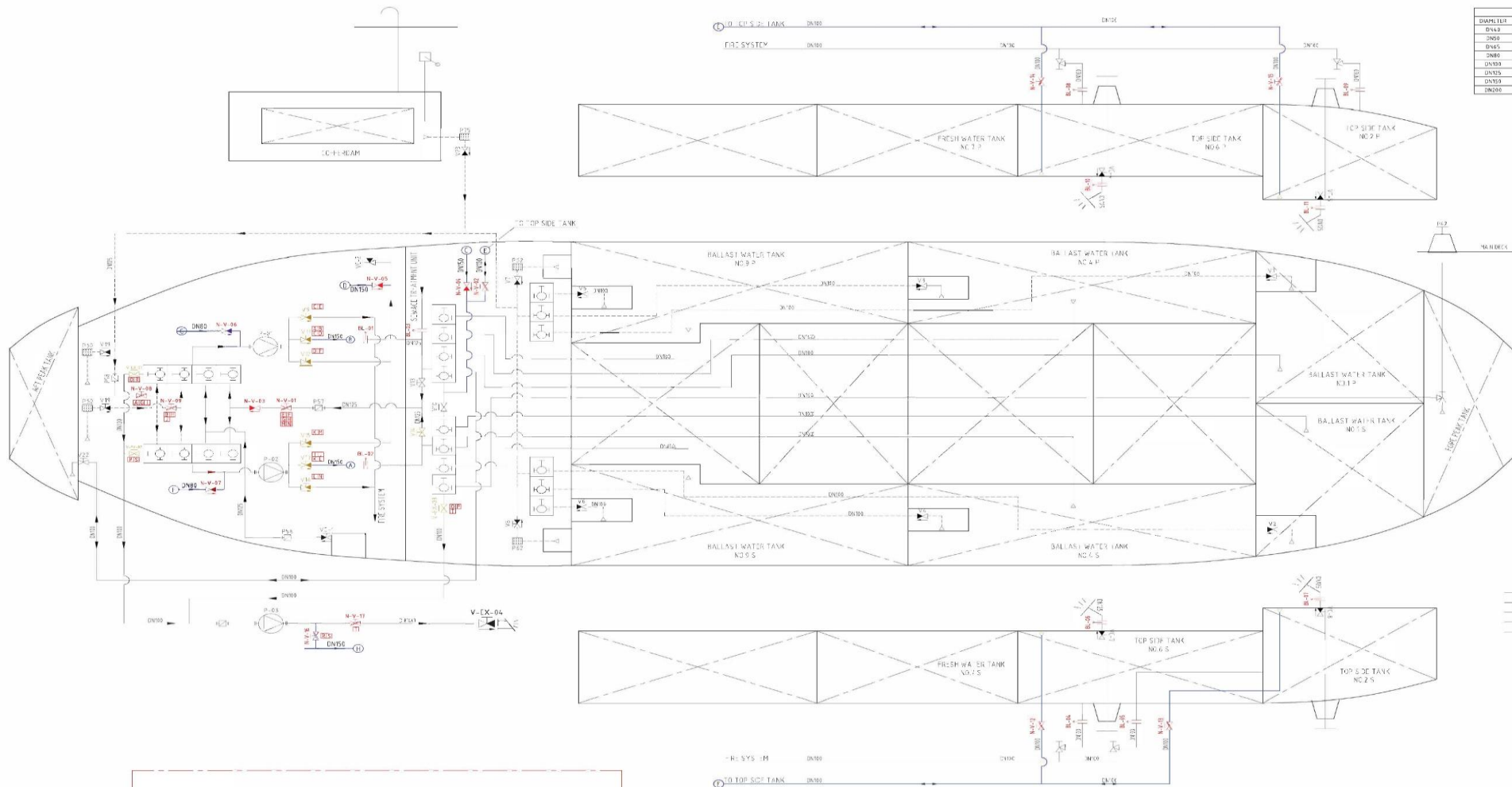
SYMBOL	DESCRIPTION
[Pump Icon]	PUMP
[Valve Icon]	VALVE
[Ballast Pump Icon]	BALLAST PUMP (UNMANNED BYEN)
[Strainer Icon]	STRAINER
[Gate Valve Icon]	GATE VALVE
[Ball Valve Icon]	BALL VALVE
[Butterfly Valve Icon]	BUTTERFLY VALVE
[Globe Check Valve Icon]	GLOBE CHECK VALVE
[Check Valve Icon]	CHECK VALVE
[Globe Valve Icon]	GLOBE VALVE
[Angle Type Globe Valve Icon]	ANGLE TYPE GLOBE VALVE
[Handle Type Globe Check Valve Icon]	HANDLE TYPE GLOBE CHECK VALVE
[Suction Icon]	SUCTION
[Reduction Icon]	REDUCTION
[Mechanical Remote Control Icon]	MECHANICAL REMOTE CONTROL
[Interconnection Valve Between Wings Icon]	INTERCONNECTION VALVE BETWEEN WINGS
[Hand And Solar Radiation Valve Icon]	HAND AND SOLAR RADIATION VALVE
[Pressure Indicator Icon]	PRESSURE INDICATOR

BWT SYSTEM P&ID



NOTES:  
 1. Range indicator QV1020-004/PI/Range indicator.  
 2. Equipment is to be tested for compliance specified.  
 3. Detail of option should consult the manufacturer in accordance with the data sheet and specifications.  
 4. Secure valve installation in the piping system for the valve.

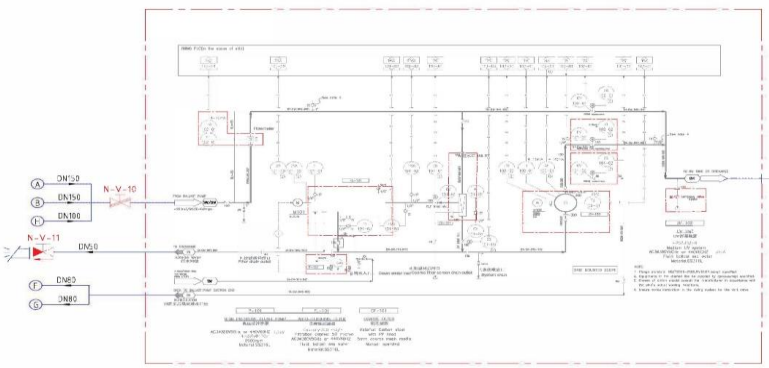
PROJECT: M/VKING VICTOR  
 TITLE: EIR BILGE, BALLAST SYSTEM



PIPE LIST		
DIAMETER	DESCRIPTION	MATERIAL
DN42	48.3 x 4.5 mm	SEAMLESS STEEL GALVANIZED PIPE
DN60	60.3 x 4.5 mm	
DN65	76.1 x 4.5 mm	
DN80	88.9 x 4.5 mm	
DN100	114.3 x 5.5 mm	
DN150	168.3 x 5.5 mm	
DN200	219.1 x 6.0 mm	

SYM	DESCRIPTION
N-V-01	SHUTTER VALVE
N-V-02	BUTTERFLY VALVE - REMOTE CONTROL
N-V-03	BALL VALVE
N-V-04	BALL VALVE - REMOTE CONTROL
N-V-05	GATE VALVE
N-V-06	3 WAY VALVE
N-V-07	NON RETURN GLOBE VALVE
N-V-08	NON RETURN DISCO CHECK VALVE
N-V-09	GLOBE VALVE (ANGLE TYPE)
N-V-10	NON RETURN GLOBE VALVE (ANGLE TYPE)
N-V-11	FIRE VALVE
N-V-12	FIRE VALVE (ANGLE TYPE)
N-V-13	FOG VALVE
N-V-14	CONDENSATOR
N-V-15	QUICK CLOSING VALVE
N-V-16	SHUTTING VALVE
N-V-17	3 WAY VALVE
N-V-18	RELIEF VALVE (ANGLE TYPE)
N-V-19	SHUTTING VALVE WITH SPRING LOADED
N-V-20	SHUTTING VALVE
N-V-21	THREE WAY BALL VALVE (REMOTE CONTROL)
N-V-22	SPECIAL FLANGE / BLIND FLANGE
N-V-23	PRESSURE INDICATOR
N-V-24	VACUUM METER
N-V-25	MUD COCK
N-V-26	FILTER
N-V-27	Y-LIFTER
N-V-28	LIFT OR
N-V-29	PUMP
N-V-30	AND PUMP


POS NO	NAME	TYPE	CAPACITY
P-01	BALLAST PUMP	VERTICAL CLV PUMP WITH SELF PRIMING	105+48 - SHIP
P-02	GENERAL SERVICE PUMP	VERTICAL CLV PUMP WITH SELF PRIMING	105+48 - SHIP



POS NO	NAME	DIAMETER	PN	MATERIAL	NOTES
N-V-01	BUTTERFLY VALVE	DN25	10	G222/BRONZE	-
N-V-02	BUTTERFLY VALVE	DN42	10	G222/BRONZE	-
N-V-03	NR CHECK VALVE	DN25	10	G222/BRONZE	FLAP TYPE
N-V-04	NR CHECK VALVE	DN42	10	G222/BRONZE	FLAP TYPE
N-V-05	NR CHECK VALVE	DN42	10	G222/BRONZE	FLAP TYPE
N-V-06	NR CHECK VALVE	DN80	10	G222/BRONZE	FLAP TYPE
N-V-07	BUTTERFLY VALVE	DN25	10	G222/BRONZE	-
N-V-08	BUTTERFLY VALVE	DN25	10	G222/BRONZE	-
N-V-09	BUTTERFLY VALVE	DN42	10	G222/BRONZE	-
N-V-10	NR GLOBE CHECK VALVE	DN42	10	G222/BRONZE	CLASS APPROVED
N-V-11	BUTTERFLY VALVE	DN42	10	G222/BRONZE	-
N-V-12	BUTTERFLY VALVE	DN42	10	G222/BRONZE	-
N-V-13	BUTTERFLY VALVE	DN42	10	G222/BRONZE	-
N-V-14	BUTTERFLY VALVE	DN42	10	G222/BRONZE	-
N-V-15	BUTTERFLY VALVE	DN42	10	G222/BRONZE	-
N-V-16	BUTTERFLY VALVE	DN42	10	G222/BRONZE	-
N-V-17	BUTTERFLY VALVE	DN42	10	G222/BRONZE	-
BL-01	BLIND FLANGE	DN25	10	S137	-
BL-02	BLIND FLANGE	DN25	10	S137	-
BL-03	BLIND FLANGE	DN42	10	S137	-
BL-04	BLIND FLANGE	DN42	10	S137	-
BL-05	BLIND FLANGE	DN42	10	S137	-
BL-06	BLIND FLANGE	DN25	10	S137	-
BL-07	BLIND FLANGE	DN25	10	S137	-
BL-08	BLIND FLANGE	DN42	10	S137	-
BL-09	BLIND FLANGE	DN25	10	S137	-
BL-10	BLIND FLANGE	DN25	10	S137	-
BL-11	BLIND FLANGE	DN25	10	S137	-

ALARM POS	VALVE POS 1	VALVE POS 2
A	V11	N-V-08
B	V11	N-V-05
C	V11	V9
D	V11	V12
E	V9	N-V-01
F	V11	N-V-01
G	N-V-11	N-V-08
H	N-V-11	N-V-05
I	V11	N-V-08
J	V11	N-V-09
K	V11	V5
L	V11	V5
M	V11	N-V-01
N	V11	N-V-01
O	V-EX-33	V-EX-01
P	V-EX-33	V-EX-02
Q	V-EX-01	N-V-10
S	V-EX-02	N-V-15
T	N-V-17	V-EX-03

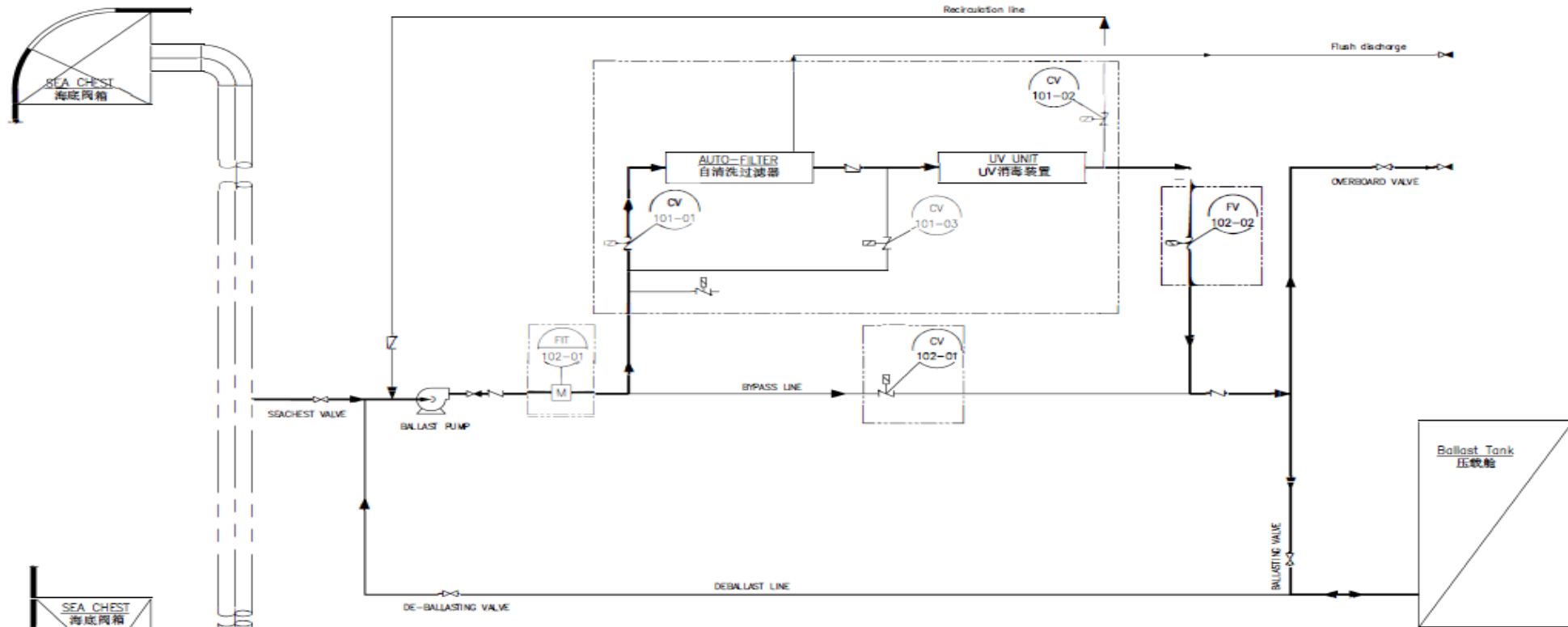




**EVE International AS**

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 Fax: (0090) 216 519 2720

<b>Ship Name :</b> PRINCESS MARIAM		<b>Prep :</b> B.Yıldırım K.	
<b>Document Name :</b> BALLAST SYSTEM		<b>Rev :</b> 2	
<b>Class :</b> --	<b>Class ID :</b> --	<b>Scale :</b> A1	<b>Date :</b> 16.06.2022
<b>Sheet :</b> 1	<b>Scale :</b> A1		



图例说明		
序号	图号	备注
1	FIT102-01	电磁流量计
2	CV101-01	过滤器进水阀
3	CV101-03	UV进水阀
4	CV101-02	回流阀
5	FV102-02	流量控制阀
6	CV102-01	旁通阀

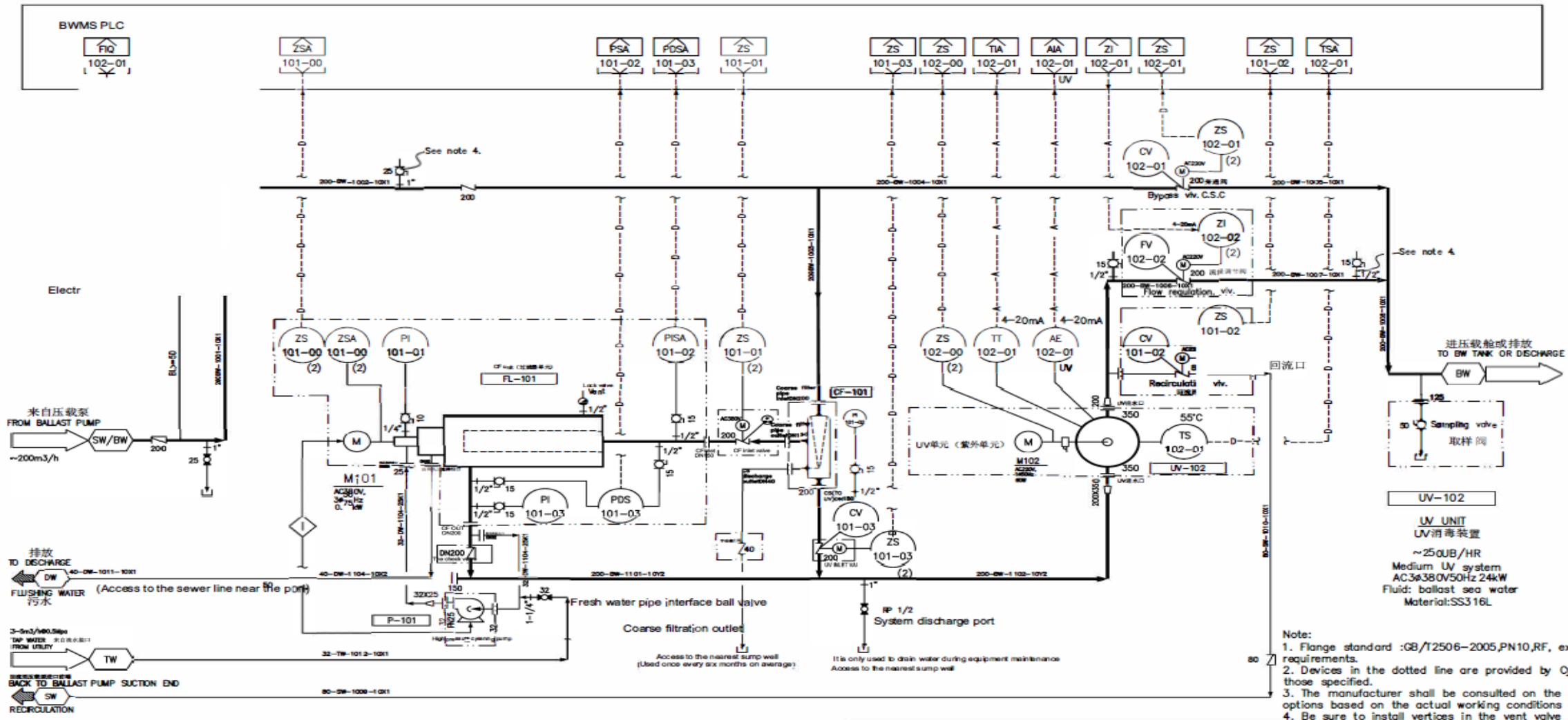


上海电气船舶环保技术有限公司

设计	Wulin	日期	
校对	XYZ	日期	
审核	Jining	日期	
审定		日期	
制图		日期	
审核		日期	

BWMS  
Process Flow Diagram (PFD)  
工艺流程图

船东 PROJECT	
客户 CLIENT	
船名 PROJECT NO.	
船名	数量
天	页
图号 DRAWING NO.	Cyeco/TD04-0010100-A/0-2018



- Note:
1. Flange standard :GB/T2506-2005,PN10,RF, except special requirements.
  2. Devices in the dotted line are provided by CyECO, except those specified.
  3. The manufacturer shall be consulted on the choice of options based on the actual working conditions of the vessel.
  4. Be sure to install vertices in the vent valve piping system.

**P-101**  
**HIGH PRESSURE FLUSH PUMP**  
 高压反冲洗泵  
 AC3#380V50Hz 4kW  
 4m<sup>3</sup>/h@176m  
 2900rpm  
 Material:SS316L

**FL-101**  
**AUTO-FLUSHING FILTER**  
 自清洗过滤器  
 Capacity:250 m<sup>3</sup>/h Filtration degree: 50 micron  
 AC3#380V50Hz  
 Fluid: ballast sea water  
 Material:SS316L

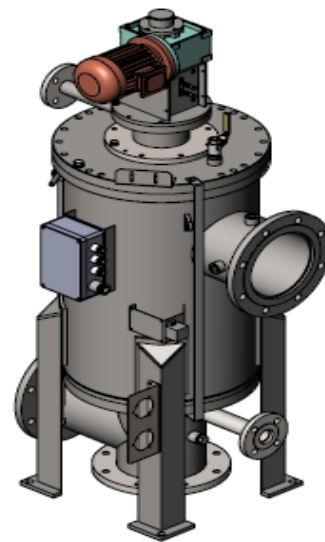
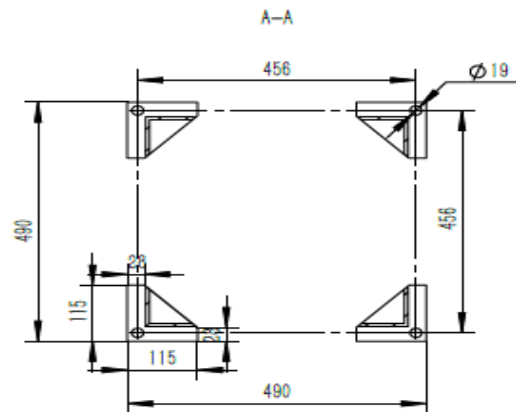
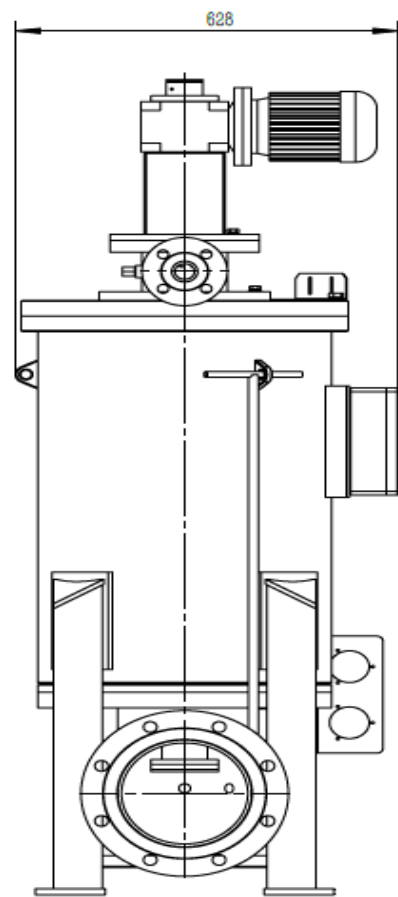
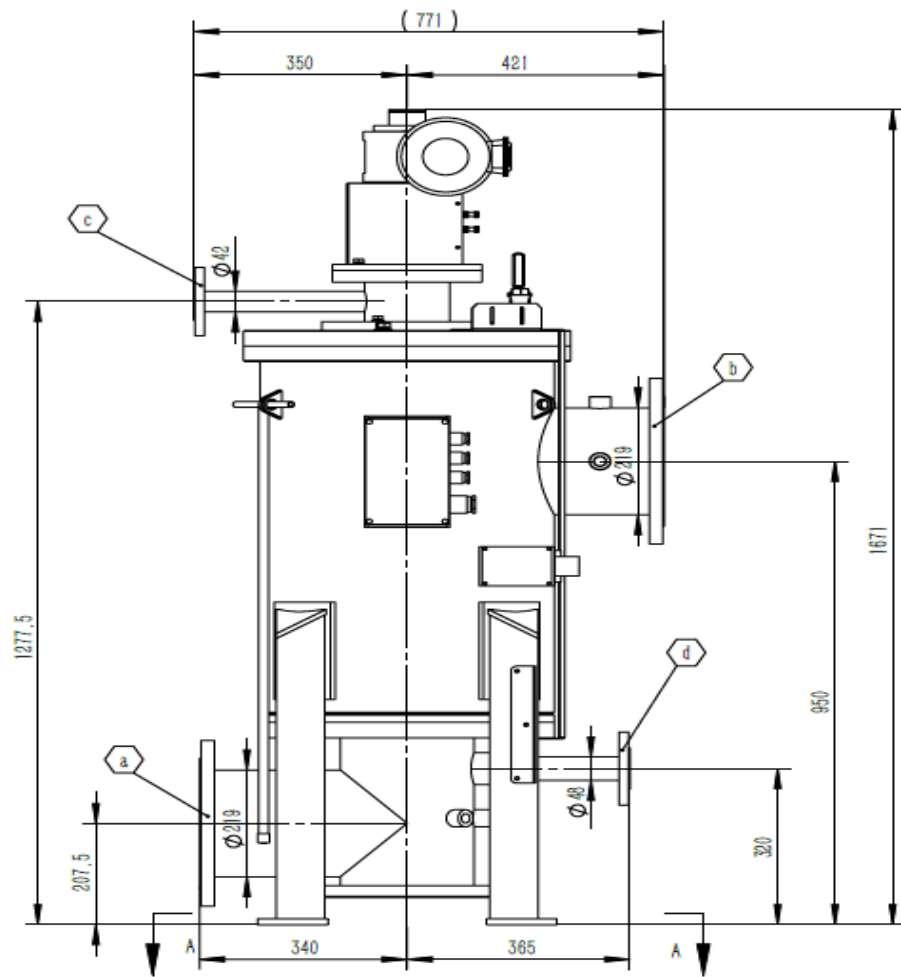
**CF-101**  
**COARSE FILTER**  
 粗孔过滤器  
 Material: Carbon steel with PP lined  
 5mm coarse mesh media  
 Manual operated

**Cyeco**  
 上海船研环保技术有限公司  
 SHANGHAI CYECO ENVIRONMENTAL TECHNOLOGY Co., LTD.

Draw	Date
Check	Date
Review	Date
Approve	Date

**CYECO BWMS**  
 Piping & Instrument Diagram\_A  
 (P&ID\_A)  
 Cyeco-B250

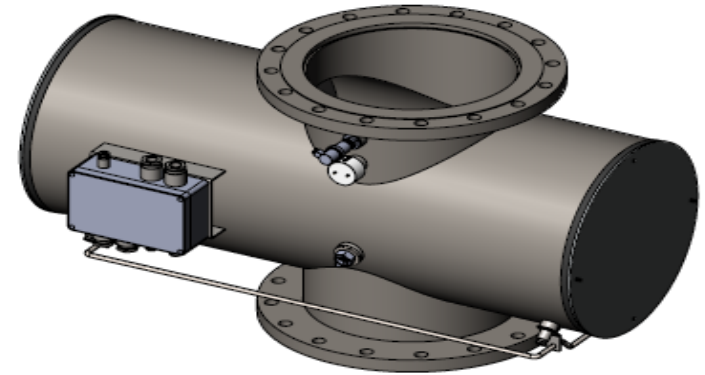
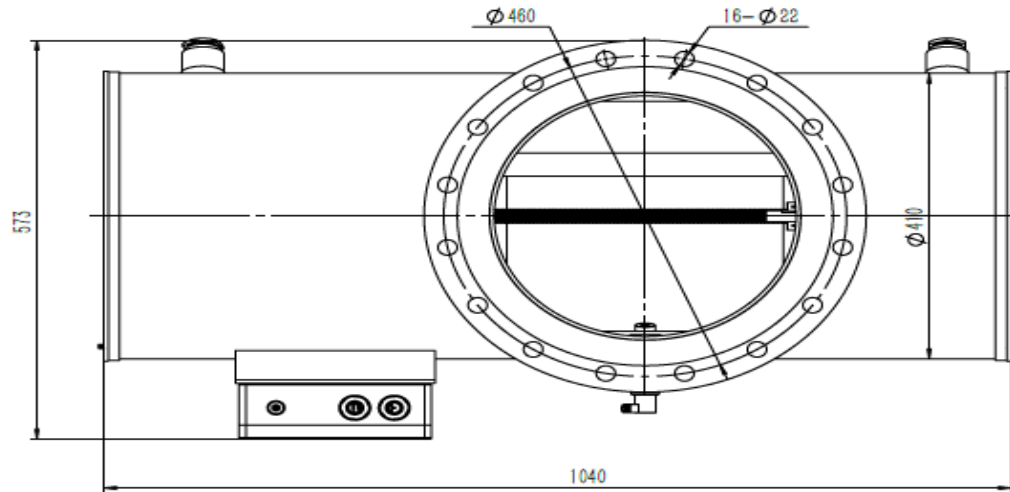
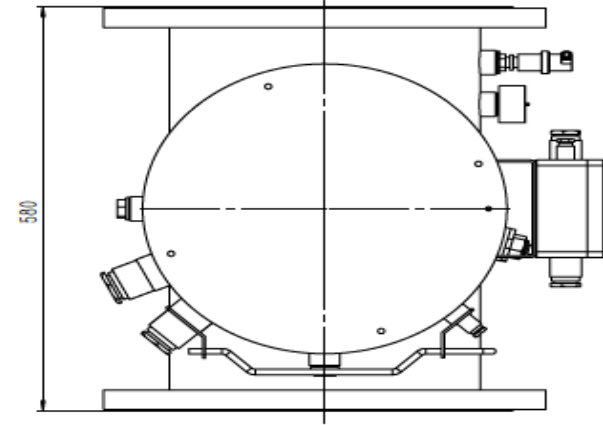
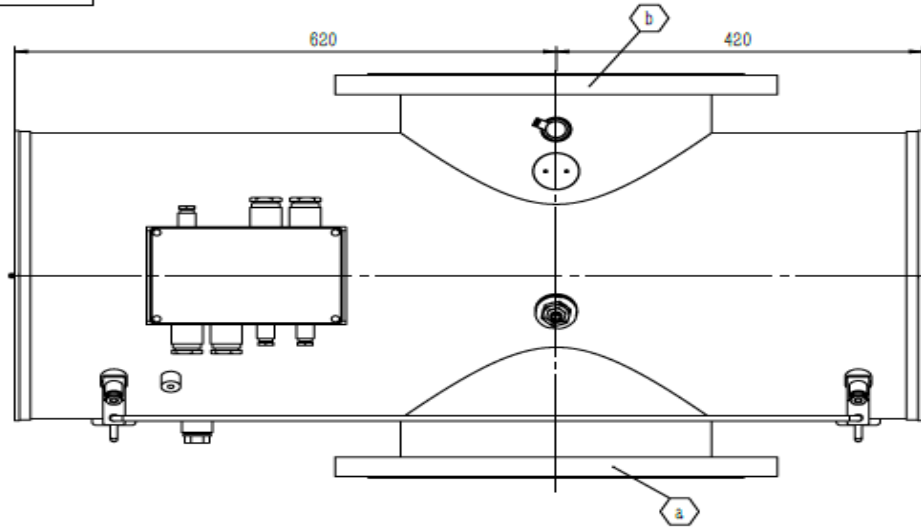
PROJECT	
CLIENT	
PROJECT NO.	
Page 1 of 1	
DRAWING NO.	Cyeco/TD04-41B01201-A/2-2021



B
File No.
File Type
Issued by
Prepared by
Checked by
Approved by
Reviewed by
Date

d	DN40	GB/T2506-2005 RF PN10	Drain Outlet
c	DN32	GB/T2506-2005 RF PN10	High Pressure Flash Port
b	DN200	GB/T2506-2005 RF PN10	Outlet
a	DN200	GB/T2506-2005 RF PN10	Inlet
No.	OD	Reference	Item
Pipeline Dimension			

General Assembly			
	Quality	Ratio	CF200L、CF300L
	466.97	1:10	
1/1		Ver.	TD04-4021-020001-2-A0
			Shanghai Electric Cyeco Environmental Technology Co., Ltd



B

File No.

File Type

Issued by

Prepared by

Checked by

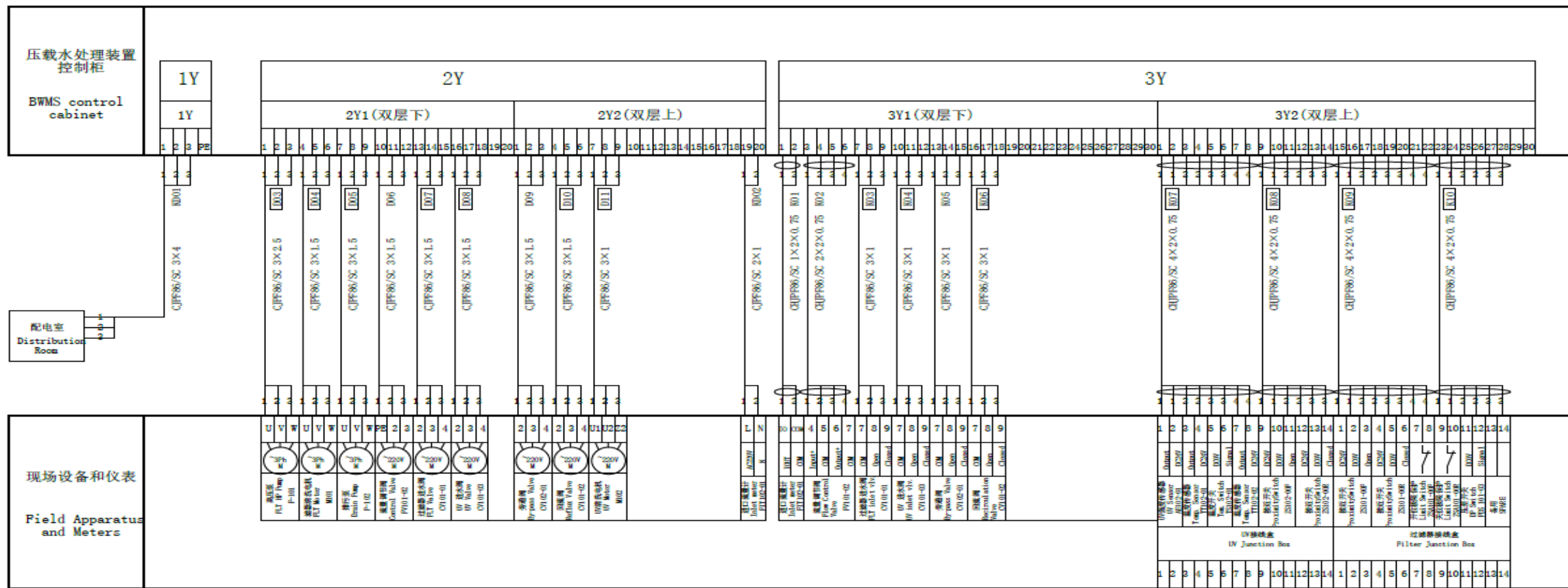
Approved by

Reviewed by

Date

No.	OD	Reference	Item
a	DN350	GB/T2506-2005 PN1.0MPa	Inlet
b	DN350	GB/T2506-2005 PN1.0MPa	Outlet

General Assembly			Quality	Ratio	
					TD04-4020-010001-2-A0
1/1			Ver.		Shanghai Electric Cyeco Environmental Technology Co., Ltd



说明:

撬块设备: 编号带框电缆为BWMS支架范围接线, 由我可负责供货接线, 其它电缆供货接线由买方(船厂/船东)完成;

散供&防爆设备: 所有电缆供货接线由买方(船厂/船东)完成。

版本/Ver	A/2	设计/Design	步永忠	标题/Title	BWMS 电气原理图 BWMS Electrical Schematic	业主/Client		高层代号 = A1 位置代号 = 04
日期/Date	2021/12/14	校对/Check	张慧	内容/Content	接线图 Wire Diagram	项目编号/Proj. No	B250	
		审核/Review	丁磊	图号/DWG. No	TD04-0250-000200-3-A2	制造方 Manufacture	Cyeco 上海电气船舶环保技术有限公司 Shanghai Electric Cyeco Environmental Technology Co., Ltd	页数/Page 1 总页数/Total 35