



DOUBLE EFFECT STEAM-FIRED ABSORPTION CHILLER

REPLACEMENT PARTS

New Release

Form 155.31-RP1 (120)

MODEL YHAU-CW
150 - 2000 TON
527 - 7033 KW



Issue Date:
January 10, 2020

IMPORTANT!

READ BEFORE PROCEEDING!

GENERAL SAFETY GUIDELINES

This equipment is a relatively complicated apparatus. During rigging, installation, operation, maintenance, or service, individuals may be exposed to certain components or conditions including, but not limited to: heavy objects, refrigerants, materials under pressure, rotating components, and both high and low voltage. Each of these items has the potential, if misused or handled improperly, to cause bodily injury or death. It is the obligation and responsibility of rigging, installation, and operating/service personnel to identify and recognize these inherent hazards, protect themselves, and proceed safely in completing their tasks. Failure to comply with any of these requirements could result in serious damage to the equipment and the property in

which it is situated, as well as severe personal injury or death to themselves and people at the site.

This document is intended for use by owner-authorized rigging, installation, and operating/service personnel. It is expected that these individuals possess independent training that will enable them to perform their assigned tasks properly and safely. It is essential that, prior to performing any task on this equipment, this individual shall have read and understood the on-product labels, this document and any referenced materials. This individual shall also be familiar with and comply with all applicable industry and governmental standards and regulations pertaining to the task in question.

SAFETY SYMBOLS

The following symbols are used in this document to alert the reader to specific situations:



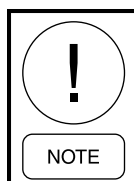
Indicates a possible hazardous situation which will result in death or serious injury if proper care is not taken.



Identifies a hazard which could lead to damage to the machine, damage to other equipment and/or environmental pollution if proper care is not taken or instructions are not followed.



Indicates a potentially hazardous situation which will result in possible injuries or damage to equipment if proper care is not taken.



Highlights additional information useful to the technician in completing the work being performed properly.



External wiring, unless specified as an optional connection in the manufacturer's product line, is not to be connected inside the control cabinet. Devices such as relays, switches, transducers and controls and any external wiring must not be installed inside the micro panel. All wiring must be in accordance with Johnson Controls' published specifications and must be performed only by a qualified electrician. Johnson Controls will NOT be responsible for damage/problems resulting from improper connections to the controls or application of improper control signals. Failure to follow this warning will void the manufacturer's warranty and cause serious damage to property or personal injury.

CHANGEABILITY OF THIS DOCUMENT

In complying with Johnson Controls' policy for continuous product improvement, the information contained in this document is subject to change without notice. Johnson Controls makes no commitment to update or provide current information automatically to the manual or product owner. Updated manuals, if applicable, can be obtained by contacting the nearest Johnson Controls Service office or accessing the Johnson Controls QuickLIT website at <http://cgproducts.johnsoncontrols.com>.

It is the responsibility of rigging, lifting, and operating/service personnel to verify the applicability of these documents to the equipment. If there is any question

regarding the applicability of these documents, rigging, lifting, and operating/service personnel should verify whether the equipment has been modified and if current literature is available from the owner of the equipment prior to performing any work on the chiller.

CHANGE BARS

Revisions made to this document are indicated with a line along the left or right hand column in the area the revision was made. These revisions are to technical information and any other changes in spelling, grammar or formatting are not included.

HOW TO USE RENEWAL PARTS MANUALS

Johnson Controls offers an assortment of replacements parts for Johnson Controls, YORK and DS units. Each replacement part is manufactured and fitted for a specific model. This Replacement Parts Manual is for standard Johnson Controls units. Chiller units built with special options, modifications, or conversions are not covered in this manual.

This Replacement Parts Manual provides Johnson Controls chiller replacement parts by part numbers, descriptions, quantities and drawing figures. To determine the correct replacement part, locate the item on drawing figure and refer to the parts list for the part number, description and quantity.

NOTE: Provide a unit model number, unit serial number and part number when requesting a quotation or placing an order. Failure to include this information may delay processing of your request.

Model and Serial Number Locations:

- **Unit** - Nameplate on side of Control Panel

Contact the following sources to order parts.

NORTH AMERICA

Baltimore Parts Center

Contrators within USA

Telephone: (800)-932-1701

Equipment Owners within USA who maintain their own equipment

Telephone: (800)-482-2778

Email: Chillerparts@jci.com

For parts availability and ordering YORK HVAC Parts within the USA please use the following link:

https://www.hvacnavigator.com/order/ccrz__homepage?isHome=true&store=CHStore&viewState=ListView

EUROPE

HVAC Parts Centre (Europe)

Telephone: +44 (0) 1268 246 400

Email: ALLParts@jci.com

NOMENCLATURE

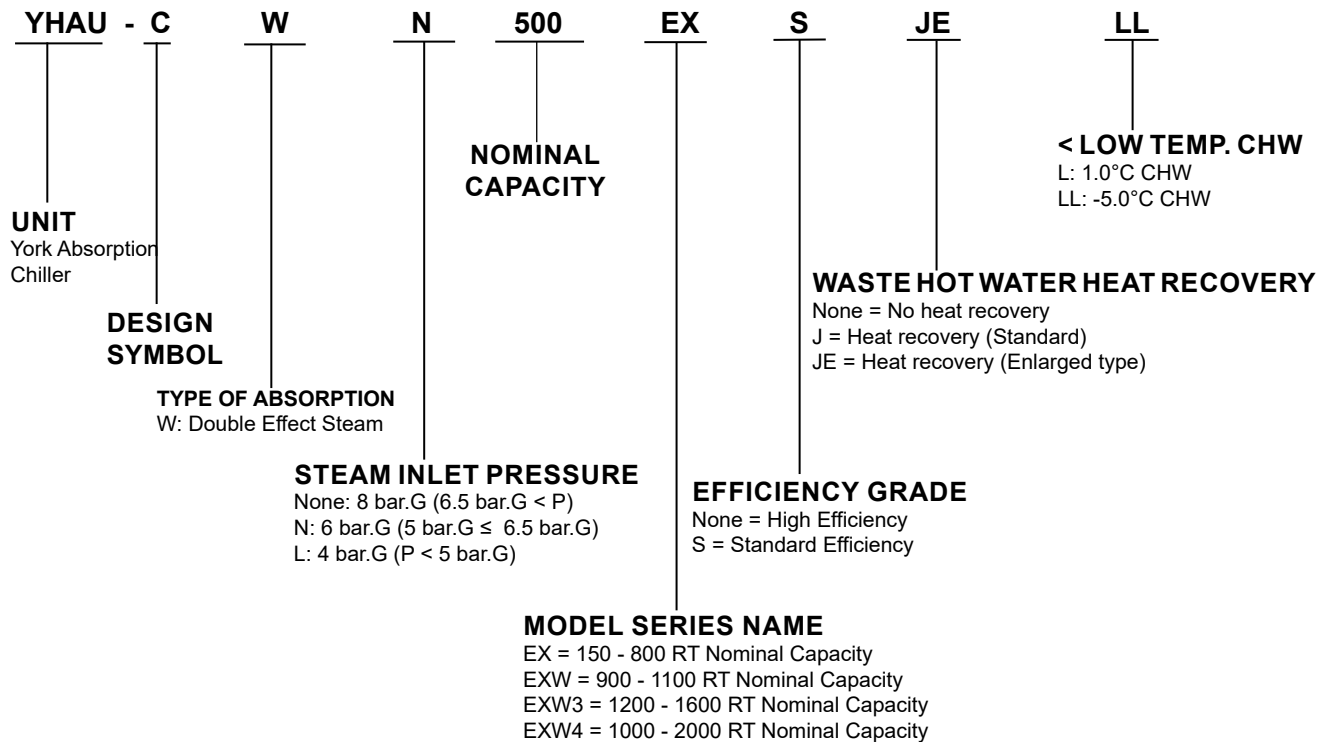


TABLE OF CONTENTS

SECTION 1 - YHAU-CW COMPONENTS OVERVIEW	7
SECTION 2 - PI&D DRAWING	8
SECTION 3 - UNIT COMPONENTS	11

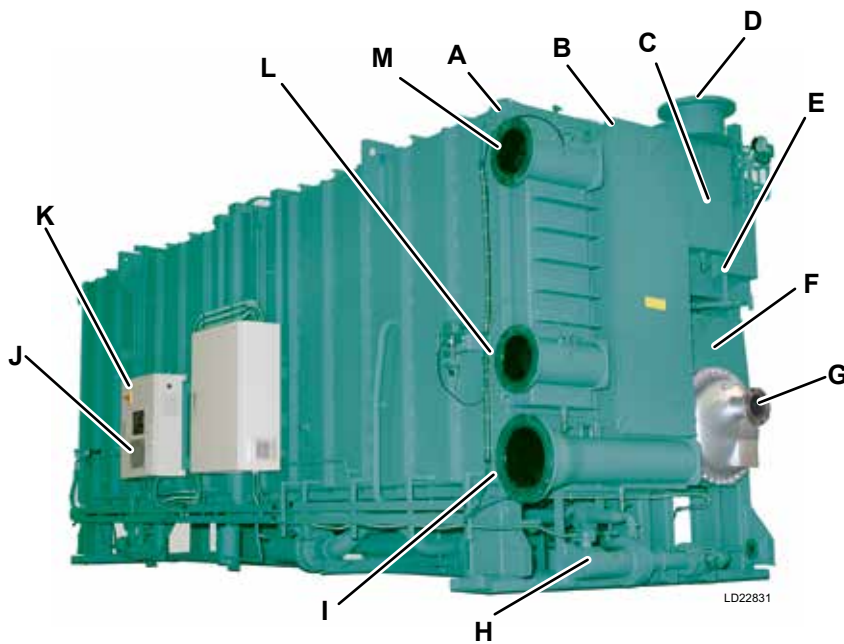
LIST OF TABLES

TABLE 1 - Symbol and Tag List in PI&D Drawing	9
TABLE 2 - Symbol and Tag List in PI&D Drawing (2).....	10
TABLE 3 - Waterbox Gasket	11
TABLE 4 - Control Panel Components.....	15
TABLE 5 - Item, P/N, Model and, Brand	19
TABLE 6 - Pump and Maintenance Kits	22
TABLE 7 - Solution and Refrigerant Pump Maintenance Kit Example	25
TABLE 8 - Vacuum Pump Maintenance Kit	25
TABLE 9 - Valves	26
TABLE 10 - Valve Types	29
TABLE 11 - Sensor and Control Switch.....	33
TABLE 12 - Other Parts.....	36
TABLE 13 - Standard Parts Kit and Tools Kit	37

LIST OF FIGURES

FIGURE 1 - YHAU-CW Components	7
FIGURE 2 - PI&D Drawing for YHAU-CW	8
FIGURE 3 - Waterbox Layout	13
FIGURE 4 - Waterbox Layout (2)	13
FIGURE 5 - Sheet Gasket	13
FIGURE 6 - Rope Gasket A	13
FIGURE 7 - Rope Gasket B	13
FIGURE 8 - Marine Type and Compact Type Waterbox	14
FIGURE 9 - Round Sheet Gasket for Steam Box	14
FIGURE 10 - Square Sheet Gasket for Steam Box	14
FIGURE 11 - Interior of Control Panel for CE, GB, and UL	20
FIGURE 12 - Battery for Touch Screen	20
FIGURE 13 - Main Board Battery	20
FIGURE 14 - Main Circuit Board	20
FIGURE 15 - Interior of Control Panel	21
FIGURE 16 - Fan, Fan Protector, and Fan Filter	21
FIGURE 17 - Refrigerant, Solution Circulation, and Solution spray Pumps	24
FIGURE 18 - Diaphragm Valve and Gasket	28
FIGURE 19 - Check Valve	28
FIGURE 20 - Solenoid Valve for Purge and Blow Pump	28
FIGURE 21 - Sampling Valve	30
FIGURE 22 - Rupture Disc Kit and Rupture Disc	30
FIGURE 23 - Refrigerant Water Float Ball Valve	30
FIGURE 24 - Adjusting Valve	30
FIGURE 25 - HTG Solution Float Ball Valve	31
FIGURE 26 - Butterfly Valve	31
FIGURE 27 - Globe Valve	31
FIGURE 28 - Needle, Steam Drain Solenoid, and Steam Drain Control Valves and Steam Drain Strainer	31
FIGURE 29 - Pressure Release Valve	31
FIGURE 30 - Air Vent and Water Drain Valves	32
FIGURE 31 - Temperature Sensor - RTD	34
FIGURE 32 - Pressure Sensor	34
FIGURE 33 - Pressure Switch	34
FIGURE 34 - Pressure Differential Switch	34
FIGURE 35 - Level Switch	34
FIGURE 36 - Temperature Sensor-Thermocouple	35
FIGURE 37 - Surface Paint Card	36

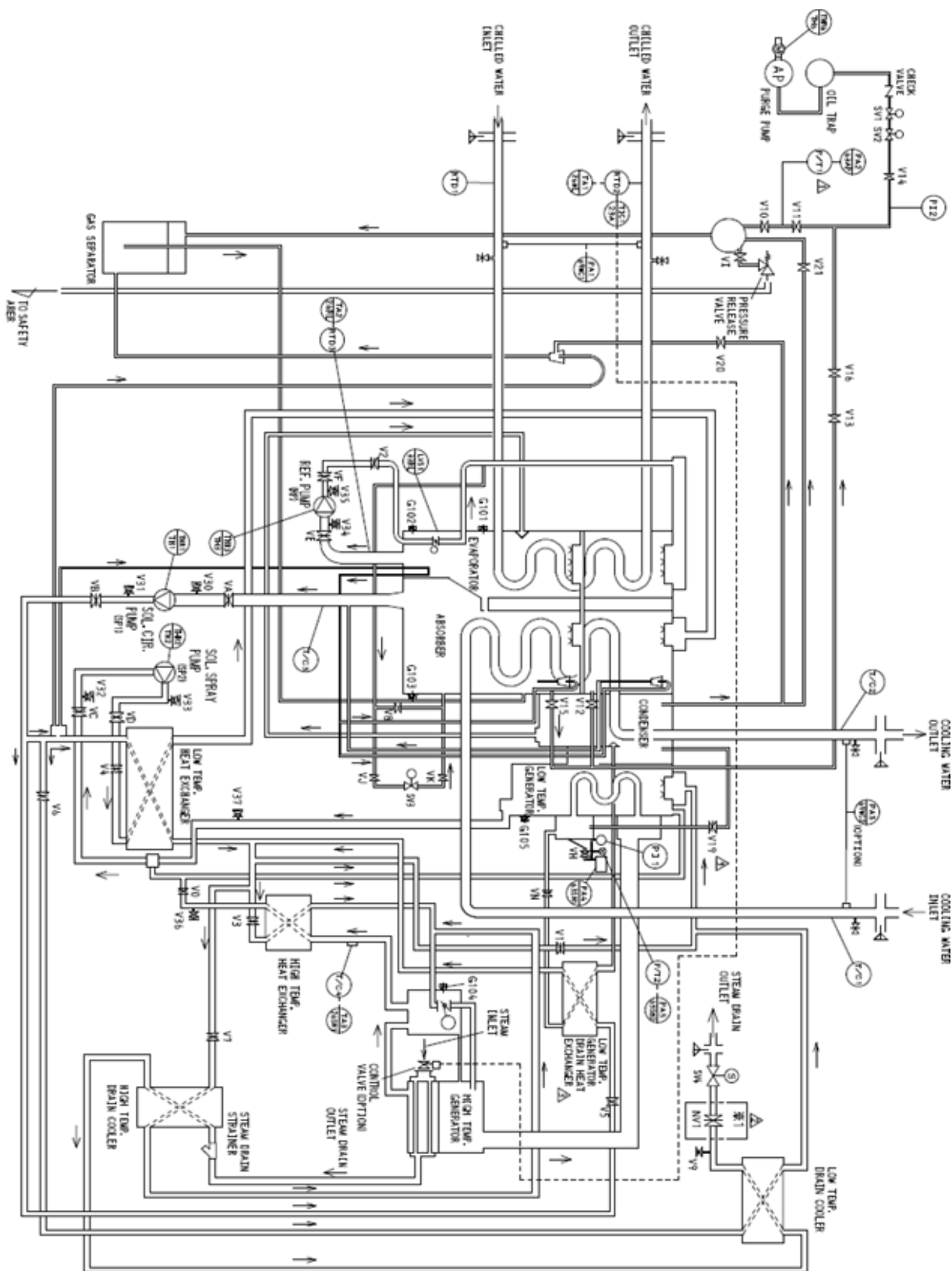
SECTION 1 - YHAU-CW COMPONENTS OVERVIEW



	COMPONENTS
A	Evaporator
B	Absorber
C	Condenser
D	Cooling Water Outlet
E	Low Temperature Generator
F	High Temperature Generator
G	Steam Inlet
H	Solution Pump
I	Cooling Water Inlet
J	Touch Panel Display
K	Control Panel
L	Chilled Water Inlet
M	Chilled Water Outlet

FIGURE 1 - YHAU-CW COMPONENTS

SECTION 2 - PI&D DRAWING



LD29582

Note: This PI&D drawing is for reference only.

FIGURE 2 - PI&D DRAWING FOR YHAU-CW

TABLE 1 - SYMBOL AND TAG LIST IN PI&D DRAWING

SYMBOL	NAME	USE
VA	Shut Off Valve	Valve for Solution Pump
VB	Shut Off Valve	Shut Off Valve for Solution Pump
VC	Shut Off Valve	Shut Off Valve for Solution Spray Pump
VD	Shut Off Valve	Shut Off Valve for Solution Spray Pump
VE	Shut Off Valve	Shut Off Valve for Refrigerant Pump
VF	Shut Off Valve	Shut Off Valve for Refrigerant Pump
VH	Shut Off Valve	Shut Off Valve for Generator Press. Sensor
VI	Shut Off Valve	Shut Off Valve for Generator Press. Release Valve
VJ	Shut Off Valve	Shut Off Valve for Ref. Blow Solenoid Valve
VK	Shut Off Valve	Shut Off Valve for Ref. Blow Solenoid Valve
VN	Shut Off Valve	Shut Off Valve for High Temp. Generator
V0	Flow Adjusting Valve	For HT-Generator Solution Flow Adjusting
V1	Flow Adjusting Valve	For LT-Generator Solution Flow Adjusting
V2	Flow Adjusting Valve	For Refrigerant Flow Adjusting
V3	Flow Adjusting Valve	For HT-Generator Solution Flow Adjusting
V4	Flow Adjusting Valve	For Absorber Solution Flow Adjusting
V5	Flow Adjusting Valve	For LTG Refrigerant Hex Solution Flow Adjusting
V6	Flow Adjusting Valve	For LT Steam Drain Hex Solution Flow Adjusting
V7	Flow Adjusting Valve	For HT Steam Drain Hex Solution Flow Adjusting
V8	Blow Valve	For Refrugerant Blow
V9	Drain Valve	For Steam Drain
V10	Purge Valve	Shut Off Valve for Purge Tank
V11	Purge Valve (Diaphragm)	Shut Off Valve for Purge Tank
V12	Purge Valve	Abso. Direct Purge Valve
V13	Purge Valve	Abso. Direct Purge Valve
V14	Purge Valve (Diaphragm)	Purge Shut Off Valve
V15	Purge Valve	Abso. Direct Purge Valve
V16	Purge Valve (Diaphragm)	Abso. Direct Purge Valve
V19	Flow Adjusting Valve	For LTG and Condenser Pressure Adjusting
V20	Purge Valve	Cond. Direct Purge Valve
V21	Purge Valve	Cond. Direct Purge Valve
NV1	Flow Adjust Valve	Steam Flow Adjust Valve
V30	Sampling Valve	For Solution Sampling
V31	Sampling Valve	For Solution Sampling
V32	Sampling Valve	For Solution Sampling
V33	Sampling Valve	For Solution Sampling
V34	Sampling Valve	For Refrigerant Sampling
V35	Sampling Valve	For Refrigerant Sampling
V36	Sampling Valve	For HTG Solution Sampling
V37	Sampling Valve	For LTG Solution Sampling
SV1	Solenoid Valve	Purge Solenoid Valve
SV2	Solenoid Valve	Purge Solenoid Valve
SV3	Solenoid Valve	Refrigrant Blow Solenoid Valve

TABLE 1 - SYMBOL AND TAG LIST IN PI&D DRAWING (CONT'D)

SYMBOL	NAME	USE
G101	Sight Glass	Sight Glass for Ref. Overflow
G102	Sight Glass	Sight Glass for Eva. Tank Low
G103	Sight Glass	Sight Glass for Abs. Tank Low
G104	Sight Glass	Sight Glass for HTG
G105	Sight Glass	Sight Glass for LTG

TABLE 2 - SYMBOL AND TAG LIST IN PI&D DRAWING (2)

TAG	SYMBOL	ITEM
RTD1		Chilled Water Inlet Temperature
RTD2		Chilled Water Outlet Temperature
RTD3		Refrigerant Temperature
T/C1		Cooling Water Inlet Temperature
T/C2		Cooling Water Outlet Temperature
T/C3		Absorber Solution Temperature
T/C4		HTG Solution Temperature
TIC1	23A	Chilled Water Outlet Temperature Controller
P/T1		Purging Tank Pressure
P/T2		HTG Pressure
TA1	26WL	Chilled Water Temperature Switch
TA2	26RL	Refrigerant Temperature Switch
TA3	26SH	HTG Solution Temperature Switch
THR1	TH1	Solution Circulation Pump Thermal Relay
THR2	TH2	Solution Spray Pump Thermal Relay
THR3	TH3	Refrigerant Pump Thermal Relay
THR6	TH6	Purge Pump Thermal Relay
PA1	63WC1	Chilled Water Pressure Differential Switch
PA2	63AP	Purge Tank Pressure Switch
PA3	69WC2	Cooling Water Pressure Differential Switch
PA4	63SH1	HTG Pressure Switch
PA5	63SH2	HTG Pressure Switch
LVS1	33RL	Level Switch for Evaporator Tank
PI1		Generator Pressure Gauge
PI2		Purge Tank Pressure Gauge

SECTION 3 - UNIT COMPONENTS

TABLE 3 - WATERBOX GASKET

DESCRIPTION		150EX(S)	180EX(S)	240EX(S)	300EX(S)	360/400EX(S)	450EX(S)	500EX(S)	560EX(S)	600EX(S)	700EX(S)	800EX(S)	900EXW(S)	1000EXW(S)	1100EXW(S)	1200EXW3(S)	1300EXW3(S)	1400EXW3(S)	1500EXW3(S)	1600EXW3(S)	1000EXW4(S)	1120EXW4(S)	1250EXW4(S)	1400EXW4(S)	1500EXW4(S)	1600EXW4(S)	1650EXW4(S)	1800EXW4(S)	1900EXW4(S)	2000EXW4(S)	
PART NAME	PART NUMBER																														
Square Sheet Gasket for Square Type Steam Waterbox	092W59453-001 (inlet side)					1																									
	092W59454-001 (turn side)					1																									
	092W59529-001 (inlet side)						1	1	1	1	1	1																			
	092W59530-001 (turn side)						1	1	1	1	1	1																			
	092W62764-001 (inlet side)												1	1	1																
	092W62765-001 (turn side)												1	1	1																
	092W59490-001 (inlet side)															1	1	1	1	1											
	092W59491-001 (turn side)															1	1	1	1	1											
	092W65531-001 (inlet side)																				1	1	1	1	1	1	1	1	1	1	
	092W65532-001 (turn side)																				1	1	1	1	1	1	1	1	1	1	
Round Sheet Gasket for Round Steam Waterbox	092W55910-000 (turn side)	2																													
	028W17869-000 (turn side)		2	2	2																										
	093W26075-001 (inlet side)						1	1	1	1	1	1																			
	093W26075-002 (turn side)						1	1	1	1	1	1																			
	093W28782-001 (inlet side)												1	1	1																
	093W28782-002 (turn side)												1	1	1																
	093W28801-001 (inlet side)															1	1	1	1	1											
	093W28801-002 (turn side)															1	1	1	1	1											
Note:																															
1. Square HTG steam waterbox will use the high temperature square sheet gasket. The inlet side square sheet gasket will include the partition gasket. Turn side square sheet gasket will not have the partition gasket. 2. Round HTG steam waterbox will use the high temperature round sheet gasket. The inlet side round sheet gasket will include the partition gasket. Turn side round sheet gasket will not have the partition gasket. 3. The round steam waterbox, except the EXW4(S) model, is used for the steam chiller that comes after the series number 50611E97103160; the previous (include 50611E97103160), EXW4(S) and CW(N/L)360/400 chiller uses the square steam waterbox; 150~300EX(S) only uses turn side round sheet gasket.																															
Rope Gasket A for Chilled Waterbox	028W17640-018																														

TABLE 2 - WATERBOX GASKET (CONT'D)

DESCRIPTION		150EX(S)	180EX(S)	240EX(S)	300EX(S)	360/400EX(S)	450EX(S)	500EX(S)	560EX(S)	600EX(S)	700EX(S)	800EX(S)	900EXW(S)	1000EXW(S)	1100EXW(S)	1200EXW3(S)	1300EXW3(S)	1400EXW3(S)	1500EXW3(S)	1600EXW3(S)	1000EXW4(S)	1120EXW4(S)	1250EXW4(S)	1400EXW4(S)	1500EXW4(S)	1600EXW4(S)	1650EXW4(S)	1800EXW4(S)	1900EXW4(S)	2000EXW4(S)
PART NAME	PART NUMBER																													
Rope Gasket B for Chilled Waterbox	028W03242-000																													
Note: 1. Standard water pressure of chilled waterbox is 10 bar, use the compact waterbox. So use the Rope gasket A. 2. Optional pressure of chilled waterbox is 20 bar, use the marine type waterbox, or the optional marine type chilled waterbox for 10 bar. If the steam chiller is after the series number 50611E97103160, use the rope gasket B. The previous chiller will use the sheet type gasket. Check with engineering team on a case by case basis. 3. Rope gasket A is used for the partition gasket in the chilled waterbox.																														
Sheet Gasket for Cooling Waterbox	028W17740-002 (for absorber)					1	1	1	1	1	1																			
	028W17739-002 (for condenser)					1	1	1	1	1	1																			
	028W17716-002 (for absorber)												1	1	1															
	028W18192-000 (for condenser)												1	1	1															
	028W17784-000 (for absorber)															1	1	1	1	1										
	028W17785-000 (for condenser)															1	1	1	1	1										
	028W17855-002 (for absorber)																				1	1	1	1	1	1	1	1	1	1
	028W17856-002 (for condenser)																				1	1	1	1	1	1	1	1	1	1
Rope Gasket A for Cooling Waterbox	028W17640-018																													
Rope Gasket B for Cooling Waterbox	028W03242-000																													
Note: 1. The standard water pressure of the cooling waterbox is 10 bar. Use the compact waterbox for the CW300EX(S) model, and use the rope gasket A. 2. Chiller model, CW360/400EX(S), with water pressure of 10 bar. If the steam chiller is older than the series number 50611E97103160, or the optional marine type below model CW300EX(S) is used, use rope gasket B. The previous chiller will use the sheet type gasket, as shown. 3. Optional pressure for all models of cooling waterbox is 20 bar. Use the marine type waterbox. If the steam chiller is older than the series number 50611E97103160, use rope gasket B. The previous chiller will use the sheet type gasket. Check with the engineering team on a case by case basis. 4. Rope gasket A is used for the partition gasket in the cooling waterbox.																														

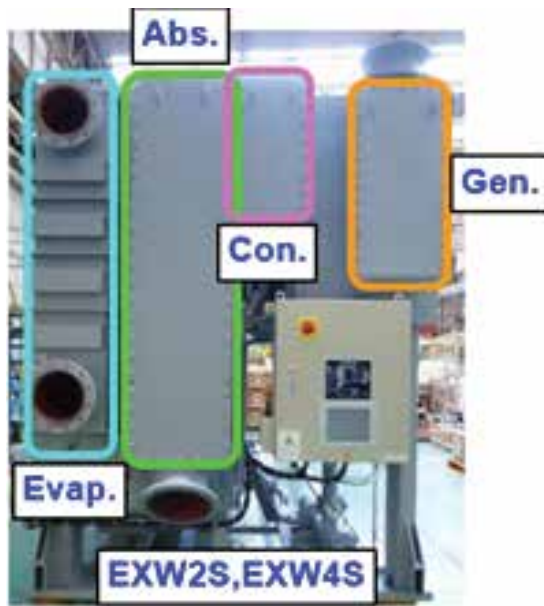


FIGURE 3 - WATERBOX LAYOUT

LD29573

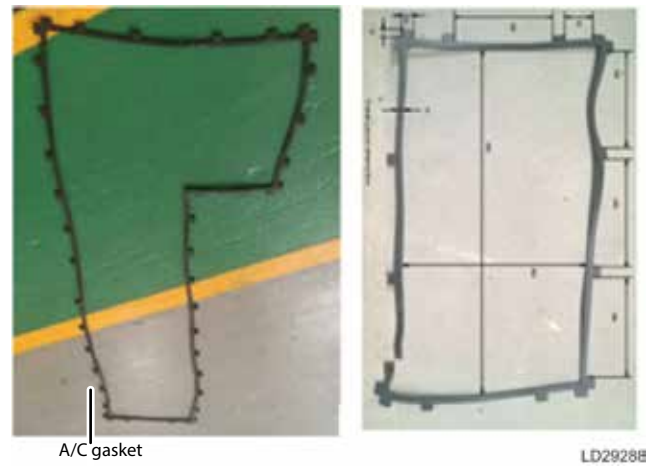


FIGURE 5 - SHEET GASKET

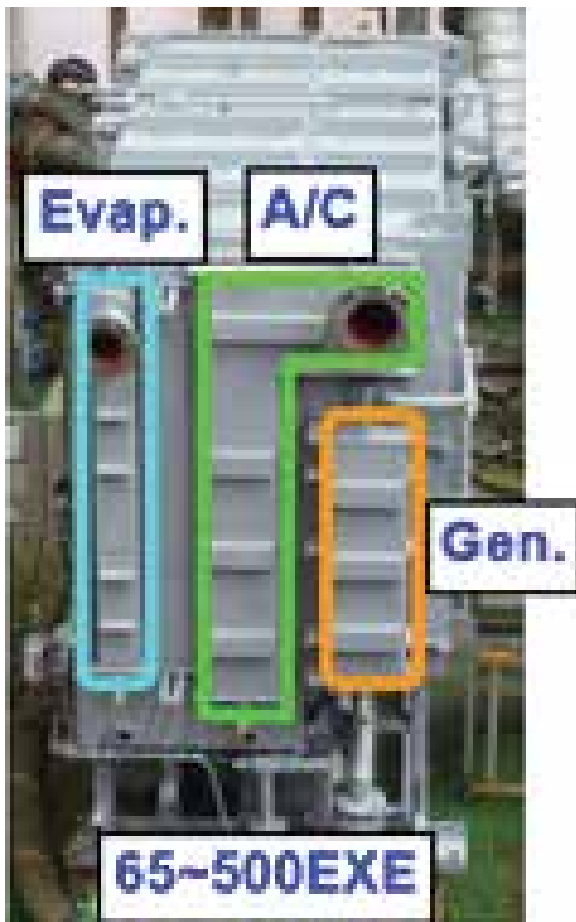


FIGURE 4 - WATERBOX LAYOUT (2)

LD29583

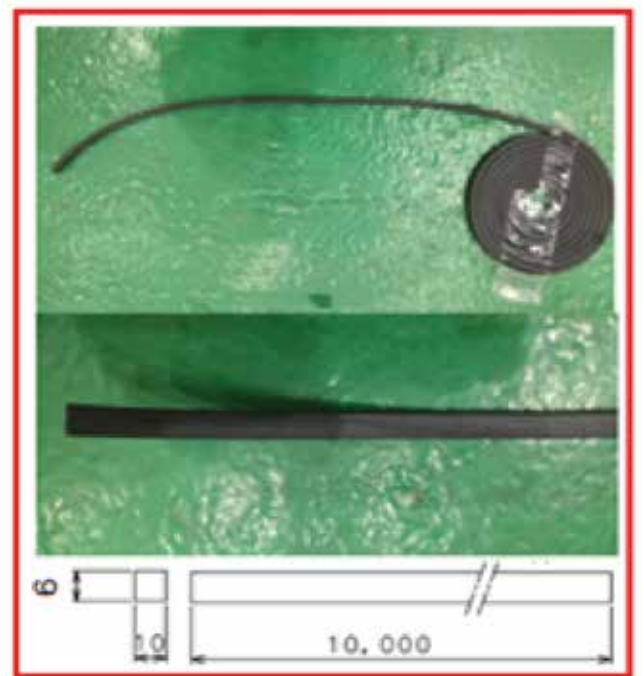


FIGURE 6 - ROPE GASKET A

LD29528

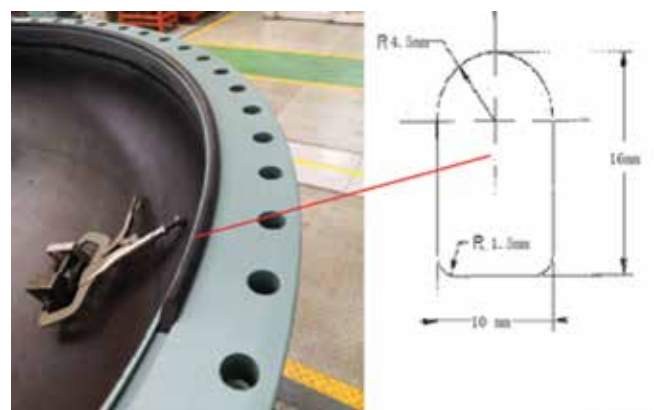


FIGURE 7 - ROPE GASKET B

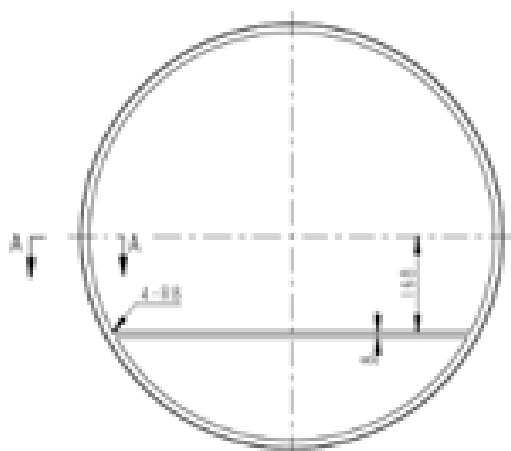
LD29531



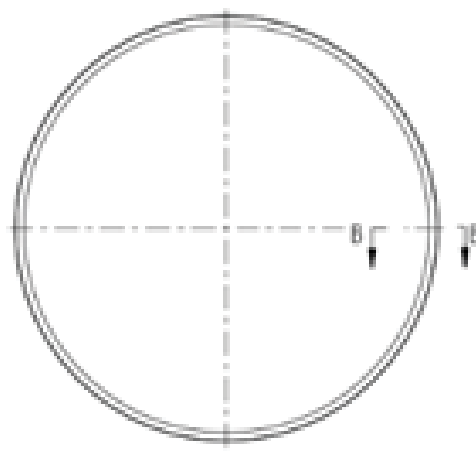
Marine Type Waterbox
 Compact Type Waterbox
FIGURE 8 - MARINE TYPE AND COMPACT TYPE WATERBOX



FIGURE 10 - SQUARE SHEET GASKET FOR STEAM BOX



Inlet side round sheet gasket



Turn side round sheet gasket

LD29584

FIGURE 9 - ROUND SHEET GASKET FOR STEAM BOX

TABLE 4 - CONTROL PANEL COMPONENTS

DESCRIPTION		150EX(S)	180EX(S)	240EX(S)	300EX(S)	360/400EX(S)	450EX(S)	500EX(S)	560EX(S)	600EX(S)	700EX(S)	800EX(S)	900EXW(S)	1000EXW(S)	1100EXW(S)	1200EXW3(S)	1300EXW3(S)	1400EXW3(S)	1500EXW3(S)	1600EXW3(S)	1000EXW4(S)	1120EXW4(S)	1250EXW4(S)	1400EXW4(S)	1500EXW4(S)	1600EXW4(S)	1680EXW4(S)	1800EXW4(S)	1900EXW4(S)	2000EXW4(S)
PART NAME	PART NUMBER																													
Main Circuit Board (PLC)	025W48016-039	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Touch Panel (TP)	025W48016-129	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Auxiliary Relay (PWX) for CE/GB	025W48016-131	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Auxiliary Relay (PWX) for UL	024W33874-140																													
Timer (PWT) for CE/GB	025W48016-033	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Timer (PWT) for UL	024W33874-131																													
Power Supply (24 VDC) (PSU1)	025W48016-037	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Circuit Protector (CP1)	024W33919-732	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Circuit Breaker (MCB1) for CE/GB	025W48016-120	1	1	1	1																									
	025W48016-121					1	1	1	1	1	1	1																		
	025W48016-122												1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
	025W48016-123																											1	1	1
Circuit Breaker (MCB1) for UL 208 V - 60 Hz	024W33919-773	1																												
	024W33919-768		1																											
	024W33919-792			1	1																									
	024W33919-794					1	1	1	1	1	1	1																		
	024W33919-766												1																	
	024W33919-762												1								1									
	024W33919-796													1	1	1	1	1	1	1		1	1	1	1	1	1			
	024W33919-798																											1	1	1

TABLE 3 - CONTROL PANEL COMPONENTS (CONT'D)

DESCRIPTION		150EX(S)	180EX(S)	240EX(S)	300EX(S)	360/400EX(S)	450EX(S)	500EX(S)	560EX(S)	600EX(S)	700EX(S)	800EX(S)	900EXW(S)	1000EXW(S)	1100EXW(S)	1200EXW3(S)	1300EXW3(S)	1400EXW3(S)	1500EXW3(S)	1600EXW3(S)	1000EXW4(S)	1120EXW4(S)	1250EXW4(S)	1400EXW4(S)	1500EXW4(S)	1600EXW4(S)	1680EXW4(S)	1800EXW4(S)	1900EXW4(S)	2000EXW4(S)
PART NAME	PART NUMBER																													
Circuit Breaker (MCB1) for UL 460 V-60 Hz	024W33919-789	1																												
	024W33919-790		1																											
	024W33919-791			1	1																									
	024W33919-774					1	1	1	1	1	1	1																		
	024W33919-773												1																	
	024W33919-769												1							1										
	024W33919-792													1	1	1	1	1	1		1	1	1	1	1	1				
	024W33919-794																										1	1	1	
Circuit Breaker Handle	025W48016-125	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Circuit Breaker (MCB2)	024W33919-529	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Transformer (T1) for CE/GB	025W48016-130	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Transformer (T1) for UL	025W43823-870	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Transformer (T2) for UL	025W43823-871	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Magnet Switch, (MC1, MC2, MC3, MC6) for CE/GB	024W33857-353	4	4	4	4	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	024W33857-354													1	1	1	1	1	1	1	1	1	1	1	1	1				
	024W33857-355					1	1	1	1	1	1	1																		
	024W33857-356												1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	024W33857-357																										1	1	1	

TABLE 3 - CONTROL PANEL COMPONENTS (CONT'D)

DESCRIPTION		150EX(S)	180EX(S)	240EX(S)	300EX(S)	360/400EX(S)	450EX(S)	500EX(S)	560EX(S)	600EX(S)	700EX(S)	800EX(S)	900EXW(S)	1000EXW(S)	1100EXW(S)	1200EXW3(S)	1300EXW3(S)	1400EXW3(S)	1500EXW3(S)	1600EXW3(S)	1000EXW4(S)	1120EXW4(S)	1250EXW4(S)	1400EXW4(S)	1500EXW4(S)	1600EXW4(S)	1680EXW4(S)	1800EXW4(S)	1900EXW4(S)	2000EXW4(S)
PART NAME	PART NUMBER																													
Magnet Switch MC1,MC2, MC3,MC6 for UL 208 V - 60 Hz	024W33857-451	4	3	2	2	2	2	2		2	2	2	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1
	024W33857-450														1	1	1	1	1	1		1	1	1	1	1	1	1	1	1
	024W33857-453		1	2	2	1	1	1	1	1	1	1	1	1																
	024W33857-454														1	1	1	1	1	1	1	1	1	1	1	1	1			
	024W33857-452					1	1	1	1	1	1	1	1																	
	024W33857-457													1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	024W33857-458																											1	1	1
Magnet Switch (MC1,MC2, MC3,MC6) for UL 460 V - 60 Hz	024W33857-451	4	4	4	4	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	024W33857-450					1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1			
	024W33857-454													1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	024W33857-452																											1	1	1
Thermal Relay (TH1, TH2, TH3, TH6) for GB and CE	025W48016-065	1																												
	025W48016-064		1	1	1	1	1	1	1	1	1	1																		
	025W44341-346	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	025W48016-128	1	1																											
	025W48207-038												1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
	025W48016-127	1	1	1	1	1	1	1	1	1	1																	1	1	1
	025W48207-039			1	1							1	1	1																
	024W33860-067														1	1	1	1	1	1	1	1	1	1	1	1	1			
	024W33860-077					1	1	1	1	1	1	1	1																	
	024W33860-078													1	1	1	1	1	1	1	1	1	1	1	1	1	1			
	024W33860-059																											1	1	1

TABLE 3 - CONTROL PANEL COMPONENTS (CONT'D)

DESCRIPTION		150EX(S)	180EX(S)	240EX(S)	300EX(S)	360/400EX(S)	450EX(S)	500EX(S)	560EX(S)	600EX(S)	700EX(S)	800EX(S)	900EXW(S)	1000EXW(S)	1100EXW(S)	1200EXW3(S)	1300EXW3(S)	1400EXW3(S)	1500EXW3(S)	1600EXW3(S)	1000EXW4(S)	1120EXW4(S)	1250EXW4(S)	1400EXW4(S)	1500EXW4(S)	1600EXW4(S)	1680EXW4(S)	1800EXW4(S)	1900EXW4(S)	2000EXW4(S)
PART NAME	PART NUMBER																													
Motor starter MMS1, MMS2, MMS3, MMS6 for UL 208 V – 60 Hz	024W33919-750	1																												
	024W33919-760	1	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	024W33919-748	1	1																											
	024W33919-802												1	1	1	1	1	1	1	1	1	1	1	1	1	1				
	024W33919-746	1	1	2	2	1	1	1	1	1	1	1	1	1							1							1	1	1
	024W33919-803														1	1	1	1	1	1		1	1	1	1	1	1			
	024W33919-759					1	1	1	1	1	1	1	1																	
	024W33919-804													1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	024W33919-805																											1	1	1
Motor starter MMS1, MMS2, MMS3, MMS6 for UL 460 V - 60 Hz	024W33919-749	1	1	1	1	1	1	1	1	1	1	1																		
	024W33919-750	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	024W33919-760	1	1										1	1	1	1	1	1	1	1	1	1	1	1	1	1				
	024W33919-748	1	1	1	1	1	1	1	1	1	1	1	1	1							1									
	024W33919-802			1	1										1	1	1	1	1	1		1	1	1	1	1	1			
	024W33919-746					1	1	1	1	1	1	1	1																	
	024W33919-803													1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	024W33919-767																											1	1	1
Noise Filter (NF0) for CE	025W48016-055	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Noise Filter (NF1)	025W48016-038	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
56-Pin Con- nector 1 for CN2	025W48016-068	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
56-Pin Con- nector 2 for CN2	025W48016-069	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Buzzer (BZ)	025W48016-071	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fan (FAN) for CE/ GB	025W48016-056	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fan (FAN) for UL	025W48016-057																													
Fan-protector (FAN)	025W48016-134	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fan-filter	025W48016-136	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Battery for Main Circuit Board	025W51225-000	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Battery for Main Touch Panel	025W51226-000	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

TABLE 5 - ITEM, P/N, MODEL AND, BRAND

ITEM	PART NUMBER	MODEL	BRAND
Breaker (MCB1) for GB/CE	025W48016-120	XT1 N 160 TMF20 FF 3P	ABB
	025W48016-121	XT1 N 160 TMD32 FF 3P	
	025W48016-122	XT1 N 160 TMD40 FF 3P	
	025W48016-123	XT1 N 160 TMD63 FF 3P	
Breaker (MCCB) for UL	024W33919-789	XT1N 125 TMF 15-500 3P F F UL/CSA	ABB
	024W33919-790	XT1N 125 TMF 20-500 3P F F UL/CSA	
	024W33919-791	XT1N 125 TMF 25-500 3P F F UL/CSA	
	024W33919-774	XT1N 125 TMF 30-500 3P F F UL/CSA	
	024W33919-773	XT1N 125 TMF 35-500 3P F F UL/CSA	
	024W33919-768	XT1N 125 TMF 40-500 3P F F UL/CSA	
	024W33919-769	XT1N 125 TMF 45-500 3P F F UL/CSA	
	024W33919-792	XT1N 125 TMF 50-500 3P F F UL/CSA	
	024W33919-793	XT1N 125 TMF 60-600 3P F F UL/CSA	
	024W33919-794	XT1N 125 TMF 70-700 3P F F UL/CSA	
	024W33919-766	XT1N 125 TMF 80-800 3P F F UL/CSA	
	024W33919-795	XT1N 125 TMF 90-900 3P F F UL/CSA	
	024W33919-762	XT1N 125 TMF 100-1000 3P F F UL/CSA	
	024W33919-796	XT1N 125 TMF 110-1100 3P F F UL/CSA	
	024W33919-797	XT1N 125 TMF 125-1250 3P F F UL/CSA	
	024W33919-766	XT1N 125 TMF 80-800 3P F F UL/CSA	
	024W33919-795	XT1N 125 TMF 90-900 3P F F UL/CSA	
	024W33919-762	XT1N 125 TMF 100-1000 3P F F UL/CSA	
	024W33919-796	XT1N 125 TMF 110-1100 3P F F UL/CSA	
Magnet Switch, (MC1, MC2, MC3, MC4, MC6) for CE/GB	024W33857-353	AX09-30-10-80	ABB
	024W33857-355	AX18-30-10-80	
	024W33857-356	AX25-30-10-80	
	024W33857-358	AX40-30-10-80	
Magnet Switch, (MC1, MC2, MC3, MC6) for UL	024W33857-451	AF09-30-10-13	ABB
	024W33857-450	AF12-30-10-13	
	024W33857-453	AF16-30-10-13	
	024W33857-454	AF26-30-00-13	
	024W33857-452	AF30-30-00-13	
	024W33857-455	AF38-30-00-13	
	024W33857-456	AF40-30-00-13	
	024W33857-457	AF52-30-00-13	
	024W33857-458	AF65-30-00-13	
Thermal Relay (TH1, TH2, TH3, TH4, TH6) for CE/GB	025W48016-065	TA25DU-1.4M(1.0-1.4)	ABB
	025W48016-064	TA25DU-1.8M(1.3-1.8)	
	25W44341-346	TA25DU-2.4M(1.7-2.4)	
	025W48016-128	TA25DU-4.0M(2.8-4.0)	
	025W48207-038	TA25DU-5.0M(3.5-5.0)	
	025W48016-127	TA25DU-6.5M(4.5-6.5)	
	025W48207-039	TA25DU-8.5M(6.0-8.5)	
	024W33860-061	TA25DU-14M(10-14)	
	024W33860-077	TA25DU-19M(13-19)	
	024W33860-078	TA25DU-25M(18-25)	
	024W33860-059	TA25DU-32M(24-32)	

MMS1, MMS2,MMS3,MMS6,MMS7 for Ult	024W33919-749	MS132-1.6-HKF1-11	
	024W33919-750	MS132-2.5-HKF1-11	
	024W33919-760	MS132-4.0-HKF1-11	
	024W33919-748	MS132-6.3-HKF1-11	
	024W33919-802	MS132-10-HKF1-11	
	024W33919-747	MS132-12-HKF1-11	
	024W33919-746	MS132-16-HKF1-11	
	024W33919-803	MS132-20-HKF1-11	
	024W33919-767	MS132-25-HKF1-11	
	024W33919-759	MS132-32-HKF1-11	
	024W33919-804	MS165-42-HKF1-11	
	024W33919-805	MS165-54-HKF1-11	
	024W33919-806	MS165-65-HKF1-11	

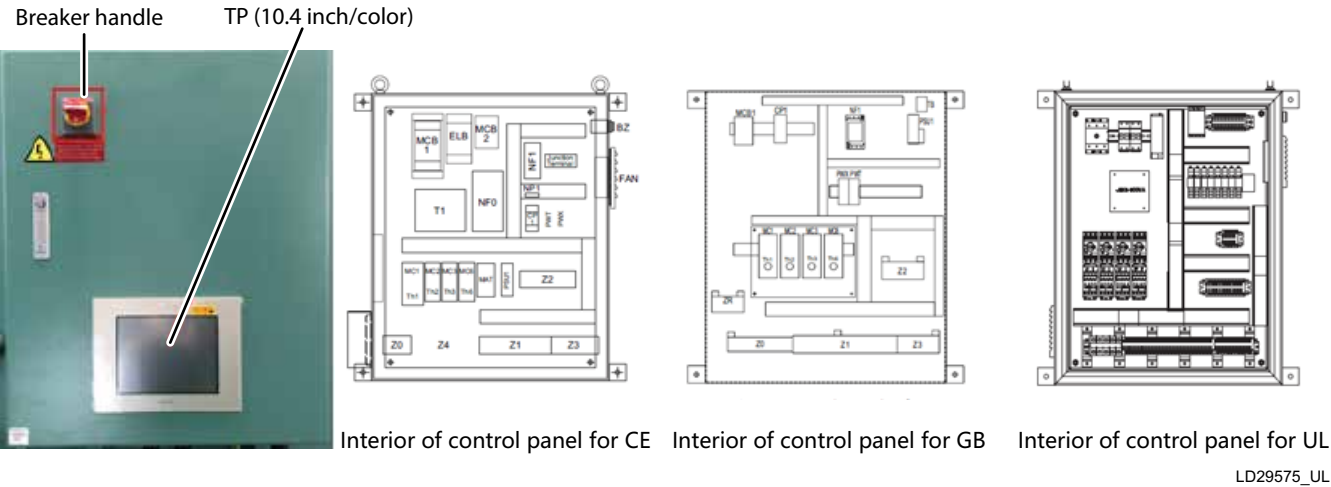


FIGURE 11 - INTERIOR OF CONTROL PANEL FOR CE, GB, AND UL

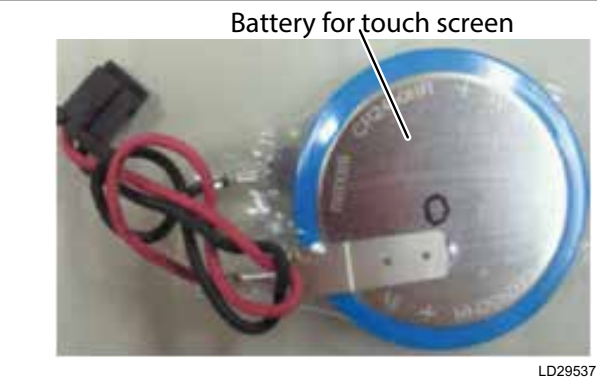
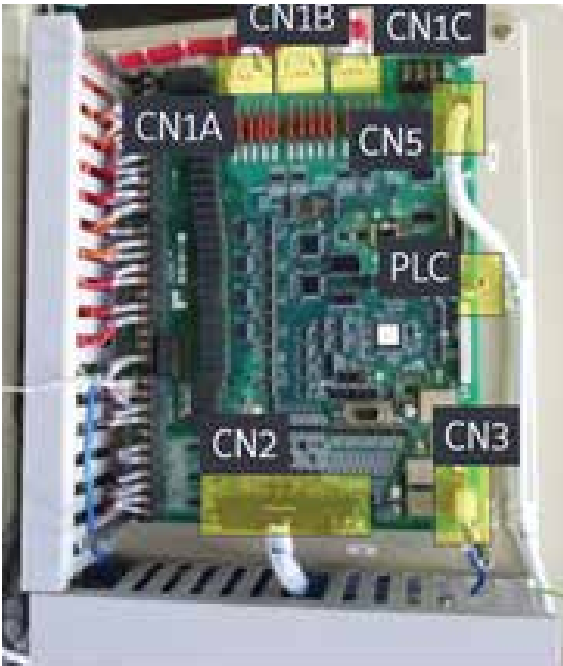


FIGURE 12 - BATTERY FOR TOUCH SCREEN



FIGURE 13 - MAIN BOARD BATTERY



LD29536

FIGURE 14 - MAIN CIRCUIT BOARD

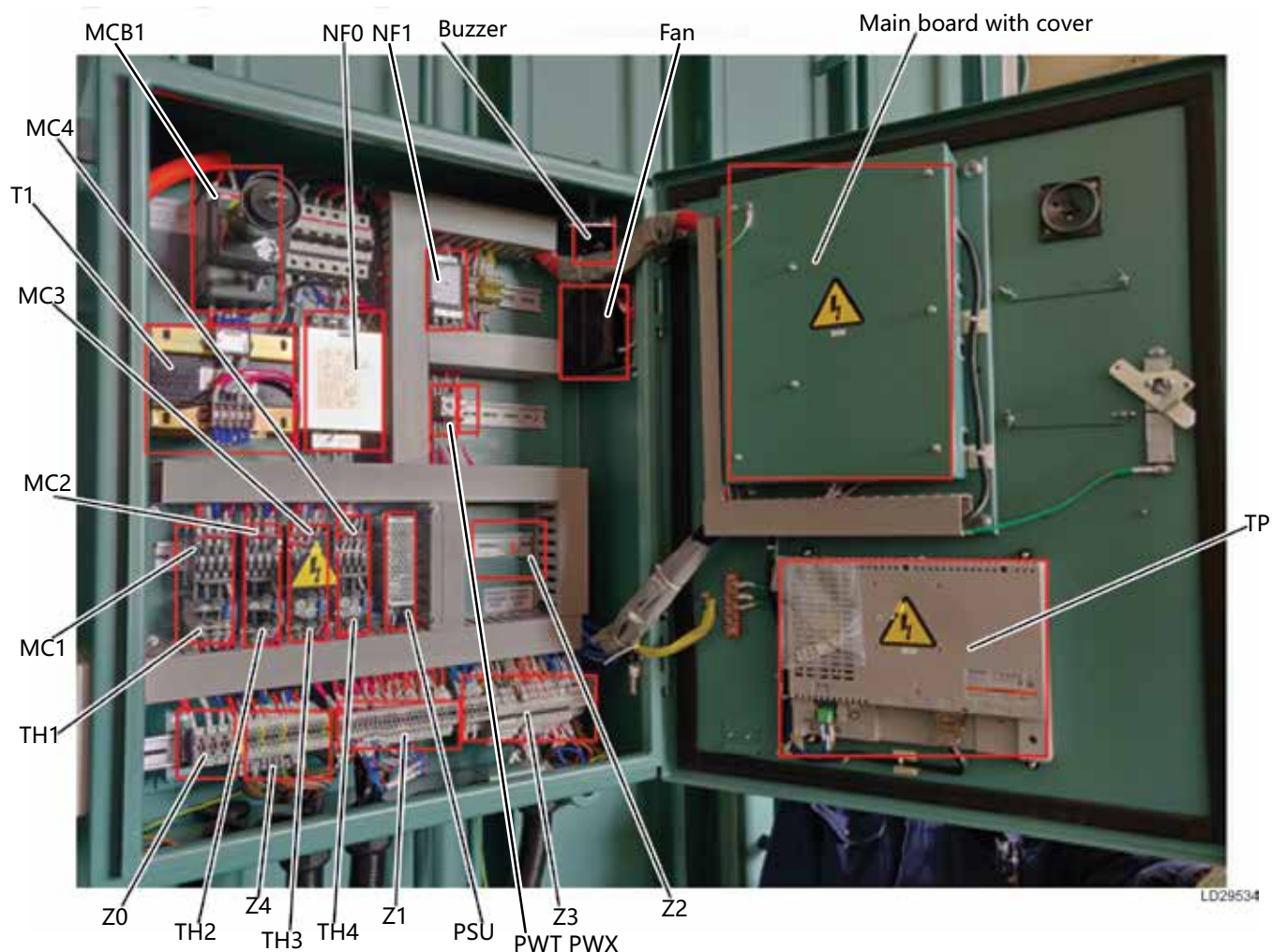


FIGURE 15 - INTERIOR OF CONTROL PANEL

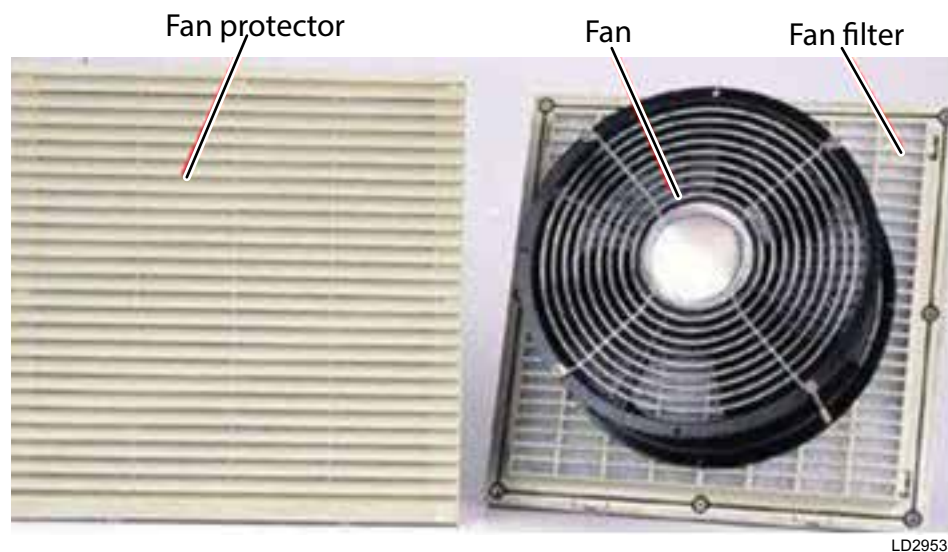


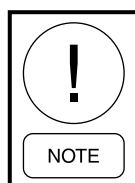
FIGURE 16 - FAN, FAN PROTECTOR, AND FAN FILTER

TABLE 6 - PUMP AND MAINTENANCE KITS

DESCRIPTION		150EX(S)	180EX(S)	240EX(S)	300EX(S)	360/400EX(S)	450EX(S)	500EX(S)	560EX(S)	600EX(S)	700EX(S)	800EX(S)	900EXW(S)	1000EXW(S)	1100EXW(S)	1200EXW3(S)	1300EXW3(S)	1400EXW3(S)	1500EXW3(S)	1600EXW3(S)	1000EXW4(S)	1120EXW4(S)	1250EXW4(S)	1400EXW4(S)	1500EXW4(S)	1600EXW4(S)	1680EXW4(S)	1800EXW4(S)	1900EXW4(S)	2000EXW4(S)
PART NAME	PART NUMBER																													
Solution Circulation Pump (AC380-415 V / 50 Hz)	026W51260-115	1	1																											
	026W50448-000			1	1																									
	026W50365-001					1	1	1	1	1	1	1	1																	
	026W51260-035													1	1	1	1	1	1	1	1	1	1	1	1	1				
	026W51260-046																										1	1	1	
Solution Circulation Pump (AC380-400 V / 60 Hz)	026W51260-116	1	1																											
	026W51260-017			1	1																									
	026W50365-004					1	1	1	1	1	1	1	1																	
	026W51260-036													1	1	1	1	1	1	1	1	1	1	1	1	1				
	026W51260-047																										1	1	1	
Solution Circulation Pump (AC460 V / 60 Hz)	026W51260-118	1	1																											
	026W51260-019			1	1																									
	026W51230-000					1	1	1	1	1	1	1	1																	
	026W51260-038													1	1	1	1	1	1	1	1	1	1	1	1	1				
	026W51260-049																										1	1	1	
Solution Spray Pump (AC380 - 415 V / 50 Hz)	026W50008-001	1	1																											
	092W70626-000			1	1																									
	026W50364-001					1	1	1	1	1	1																			
	026W50369-000												1	1	1															
	026W51260-071														1	1	1	1	1	1	1	1	1	1	1	1				
	026W50420-000																										1	1	1	
Solution Spray Pump (AC380 - 400 V / 60 Hz)	026W51260-052	1	1																											
	026W51260-056			1	1																									
	026W51260-060					1	1	1	1	1	1																			
	026W51260-066												1	1	1															
	026W51260-072														1	1	1	1	1	1	1	1	1	1	1	1				
	026W51260-041																										1	1	1	

TABLE 4 - PUMP AND MAINTENANCE KITS (CONT'D)

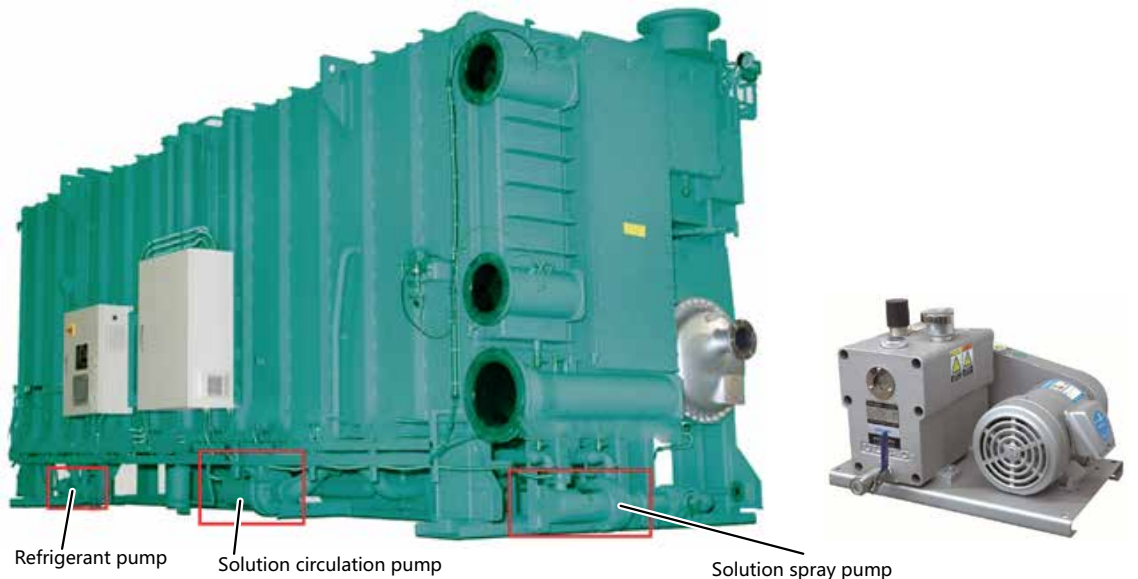
DESCRIPTION		150EX(S)	180EX(S)	240EX(S)	300EX(S)	360/400EX(S)	450EX(S)	500EX(S)	560EX(S)	600EX(S)	700EX(S)	800EX(S)	900EX(S)	1000EX(S)	1100EX(S)	1200EX(S)	1300EX(S)	1400EX(S)	1500EX(S)	1600EX(S)	1000EXW4(S)	1120EXW4(S)	1250EXW4(S)	1400EXW4(S)	1500EXW4(S)	1600EXW4(S)	1680EXW4(S)	1800EXW4(S)	1900EXW4(S)	2000EXW4(S)
PART NAME	PART NUMBER																													
Solution Spray Pump (AC460 V / 60 Hz)	026W51260-054	1	1																											
	026W51260-058			1	1																									
	026W50672-000					1	1	1	1	1	1																			
	026W51260-068											1	1	1																
	026W51260-074														1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	026W51260-043																											1	1	1
Refrigerant Pump (AC380 - 415 V / 50 Hz)	026W50006-001	1																												
	026W50449-000		1	1	1																									
	026W50344-001					1	1	1	1	1	1	1																		
	026W50370-000												1	1																
	026W50370-000														1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	026W50418-000																											1	1	1
Refrigerant Pump (AC380 - 400 V / 60 Hz)	026W51260-085	1																												
	026W51260-094		1	1	1																									
	026W51260-097					1	1	1	1	1	1	1																		
	026W51260-099												1	1																
	026W51260-105														1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	026W51260-110																											1	1	1
Refrigerant Pump (AC460 V / 60 Hz)	026W51260-087	1																												
	026W51260-096		1	1	1																									
	026W50671-000					1	1	1	1	1	1	1																		
	026W51260-101												1	1																
	026W51260-107														1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	026W51260-112																											1	1	1
Maintenance Parts for Solution Circulation Pump	026W51221-002	1	1																											
	026W51221-007			1	1																									
	026W51221-004					1	1	1	1	1	1	1	1																	
	026W51221-005													1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	026W51221-006																											1	1	1
Maintenance Parts for Solution Spray Pump	026W51222-001	1	1																											
	026W51222-002			1	1																									
	026W51222-003					1	1	1	1	1	1																			
	026W51222-004											1	1	1																
	026W51222-005														1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	026W51222-006																											1	1	1



The maintenance parts kit is suitable for different power supplier pumps. Vacuum pump maintenance parts kits can be used for both indoor and outdoor vacuum pumps.

TABLE 4 - PUMP AND MAINTENANCE KITS (CONT'D)

DESCRIPTION																														
PART NAME	PART NUMBER	150EX(S)	180EX(S)	240EX(S)	300EX(S)	360/400EX(S)	450EX(S)	500EX(S)	560EX(S)	600EX(S)	700EX(S)	800EX(S)	900EXW(S)	1000EXW(S)	1100EXW(S)	1200EXW3(S)	1300EXW3(S)	1400EXW3(S)	1500EXW3(S)	1600EXW3(S)	1000EXW4(S)	1120EXW4(S)	1250EXW4(S)	1400EXW4(S)	1500EXW4(S)	1600EXW4(S)	1680EXW4(S)	1800EXW4(S)	1900EXW4(S)	2000EXW4(S)
Maintenance Parts Kit for Refrigerant Pump	026W51223-001	1																												
	026W51223-002		1	1	1																									
	026W51223-003					1	1	1	1	1	1	1																		
	026W51223-004												1	1																
	026W51223-005														1	1	1	1	1	1	1	1	1	1	1	1	1			
	026W51223-006																											1	1	1
Vacuum Pump (AC380~415 V / 50 Hz 400~460 V / 60 Hz) Indoor	026W49989-000																													
Vacuum Pump (AC380~415 V / 50 Hz 400~460 V / 60 Hz) outdoor	026W50423-002																													
Vacuum Pump (AC200/220)	026W50677-001																													
Maintenance Parts Kit for Vacuum Pump	026W50889-000																													
Vacuum Pump V-belt	026W50890-000																													



LD29631

FIGURE 17 - REFRIGERANT, SOLUTION CIRCULATION, AND SOLUTION SPRAY PUMPS

TABLE 7 - SOLUTION AND REFRIGERANT PUMP MAINTENANCE KIT EXAMPLE

PART NUMBER	PART LIST
026W51221-002	Front bearing
	Rear bearing
	Front shaft sleeve
	Rear shaft sleeve
	Front thrust collar
	Rear thrust collar
	Sealing gasket for casing
	Sealing gasket for rear bearing housing
	Lock washer for front end of shaft
	Plain washer for front end of shaft
	Snap ring for rear end of shaft
	Set of washer for adjusting axial gap (1)
	Set of washer for adjusting axial gap (2)

Note: The parts will be different according to the pump model.

TABLE 8 - VACUUM PUMP MAINTENANCE KIT

PART NUMBER	PART LIST
026W50889-000	Oil seal
	Deep groove ball bearing 1
	Deep groove ball bearing 2
	Oil level gauge
	First blade spring
	Second blade spring
	Exhaust valve plate
	Exhaust valve plate spring
	Composite seal gasket
	Gas ballast valve gasket
	O-ring for PVD-N360
	V-belt

TABLE 9 - VALVES

DESCRIPTION		150EX(S)	180EX(S)	240EX(S)	300EX(S)	360/400EX(S)	450EX(S)	500EX(S)	560EX(S)	600EX(S)	700EX(S)	800EX(S)	900EXW(S)	1000EXW(S)	1100EXW(S)	1200EXW3(S)	1300EXW3(S)	1400EXW3(S)	1500EXW3(S)	1600EXW3(S)	1000EXW4(S)	1120EXW4(S)	1250EXW4(S)	1400EXW4(S)	1500EXW4(S)	1600EXW4(S)	1680EXW4(S)	1800EXW4(S)	1900EXW4(S)	2000EXW4(S)
PART NAME	PART NUMBER																													
Diaphragm valve(15A)	022W13281-001	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	
Diphragm for diaphragm valve(15A)	028W18178-000	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	
Haimen Diaphragm Valve(15A) X	022W13807-001	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	
Diaphragm for Haimen Valve(15A) X	022W13807-101	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	
V11: Purge valve from purging tank V14: Main purging valve V16: Purging valve from absorber														V21: Purging valve from condenser (direct purging) Note: Haimen diaphragm valve uses the units after the chiller series number 50611L98391163 (included)																
Solenoid valve for purge line and ref. blowing line (AC200)	025W48003-002	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Solenoid valve for purge line and ref. blowing line (AC110) for UL	025W48003-001	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Check valve for purge line	022W13235-000	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
SV1: Vacuum purging solenoid valve SV2: Vacuum purging solenoid valve														SV3: Refrigerant blowing solenoid valve Check valve for purge line is canceled																
Sampling valve (10A)	022W13372-000	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
O-ring for sampling valve P21	028W18176-000	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
O-ring for adjusting and sampling valve P16	028W18177-000	24	27	27	27	27	26	26	26	26	20	20	20	17	17	17	17	17	27	26	26	26	26	27	26	26	26	26	20	20
V30: Solution sampling valve before the solution circulation pump V31: Solution sampling valve after solution circulation pump V32: Solution sampling valve before solution spray pump V33: Solution sampling valve after solution spray pump										V34: Refrigerant sampling valve before the refrigerant pump V35: Refrigerant sampling valve after the refrigerant pump V36: HTG solution sampling valve V37: LTG solution sampling valve																				
Pressure release valve for GB and CE	322W13373-001	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Rupture disk for UL (1.5") 12 psig	026W51293-000	1	1	1	1	1																								
Rupture disk for UL (2") 12 psig	026W51295-000						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							
Rupture disk for UL (3") 12 psig	026W51297-000																								1	1	1	1	1	
Pressure release valve is located on the purging tank standard for GB and CE. The rupture disc assessor is located on tube side of LTG for UL. It uses the 12 psi rupture disk.																														
Air vent valve for waterbox	022W13246-002	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Position: On the top, front, and back of the waterbox																														
Drain valve for waterbox (15A)	022W13246-004	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Position: On the bottom, front, and back of the waterbox																														

TABLE 7 - VALVES (CONT'D)

DESCRIPTION		150EX(S)	180EX(S)	240EX(S)	300EX(S)	360/400EX(S)	450EX(S)	500EX(S)	560EX(S)	600EX(S)	700EX(S)	800EX(S)	900EXW(S)	1000EXW(S)	1100EXW(S)	1200EXW3(S)	1300EXW3(S)	1400EXW3(S)	1500EXW3(S)	1600EXW3(S)	1000EXW4(S)	1120EXW4(S)	1250EXW4(S)	1400EXW4(S)	1500EXW4(S)	1600EXW4(S)	1680EXW4(S)	1800EXW4(S)	1900EXW4(S)	2000EXW4(S)	
PART NAME	PART NUMBER																														
Float ball valve for refrigerant tank	322W13803-000 32A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1															
	022W13382-000 50A																1	1	1												
	322W13896-000 65A																			1	1	1	1	1	1	1	1	1	1	1	
	322W13898-000 65A *																			1	1	1	1	1	1	1	1	1	1	1	
Position: In the refrigerant tank *: Used for module 2 unit of twin type chiller or a chiller of a similar layout as module 2.																															
Float ball valve for HTG Solution tank	322W13897-000 32A	1	1	1	1	1	1	1																							
	022W13385-000 40A								1	1	1																				
	322W13805-000 50A											1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	022W13808-000 50A *											1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Position: In the HTG float ball valve tank *: Used for module 2 unit of twin type chiller or a chiller of a similar layout as module 2.																															
Needle valve	022W13368-002	1	1																												
	022W13368-003			1	1	1																									
	022W13368-004						1	1	1	1	1																				
	022W13368-005											1	1	1	1	1	1				1	1	1								
	022W13368-006																	1	1	1				1	1	1	1	1	1	1	
Steam drain solenoid valve for 200 V 50 Hz	025W48101-002	1	1	1	1	1	1																								
	025W48101-003							1	1	1	1	1																			
	022W13323-004												1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Steam drain solenoid valve 100 V 60 Hz for UL	025W51242-001	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Steam drain strainer 20 bar 80 mesh	026W50409-004	1	1	1	1	1	1	1	1	1	1	1																			
	026W50409-005												1	1	1	1					1										
	026W50409-006																1	1	1	1		1	1	1	1	1	1	1	1	1	
Steam drain control valve 24 VAC	022W13362-001	1	1	1	1	1	1	1	1	1	1	1	1	1							1										
	022W13362-002														1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	
Position: On the steam drain pipe																															
Globe valve	022W13370-001										2																1				
	022W13370-002										4																1				
	022W13370-003																									2					
	022W13370-004																														
	022W13370-005																											1			
Copper packing for globe valve (40A)	021W35469-001																														

TABLE 7 - VALVES (CONT'D)

DESCRIPTION		150EX(S)	180EX(S)	240EX(S)	300EX(S)	360/400EX(S)	450EX(S)	500EX(S)	560EX(S)	600EX(S)	700EX(S)	800EX(S)	900EXW(S)	1000EXW(S)	1100EXW(S)	1200EXW3(S)	1300EXW3(S)	1400EXW3(S)	1500EXW3(S)	1600EXW3(S)	1000EXW4(S)	1120EXW4(S)	1250EXW4(S)	1400EXW4(S)	1500EXW4(S)	1600EXW4(S)	1680EXW4(S)	1800EXW4(S)	1900EXW4(S)	2000EXW4(S)	
PART NAME	PART NUMBER																														
Copper packing for globe valve (65A)	021W35469-002																														
Adjusting valve	022W13371-001										5																4				
	022W13371-002										10																7				
	022W13371-003										1																5				
VH: Shut off valve for generator pressure gauge VI: Shut off valve for pressure release valve VJ: Shut off valve for ref. blowing solenoid valve VK: Shut off valve for ref. blowing solenoid valve V1: For generator solution flow adjusting V2: For refrigerant flow adjusting										V4: For absorber solution flow adjusting V5: For ejector solution flow adjusting V6: For ejector solution flow adjusting V8: For refrigerant blow V10: Shut off valve for purge tank V12: Upper absorber direct purge valve										V13: Absorber purge valve V15: Lower absorber direct purge valve V15: Lower absorber direct purge valve V18: Condenser direct purge valve V19: Condenser purge valve V20: Condenser purge valve											
Butterfly Valve (Option)	022W13280-009																														
	022W13280-010										1																				
	022W13280-011										2																1				
	022W13280-012										1																				
	022W13280-013										1																2				
	022W13280-014																														
	022W13280-015																											2			
VA: Butterfly valve before the solution circulation pump VB: Butterfly valve after the solution circulation pump VC: Butterfly valve before the solution spray pump														VD: Butterfly valve after the solution spray pump VE: Butterfly valve before the refrigerant pump VF: Butterfly valve after the refrigerant pump																	
The quantity of the globe valve, adjusting valve, and butterfly valve is to be decided. It will be different according to the chiller order. Before placing the order, measure the size of these valves.																															

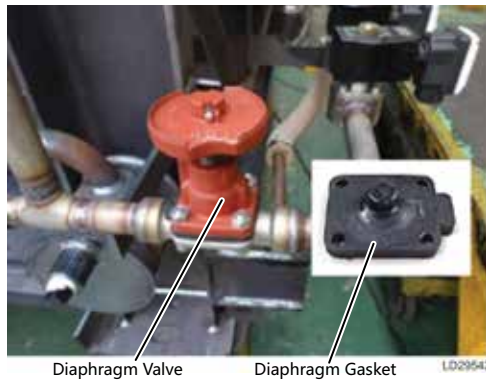


FIGURE 18 - DIAPHRAGM VALVE AND GASKET



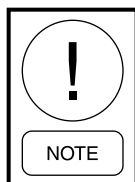
FIGURE 20 - SOLENOID VALVE FOR PURGE AND BLOW PUMP



FIGURE 19 - CHECK VALVE

TABLE 10 - VALVE TYPES

VALVE NAME	PART NUMBER	VALVE MODEL
Adjusting Valve	022W13371-001	V-15A
	022W13371-002	V-25A
	022W13371-003	V-40A
Globe Valve	022W13370-001	V-40A
	022W13370-002	V-50A
	022W13370-003	V-65A
	022W13370-004	V-80A
	022W13370-005	V-100A
Needle Valve	022W13368-002	NPT1/4(8A)
	022W13368-003	NPT3/8(10A)
	022W13368-004	NPT1/2(15A)
	022W13368-005	NPT3/4(20A)
	022W13368-006	NPT1(25A)
Butterfly Valve (Option)	022W13280-009	V-40A
	022W13280-010	V-50A
	022W13280-011	V-65A
	022W13280-012	V-80A
	022W13280-013	V-100A
	022W13280-014	V-125A
	022W13280-015	V-150A
Steam Drainer Control Valve 24 VAC	022W13362-001	AVF-6202-6330-20A
	022W13362-002	AVF-6202-6330-25A
Steam Drain Solenoid Valve 200 V - 50 Hz for GB/CE	025W48101-002	PVS-20A-210 20A
	025W48101-003	PVS-25A-210 25A
	022W13323-004	PVS-32A-210 32A
Steam Drain Solenoid Valve 100 V - 60 Hz for UL	025W51242-001	AP21-32F-C4M 32A
Steam Drain Strainer	026W50409-002	15A
	026W50409-004	25A
	026W50409-005	32A
	026W50409-006	40A
	026W50409-007	50A



The size of the valve will follow the following sheet

	15A	25A	40A	50A	65A	80A	100A	125A	150A
mm	Φ21.7	Φ34	Φ48.6	Φ60	Φ76	Φ89	Φ114	Φ140	Φ165

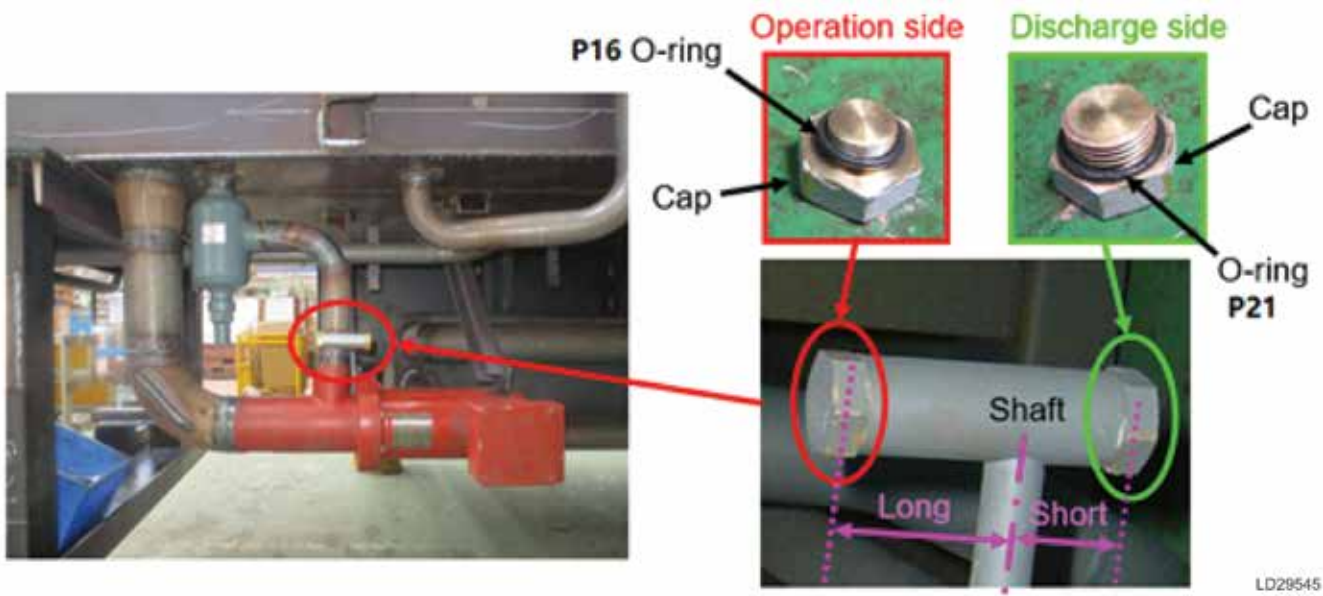


FIGURE 21 - SAMPLING VALVE



FIGURE 22 - RUPTURE DISC KIT AND RUPTURE DISC



Refrigerant water float ball

FIGURE 23 - REFRIGERANT WATER FLOAT BALL VALVE

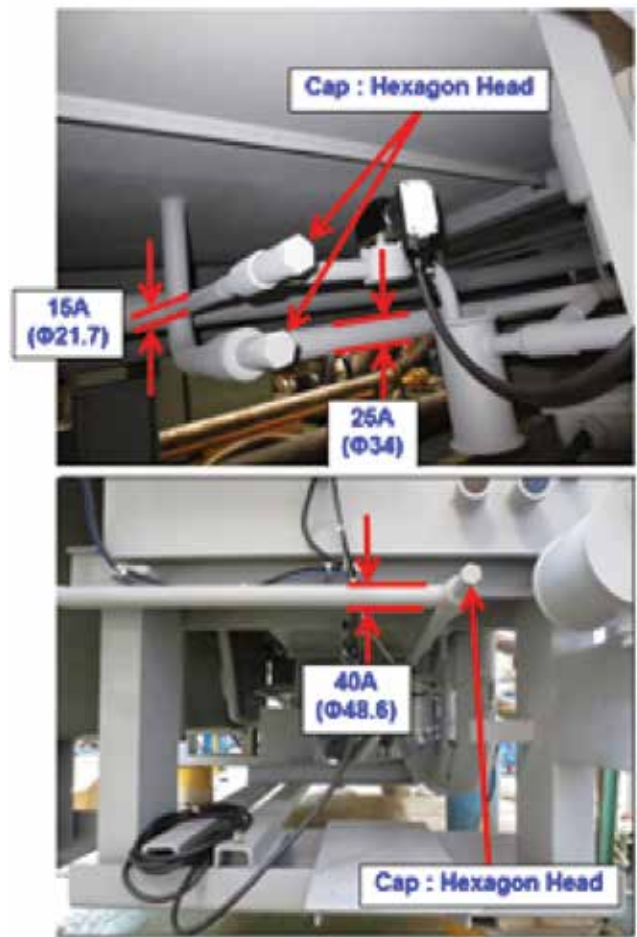


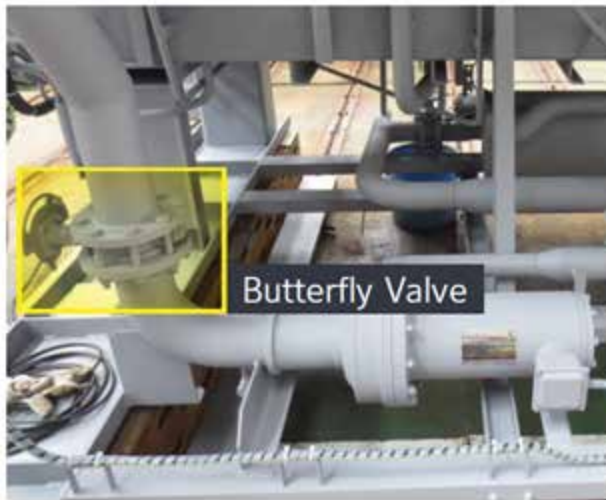
FIGURE 24 - ADJUSTING VALVE



HTG solution float ball valve

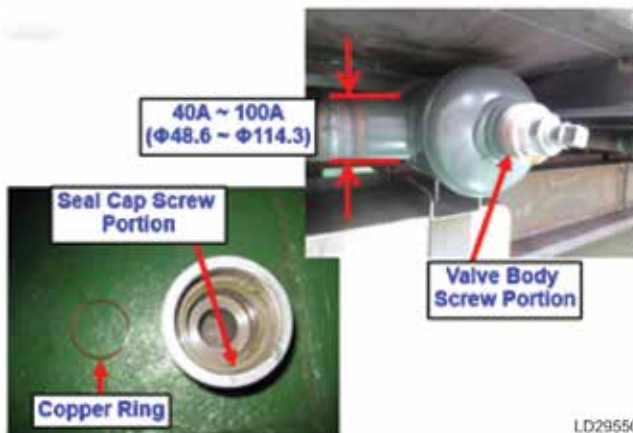
LD29632

FIGURE 25 - HTG SOLUTION FLOAT BALL VALVE



LD29551

FIGURE 26 - BUTTERFLY VALVE



LD29550

FIGURE 27 - GLOBE VALVE



Steam drain solenoid valve



Steam drain control valve

Steam drain strainer



Needle valve



LD29633

FIGURE 28 - NEEDLE, STEAM DRAIN SOLENOID, STEAM DRAIN CONTROL VALVES, AND STEAM DRAIN STRAINER



Pressure Release Valve

LD29553

FIGURE 29 - PRESSURE RELEASE VALVE

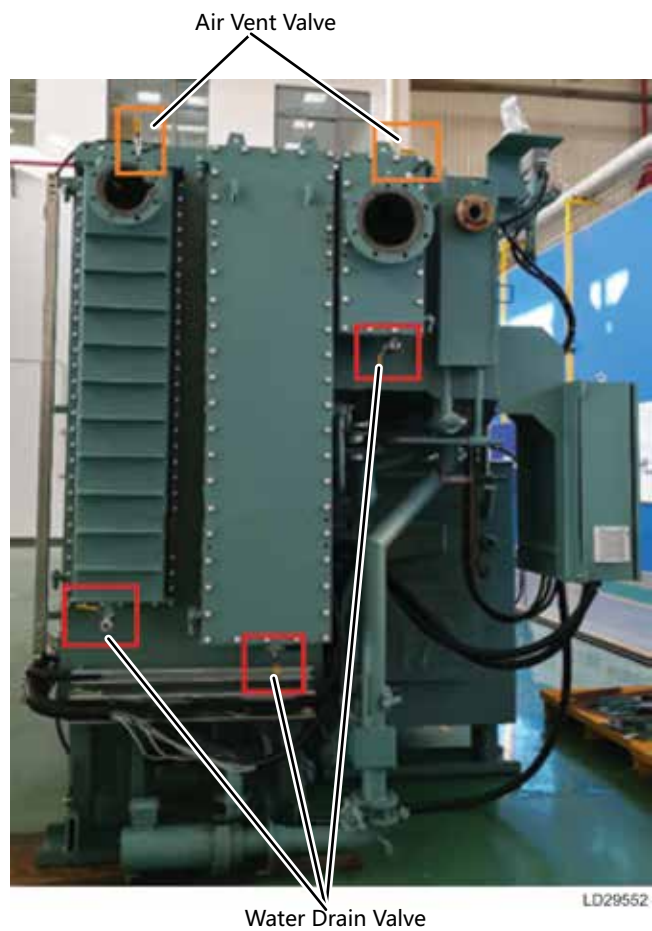


FIGURE 30 - AIR VENT AND WATER DRAIN VALVES

TABLE 11 - SENSOR AND CONTROL SWITCH

DESCRIPTION		150EX(S)	180EX(S)	240EX(S)	300EX(S)	360/400EX(S)	450EX(S)	500EX(S)	560EX(S)	600EX(S)	700EX(S)	800EX(S)	900EXW(S)	1000EXW(S)	1100EXW(S)	1200EXW3(S)	1300EXW3(S)	1400EXW3(S)	1500EXW3(S)	1600EXW3(S)	1000EXW4(S)	1120EXW4(S)	1250EXW4(S)	1400EXW4(S)	1500EXW4(S)	1600EXW4(S)	1680EXW4(S)	1800EXW4(S)	1900EXW4(S)	2000EXW4(S)
PART NAME	PART NUMBER																													
Resistance Temp. Sensor (RTD1,RTD-2)	025W47992-001(10m)	1	1	1																										
	025W47992-004(10m)	1	1	1																										
	025W48061-001(10m)				1	1	1	1	1	1																				
	025W48061-002(15m)										1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	025W48061-005(12m)				1	1	1	1	1																					
	025W48061-006(17m)									1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Resistance Temp. Sensor (RTD-3)	025W47994-002(10m)	1	1	1	1	1	1	1	1	1																				
	025W47994-003(15m)										1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Thermocouple (T/C1, T/C2)	025W47997-008(7m)	2	2	2	2																									
	025W47997-001(10m)					2																								
	025W48063-002(12m)						2	2	2	2	1	1	1																	
	025W48063-007(17m)										1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2			
	025W48063-019(22m)																											2	2	2
Thermocouple (T/C3, T/C4)	025W47999-009(12m)										1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	025W47999-008(7m)	1	1	1	1	1	1	1	1	1																				
	025W47999-011(10m)	1	1	1	1	1	1	1	1	1																				
	025W47999-013(17m)										1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pressure Sensor (PT1,PT2)	025W47983-000	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Level Switch (33RL)	024W39631-000	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pressure Differential Switch (69 WC1, 69WC2)	024W39662-002	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
HTG Pressure Switch (63SH1)	024W39636-003	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

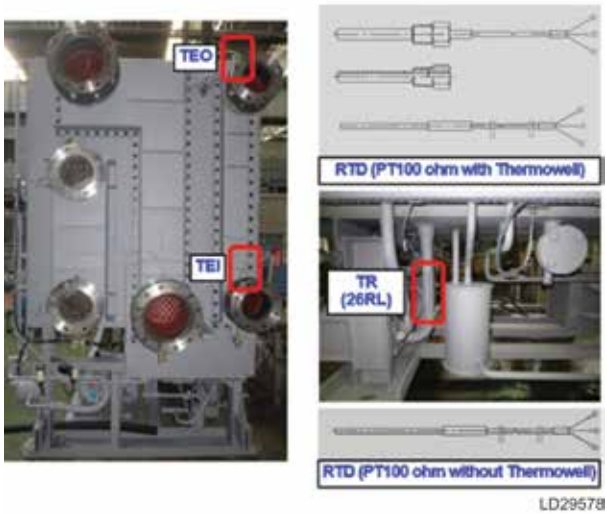


FIGURE 31 - TEMPERATURE SENSOR - RTD



FIGURE 34 - PRESSURE DIFFERENTIAL SWITCH



FIGURE 32 - PRESSURE SENSOR

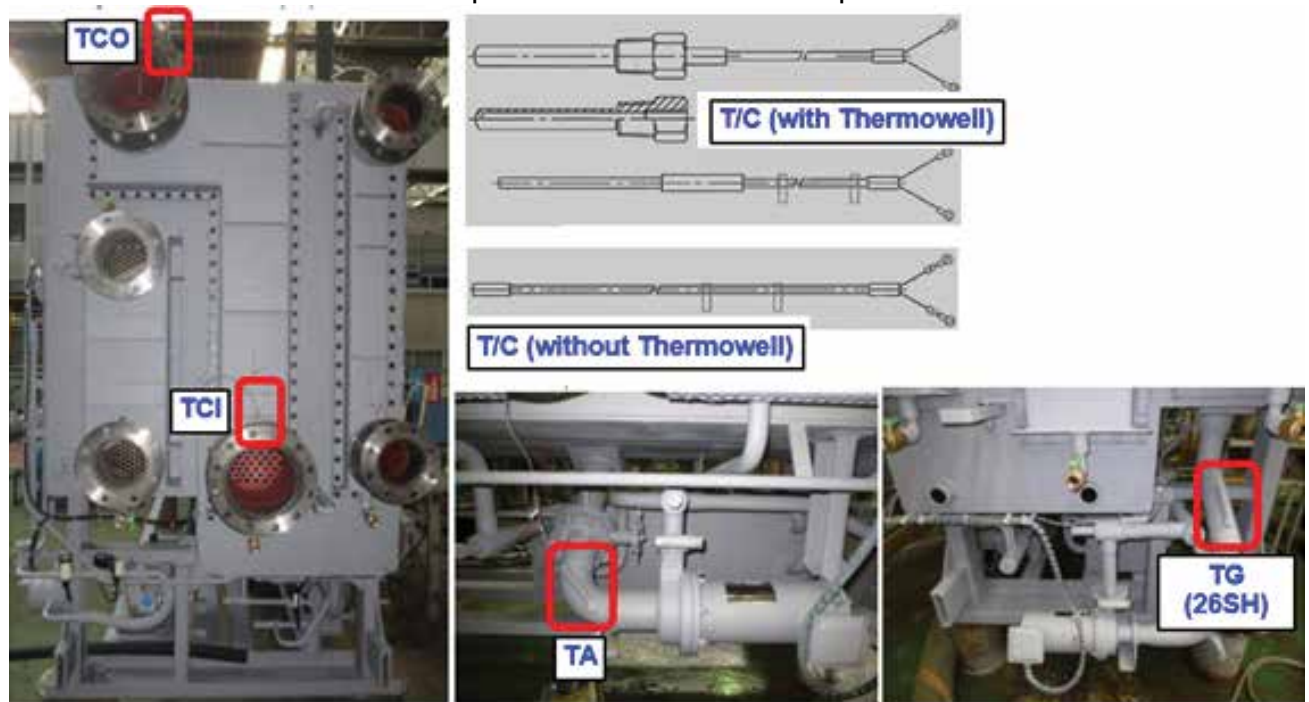


FIGURE 35 - LEVEL SWITCH



FIGURE 33 - PRESSURE SWITCH

Temperature sensor-thermocouple

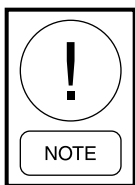


LD29580

FIGURE 36 - TEMPERATURE SENSOR-THERMOCOUPLE

TABLE 12 - OTHER PARTS

DESCRIPTION		150EX(S)	180EX(S)	240EX(S)	300EX(S)	360/400EX(S)	450EX(S)	500EX(S)	560EX(S)	600EX(S)	700EX(S)	800EX(S)	900EXW(S)	1000EXW(S)	1100EXW(S)	1200EXW3(S)	1300EXW3(S)	1400EXW3(S)	1500EXW3(S)	1600EXW3(S)	1000EXW4(S)	1120EXW4(S)	1250EXW4(S)	1400EXW4(S)	1500EXW4(S)	1600EXW4(S)	1680EXW4(S)	1800EXW4(S)	1900EXW4(S)	2000EXW4(S)	
PART NAME	PART NUMBER																														
Compound Gauge for Generator	022W13350-002	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Vacuum Gauge for Purge Line	022W13350-003	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Rubber Hose for Purge Line	022W13899-001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Paint for Waterbox A	013W03621-000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Paint for Waterbox B	013W03620-000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Waterbox paint thinner	013W03481-000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Paint for surface	013W03775-000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Surface paint thinner	013W03776-000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Note: Surface paint: Munsell 4.65G 4.50/2.85 do not have the standard ROL color code. Factory can send the Color Standard Panel, the paint company can make the surface paint according to this color standard panel.																															
Vacuum pump oil	028W17656-000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
LiBr Solution 100 kg/ barrel	011W01083-001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
LiBr Solution 320 kg/ barrel	011W01075-000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Lithium Molybdate Solution	011W01077-000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Lithium Nitrate Solution	011W01076-000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Octyl Alcohol	011W01070-000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		



Contact JCH to purchase vacuum pump oil, lithium molybdate, lithium nitrate, and octyl alcohol.



LD29570

FIGURE 37 - SURFACE PAINT CARD

TABLE 13 - STANDARD PARTS KIT AND TOOLS KIT

NAME	PART NUMBER	PART LIST	PART MODEL	UNIT	QUANTITY
Parts Kit	393W21037-000	Thermocouple	WRNT-106A (17 m)	Pcs	1
		Resistance temperature sensor	WZPKT-2906A (15 m)	Pcs	1
		Pressure sensor	PA-838-102A-10-064	Pcs	1
		Differential pressure switch	WFS10	Pcs	1
		O-ring gasket of sampling valve	P-21 (Extraction Side)	Pcs	10
		O-ring for adjusting valve (15 A - 40 A)	P-16 ϕ 15.8 $\times$ ϕ 2.4 FKM (Operation Side)	Pcs	10
		Diaphragm gasket for purging vale	DIAP (407NB-CR)	Pcs	1
		Solenoid valve for purge line	AB41-04-8-D-3M	Pcs	1
		Vacuum pump belt		Pcs	1
		Suitcase for parts kit		Pcs	1

NAME	PART NUMBER	PART LIST	PART MODEL	UNIT	QUANTITY
Tools Kit	393W21036-000	PP Measuring cylinder	(B class) - 250 ml 650941	Pcs	2
		Glass thermometer	H441 range 5-135°C/40-280°F	Pcs	2
		Glass thermometer	E520R 0-80°C/20-180°F	Pcs	2
		Density meter	14 pcs package	Set	1
		Allen-key	8 mm, 20	Pcs	1
		Spanner	8#	Pcs	1
		Sampler		Pcs	1
		Suitcase for tools kit		Pcs	1



5000 Renaissance Drive, New Freedom, Pennsylvania USA 17349
Copyright © by Johnson Controls 2020
Form 155.31-RP1 (120)
Issue Date: January 10, 2020
New Release

1-800-524-1330
www.johnsoncontrols.com

Subject to change without notice. Printed in USA
ALL RIGHTS RESERVED