


PAAD380393	HT CW static pressure adjustment: with separate expansion tank
PAAD380394	HT CW static pressure adjustment: with separate buffer-unit

Net Weight											
0,001	0,001										
1	1	003	107.429.532.500	CONCEPT GUIDANCE Freshwater generation	107.429.532						0,001
-	1	002	PAAD380377	CENTRAL COOLING WATER SYSTEM HT_static-pressure: Buffer-unit	DAAD142877						0,001
1	-	001	PAAD380361	CENTRAL COOLING WATER SYSTEM HT_static-pressure: EXP tank	DAAD142875						0,001

SEE TABLE

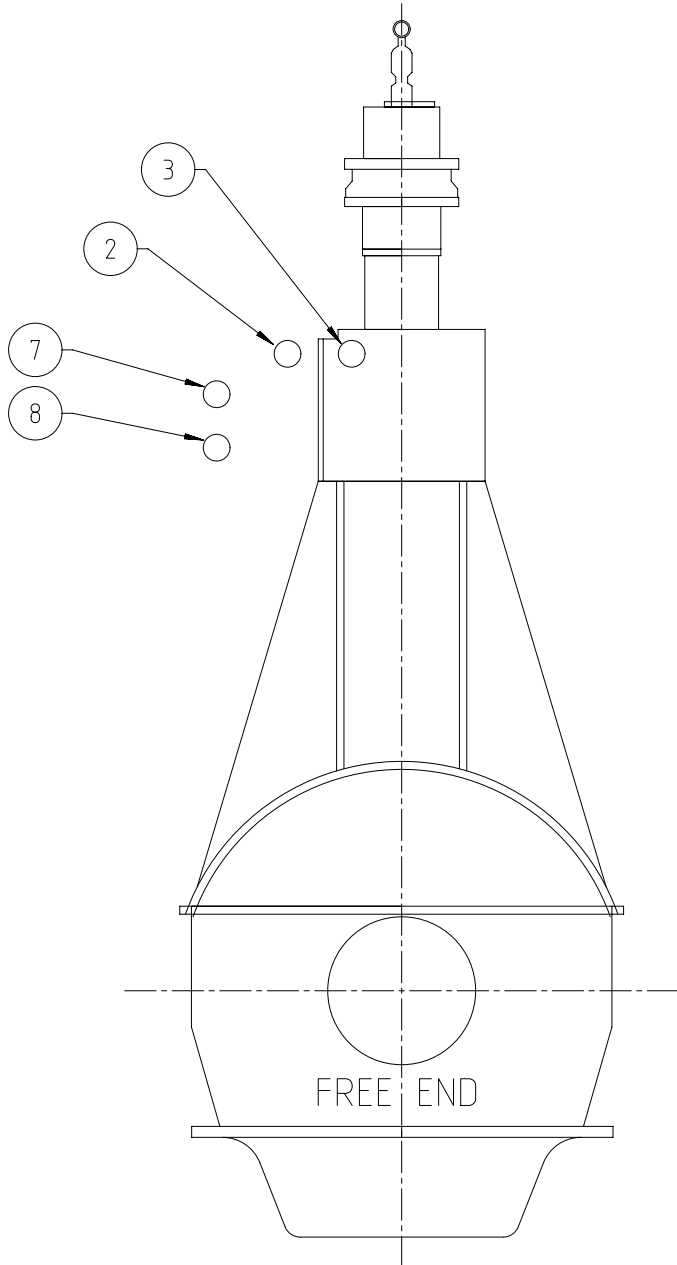
Quantity PER ENGINE	SEQ NO	Material ID	Material Name	Dimension, Occ	Standard or Drawing	Basic Material Material Standard	Weight GR./NET
PAAD380394	PAAD380393	Free space for lic.				Q-Code XXXXXX Standard ISO; JIS	Main Drw. H
Modif.	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number

	Product W5-8X52-S2.0	CENTRAL COOLING WATER SYSTEM Zentralkuehlwassersystem
	Units mm kg NX	Basic Material

SURFACE PROTECTION SEE GROUP 0344	Made	19.04.2021 dki021 DH.Kim	Scale	-	Size	A3	Page	1/1	Material ID	DAAD142891	Rev.	-
TOLERANCING PRINCIPLE ISO8015	Chkd	23.04.2021 jpi101 Pickup	Design Group	9721	Drawing ID							
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd	23.04.2021 mhu019 Hug										

Approved
DIM - DIMENSIONAL DRAWING - Confidential

X52-S2.0



SPECIFICATION which must be met:

2	<p>INLET - Cylinder cooling water (HT water)</p> <ul style="list-style-type: none"> - Cooling water pressure: 2.0 - 4.0 bar - Cooling water volume flow: according to GTD specification - Cooling water (freshwater) has to be treated according to WinGD specification. - An expansion tank must be installed. - The static pressure at engine inlet must be adjusted by the installation of the expansion tank. - Pre-heating: The engine must be warmed-up by heated HT water to min. 60 °C before engine start. - HT cooling water amount on engine side: Given in table1 on page 2
3	<p>OUTLET - Cylinder cooling water (HT water)</p> <p>Cooling water temperature:</p> <ul style="list-style-type: none"> - Controller set-point: 90 °C - Steady state condition: 90±2 °C - Transient condition: 90±4 °C
7	<p>INLET - Scavenge air cooler (SAC) cooling water (LT water)</p> <ul style="list-style-type: none"> - Cooling water pressure: 2.0 - 4.0 bar - Cooling water temperature: 10 - 36 °C - Cooling water volume flow: according to GTD specification - Cooling water (freshwater) has to be treated according to WinGD specification. - LT cooling water amount on engine side: Given in table1 on page 2
8	<p>OUTLET - Scavenge air cooler (SAC) cooling water (LT water)</p> <ul style="list-style-type: none"> - Cooling water volume flow: according to GTD specification, adjusted by an orifice in the outlet pipe on shipside.

1	016	107.245.419.500	EXPANSION TANK	107.245.419		0,001	
1	015	107.413.097.500	EXPANSION TANK	107.413.097		0,001	
QTY	SEQ NO	Material ID	Material Name	Dimension, Occ	Standard or Drawing	Basic Material Material Standard	Weight GR./NET
Free space for lic.						Q-Code XXXXXX	Main Drw.
						Standard ISO; JIS	

Modif.									
	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date	

 Winterthur Gas & Diesel	Product 5-8X52-S2.0	CENTRAL COOLING WATER SYSTEM	
		HT_static-pressure: EXP tank Zentralkuehlwassersystem	

Units	mm kg	NX		Basic Material	Net Weight 0,001
-------	-------	----	--	----------------	------------------

SURFACE PROTECTION SEE GROUP 0344	Made	21.04.2021	dk1021 DH.Kim	Scale	-	Size	A3	Page	1/2	Material ID	PAAD380361
TOLERANCING PRINCIPLE ISO8015	Chkd	23.04.2021	jpi101 Pickup	Design Group	9721	Drawing ID	DAAD142875	Rev.	-		
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd	23.04.2021	mhu019 Hug								

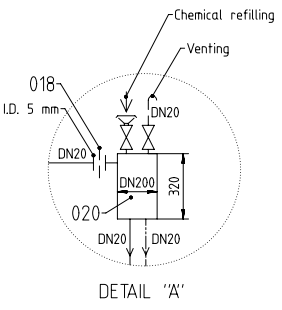
Approved
DIM - DIMENSIONAL DRAWING - Confidential

SYSTEM PROPOSAL

Pos.	ENGINE COMPONENTS *3)
EC01	Scavenge air cooler (SAC)
EC02	Manual vent valve, for each cylinder *15)
EC03	Air separator
EC04	Automatic venting unit

Pos.	ENGINE CONNECTIONS *2)
②	INLET - Cylinder cooling water (HT water)
③	OUTLET - Cylinder cooling water (HT water)
⑦	INLET - Scavenge air cooler (SAC) cooling water (LT water) *7)
⑧	OUTLET - Scavenge air cooler (SAC) cooling water (LT water) *7)

Pos.	SYSTEM COMPONENTS *1)
001	Low sea chest
002	High sea chest
003	Seawater strainer
004	Air vent (air vent pipe or equal venting system acc. to shipyard's design)
005	Seawater circulating pump
006	Central cooler (LT cooling water)
007	Automatic temperature control valve for LT circuit *13)
008	Temperature sensor of regulating system *13)
009	Cooling water pump for LT circuit
010	Lubricating oil cooler
011	Automatic temperature control valve for HT circuit *14)
012	Temperature sensor of regulating system *14)
013	Cylinder cooling water pump for HT circuit
014	Pre-heating circulating pump (optional), cap. 10% from cylinder cooling pump *8)
015	HT water expansion tank (link to detail drawing on page 1)
016	LT water expansion tank (link to detail drawing on page 1)
017	Pre-heater for main engine (HT circuit)
018	Throttling disc *5)
019	Freshwater generator
020	Chemical treatment refill unit *4)
021	HT cooling water cooler
022	Transition piece (adapter) *9)
023	MDO/MGO cooler



Number of cylinders		5	6	7	8
Main engine X52-S2.0 (R1 rated)	power (kW)	9550	11460	13370	15280
	speed (rpm)	120			
Pressure drop across the engine	(bar)	1.3			
Cooling water expansion tank (HT)	Cap. (m³)	Depending on ancillary plants min. 10% of HT cooling water			
Cooling water expansion tank (LT)	Cap. (m³)	Depending on ancillary plants min. 10% of LT cooling water			

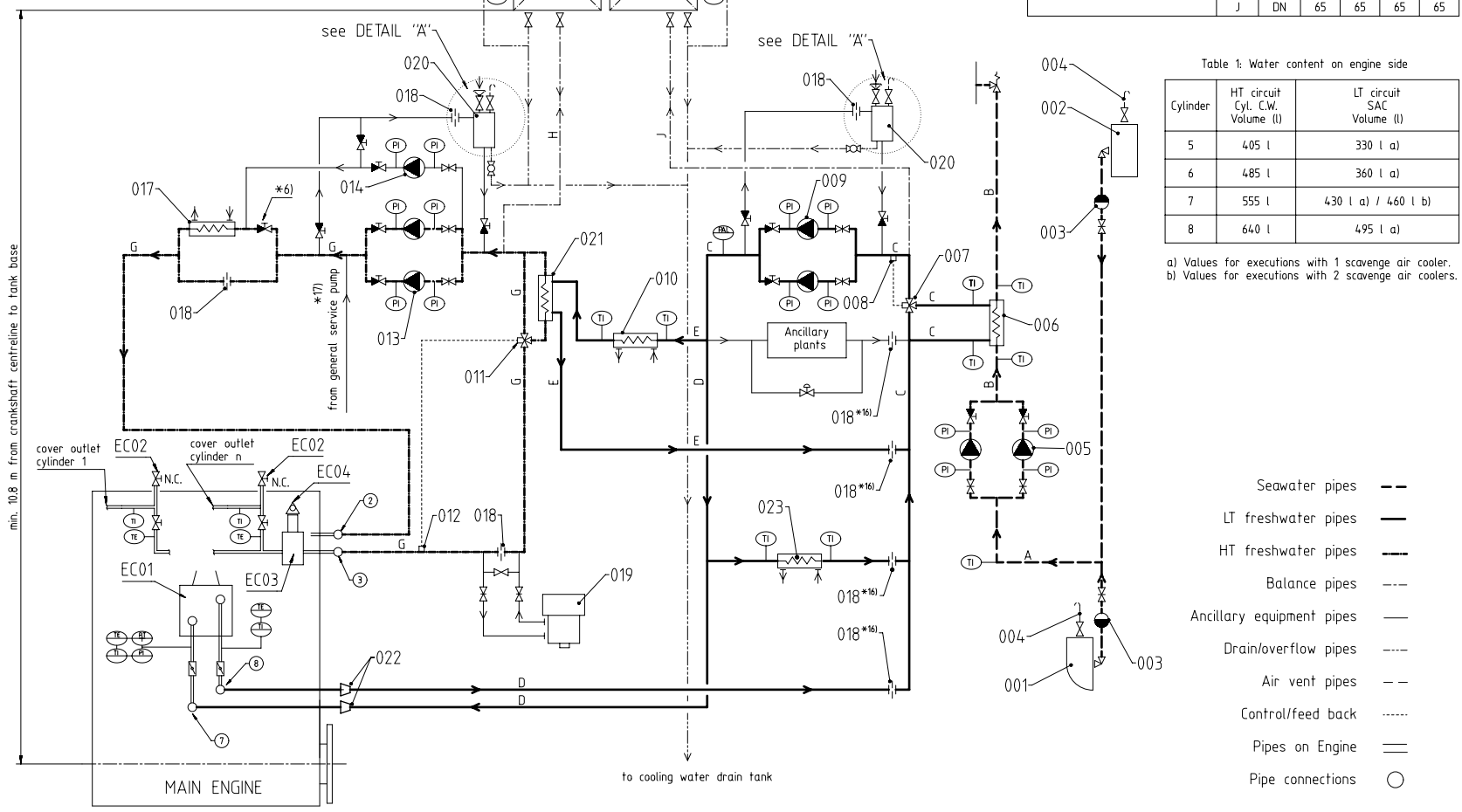
PROPOSAL for pipe dimensioning *11)

Nominal pipe diameter	A	DN	Yard determination, suitable for main engine and ancillary plants			
			C	DN	D	DN
D	DN	200	200	200	250	
E	DN	100	125	125	125	
G	DN	125	125	125	150	
H	DN	65	65	65	65	
J	DN	65	65	65	65	

Table 1: Water content on engine side

Cylinder	HT circuit Cyl. C.W. Volume (l)	LT circuit SAC Volume (l)
5	405 l	330 l a)
6	485 l	360 l a)
7	555 l	430 l a) / 460 l b)
8	640 l	495 l a)

a) Values for executions with 1 scavenge air cooler.
b) Values for executions with 2 scavenge air coolers.



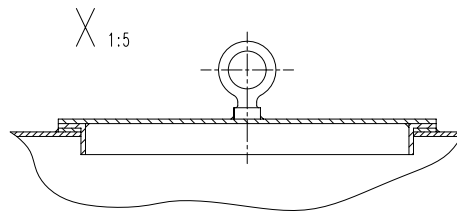
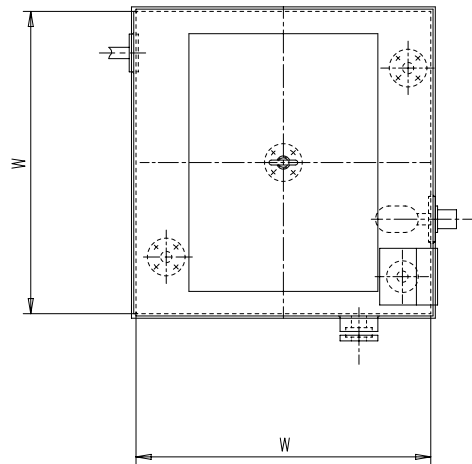
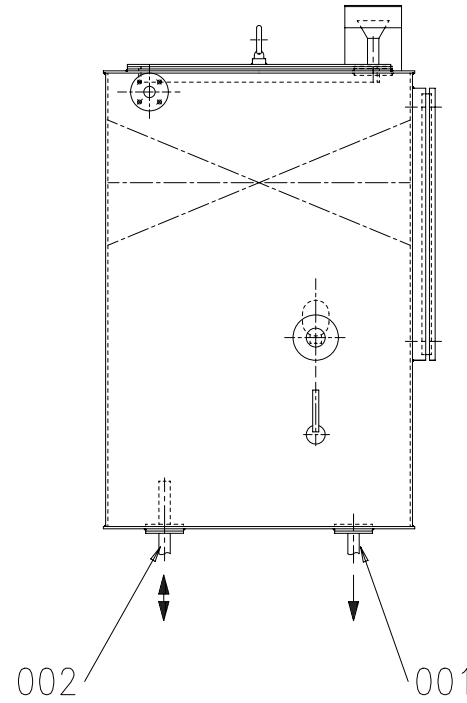
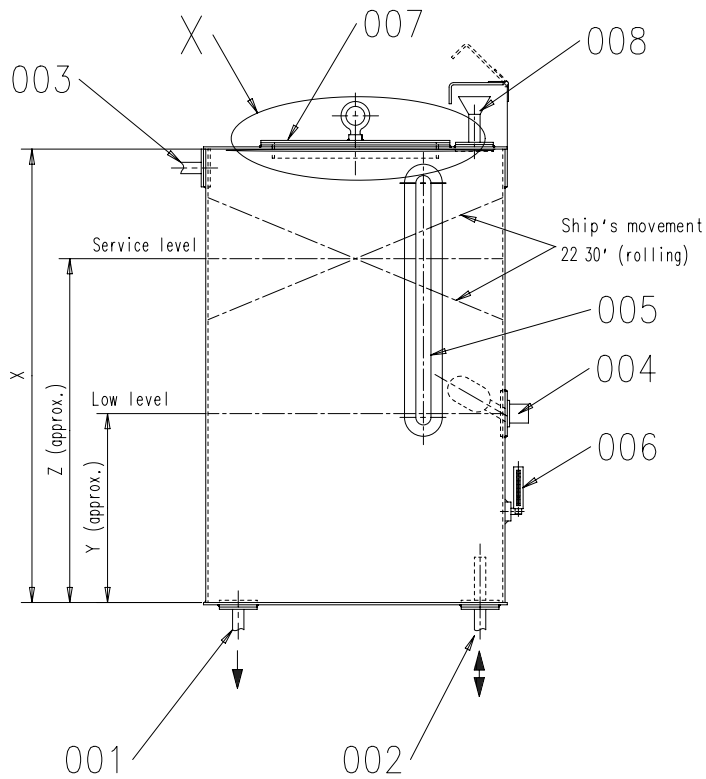
Remarks:

- Air vent and drain pipes not shown on drawing. Shall be installed where required.
- Air vent and drain pipes must be fully functional at all inclination angles of the ship at which the engine must be operational.

- *1) To be installed by the shipyard.
- *2) Refer to the "Pipe Connection Plan" for the execution and location of the engine pipe connection.
- *3) To be delivered by the engine manufacturer, i.e. already equipped on engine side.
- *4) To be installed for cooling water after-treatment during regular engine operation. Convenient dimensions are provided in view "A". Other designs are possible.
- *5) When using a valve, lock in proper position to avoid mishandling.
- *6) Only when pos. 014 is installed.
- *7) The inlet and outlet pipes to SAC must be designed to allow engine thermal expansion, or be fitted with expansion pieces.
- *8) For guidance only, final layout according to actual engine pre-heating requirements.
- *9) Installed as required (check with "Pipe Connection Plan")
- *11) All given diameters are valid for the mentioned rating and serve just as an example. To make the layout for the project specific rating please refer to DG9730 "Fluid velocities and flow rates, recommended values for pipework of diesel plants" for selecting the appropriate pipe diameter. Rating specific flow rates are provided by GTD.
- *13) A minimum temperature at engine inlet must be maintained. The minimum temperature set-point is 10°C. A lower LT water temperature assists the main engine to reach lower BSFC. If the ancillary plants require a temperature lower or greater than the LT water set-point, a separate LT water supply system with the different temperature set-point has to be installed (please refer to system proposal in MIM).
- *14) A constant temperature at engine outlet must be maintained. Required controller set-point for main engine operation is 90 °C.
- *15) Only to be used for manual venting of isolated cylinders after maintenance. To be kept closed during engine operation.
- *16) Optional, only to be installed if needed for hydraulic balancing.
- *17) Optional connection to the general service pump. To be considered if requested by class rules for emergency engine cooling.

- Seawater pipes ---
- LT freshwater pipes —
- HT freshwater pipes - - -
- Balance pipes - - - -
- Ancillary equipment pipes —
- Drain/overflow pipes - - - -
- Air vent pipes - -
- Control/feed back - - - -
- Pipes on Engine —
- Pipe connections ○

Q-Code	XXXXXX	Main Drw.
Standard	ISO, JIS	
Product	5-BX52-S2.0	
CENTRAL COOLING WATER SYSTEM		
HT static-pressure: EXP tank		
Zentralkuehlwassersystem		



drawing view shows dimensioning scale for 0.75 m³ capacity

Pos.	Description
001	Drain from HT circuit
002	Balance pipe from HT circuit
003	Overflow/air vent
004	Low level alarm
005	Level indicator *1)
006	Thermometer
007	Inspection cover *2)
008	Filling pipe/inlet chemical treatment *2)

Remarks:

- *1) Level indicator can be omitted if an alternative is fitted.
- *2) Other designs like hinged covers, etc. are also possible

Ⓐ - Tank dimensions are defined by the Tank capacity, as seen in Table 1. For capacity and pipe diameter, refer to drawing 'Central cooling water system'.

Table 1: Tank dimensions

HT Tank capacity (m ³)	W (mm)	X (mm)	Y (mm)	Z (mm)
0.5	800	800	330	640
0.75	800	1200	500	960
1.0	800	1600	670	1280
1.25	1000	1250	530	1000
1.5	1000	1500	630	1200
1.75	1000	1750	730	1400
2.0	1000	2000	830	1600

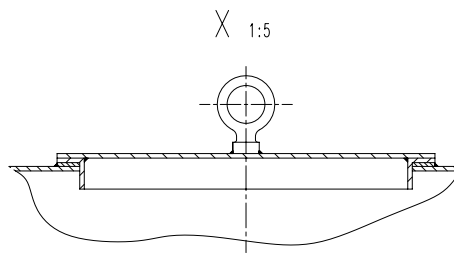
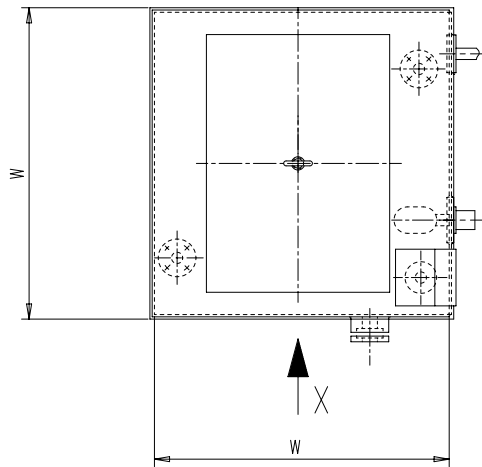
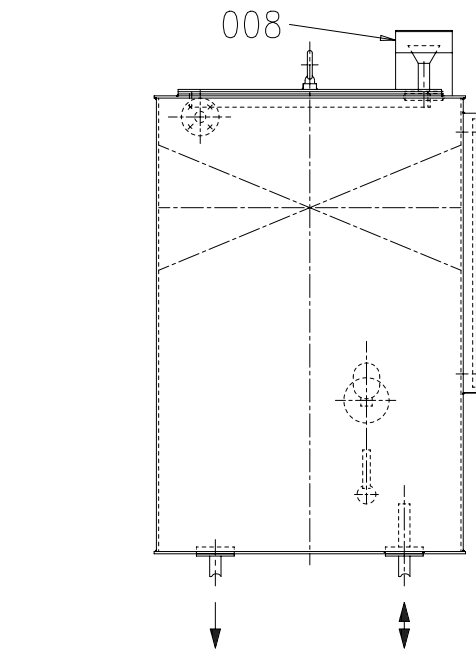
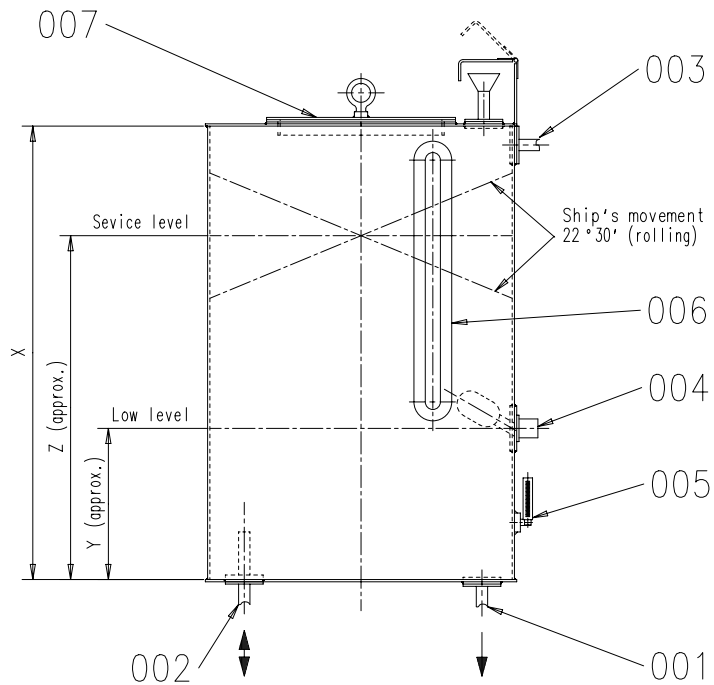
Free space for file	Q-Code				Main Drw.
	XXXXXX				
Modif.	Standard				
	ISO; JIS				
EAAD091567	15.11.2019				
Number	Drawn date	Number	Drawn date	Number	Drawn date

WINGD
 Winterthur Gas & Diesel

Product: W-2S
EXPANSION TANK
 CENTRAL COOLING WATER HT CIRCUIT
 Ausgleichstank
 Zentralkuehlwassersystem HT circuit

Units: mm kg NX Basic Material: Net Weight 0,001

SURFACE PROTECTION SEE GROUP 0344	Made	16.04.2009	M.PRSTEC	Scale	1:10	Size	A2	Page	1/1	Material ID	107.413.097.500
TOLERANCING PRINCIPLE ISO8015	Chkd			Design Group		Drwng ID	107.413.097	Rev.	A		
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd	30.04.2009	MPR002 Prstec								



Drawn for 0.75 m³ capacity

Pos.	Description (D)
001	Drain
002	Balance pipe from LT circuit
003	Overflow/air vent
004	Low level alarm
005	Thermometer
006	Level indicator *1)
007	Inspection cover *2)
008	Filling pipe/inlet chemical treatment *2)

Remarks:

- *1) Level indicator can be omitted if an alternative is fitted.
- *2) Other designs like hinged covers, etc. are also possible

- For required tank capacity and pipe diameters refer to drawing 'Central cooling water system'

Table 1: Tank dimensions

LT tank capacity (m ³)	W (mm)	X (mm)	Y (mm)	Z (mm)
0.5	800	800	330	640
0.75	800	1200	500	960
1.0	800	1600	670	1280
1.25	1000	1250	530	1000
1.5	1000	1500	630	1200
1.75	1000	1750	730	1400
2.0	1000	2000	830	1600

Free space for file	Q-Code				Main Drw.		
	XXXXXX						
Modif.	Standard				ISO; JIS		
	ISO; JIS						
EAAD014356	16.06.1997	B7-37.090	16.08.2007	EAAD083145	25.01.2012	EAAD091029	12.09.2019
Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date

WINGD
Winterthur Gas & Diesel

Product: W-2S

EXPANSION TANK
CENTRAL COOLING WATER LT CIRCUIT
Ausgleichstank
Zentralkuehlwassersystem LT

Units	mm kg	NX	Basic Material	Net Weight 0,001
-------	-------	----	----------------	------------------

SURFACE PROTECTION SEE GROUP 0344	Made	11.06.1997	T.LANDERT	Scale	1:10	Size	A2	Page	1/1	Material ID	107.245.419.500
TOLERANCING PRINCIPLE ISO8015	Chkd			Design Group		Drawing ID	107.245.419	Rev.	D		
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd	11.06.1997	WCH001	Service User							

SPECIFICATION which must be met:

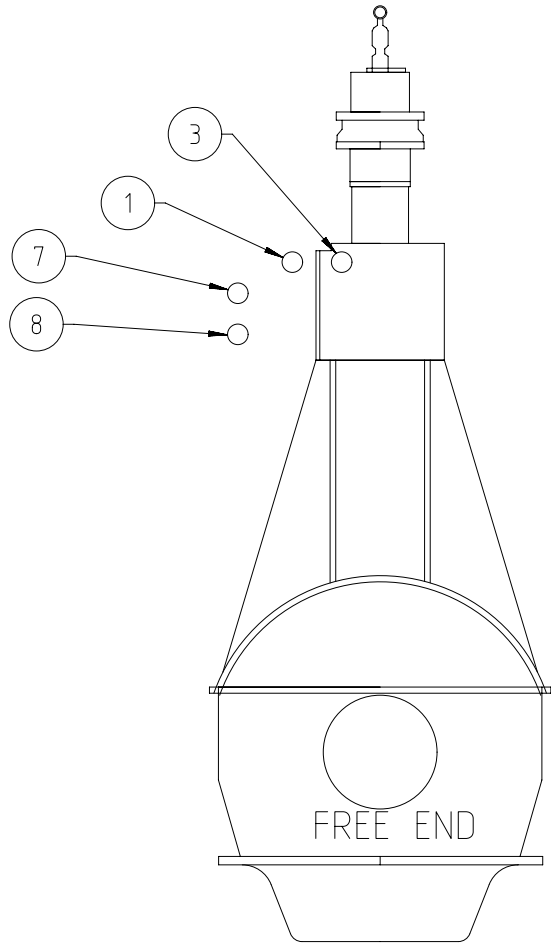
8 OUTLET - Scavenge air cooler (SAC) cooling water (LT water)
 - Cooling water volume flow: according to GTD specification, adjusted by an orifice in the outlet pipe on shipside.

1 INLET - Cylinder cooling water (HT water)
 - Cooling water pressure: 2.0 - 4.0 bar
 - Cooling water volume flow: according to GTD specification
 - Cooling water (freshwater) has to be treated according to WinGD specification.
 - A buffer unit must be installed.
 - The static pressure at engine inlet must be adjusted by buffer unit pressure setting.
 - Pre-heating: The engine must be warmed-up by heated HT water to min. 60 °C before engine start.
 - HT cooling water amount on engine side: Given in table 1 on page 2

3 OUTLET - Cylinder cooling water (HT water)
 Cooling water temperature
 - Controller set-point: 90 °C
 - Steady state condition: 90 ± 2 °C
 - Transient condition: 90 ± 4 °C

7 INLET - Scavenge air cooler (SAC) cooling water (LT water)
 - Cooling water pressure: 2.0 - 4.0 bar
 - Cooling water temperature: 10 - 36 °C
 - Cooling water volume flow: according to GTD specification
 - Cooling water (freshwater) has to be treated according to WinGD specification.
 - LT cooling water amount on engine side: Given in table 1 on page 2.

X52-S2.0



1	016	107.245.419.500	EXPANSION TANK	107.245.419		0,001
---	-----	-----------------	----------------	-------------	--	-------

1	015	107.245.626.500	BUFFER	107.245.626		0,001
---	-----	-----------------	--------	-------------	--	-------

QTY	SEQ NO	Material ID	Material Name	Dimension, Occ	Standard or Drawing	Basic Material Material Standard	Weight GR./NET
						Q-Code XXXXXX Standard ISO; JIS	Main Drw.

Modif.									
	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date	

	Product 5-8X52-S2.0	CENTRAL COOLING WATER SYSTEM HT_static-pressure: Buffer-unit Zentralkuehlwassersystem	
	Units mm kg NX	Basic Material	Net Weight 0,001

SURFACE PROTECTION SEE GROUP 0344	Made	19.04.2021 dki021 DH.Kim	Scale	-	Size	A3	Page	1/2	Material ID	PAAD380377
TOLERANCING PRINCIPLE ISO8015	Chkd	23.04.2021 jpi101 Pickup	Design Group	9721	Drawing ID	DAAD142877	Rev.	-		
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd	23.04.2021 mhu019 Hug								

Approved
 Confidential
 DIM - DIMENSIONAL DRAWING

SYSTEM PROPOSAL

Pos.	ENGINE COMPONENTS *3)
EC01	Savange air cooler (SAC)
EC02	Manual vent valve, each cylinder *15)
EC03	Air separator
EC04	Automatic venting unit

Pos.	ENGINE CONNECTIONS *2)
①	INLET - Cylinder cooling water (HT water)
②	OUTLET - Cylinder cooling water (HT water)
③	INLET - Savange air cooler (SAC) cooling water (LT water) *7)
④	OUTLET - Savange air cooler (SAC) cooling water (LT water) *7)

Pos.	SYSTEM COMPONENTS *1)
001	Low sea chest
002	High sea chest
003	Seawater strainer
004	Air vent fair vent pipe or equal venting system acc. to shipyard's design
005	Seawater circulating pump
006	Central seawater cooler
007	Automatic temperature control valve for LT circuit *13)
008	LT water temperature sensor *13)
009	Cooling water pump for LT circuit
010	Lubricating oil cooler
011	Automatic temperature control valve for HT circuit *14)
012	HT water temperature sensor *14)
013	Cylinder cooling water pump for HT circuit
014	Pre-heating circulating pump (optional, cap. 10% from cylinder cooling pump *8)
015	Buffer unit for HT circuit (link to detail drawing on page 1)
016	LT water expansion tank (link to detail drawing on page 1)
017	Pre-heater for main engine (HT circuit)
018	Throttling disc *5)
019	Freshwater generator
020	Chemical treatment refill unit *4)
021	HT cooling water cooler
022	Transition piece (adapter) *9)
023	Salenoid valve (air inlet to be interlocked with min. water level)
024	MDD/MGO cooler
025	Filling pipe / inlet chemical treatment
026	Supply pump, automatic level control (0.5 m ³ /h at 4bar)
027	Cylinder cooling water feed & drain tank (or feed tank only)
028	Control air valve with air release function *12) (to be adjusted to ensure CW pressure at ME inlet 4 - 5 barg))

Table 1: Water content on engine side

Cylinder	HT circuit Cyl. CW Volume (l)	LT circuit SAC Volume (l)
5	405 l	330 l a)
6	485 l	360 l a)
7	555 l	430 l a) / 440 l b)
8	640 l	495 l a)

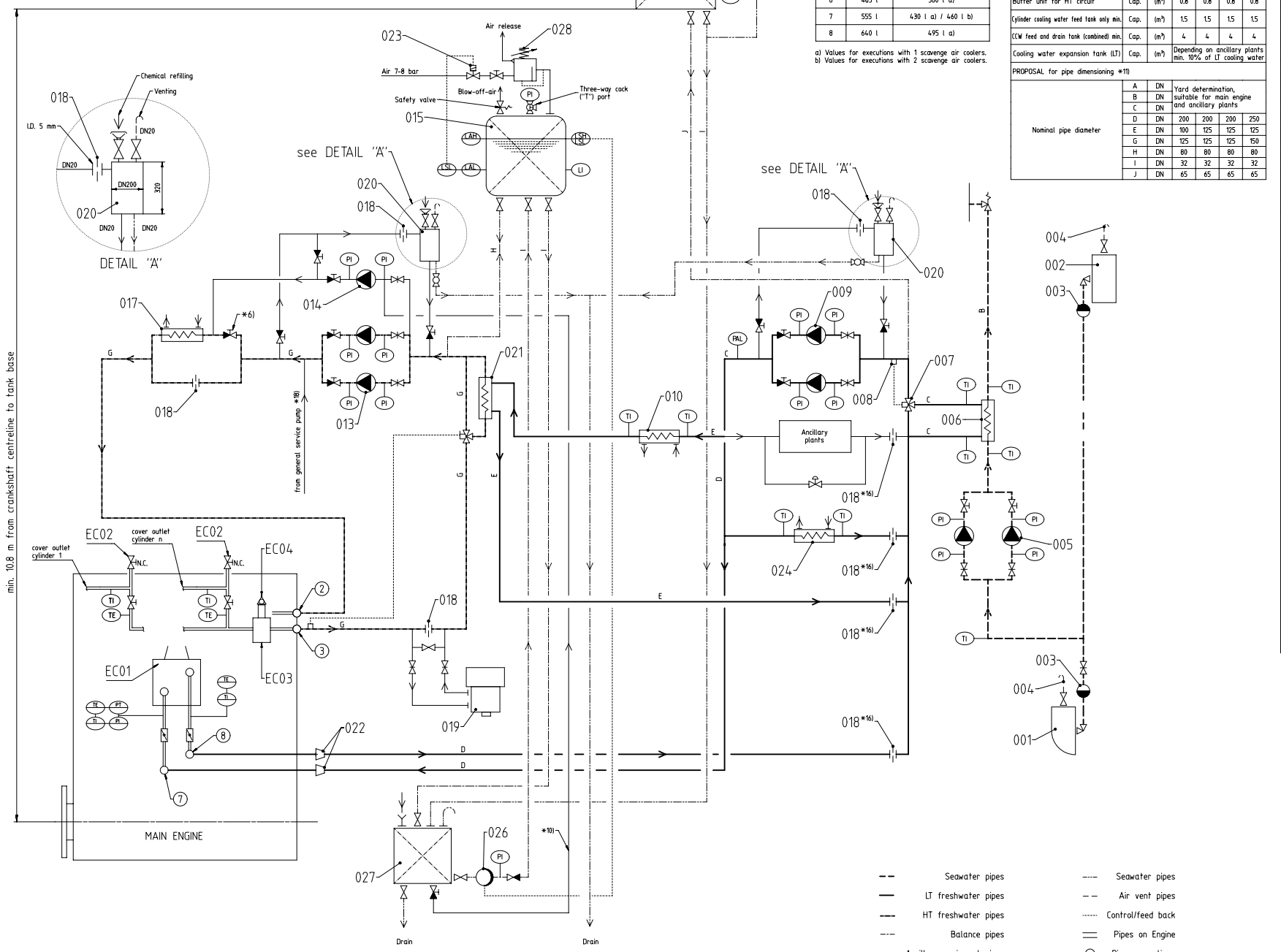
a) Values for executions with 1 scavange air coolers.
b) Values for executions with 2 scavange air coolers.

Number of cylinders	power (kW)	9550	11460	13370	15280
Main engine XS2-S2.0 R1 rated	speed (rpm)	120			
Buffer unit for HT circuit	Cap. (m ³)	0.8	0.8	0.8	0.8
Cylinder cooling water feed tank only min.	Cap. (m ³)	1.5	1.5	1.5	1.5
CW feed and drain tank (combined) min.	Cap. (m ³)	4	4	4	4
Cooling water expansion tank (LT)	Cap. (m ³)	Depending on ancillary plants min. 10% of LT cooling water			

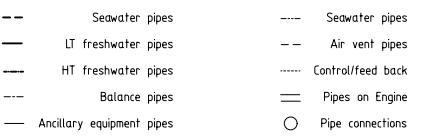
PROPOSAL for pipe dimensioning *10)

A	DN	Yard determination, suitable for main engine and ancillary plants
B	DN	
C	DN	
D	DN	200 200 200 250
E	DN	100 125 125 125
G	DN	125 125 125 150
H	DN	80 80 80 80
I	DN	32 32 32 32
J	DN	65 65 65 65

Nominal pipe diameter

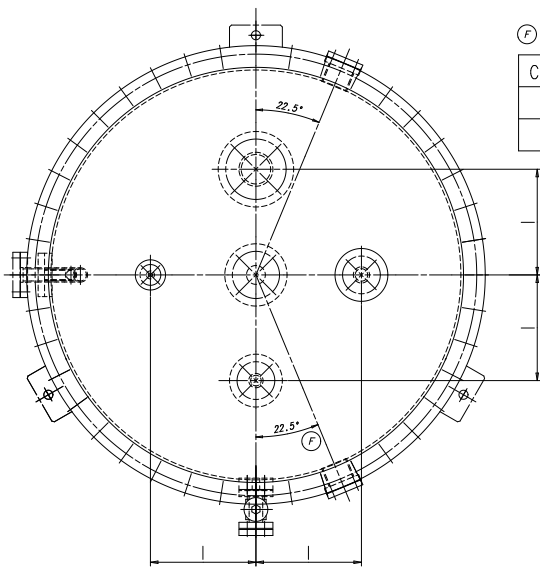
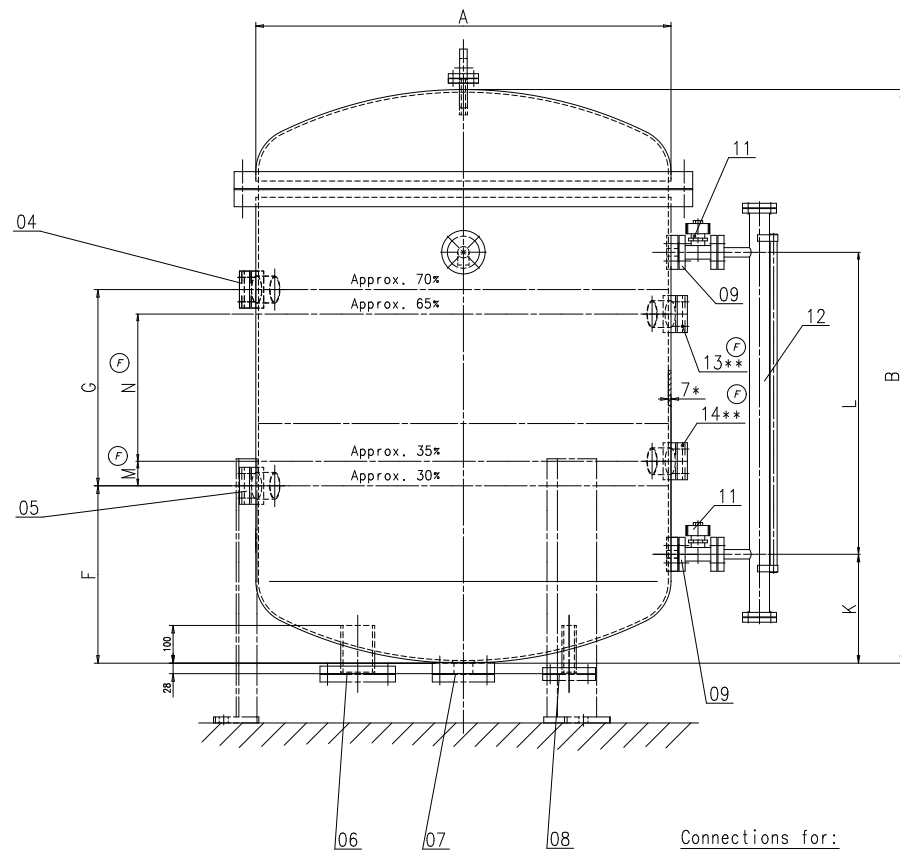
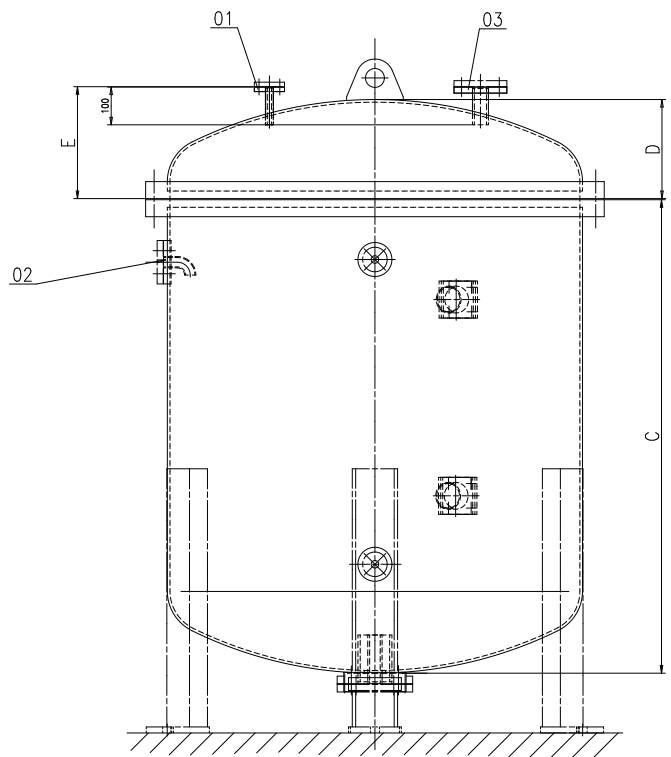


- Remarks:
- Air vent and drain pipes not shown on drawing. Shall be installed where required.
 - Air vent and drain pipes must be fully functional at all inclination angles of the ship at which the engine must be operational.
- To be installed by the shipyard.
 - Refer to the "Pipe Connection Plan" for the execution and location of the engine pipe connection.
 - To be delivered by the engine manufacturer, i.e. already equipped on engine side.
 - To be installed for cooling water after-treatment during regular engine operation. Convenient dimensions are provided in view "A". Other designs are possible.
 - When using a valve, lock in proper position to avoid mishandling.
 - Only when pos. 016 is installed.
 - The inlet and outlet pipes to SAC must be designed to allow engine thermal expansion, or be fitted with expansion pieces.
 - For guidance only, final layout according to actual engine pre-heating requirements.
 - Installed as required (check with "Pipe Connection Plan")
 - Optional filling line to enable fast system re-filling (e.g. after a complete system drained) by means of the pre-heating pumps.
 - All given diameters are valid for the mentioned rating and serve just as an example. To make the layout for the project specific rating please refer to ISO 720 "Fluid velocities and flow rates, recommended values for pipework of diesel plants" for selecting the appropriate pipe diameter. Rating specific flow rates are provided by GTD.
 - If the selected control air valve does not have the interrated air release functionality a separate air release valve can be installed as alternative on the top of the buffer unit.
 - A minimum temperature at engine inlet must be maintained. The minimum temperature set-point is 10°C. A lower LT water temperature assists the main engine to reach lower BSFC. If the ancillary plants require a temperature lower or greater than the LT water set-point, a separate LT water supply system with the different temperature set-point has to be installed (please refer to system proposal in RWD).
 - A constant temperature at engine outlet must be maintained. Recommended controller set-point for main engine operation is 90 °C.
 - Only to be used for manual venting of isolated cylinders after maintenance. To be kept close during engine operation.
 - Optional, only to be installed if needed for hydraulic balancing.
 - If gas driven auxiliaries are connected to the LT circuit, the LT expansion tank must be gas tight and has to be vented to a safe area outside of engine room.
 - Optional connection to the general service pump.
 - To be considered if requested by class rules for emergency engine cooling.



		Scale: 1:2 Date: 19.04.2021 Project: 48021	
SURNAME PROTECTION SEE GROUP 034 ITALIANING PRINCIPLE ISSUES GENERAL TOLERANCES ACCORDING TO ISO 2768-MS		Scale: 1:2 Date: 19.04.2021 Project: 48021	
Title: 5-BX52-S2.0 Drawing: 01		Title: CENTRAL COOLING WATER SYSTEM HT-static-pressure: Buffer-unit Zentralkuehlwassersystem	
Date: 19.04.2021 Drawn: 01		Date: 19.04.2021 Drawn: 01	

min. 10.8 m from crankshaft centreline to tank base



Capacity	A	B	C	D	E	F	G	H	I	K	L	M	N
800l	ø900	1430	1205	222	250	455	520	600	250	250	800	65	390
1200l	ø1100	1520	1255	262	300	470	520	650	280	290	800	65	390

Connections for:

- 01 Compressed air supply from control air valve, DN15 with blank flange
- 02 Pressure indicator, DN25 with blank flange
- 03 Safety and relief valve adjustment 5,5 bar DN32 with blank flange
- 04 Level alarm high, with blank flange
- 05 Level alarm low, with blank flange
- 06 Compensation, DN80 with blank flange
- 07 Drain, DN32 with blank flange
- 08 Feed, DN32 with blank flange
- 09 Flanges for level indicator
- ^(F) 11 Valve for level indicator, self-closing type
- 12 Level indicator
- 13 Level switch high, with blank flange **
- 14 Level switch low, with blank flange **

Working pressure : 5 bar

* Wall thickness and test pressure : according to relevant classification society/rules

Service temperature : max. 95°C

^(F) ** Tank volume between LSH and LSL shall be no less than 150 litres.

Drawn for 1200l capacity

1-41.644.105.03.2000 (L) (A) (B) (C) (D) (E) (F) (G) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) (W) (X) (Y) (Z)		14.08.2012 (E) (F) (G) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) (W) (X) (Y) (Z)	107.245.626.500
107.245.626.500	107.245.626.500	107.245.626.500	107.245.626.500
SURFACE PROTECTION SEE GROUP 0344		Scale: 1:5	No. Weight: 0.001
TOLERANCING PER IEC 1500015		Date: 22.08.20	Drawn date: 107.245.626.500
GENERAL TOLERANCES ACCORDING TO ISO 150000		Dev. Group: 3721	Date: 107.245.626
WIN GO		BUFFER TO CYL. COOLING WATER SYS Puffer	

MIDS - WinGD X52-S2.0 – Cooling Water System (DG9721)

TRACK CHANGES

DATE	SUBJECT	DESCRIPTION
2021-05-10	DRAWING SET	First web upload

DISCLAIMER

© Copyright by Winterthur Gas & Diesel Ltd.

All rights reserved. No part of this document may be reproduced or copied in any form or by any means (electronic, mechanical, graphic, photocopying, recording, taping or other information retrieval systems) without the prior written permission of the copyright owner.

THIS PUBLICATION IS DESIGNED TO PROVIDE AN ACCURATE AND AUTHORITATIVE INFORMATION WITH REGARD TO THE SUBJECT-MATTER COVERED AS WAS AVAILABLE AT THE TIME OF PRINTING. HOWEVER, THE PUBLICATION DEALS WITH COMPLICATED TECHNICAL MATTERS SUITED ONLY FOR SPECIALISTS IN THE AREA, AND THE DESIGN OF THE SUBJECT-PRODUCTS IS SUBJECT TO REGULAR IMPROVEMENTS, MODIFICATIONS AND CHANGES. CONSEQUENTLY, THE PUBLISHER AND COPYRIGHT OWNER OF THIS PUBLICATION CAN NOT ACCEPT ANY RESPONSIBILITY OR LIABILITY FOR ANY EVENTUAL ERRORS OR OMISSIONS IN THIS BOOKLET OR FOR DISCREPANCIES ARISING FROM THE FEATURES OF ANY ACTUAL ITEM IN THE RESPECTIVE PRODUCT BEING DIFFERENT FROM THOSE SHOWN IN THIS PUBLICATION. THE PUBLISHER AND COPYRIGHT OWNER SHALL UNDER NO CIRCUMSTANCES BE HELD LIABLE FOR ANY FINANCIAL CONSEQUENTIAL DAMAGES OR OTHER LOSS, OR ANY OTHER DAMAGE OR INJURY, SUFFERED BY ANY PARTY MAKING USE OF THIS PUBLICATION OR THE INFORMATION CONTAINED HEREIN.