

Available executions

Execution No.	Material ID	Attribute 2: TC amount
001	PTAA036947	1
002	PTAA036948	2

SURFACE PROTECTION SEE GROUP 03/44
TOLERANCING PRINCIPLE ISO8015

NOTE

The above executions can be configured using the Engine Configurator. Detailed guidance for the executions is provided within the Marine Installation Manual (MIM). If a specific execution of interest is not shown in the above table, then it may still be under development or not available. For further information or in case of a project-specific request, WinGD must be contacted directly.

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Prod.	X72DF-2.1 X72DF-2.2								
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Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C
A	mhu019	dst009	22.06.2022	CNAA002075	Drawing Updated			-	-
-	mhu019	dst009	12.11.2021	CNAA001002	new Design			-	-



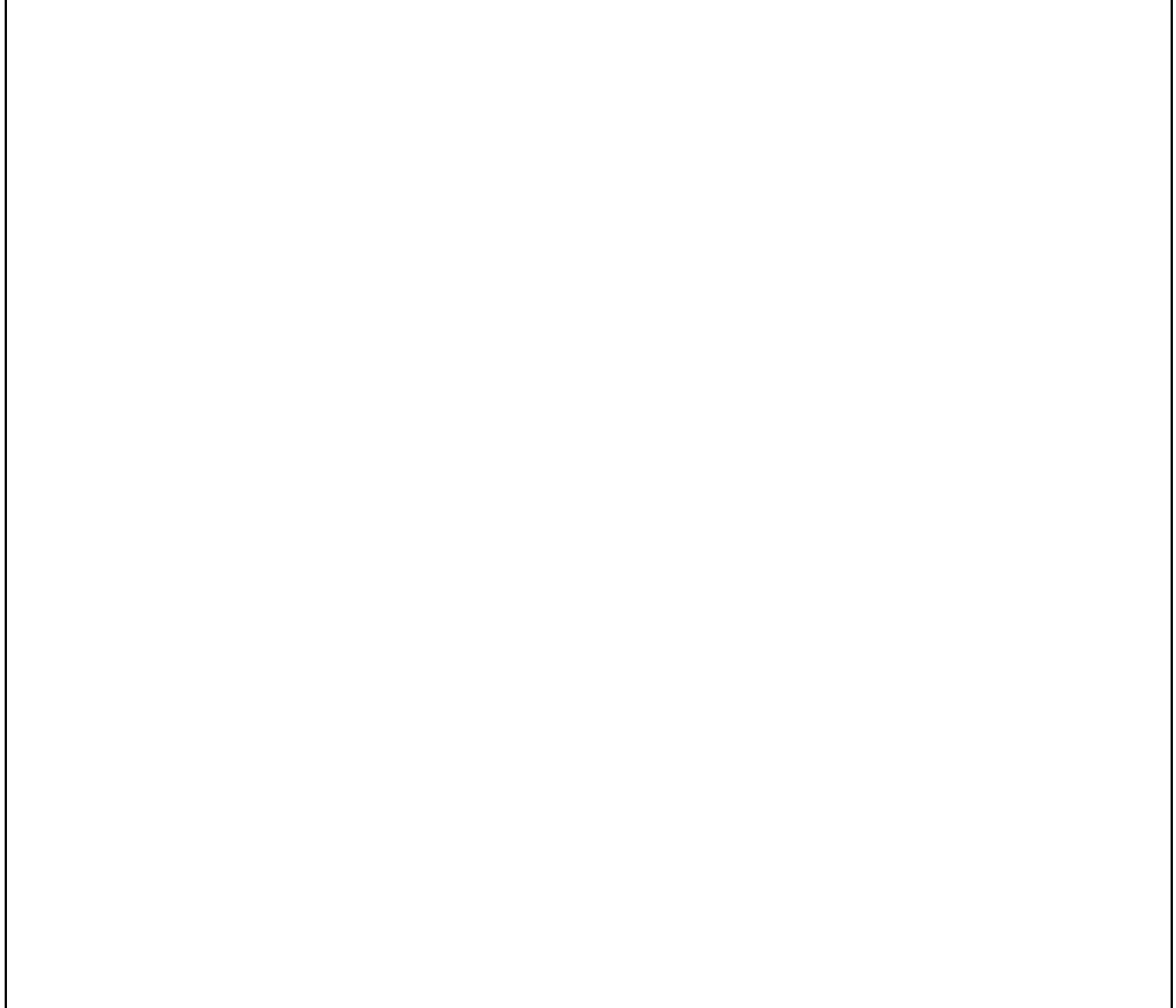
LEAKAGE COLLECTION/WASHING SYS.
MIDS master drawing

separate BOM available

Dimension

Scale	-		NX	Units [mm] [kg]	Basic Material	Net Weight	0.001		
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Qty per	A4	Item ID	PTAA014228		Drawing Page/s	1/1			

SEQ NO	QTY	Item ID	Item Name	Dimension	Standard-ID	Basic Material	Net Weight
3	1	PTAA036864	LEAKAGE COLLECTION/WASHING SYS. WITH ONE TURBOCHARGER				0



Prod.	5,6,7,8 X72DF-2.1 5,6 X72DF-2.2							
Change History								
	-	dkl021	dst009	21062022	01A002059	Main Design/Drawing Introduced	-	-
Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E C

	LEAKAGE COLLECTION/WASHING SYS.
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Bill Of Material		Dimension	
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	Main Design	Yes	Design Group 9724 Q-Code XXXXX
	Qty per	Engine A4	Item ID PTAA036947
			Net Weight 0 Standard WDS BOM Page/s 01/01

SEQ NO	QTY	Item ID	Item Name	Dimension	Standard-ID	Basic Material	Net Weight
001	1	107.425.369.500	SLUDGE OIL TRAP				0.001

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Proc.	X72DF-2.1		X72DF-2.2							
Change History	E	npa101	mhu019	23.08.2024	CNAA006157	Drawing updated			4	3
	D	npa101	mhu019	13.06.2024	CNAA005249	Drawing updated			4	3
	C	dkl021	mhu019	19.12.2022	CNAA002848	Drawing Updated			4	3
	-	dkl021	dst009	21.06.2022	CNAA002059	new Design			-	-
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C

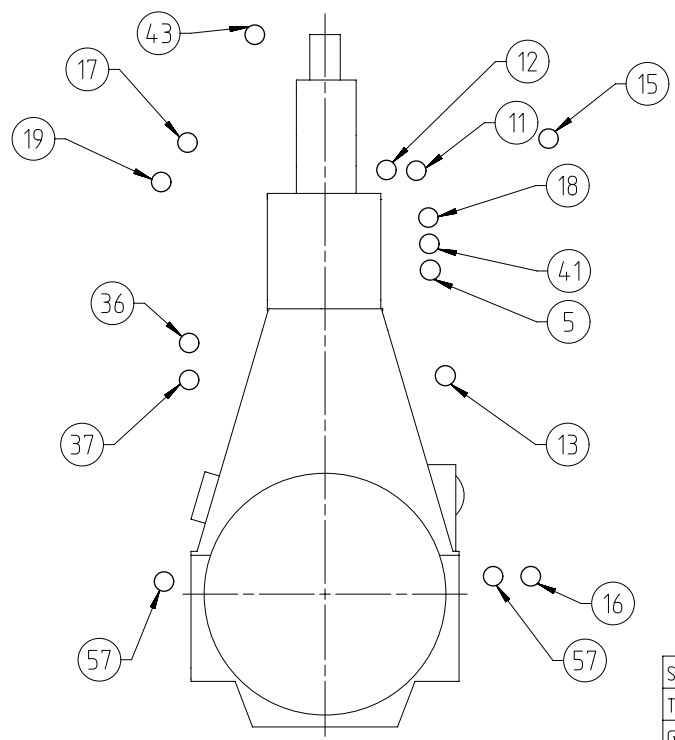
	LEAKAGE COLLECTION/WASHING SYS. TC 1
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Bill Of Material		Dimension	
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	Main Design	Design Group	9724 Q-Code X X M Standard WDS
	Qty per	A4 Item ID	PTAA036864 BOM Page/s 01/01

SPECIFICATION which must be met:

18	OUTLET - SAC venting - Free flow outside of engine room
19	OUTLET - SAC condensate water, iCER - To EGC wastewater holding tank during iCER operation - The system components downstream of this connection must be made of stainless steel
36	OUTLET - Dirty oil piston underside - Flow with SAC pressure to sludge oil trap or appropriate arrangement - Min. inclination of drain pipe: 15°
37	OUTLET - Leakage oil gland box - Gravity flow to sludge tank or appropriate tank
41	OUTLET - Venting crankcase - Venting to funnel - Must not be connected to other venting pipes
43	OUTLET - Venting turbocharger - Venting to funnel - Minimum inclination according to TC suppliers specification - Must not be connected to other venting pipes
57	OUTLET - Various leakages - Gravity flow to sludge tank or appropriate tank

5	OUTLET - Cylinder cooling water drain. - Gravity flow to cooling water drain tank or appropriate tank
11	INLET - SAC washing water - Washing water supply from an external washing system, which must be installed on the ship side - Washing water properties: Fresh water mixed with a chemical washing agent Mixing ratio according to chemical washing agent suppliers specification - Washing water supply pressure: 3.0 bar - Washing water temperature: 50 °C - 60 °C - Washing water pump circulation rate: 4.5 m³/h
12	INLET - Air for cleaning plants TC - Working air, supply pressure: 7 - 9 bar
13	OUTLET - Oily water from scavenge air receiver - Gravity flow to oily water tank or appropriate tank
15	INLET - SAC wetting water - Wetting water supply: From clean water holding tank or SAC wetting buffer tank - Wetting water supply pressure: max. 10 bar - Wetting water circulation rate: 500 - 1000 l/h per SAC
16	OUTLET - SAC condensate water - Gravity flow to standard SAC drain arrangement according to shipyard's preference
17	OUTLET - SAC washing water - During SAC cleaning to the chemical washing water circulation tank, which is part of the external washing system, as installed on the ship side

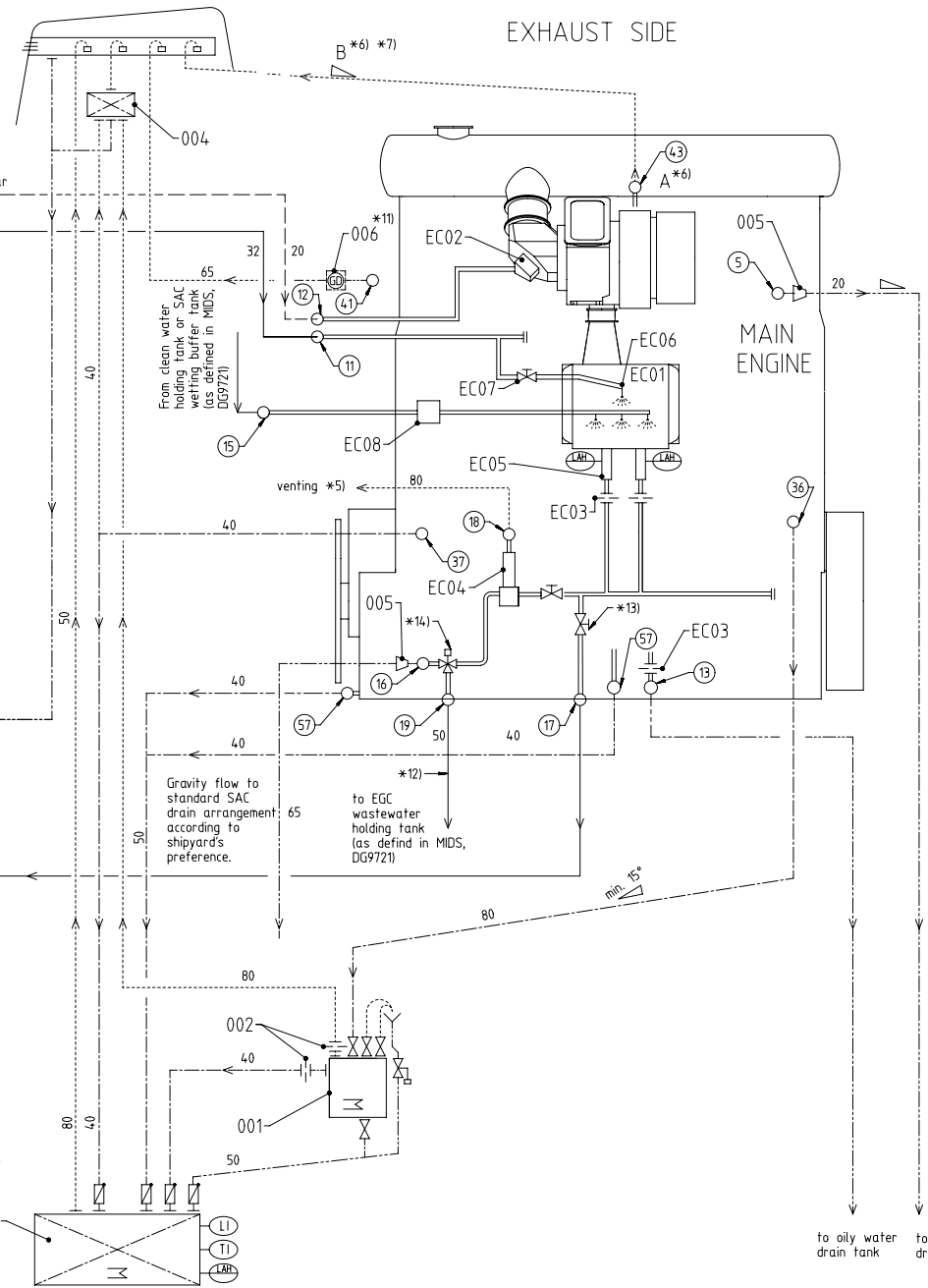


SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Prod.	X72DF-2.1 X72DF-2.2								
Change History	E	npa101	mhu09	23.08.2024	CNA00657	Drawing updated	4	3	
	D	npa101	mhu019	13.06.2024	CNA005249	Drawing updated	4	3	
	C	dki021	mhu019	19.12.2022	CNA002848	Drawing Updated	4	3	
	-	dki021	dst009	21.06.2022	CNA002059	new Design	-	-	
Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved		Activity Code	E C
WIN GD		LEAKAGE COLLECTION/WASHING SYS. TC 1							
separate BOM available		Dimension							
Scale	-		NX	Units [mm] [kg]	Basic Material			Net Weight	0.000
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Qty per	A3	Item ID	PTAA036864			Drawing Page/s	1/2		

SYSTEM PROPOSAL

NOTE
Further installation details and variants can be found listed in the Marine Installation Manual (MIM), which provides also the acronyms used in this drawing set. The piping symbols are explained by the piping symbol key as included in the drawing set "Various Installation Items".



Turbocharger type	A**	B**	Min. Inclination
1 x A175-L	65	65	≥ 5°
1 x A275-L	65	65	≥ 5°
1 x A180-L	80	80	≥ 5°
1 x A280-L	80	80	≥ 5°
2 x A170-L	65	100	≥ 5°
2 x A175-L	65	100	≥ 5°
2 x A265-L	65	80	≥ 5°
2 x A270-L	65	100	≥ 5°
1 x MET53MB	65	65	≥ 3°
1 x MET60MB	80	80	≥ 3°
1 x MET66MB	80	80	≥ 3°
1 x MET71MB	80	80	≥ 3°
2 x MET53MB	65	80	≥ 3°
2 x MET60MB	80	100	≥ 3°
2 x MET66MB	80	100	≥ 3°

Pos.	SYSTEM COMPONENTS *1)
001	Sludge oil trap (link to detail drawing on the partlist of this drawing)
002	Throttling disc (size shown on separate sludge oil trap drawing)
003	Sludge or appropriate tank
004	Air vent manifold
005	Transition piece (adaptor) *9)
006	Gas detector *11)
007	Chemical washing water circulation tank *15)
008	Chemical washing water circulation pump
009	Chemical washing water strainer (0.5-1.0 mm)

Pos.	ENGINE CONNECTIONS *2)
⑤	OUTLET - Cylinder cooling water drain
⑪	INLET - SAC washing water
⑫	INLET - Air for cleaning TC
⑬	OUTLET - Oily water from scavenge air receiver *10)
⑮	INLET - SAC wetting water
⑯	OUTLET - SAC condensate water *4) *10) *12)
⑰	OUTLET - SAC washing water *12)
⑱	OUTLET - SAC venting *5)
⑲	OUTLET - SAC condensate water, iCER *14)
⑳	OUTLET - Dirty oil piston underside
㉑	OUTLET - Leakage oil gland box
㉒	OUTLET - Venting crankcase
㉓	OUTLET - Venting turbocharger
㉔	OUTLET - Various leakages

Pos.	ENGINE COMPONENTS *3)
EC01	Scavenge Air Cooler (SAC)
EC02	Dry cleaning device
EC03	Throttling disc
EC04	Venting Unit
EC05	Condensate drain unit
EC06	SAC washing spray nozzle
EC07	SAC washing isolating valve
EC08	SAC wetting valve unit

Remarks

- 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 connections.
- *3) To be delivered by the engine manufacturer, i.e. already equipped on engine side.
- *4) The amount of condensate water drained off after the SAC depends on the relative air humidity and the scavenge air temperature before and after the SAC. During iCER operation, the SAC drain water amount is significantly increased. The specific drain amount is provided by the GTD.
- *5) Free flow venting outside of engine room.
- *6) In relation to turbocharger type, see table on the left side.
- *7) Vent pipe diameter as per turbocharger requirements.
- *8) Vent pipe diameter of common collection pipe.
- *9) Installed as required (check with the Pipe Connection Plan).
- *10) Drain connection 13 and 16 are with air flow from scavenging system. Both drain lines must be kept separated and directed to separate tanks. The tanks must be designed with sufficiently sized vents to prevent excessive pressure in the tanks. The drain amount depends on the ambient conditions.
- *11) Optional, to be installed if requested by the flag state and/or class to achieve IGC compliance.
- *12) The system components from the iCER bleed-off water outlet must be made of stainless steel.
- *13) Switching to the separate washing water collection tank must be carried out for SAC cleaning.
- *14) While the iCER is in operation, drain to the EGC wastewater holding tank. The solenoid valve is actuated by a signal from the "Engine Control System".
- *15) Washing water is heated between 50 and 60 °C by a heating coil. Recommended washing water circulation tank capacity: 0.4 m³

- Compressed air pipes
- Air vent pipes
- Drain & overflow pipes
- Dirty oil drain pipes
- Washing water pipes
- ===== Pipes on engine
- Pipe connections

SEQ NO	QTY	Item ID	Item Name	Dimension	Standard-ID	Basic Material	Net Weight
3	1	PTAA036927	LEAKAGE COLLECTION/WASHING SYS. WITH TWO TURBOCHARGERS				0

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Prod.	5,6,7,8 X72DF-2.1						
Change History							
	-	dki021	dst009	21062022	01A002059	Main Design/Drawing Introduced	-
Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code E C


	LEAKAGE COLLECTION/WASHING SYS.
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Bill Of Material		Dimension	
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Main Design Yes	Design Group 9724	Q-Code XXXXX	Standard WDS
Qty per Engine	A4	Item ID PTAA036948	BOM Page/s 01/01

SEQ NO	QTY	Item ID	Item Name	Dimension	Standard-ID	Basic Material	Net Weight
001	1	107.425.369.500	SLUDGE OIL TRAP				0.001

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Proc.	X72DF-2.1										
Change History	E	npa101	mhu019	23.08.2024	CNAA006157	Drawing updated				4	3
	D	npa101	mhu019	13.06.2024	CNAA005249	Drawing updated				4	3
	C	dkl021	mhu019	19.12.2022	CNAA002848	Drawing Updated				4	3
	-	dkl021	dst009	21.06.2022	CNAA002059	new Design				-	-
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C	

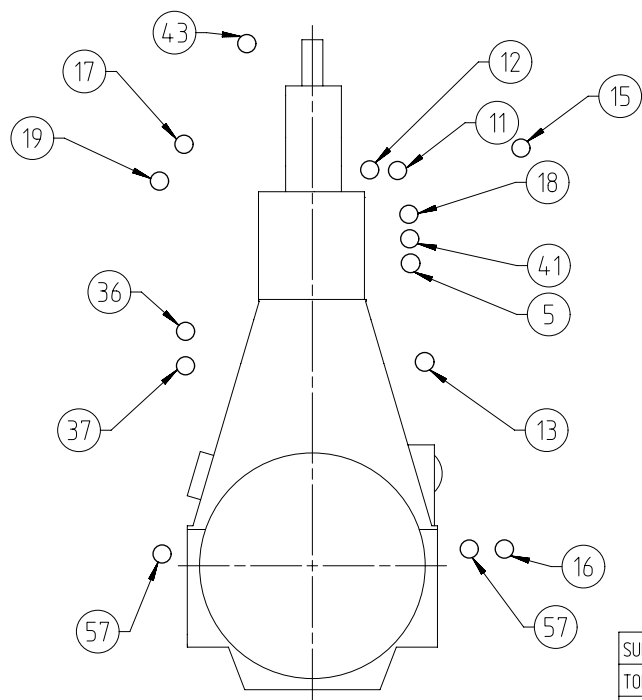
	LEAKAGE COLLECTION/WASHING SYS. TC 2
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Bill Of Material		Dimension						
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	Main Design	Design Group		9724	Q-Code	X X M	Standard	WDS
	Qty per	A4	Item ID	PTAA036927		BOM Page/s	01/01	

SPECIFICATION which must be met:

18	OUTLET - SAC venting - Free flow outside of engine room
19	OUTLET - SAC condensate water, iCER - To EGC wastewater holding tank during iCER operation - The system components downstream of this connection must be made of stainless steel
36	OUTLET - Dirty oil piston underside - Flow with SAC pressure to sludge oil trap or appropriate arrangement - Min. inclination of drain pipe: 15°
37	OUTLET - Leakage oil gland box - Gravity flow to sludge tank or appropriate tank
41	OUTLET - Venting crankcase - Venting to funnel - Must not be connected to other venting pipes
43	OUTLET - Venting turbocharger - Venting to funnel - Minimum inclination according to TC suppliers specification - Must not be connected to other venting pipes
57	OUTLET - Various leakages - Gravity flow to sludge tank or appropriate tank

5	OUTLET - Cylinder cooling water drain. - Gravity flow to cooling water drain tank or appropriate tank
11	INLET - SAC washing water - Washing water supply from an external washing system, which must be installed on the ship side - Washing water properties: Fresh water mixed with a chemical washing agent Mixing ratio according to chemical washing agent suppliers specification - Washing water supply pressure: 3.0 bar - Washing water temperature: 50 °C - 60 °C - Washing water pump circulation rate: 4.5 m³/h
12	INLET - Air for cleaning plants TC and SAC - Working air, supply pressure: 7 - 9 bar
13	OUTLET - Oily water from scavenge air receiver - Gravity flow to oily water tank or appropriate tank
15	INLET - SAC wetting water - Wetting water supply: From clean water holding tank or SAC wetting buffer tank - Wetting water supply pressure: max. 10 bar - Wetting water circulation rate: 500 - 1000 l/h per SAC
16	OUTLET - SAC condensate water - Gravity flow to standard SAC drain arrangement according to shipyard's preference
17	OUTLET - SAC washing water - During SAC cleaning to the chemical washing water circulation tank, which is part of the external washing system, as installed on the ship side

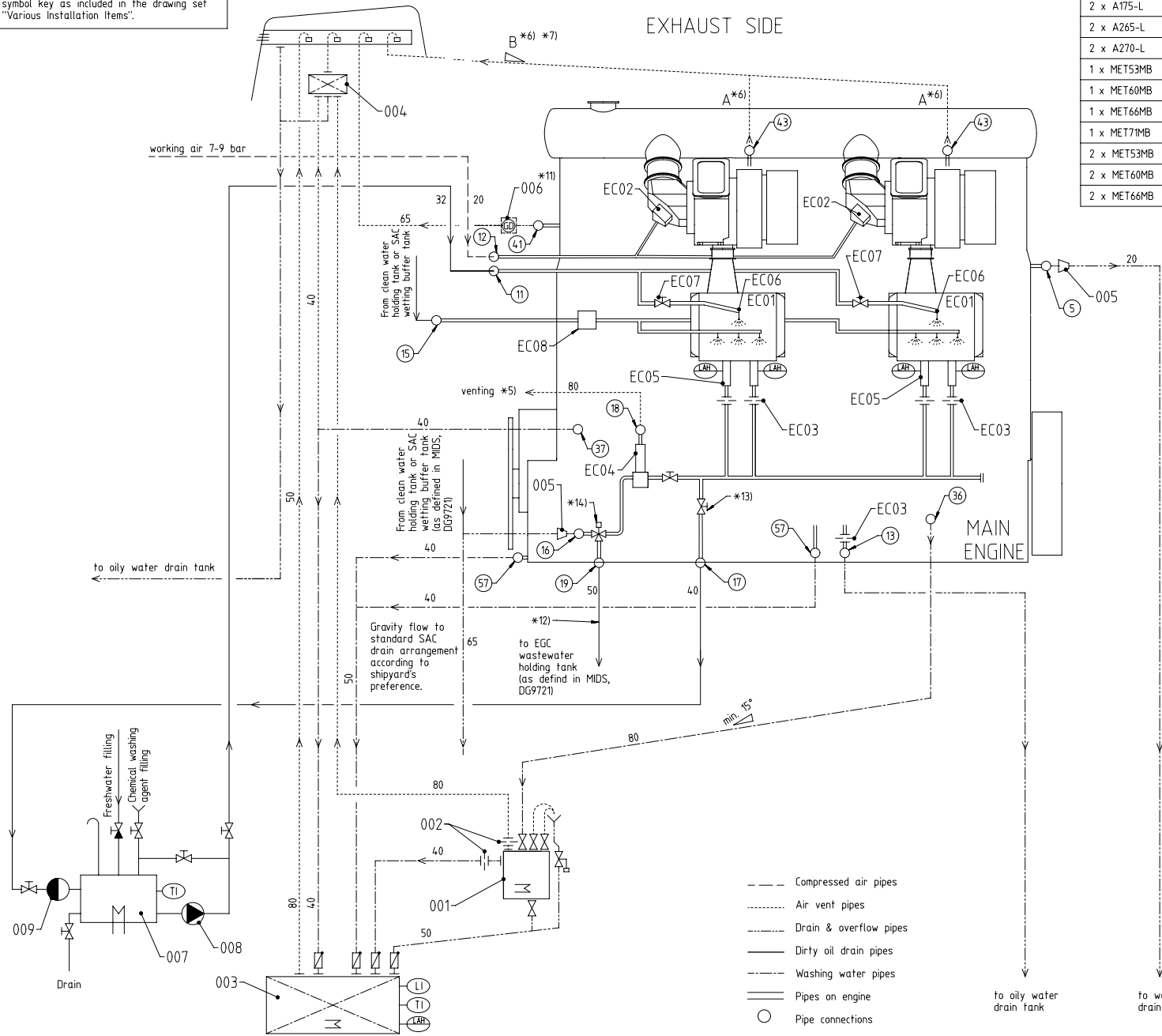


SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Prod.	X72DF-2.1										
Change History	E	npa101	mhu09	23.08.2024	CNA00617	Drawing updated	4	3			
	D	npa101	mhu019	13.06.2024	CNA005249	Drawing updated	4	3			
	C	dki021	mhu019	19.12.2022	CNA002848	Drawing Updated	4	3			
	-	dki021	dst009	21.06.2022	CNA002059	new Design	-	-			
Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C		
WIN GD		LEAKAGE COLLECTION/WASHING SYS. TC 2									
separate BOM available		Dimension									
Scale	-		NX	Units [mm] [kg]	Basic Material			Net Weight	0.000		
Main Design	Design Group		9724	Q-Code X X M		Standard	WDS				
Qty per	A3	Item ID	PTAA036927			Drawing Page/s	1/2				

SYSTEM PROPOSAL

NOTE
Further installation details and variants can be found listed in the Marine Installation Manual (MIM), which provides also the acronyms used in this drawing set. The piping symbols are explained by the piping symbol key as included in the drawing set "Various Installation Items".



Turbocharger type	A**	B**	Min. Inclination
1 x A175-L	65	65	≥ 5°
1 x A275-L	65	65	≥ 5°
1 x A180-L	80	80	≥ 5°
1 x A280-L	80	80	≥ 5°
2 x A170-L	65	100	≥ 5°
2 x A175-L	65	100	≥ 5°
2 x A265-L	65	80	≥ 5°
2 x A270-L	65	100	≥ 5°
1 x MET53MB	65	65	≥ 3°
1 x MET60MB	80	80	≥ 3°
1 x MET66MB	80 <td 80	≥ 3°	
1 x MET71MB	80	80	≥ 3°
2 x MET53MB	65	80	≥ 3°
2 x MET60MB	80	100	≥ 3°
2 x MET66MB	80	100	≥ 3°

Pos.	SYSTEM COMPONENTS *1)
001	Sludge oil trap (link to detail drawing on the partlist of this drawing)
002	Throttling disc (size shown on separate sludge oil trap drawing)
003	Sludge or appropriate tank
004	Air vent manifold
005	Transition piece (adaptor) *9)
006	Gas detector *11)
007	Chemical washing water circulation tank *15)
008	Chemical washing water circulation pump
009	Chemical washing water strainer (0.5-1.0 mm)

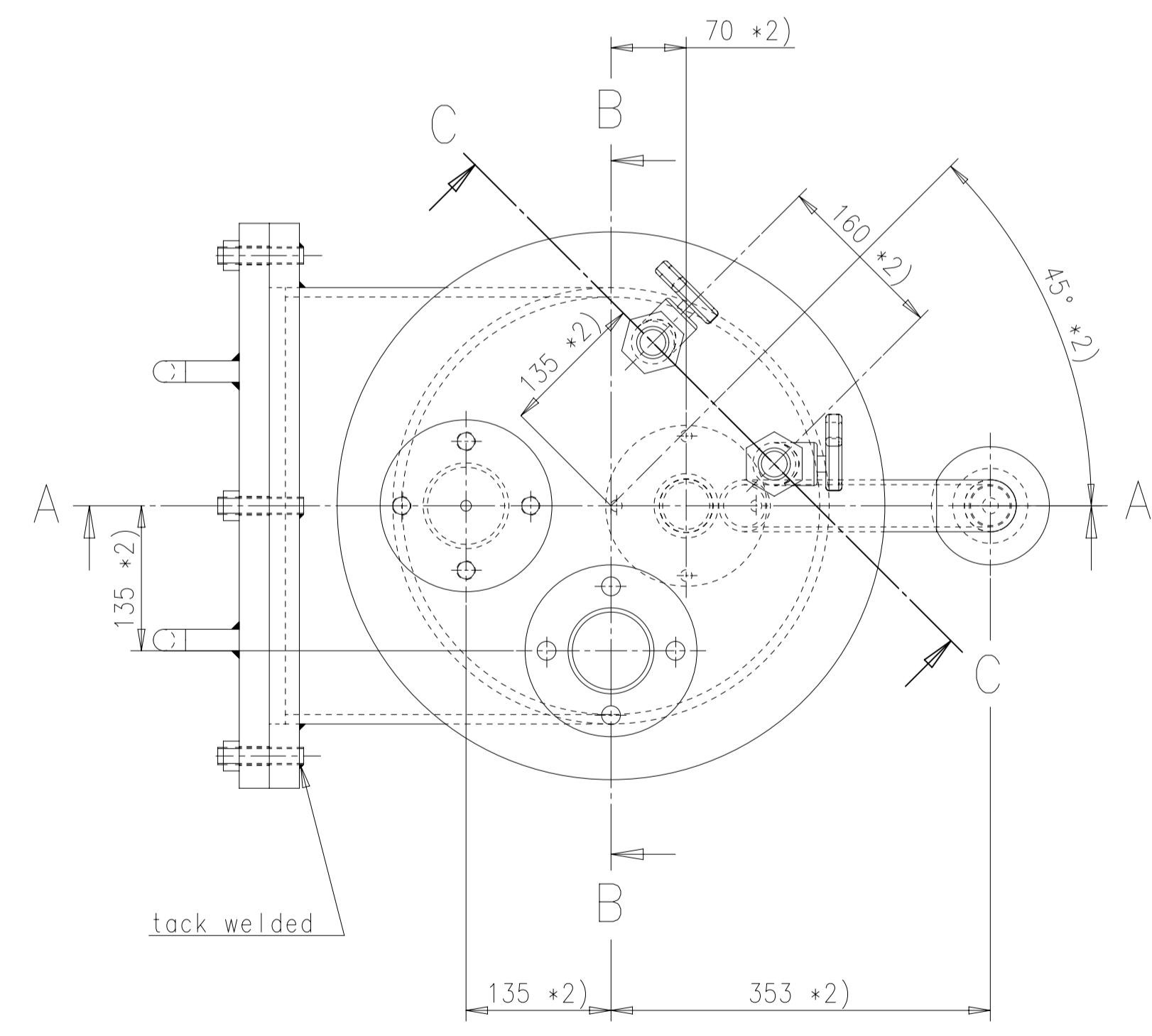
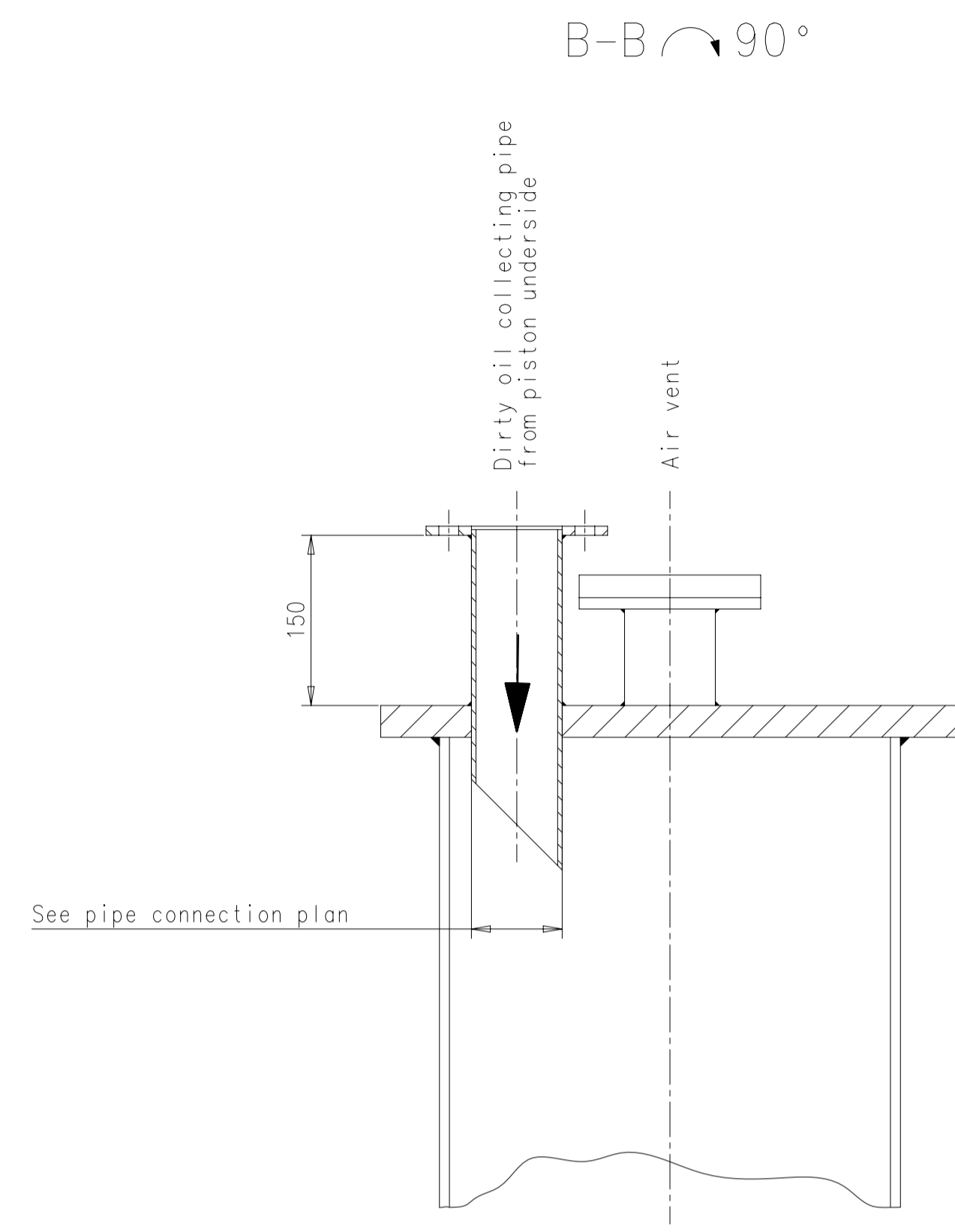
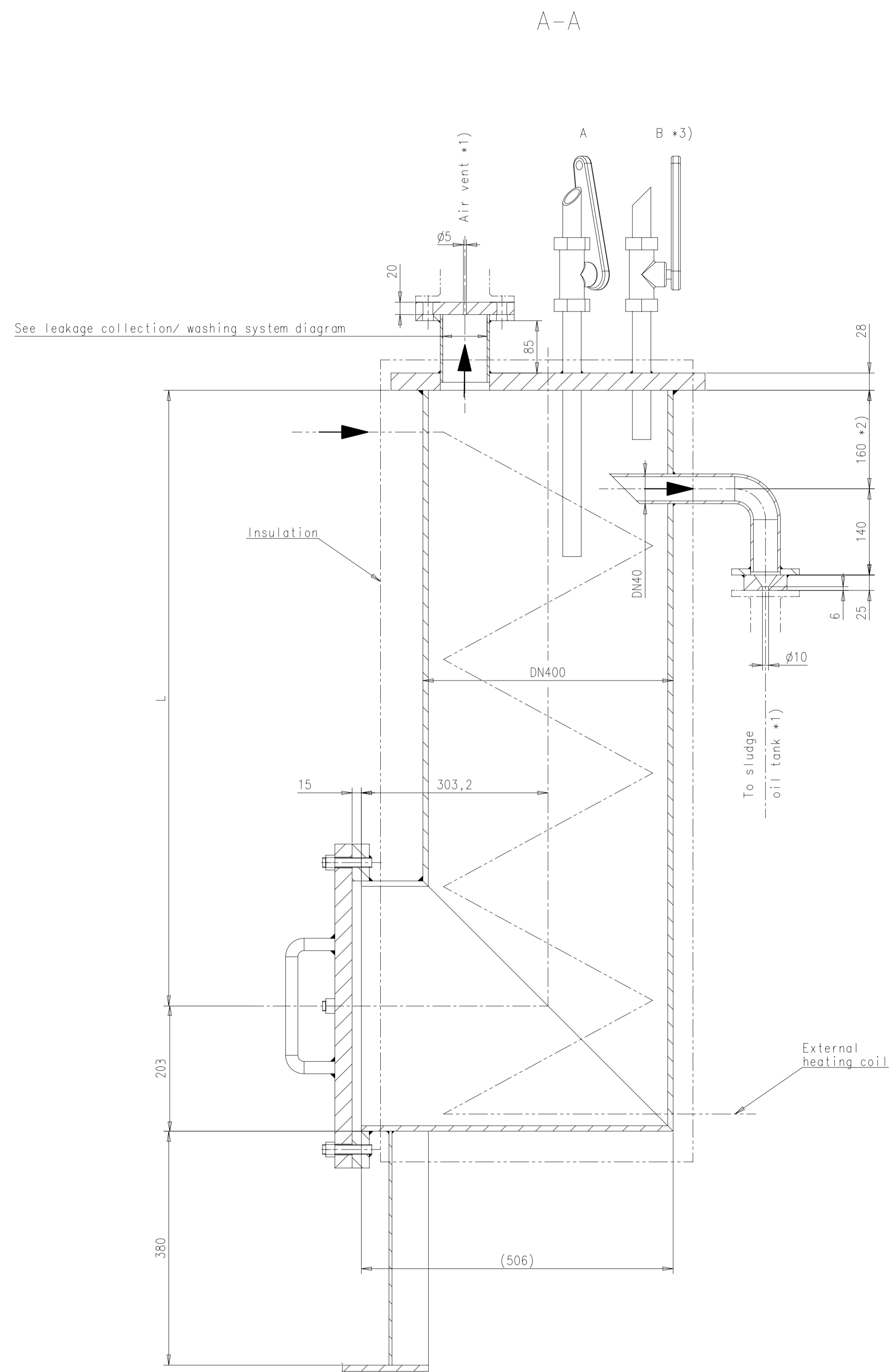
Pos.	ENGINE CONNECTIONS *2)
⑤	OUTLET - Cylinder cooling water drain
⑪	INLET - SAC washing water
⑫	INLET - Air for cleaning TC
⑬	OUTLET - Oily water from scavange air receiver *10)
⑮	INLET - SAC wetting water
⑯	OUTLET - SAC condensate water *4) *10) *12)
⑰	OUTLET - SAC washing water *13)
⑱	OUTLET - SAC venting *5)
⑳	OUTLET - SAC condensate water, (ICER *14)
⑳	OUTLET - Dirty oil piston underside
㉟	OUTLET - Leakage oil gland box
㉡	OUTLET - Venting crankcase
㉢	OUTLET - Venting turbocharger
㉣	OUTLET - Various leakages

Pos.	ENGINE COMPONENTS *3)
EC01	Scavange Air Cooler (SAC)
EC02	Dry cleaning device
EC03	Throttling disc
EC04	Venting Unit
EC05	Condensate drain unit
EC06	SAC washing spray nozzle
EC07	SAC washing isolating valve
EC08	SAC wetting valve unit

Remarks

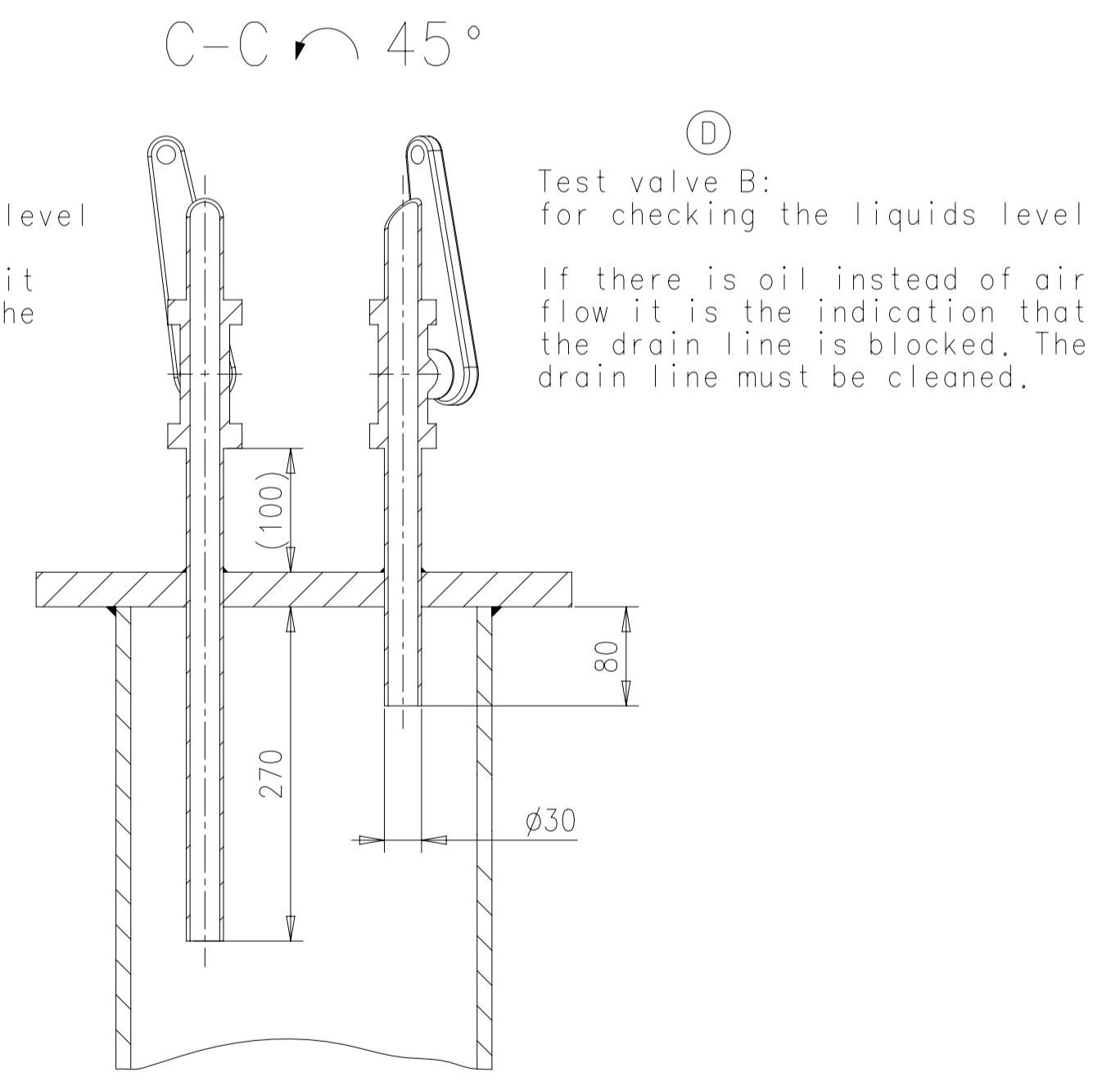
- Air vent and drain pipes must be fully functional at all inclination angles of the ship at which the engine must be operational.
- *1) To be installed by the shipyard.
- *2) Refer to the "Pipe Connection Plan" for the execution and location of the engine pipe connections.
- *3) To be delivered by the engine manufacturer, i.e. already equipped on engine side.
- *4) The amount of condensate water drained off after the SAC depends on the relative air humidity and the scavange air temperature before and after the SAC. During ICER operation, the SAC drain water amount is significantly increased. The specific drain amount is provided by the GID.
- *5) Free flow venting outside of engine room.
- *6) In relation to turbocharger type, see table on the left side.
- *7) Vent pipe diameter as per turbocharger requirements.
- *8) Vent pipe diameter of common collection pipe.
- *9) Installed as required (check with the Pipe Connection Plan).
- *10) Drain connection 13 and 16 are with air flow from scavenging system. Both drain lines must be kept separated and directed to separate tanks. The tanks must be designed with sufficiently sized vents to prevent excessive pressure in the tanks. The drain amount depends on the ambient conditions.
- *11) Optional, to be installed if requested by the flag state and/or class to achieve IGC compliance.
- *12) The system components from the ICER bleed-off water outlet must be made of stainless steel.
- *13) Switching to the separate washing water collection tank must be carried out for SAC cleaning.
- *14) While the ICER is in operation, drain to the EGC wastewater holding tank. The solenoid valve is actuated by a signal from the "Engine Control System".
- *15) Washing water is heated to between 50 and 60 °C by a heating coil. Recommended washing water circulation tank capacity: 0.4 m³

- Compressed air pipes
- Air vent pipes
- Drain & overflow pipes
- Dirty oil drain pipes
- Washing water pipes
- ==== Pipes on engine
- Pipe connections



Ⓓ
Test valve A:
for checking the solids level

If there is no oil flow it is the indication that the solid level is too high. The sludge oil trap must be cleaned.



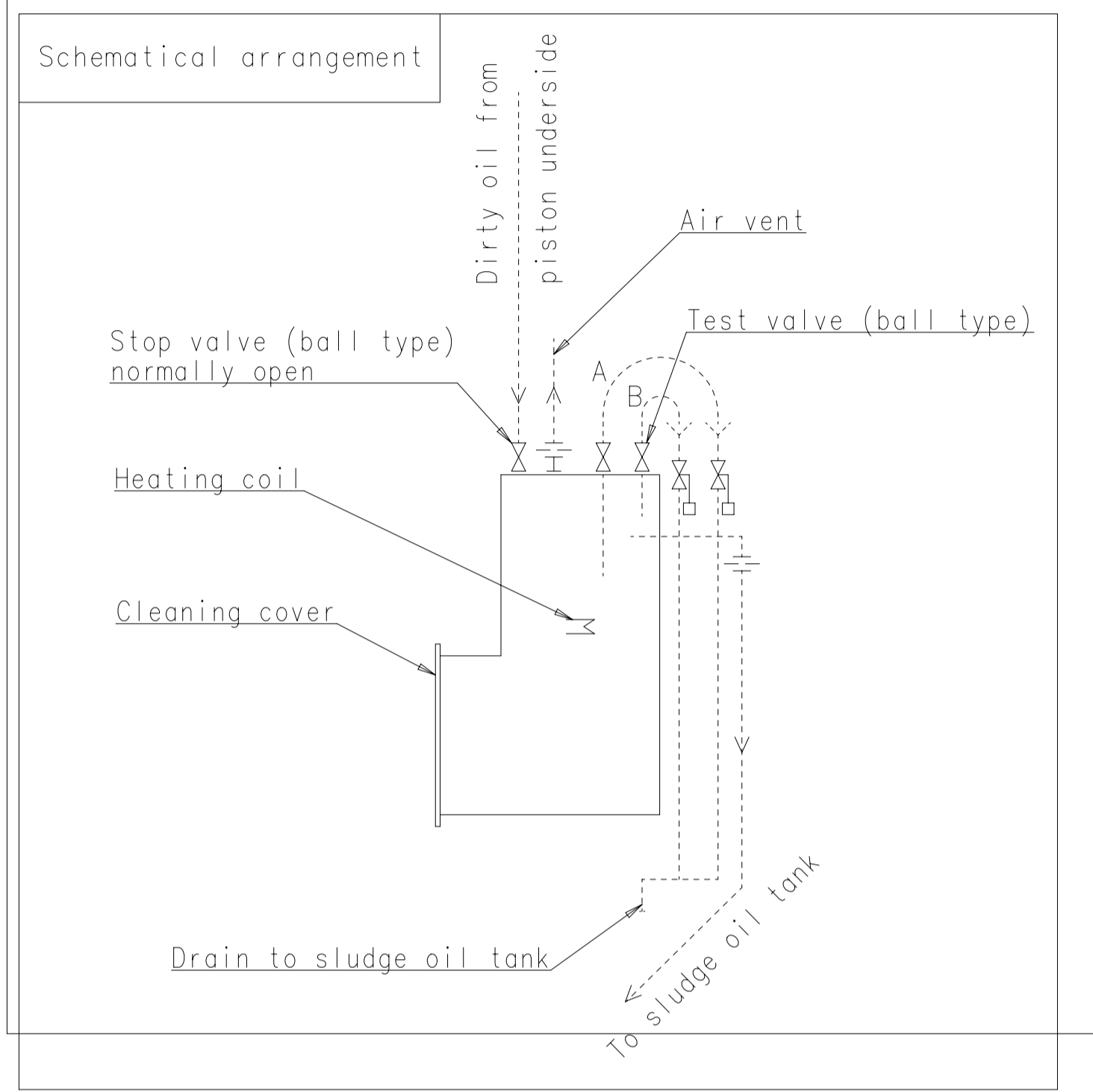
Ⓓ
Test valve B:
for checking the liquids level

If there is oil instead of air flow it is the indication that the drain line is blocked. The drain line must be cleaned.

Remarks:

- *1) Orifice to be as shown
- *2) Observe location of pipes with regard to each other
- *3) Optional - Alternatives, such as level sensors, are possible

Details:	Cylinder bore size:	L = 1000	L = 550
	Capacity:	150 l	100 l
	Working pressure:	4 bar	
	Testing pressure:	6 bar	
	Temperatur:	80°C	



Prof.	CX40DF RT-flex48T-D	RT-flex50-D RT-flex48T-D	RT-flex58T-D V1 RT-flex58T-D V2	RT-flex58T-E RT-flex68-D	RT-flex68-D_L RT-flex82C	RT-flex82SCR-HHM-PILOT RTA68-D	X35-B [...]		
Change History	sd101	mhu019	19.01.2022	CNA001373	drawing updated		4	3	
	sd101	mhu019	10.09.2018	EAAD089439	Legacy information. See corresponding ChangeNotice		4	-	
	dk1021	mhu019	14.07.2017	EAAD087849	Legacy information. See corresponding ChangeNotice		4	-	
	WinGD	jba029	13.11.2009	-			-	-	
Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved		Activity Code	E C
WINGD Winterthur Gas & Diesel		SLUDGE OIL TRAP							
Scale	1:5	NX		Units [mm] [kg]	Basic Material	Net Weight	0.001		
SURFACE PROTECTION SEE GROUP 0344		TOLERANCING PRINCIPLE ISO8015		GENERAL TOLERANCES ACCORDING TO ISO2768-mK		<small>Copyright Winterthur Gas & Diesel Ltd. All rights reserved. No liability is assumed for the use of this drawing for any purpose other than the one intended. The user is responsible for the correct interpretation and application of this drawing. The user is responsible for the correct interpretation and application of this drawing. The user is responsible for the correct interpretation and application of this drawing.</small>			
Main Design	Design Group	9724	Q-Code	XXXXX	Standard	WDS			
Qty per	A1	Item ID	107.425.369.500		Drawing Page/s	1/1			

1

2

3

4

Available executions

Execution No.	Material ID	Attribute 1: Cylinder No.	Attribute 2: TC amount
001	PAAD359824	5-7	1
002	PTAA028070	8	2

NOTE

The above executions can be configured using the Engine Configurator. Detailed guidance for the executions is provided within the Marine Installation Manual (MIM). If a specific execution of interest is not shown in the above table, then it may still be under development or not available. For further information or in case of a project-specific request, WinGD must be contacted directly.

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Prod.	X72DF-2.1 X72DF-2.2										
Change History											
	-	mhu019				new Design					
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C		
				LEAKAGE COLLECTION/WASHING SYS. MIDS master drawing							
separate BOM available				Dimension							
Scale	-		NX	Units [mm] [kg]	Basic Material			Net Weight	0.006		
<small>Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of the drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.</small>				Main Design		Design Group	9724	Q-Code	XXXXX	Standard	WDS
				Qty per	A4	Item ID	PTAA014228			Drawing Page/s	1/1

1

2

3

4

SEQ NO	QTY	Item ID	Item Name	Dimension	Standard-ID	Basic Material	Net Weight
3	1	PAAD359687	LEAKAGE COLLECTION/WASHING SYS.				0.001

NOT VALID for new projects

The following pages are provided only as reference for projects which had been contracted before April 2022

NOT VALID for new projects

Prod.	5,6,7 X72DF-2.1 5,6 X72DF-2.2							
Change History								
	-	dkl021	mhu019	04.12.2020		-		-
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E C

	LEAKAGE COLLECTION/WASHING SYS.
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Bill Of Material			Dimension					
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Main Design		Yes	Design Group	9724	Q-Code	XXXXX	Standard	WDS
Qty per	Engine	A4	Item ID	PAAD359824			BOM Page/s	01/01


SEQ NO	QTY	Item ID	Item Name	Dimension	Standard-ID	Basic Material	Net Weight
001	1	107.425.369.500	SLUDGE OIL TRAP				0.001

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The following pages are provided only as reference for projects which had been contracted before April 2022

NOT VALID for new projects

Prod.	X72DF-2.1		X72DF-2.2							
Change History	B	sde101	mhu019	08.03.2022	CNA001599	Drawing Updated			4	3
	A	mhu019	dst009	20.12.2021	CNA001054	Drawing Updated			4	3
	-	dkl021	mhu019	04.12.2020		-			-	-
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C

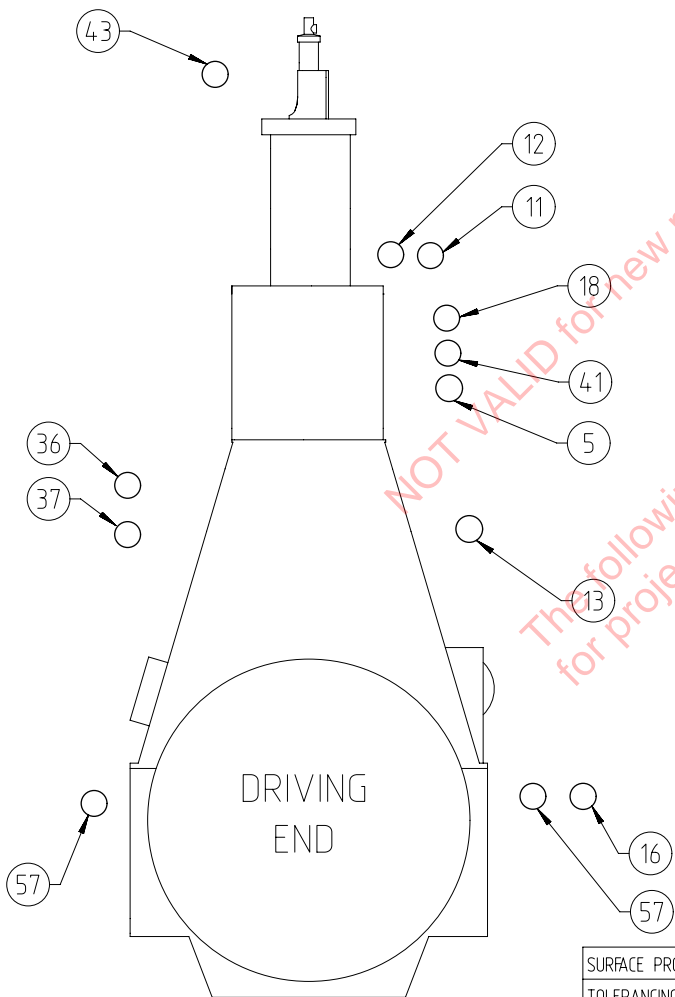
	LEAKAGE COLLECTION/WASHING SYS.
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Bill Of Material		Dimension					
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	Main Design	Design Group	9724	Q-Code	XXXXX	Standard	WDS
	Qty per	A4	Item ID	PAAD359687		BOM Page/s	01/01

SPECIFICATION which must be met:

- ④3 OUTLET - Venting turbocharger
 - Venting to funnel
 - Minimum inclination according to TC suppliers specification
 - Must not be connected to other venting pipes.
- ⑤7 OUTLET - Various leakages
 - Gravity flow to sludge tank or appropriate tank.

- ⑤ OUTLET - Cylinder cooling water drain.
 - Gravity flow to cooling water drain tank or appropriate tank.
- ①1 INLET - Washing water SAC
 - From freshwater hydrophore system
- ①2 INLET - Air for cleaning plants TC and SAC
 - Working air, supply pressure: 7-9 bar
- ①3 OUTLET - Oily water from scavenge air receiver
 - Gravity flow to oily water tank or appropriate tank.
- ①6 OUTLET - SAC condensate water
 - Gravity flow to bilge water tank or washing water collection tank or to the EGC bleed-off line depending on the operation mode.
 - The system components downstream of this connection until the pH-neutralisation dosing unit must be designed for low pH operation.
- ①8 OUTLET - SAC venting
 - Free flow outside of engine room
- ③6 OUTLET - Dirty oil piston underside
 - Flow with SAC pressure to sludge oil trap or appropriate arrangement.
 - Min. inclination of drain pipe: 15°
- ③7 OUTLET - Leakage oil gland box
 - Gravity flow to sludge tank or appropriate tank.
- ④1 OUTLET - Venting crankcase
 - Venting to funnel
 - Must not be connected to other venting pipes.

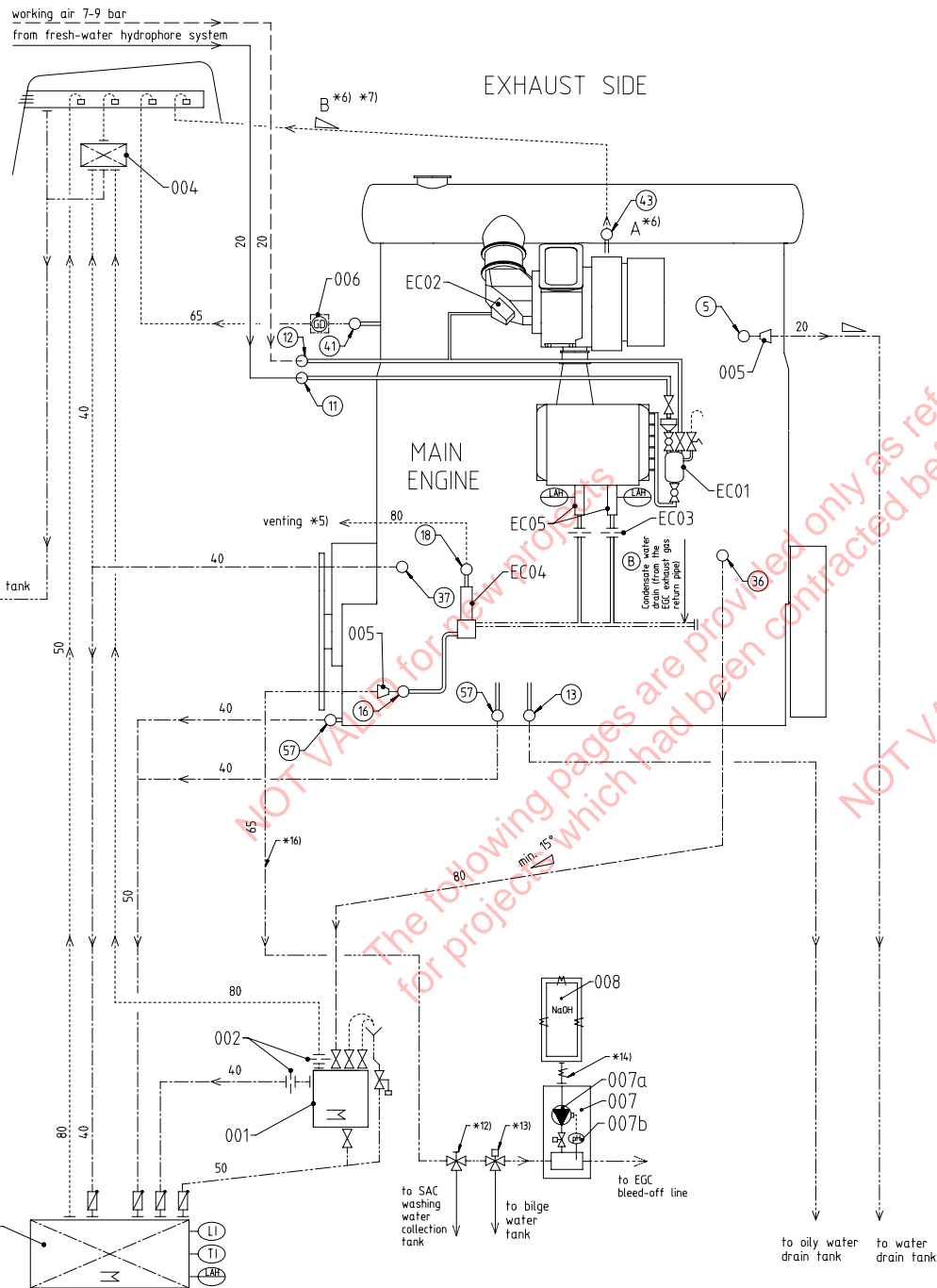


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The following pages are provided only as reference for projects which had been contracted before 2021

Prod.	X72DF-2.1 X72DF-2.2										
Change History	B	sde101	mhu019	08.03.2022	CNA001599	Drawing Updated			4	3	
	A	mhu019	dst009	20.12.2021	CNAA001054	Drawing Updated			4	3	
	-	dki021	mhu019	04.12.2020	-				-	-	
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis			Approved	Activity Code	E
WINGD Winterthur Gas & Diesel					LEAKAGE COLLECTION/WASHING SYS.						
separate BOM available					Dimension						
Scale	-		NX	Units [mm] [kg]	Basic Material			Net Weight	0.001		
Main Design	Design Group		9724	Q-Code	XXXXXX		Standard	WDS			
Qty per	A3	Item ID	PAAD359687			Drawing Page/s	1/2				
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TOLERANCING PRINCIPLE ISO8015											
GENERAL TOLERANCES ACCORDING TO ISO2768-mK											

SYSTEM PROPOSAL

NOTE
Further installation details and variants can be found listed in the Marine Installation Manual (MIM), which provides also the acronyms used in this drawing set. The piping symbols are explained by the piping symbol key as included in the drawing set "Various Installation Items".



Turbocharger type	A**	B**	Min. Inclination
1 x A175-L	65	65	≥ 5°
1 x A275-L	65	65	≥ 5°
1 x A180-L	80	80	≥ 5°
1 x A280-L	80	80	≥ 5°
2 x A170-L	65	100	≥ 5°
2 x A175-L	65	100	≥ 5°
2 x A265-L	65	80	≥ 5°
2 x A270-L	65	100	≥ 5°
1 x MET53MB	65	65	≥ 3°
1 x MET60MB	80	80	≥ 3°
1 x MET66MB	80	80	≥ 3°
1 x MET71MB	80	80	≥ 3°
2 x MET53MB	65	80	≥ 3°
2 x MET60MB	80	100	≥ 3°
2 x MET66MB	80	100	≥ 3°

Pos.	SYSTEM COMPONENTS *1)
001	Sludge oil trap (link to detail drawing on the partlist of this drawing).
002	Throttling disc (size shown on separate sludge oil trap drawing)
003	Sludge or appropriate tank
004	Air vent manifold
005	Transition piece (adaptor) *9)
006	Gas detector *11)
007	pH-neutralisation dosing unit with *15) 007a - NaOH dosing pump 007b - pH sensor
008	NaOH storage tank *14) *15)

Pos.	ENGINE CONNECTIONS *2)
⑤	OUTLET - Cylinder cooling water drain
⑪	INLET - Washing water SAC
⑫	INLET - Air for cleaning TC and SAC
⑬	OUTLET - Oily water from scavange air receiver *10)
⑯	OUTLET - SAC condensate water *4) *10) *16) (A)
⑰	OUTLET - SAC venting *5)
⑳	OUTLET - Dirty oil piston underside
㉑	OUTLET - Leakage oil gland box
㉒	OUTLET - Venting crankcase
㉓	OUTLET - Venting turbocharger
㉔	OUTLET - Various leakages

Pos.	ENGINE COMPONENTS *3)
EC01	Scavange air cooler washing plant
EC02	Dry cleaning device
EC03	Throttling disc
EC04	Venting Unit
EC05	Condensate drain unit

- Remarks**
- 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 connections.
 - *3) To be delivered by the engine manufacturer, i.e. already equipped on engine side.
 - *4) The amount of condensate water drained off after the SAC depends on the relative air humidity and the scavange air temperature before and after the SAC. During IECR operation, the SAC drain water amount is significantly increased. The specific drain amount is provided by the GTD.
 - *5) Free flow venting outside of engine room.
 - *6) In relation to turbocharger type, see table on the left side.
 - *7) Vent pipe diameter as per turbocharger requirements.
 - *8) Vent pipe diameter of common collection pipe.
 - *9) Installed as required (check with the Pipe Connection Plan).
 - *10) Drain connection 13 and 16 are with air flow from scavange system. Both drain lines must be kept separated and directed to separate tanks. The tanks must be designed with sufficiently sized vents to prevent excessive pressure in the tanks. The drain amount depends on the ambient conditions.
 - *11) Optional, to be installed if requested by the flag state and/or class to achieve IGC compliance.
 - *12) Switching to the separate washing water collection tank must be carried out for SAC cleaning.
 - *13) While the IECR is in operation, drain to the EGC bleed-off line. The solenoid valve is actuated by a signal from the "Engine Control System".
 - *14) If the caustic soda water solution has a mass fraction of 50% m/m NaOH, then the tank and supply line must be trace heated and insulated to keep the caustic soda temperature in the range of 27 - 37 °C. If the caustic soda water solution has a mass fraction of max. 30% m/m NaOH, then no heating is required.
 - *15) The caustic soda storage tank and the pH-neutralisation dosing unit must be applied for installations with IECR Diesel Tier III mode. For installations with only IECR gas mode, this unit can be omitted.
 - *16) The system components from the SAC condensation water outlet (engine connection 16) must be designed for low pH operation. After pH neutralisation unit 007 on this drawing or the pH-neutralisation dosing unit in the EGC bleed-off line, the system components can be of standard material.

- Compressed air pipes
- Air vent pipes
- Drain & overflow pipes
- Dirty oil drain pipes
- Washing water pipes
- Pipes on engine
- Pipe connections

SEQ NO	QTY	Item ID	Item Name	Dimension	Standard-ID	Basic Material	Net Weight
1	1	PTAA028071	LEAKAGE COLLECTION/WASHING SYS.				0

NOT VALID for new projects

The following pages are provided only as reference for projects which had been contracted before April 2022

NOT VALID for new projects

Proc.	8 X72DF-2.1							
Change History								
	-	mhu019	dst009	08.03.2022	CNAA001600	Main Design/Drawing Introduced	-	-
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E C

	LEAKAGE COLLECTION/WASHING SYS.
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Bill Of Material		Dimension							
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	Main Design	Yes	Design Group		9724	Q-Code	XXXXX	Standard	WDS
	Qty per	Engine	A4	Item ID	PTAA028070		BOM Page/s	01/01	

SEQ NO	QTY	Item ID	Item Name	Dimension	Standard-ID	Basic Material	Net Weight
001	1	107.425.369.500	SLUDGE OIL TRAP				0.001

NOT VALID for new projects

The following pages are provided only as reference for projects which had been contracted before April 2022

NOT VALID for new projects

Prod.	X72DF-2.1								
Change History									
	-	mhu019	ds009	08.03.2022	01A01600	new Design		-	-
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E C



LEAKAGE COLLECTION/WASHING SYS.

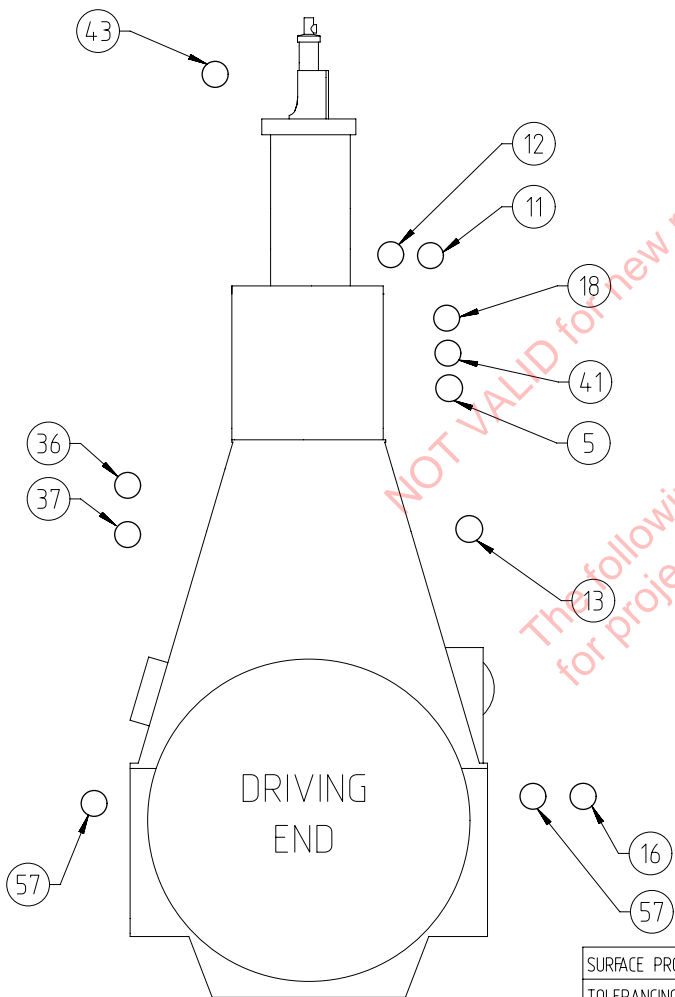
Bill Of Material

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		Main Design		Design Group		9724 Q-Code XXXXX		Standard WDS	
		Qty per		A4 Item ID		PTAA028071		BOM Page/s 01/01	

SPECIFICATION which must be met:

43	OUTLET - Venting turbocharger - Venting to funnel - Minimum inclination according to TC suppliers specification - Must not be connected to other venting pipes.
57	OUTLET - Various leakages - Gravity flow to sludge tank or appropriate tank.

5	OUTLET - Cylinder cooling water drain. - Gravity flow to cooling water drain tank or appropriate tank.
11	INLET - Washing water SAC - From freshwater hydrophore system
12	INLET - Air for cleaning plants TC and SAC - Working air, supply pressure: 7-9 bar
13	OUTLET - Oily water from scavenge air receiver - Gravity flow to oily water tank or appropriate tank.
16	OUTLET - SAC condensate water - Gravity flow to bilge water tank or washing water collection tank or to the EGC bleed-off line depending on the operation mode. - The system components downstream of this connection until the pH-neutralisation dosing unit must be designed for low pH operation.
18	OUTLET - SAC venting - Free flow outside of engine room
36	OUTLET - Dirty oil piston underside - Flow with SAC pressure to sludge oil trap or appropriate arrangement. - Min. inclination of drain pipe: 15°
37	OUTLET - Leakage oil gland box - Gravity flow to sludge tank or appropriate tank.
41	OUTLET - Venting crankcase - Venting to funnel - Must not be connected to other venting pipes.



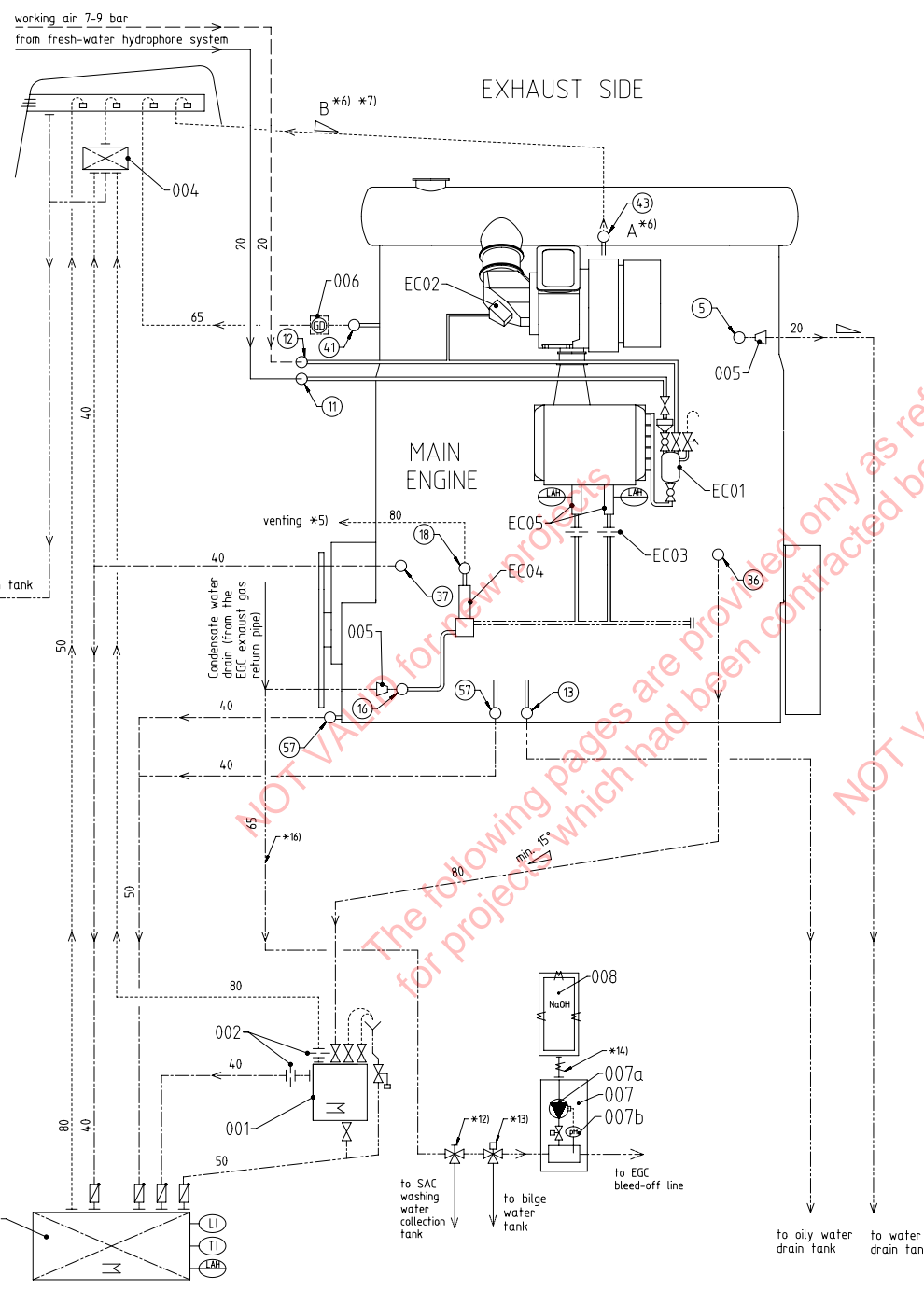
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SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Prod.	X72DF-2.1									
Change History	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C
	-	mhu019	dt009	08.03.2022	0AA01600	new Design				
		LEAKAGE COLLECTION/WASHING SYS.								
separate BOM available		Dimension								
Scale	-		NX		Units [mm] [kg]	Basic Material			Net Weight 0.000	
Main Design	Qty per		A3		Design Group	9724	Q-Code XXXXX	Standard WDS		
				Item ID		PTAA028071		Drawing Page/s 1/2		

SYSTEM PROPOSAL

NOTE
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2 x MET60MB	80	100	≥ 3°
2 x MET66MB	80	100	≥ 3°

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007	pH-neutralisation dosing unit with *15) 007a - NaOH dosing pump 007b - pH sensor
008	NaOH storage tank *14) *15)

Pos.	ENGINE CONNECTIONS *2)
⑤	OUTLET - Cylinder cooling water drain
⑪	INLET - Washing water SAC
⑫	INLET - Air for cleaning TC and SAC
⑬	OUTLET - Oily water from scavenge air receiver *10)
⑯	OUTLET - SAC condensate water *4) *10) *16)
⑰	OUTLET - SAC venting *5)
⑳	OUTLET - Dirty oil piston underside
㉓	OUTLET - Leakage oil gland box
㉔	OUTLET - Venting crankcase
㉕	OUTLET - Venting turbocharger
㉖	OUTLET - Various leakages

Pos.	ENGINE COMPONENTS *3)
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EC04	Venting Unit
EC05	Condensate drain unit

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 - *4) The amount of condensate water drained off after the SAC depends on the relative air humidity and the scavenge air temperature before and after the SAC. During ICR operation, the SAC drain water amount is significantly increased. The specific drain amount is provided by the GTD.
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 - *6) In relation to turbocharger type, see table on the left side.
 - *7) Vent pipe diameter as per turbocharger requirements.
 - *8) Vent pipe diameter of common collection pipe.
 - *9) Installed as required (check with the Pipe Connection Plan).
 - *10) Drain connection 13 and 16 are with air flow from scavenging system. Both drain lines must be kept separated and directed to separate tanks. The tanks must be designed with sufficiently sized vents to prevent excessive pressure in the tanks. The drain amount depends on the ambient conditions.
 - *11) Optional, to be installed if requested by the flag state and/or class to achieve IGC compliance.
 - *12) Switching to the separate washing water collection tank must be carried out for SAC cleaning.
 - *13) While the ICR is in operation, drain to the EGC bleed-off line. The solenoid valve is actuated by a signal from the "Engine Control System".
 - *14) If the caustic soda water solution has a mass fraction of 50% m/m NaOH, then the tank and supply line must be trace heated and insulated to keep the caustic soda temperature in the range of 27 - 37 °C. If the caustic soda water solution has a mass fraction of max. 30% m/m NaOH, then no heating is required.
 - *15) The caustic soda storage tank and the pH-neutralisation dosing unit must be applied for installations with ICR Diesel Tier III mode. For installations with only ICR gas mode, this unit can be omitted.
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- Compressed air pipes
- Air vent pipes
- Drain & overflow pipes
- Dirty oil drain pipes
- Washing water pipes
- Pipes on engine
- Pipe connections

MIDS - Leakage Collection & Washing System (DG9724)

WinGD X72DF/-2.1/-2.2

TRACK CHANGES

DATE	SUBJECT	DESCRIPTION
2020-12-10	DRAWING SET	First web upload
2021-12-21	PAAD359687	new revision
2022-03-10	PAAD359687 107.425.369.500 PTAA028070 PTAA028071	System and main drgs – new revision/new drg
2022-06-23	PTAA036947 PTAA036948 PTAA036947 PTAA036864 PTAA036948 PTAA036927	New main and system drgs. as replacement for the previous drawing set added
2022-12-01	PTAA036864 PTAA036927	new revision
2022-12-20	PTAA036864 PTAA036927	new revision
2024-08-26	PTAA036927E PTAA036864E	New revision

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