

Available executions

Execution No.	Material ID
001	PTAA036181

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

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.	X92DF-2.0										
Change History											
	-	sna102	dst009	22.06.2022	CNA002074	new Design				-	-
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	<b>Approved</b>		Activity Code	E	C




LEAKAGE COLLECTION/WASHING SYS.  
 MIDS master drawing

separate BOM available				Dimension								
Scale	-		NX	Units [mm] [kg]	Basic Material				Net Weight	0.001		
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				Qty per	A4	Item ID	PTAA026439				Drawing Page/s	1/1

SEQ NO	QTY	Item ID	Item Name	Dimension	Standard-ID	Basic Material	Net Weight
1	1	PTAA036177	LEAKAGE COLLECTION/WASHING SYS.				0.001

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Prod.	6,7,8,9,10,11,12 X92DF-2.0						
Change History							
	A	npa101	mhu019	23.08.2024	CNAA006157	Drawing updated	4 3
	-	dkl021	dst009	21.06.2022	CNAA002059	Main Design/Drawing Introduced	- -
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved Activity Code E C

	<b>LEAKAGE COLLECTION/WASHING SYS.</b>
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<b>Bill Of Material</b>		Dimension					
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	Main Design	Yes	Design Group		9724	Q-Code	X X M
	Qty per	Engine	A4	Item ID	<b>PTAA036181</b>		BOM Page/s

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

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Proc.	X92DF-2.0										
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	

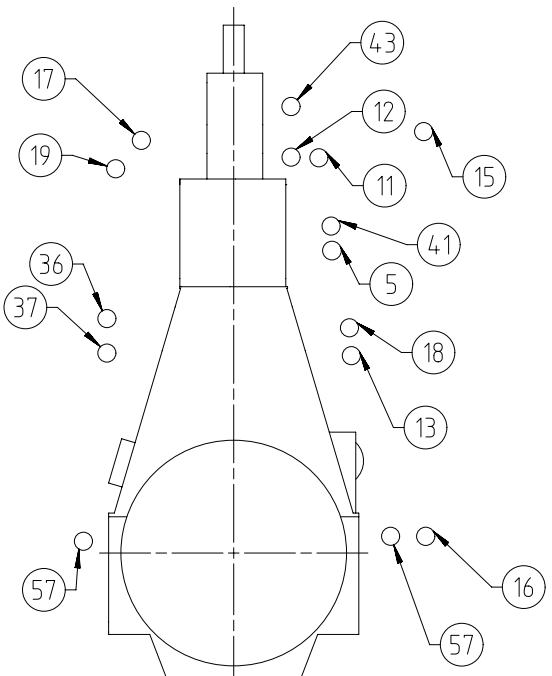
	<b>LEAKAGE COLLECTION/WASHING SYS. TC 3</b>
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Bill Of Material		Dimension						
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	Main Design	Design Group		9724	Q-Code	X X M	Standard	WDS
	Qty per	A4	Item ID	PTAA036177			BOM Page/s	01/01

# 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



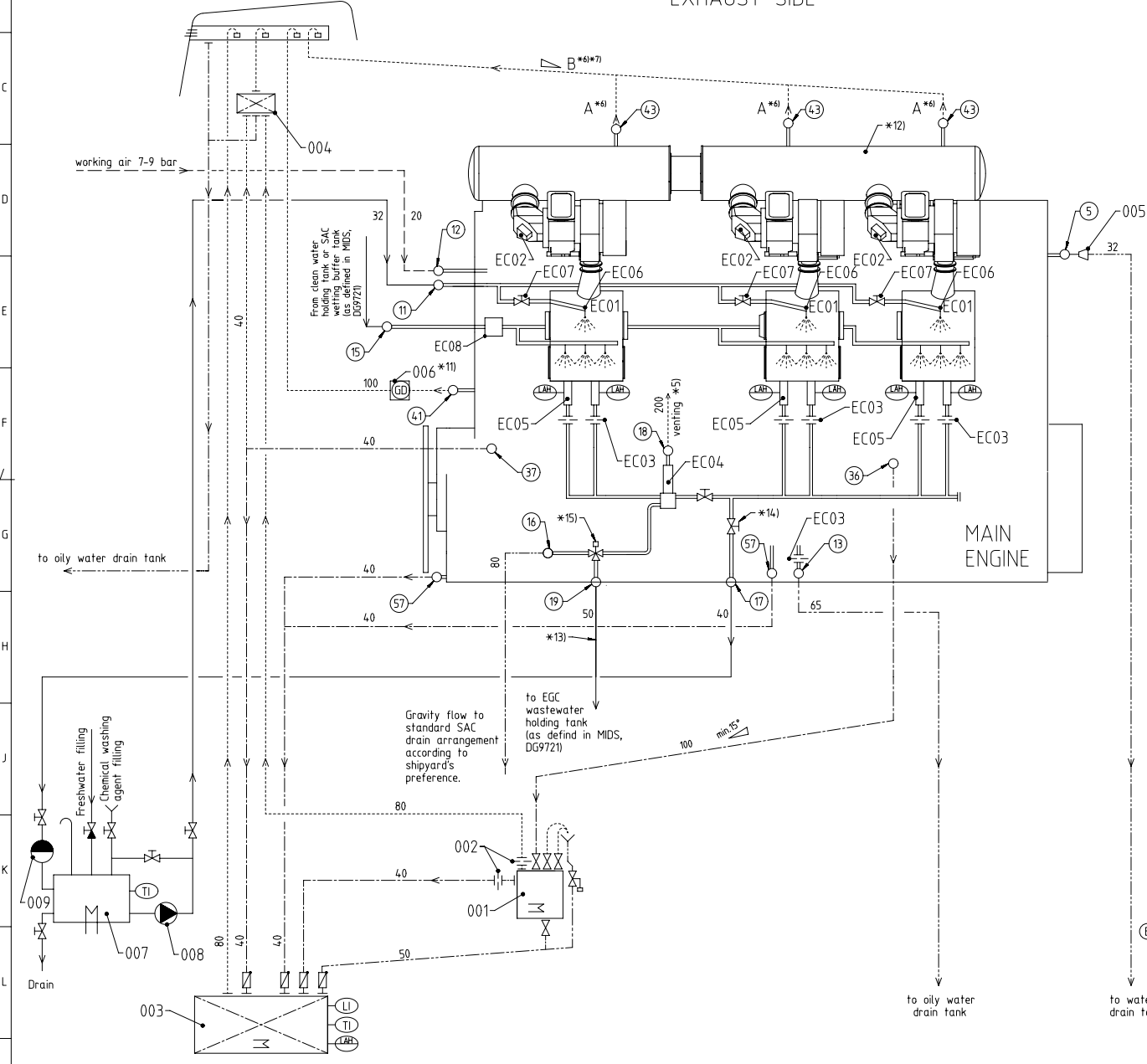
SURFACE PROTECTION SEE GROUP 0344  
TOLERANCING PRINCIPLE ISO8015  
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Prod.	X92DF-2.0									
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	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
<b>WIN GD</b>		LEAKAGE COLLECTION/WASHING SYS. TC 3								
separate BOM available		Dimension								
Scale	-		NX	Units [mm] [kg]	Basic Material			Net Weight	0.001	
Main Design	Design Group		9724	Q-Code X X M		Standard		WDS		
Qty per	A3	Item ID	PTAA036177			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".

## EXHAUST SIDE



Turbocharger type	A*7)	B*8)	Min. Inclination
2x A175	65	100	≥ 5°
2x A180	80	100	≥ 5°
2x A185	80	125	≥ 5°
2x A190	80	125	≥ 5°
2x A275	65	100	≥ 5°
2x A280	80	100	≥ 5°
2x A285	80	125	≥ 5°
3x A175	65	125	≥ 5°
3x A180	80	125	≥ 5°
3x A185	80	150	≥ 5°
3x A190	80	150	≥ 5°
3x A275	65	125	≥ 5°
3x A280	80	125	≥ 5°
3x A285	80	150	≥ 5°
2x MET66MB	80	100	≥ 3°
2x MET71MB	80	100	≥ 3°
2x MET83MB	100	125	≥ 3°
2x MET90MB	100	125	≥ 3°
3x MET66MB	80	125	≥ 3°
3x MET71MB	80	125	≥ 3°
3x MET83MB	100	150	≥ 3°
3x MET90MB	100	150	≥ 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 *16)
008	Chemical washing water circulation pump
009	Chemical washing water strainer (0.5-1.0 mm)

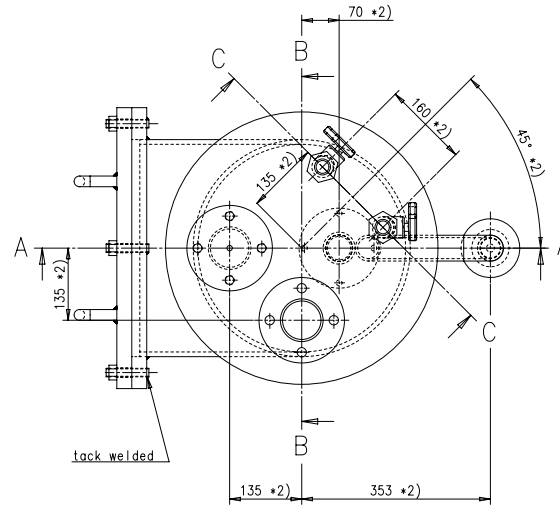
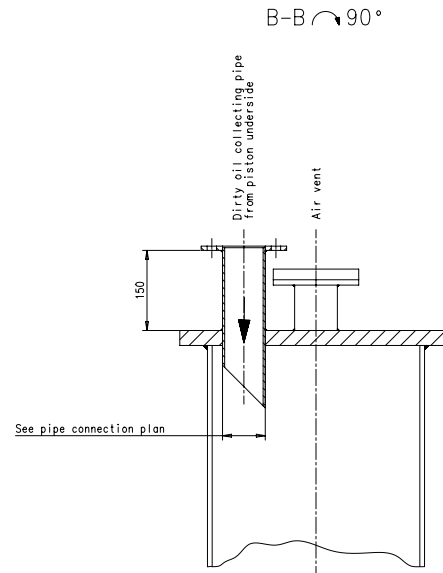
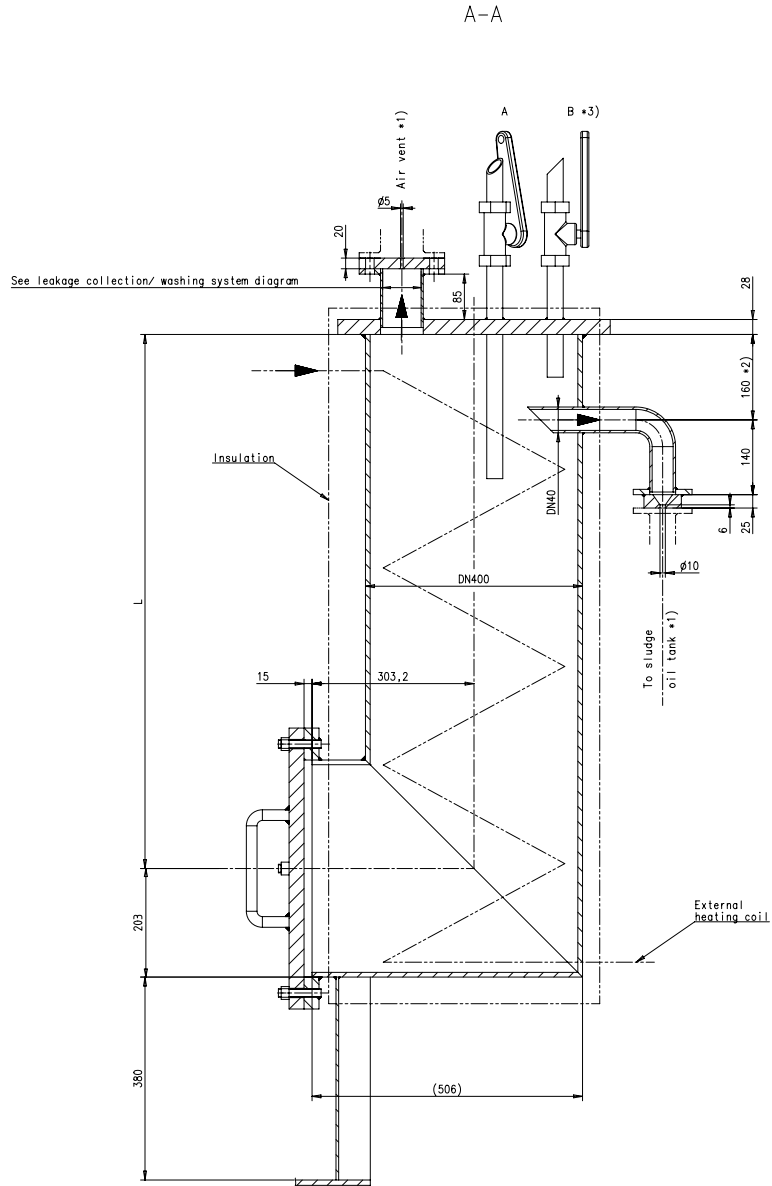
Pos.	ENGINE CONNECTIONS *2)
5	OUTLET - Cylinder cooling water drain
11	INLET - SAC washing water
12	INLET - Air for cleaning TC
13	OUTLET - Oily water from scavange air receiver *10)
15	INLET - SAC wetting water
16	OUTLET - SAC condensate water *4) *10) *13)
17	OUTLET - SAC washing water *14)
18	OUTLET - SAC venting *5)
19	OUTLET - SAC condensate water, iCER *15)
36	OUTLET - Dirty oil piston underside
37	OUTLET - Leakage oil gland box
41	OUTLET - Venting crankcase
43	OUTLET - Venting turbocharger
57	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**

- \*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 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 scavangeing 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) Manifold pipe for 2 TC
- \*13) The system components from the iCER bleed-off water outlet must be designed for low pH operation. After the pH neutralisation the system components can be of standard material.
- \*14) Switching to the separate wash water collection tank must be carried out for SAC cleaning.
- \*15) 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".
- \*16) Washing water is heated to between 50 and 60 °C by a heating coil. Recommended washing water circulation tank capacity: 0.4 m³

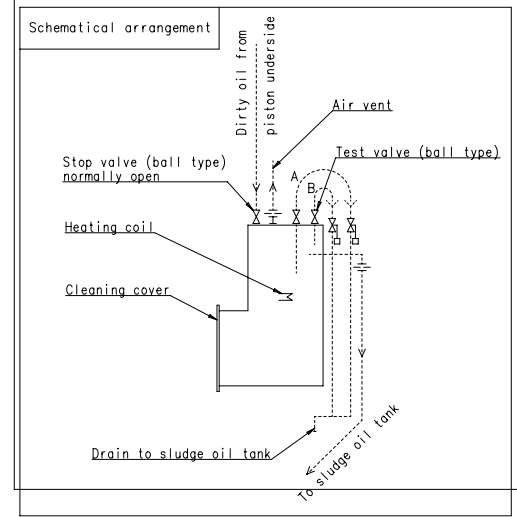
- Compressed air pipes
- ..... Air vent pipes
- Drain & overflow pipes
- Washing water pipes
- Dirty oil drain pipes
- Pipes on engine
- Pipe connections



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:	55-96	35-54
	Working pressure:	4 bar	
	Testing pressure:	6 bar	
	Temperature:	80°C	

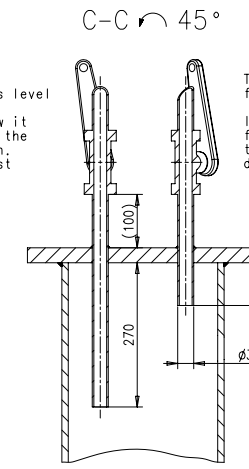


Test valve A:  
for checking the solids level

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.



Proj.	CX40DF	R1=rev50-D	R2=rev50-T-D V1	R1=rev58T-E	R1=rev80-L	R1=rev82	CR4HMM-PILOT	X33-8
Rev.	01	30.01.2022	04A003373				X33	
Change History	D sde01	mhu019	10.09.2018	EAA0089439	Legacy information. See corresponding ChangeNotice			4 -
	B dki021	mhu019	16.07.2017	EAA0087849	Legacy information. See corresponding ChangeNotice			4 -
	WniGD	jba029	13.11.2009					-
Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approval	Activity Code	E C

<b>WINGD</b> Winterthur Gas & Diesel		<b>SLUDGE OIL TRAP</b>	
Scale	1:5	Units [mm] [kg]	Basic Material
Dimension	NX		
Main Design		Design Group	9724
Part	A1	Item ID	107.4.25.369.500
Net Weight	0.001	Standard	WDS
Drawing Page	1/1		

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



**Available executions**

Execution No.	Material ID	Cylinder No.
001	PTAA004212	6-12

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

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NOT VALID FOR NEW PROJECTS!  
 Provided only as reference for projects  
 contracted before April 2022

Prod.	X92DF-2.0								
Change History									
	-	sna102				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	0.001		
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Qty per	A4	Item ID	PTAA026439		Drawing Page/s	1/1			



SEQ NO	QTY	Item ID	Item Name	Dimension	Standard-ID	Basic Material	Net Weight
3	1	PTAA004208	LEAKAGE COLLECTION/WASHING SYS.				0

NOT VALID FOR NEW PROJECTS!  
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Prod.	6,7,8,9,10,11,12 X92DF-2.0								
Change History									
	-	dki021	dst009	22.12.2021	CNAA001288	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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<b>Bill Of Material</b>			Dimension				
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	Main Design	Yes	Design Group	9724	Q-Code	XXXXX	Standard WDS
	Qty per	Engine	A4	Item ID	PTAA004212		BOM Page/s

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

NOT VALID FOR NEW PROJECTS!  
 Provided only as reference for projects  
 contracted before April 2022

Prod.	X92DF-2.0									
Change History										
	-	dkl021	dst 009	20.12.2021	CNAA001054	new Design		-	-	
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E C	

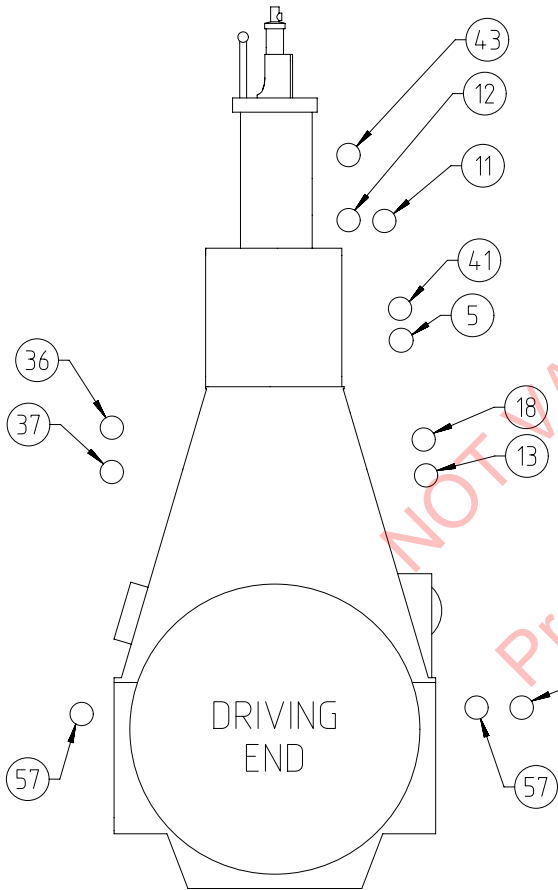
	LEAKAGE COLLECTION/WASHING SYS.
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<b>Bill Of Material</b>				Dimension				
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Main Design		Design Group		9724	Q-Code	XXXXX	Standard	WDS
Qty per		A4	Item ID	PTAA004208			BOM Page/s	01/01

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.



NOT VALID FOR NEW PROJECTS  
 Provided only as reference  
 Contracted before April 2022

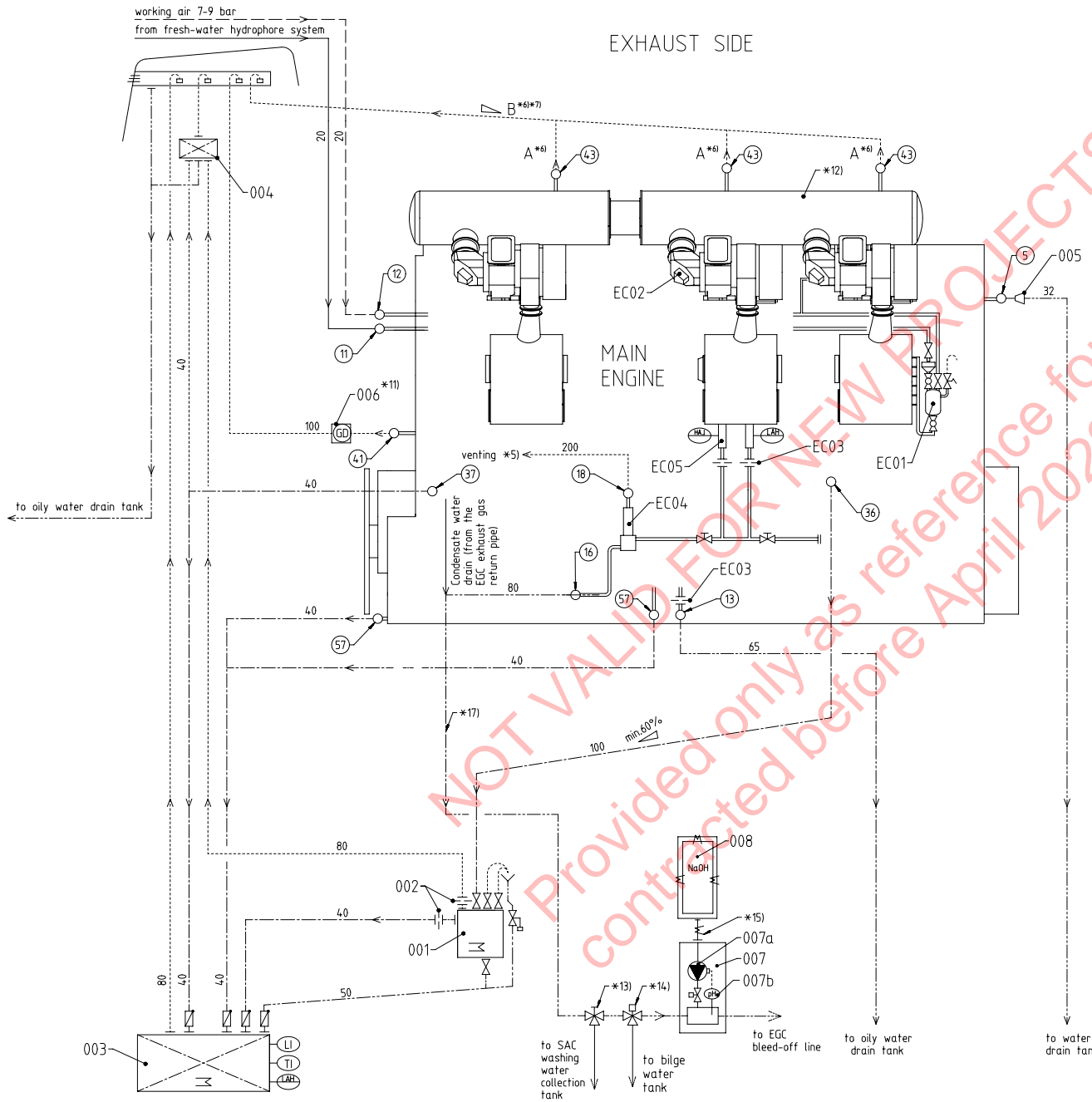
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	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis		Approved	Activity Code	E	C			
<b>WINGD</b> Winterthur Gas & Diesel						LEAKAGE COLLECTION/WASHING SYS.								
separate BOM available						Dimension								
Scale	-	⊕ ⊖		NX		Units [mm] [kg]	Basic Material			Net Weight	0.001			
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						Qty per	A3		Item ID	PTAA004208			Drawing Page/s	1/2

SURFACE PROTECTION SEE GROUP 0344  
 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".

## EXHAUST SIDE



Turbocharger type	A*7)	B*8)	Min. Inclination
2x A175	65	100	≥ 5°
2x A180	80	100	≥ 5°
2x A185	80	125	≥ 5°
2x A190	80	125	≥ 5°
2x A275	65	100	≥ 5°
2x A280	80	100	≥ 5°
2x A285	80	125	≥ 5°
3x A175	65	125	≥ 5°
3x A180	80	125	≥ 5°
3x A185	80	150	≥ 5°
3x A190	80	150	≥ 5°
3x A275	65	125	≥ 5°
3x A280	80	125	≥ 5°
3x A285	80	150	≥ 5°
2x MET66MB	80	100	≥ 3°
2x MET71MB	80	100	≥ 3°
2x MET83MB	100	125	≥ 3°
2x MET90MB	100	125	≥ 3°
3x MET66MB	80	125	≥ 3°
3x MET71MB	80	125	≥ 3°
3x MET83MB	100	150	≥ 3°
3x MET90MB	100	150	≥ 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 *16) 007a - NaOH dosing pump 007b - pH sensor
008	NaOH storage tank *15) *16)

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 - Dirty water from scavenge air receiver *10)
16	OUTLET - SAC condensate water *4) *10) *17)
18	OUTLET - SAC venting *5)
36	OUTLET - Dirty oil piston underside
37	OUTLET - Leakage oil gland box
41	OUTLET - Venting crankcase
43	OUTLET - Venting turbocharger
57	OUTLET - Various leakages

Pos.	ENGINE COMPONENTS *3)
EC01	Scavenge 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 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 G.D.
- \*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) Manifold pipe for 2 TC
- \*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 bleed-off line. The solenoid valve is actuated by a signal from the "Engine Control System".
- \*15) 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.
- \*16) The caustic soda storage tank and the pH-neutralisation dosing unit must be applied for installations with iCER diesel Tier III mode. For installations with only iCER gas mode, this unit can be omitted.
- \*17) The system components from the SAC condensate 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
- Washing water pipes
- Dirty oil drain pipes
- Pipes on engine
- Pipe connections

## MIDS - Leakage Collection & Washing System (DG9724)

WinGD X92DF-2.0

### TRACK CHANGES

DATE	SUBJECT	DESCRIPTION
2021-08-31	DRAWING SET	First web upload
2021-12-22	PTAA004208	new revision
2022-03-14	107.425.369.500	new revision
2022-06-24	PTAA036181 PTAA036177	System main and system drg – new drgs. added as replacement for the previous drawing set
2022-12-01	PTAA036177	new revision
2022-12-20	PTAA036177	new revision
2024-08-26	PTAA036181A PTAA036177E	New revision

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