SURFACE PROTECTION SEE GROUP 0344

TOLERANCING PRINCIPLE ISO8015

Available executions

Execution No.	Material ID	Attribute 1: Number of turbocharger	
		1 TC	2TC
1	PTAA037451	X	

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.

Prod. X52DF-2.1

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
–	sna102				new Design			

WIN GD
Winterthur Gas & Diesel

LEAKAGE COLLECTION/WASHING SYS.

MIDS master drawing

separate BOM available

Dimension

Scale	–	NX	Units [mm] [kg]	Basic Material	Net Weight	0.001
Main Design			Design Group	9724	Q-Code XXXXX	Standard WDS
Qty per			A4	Item ID PTAA025616	Drawing Page/s	1/1

SEQ NO	QTY	Item ID	Item Name / Dimension	Standard-ID	Basic Material	Net Weight
001	1	PTAA037008	LEAKAGE COLLECTION/WASHING SYS.			0.001

Prod.				
	5,6,7,8 X52DF-2.1			

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
-	sde101	mhu019	29.06.2022	CNAA002055	Main Design/Drawing Introduced		-	-

WIN GD
Winterthur Gas & Diesel

LEAKAGE COLLECTION/WASHING SYS.

iCER off-engine

Bill Of Material

Dimension	iCER off-engine						
Units	[m] [kg]	Basic Material				Net Weight	0.001
Main Design	Yes	Design Group	9724	Q-Code	XXXXX	Standard	WDS
Qty per	Engine	A4	Item ID	PTAA037451		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

Prod.								
	X52DF-2.1							

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
B	dki021	mhu019	19.12.2022	CNAA002848	Drawing Updated	4	4	3
A	rth101	mhu019	22.11.2022	CNAA002751	Drawing Updated	4	4	3
-	sde101	mhu019	29.06.2022	CNAA002055	new Design	-	-	-

Approved

WIN GD
Winterthur Gas & Diesel

LEAKAGE COLLECTION/WASHING SYS.

iCER off-engine

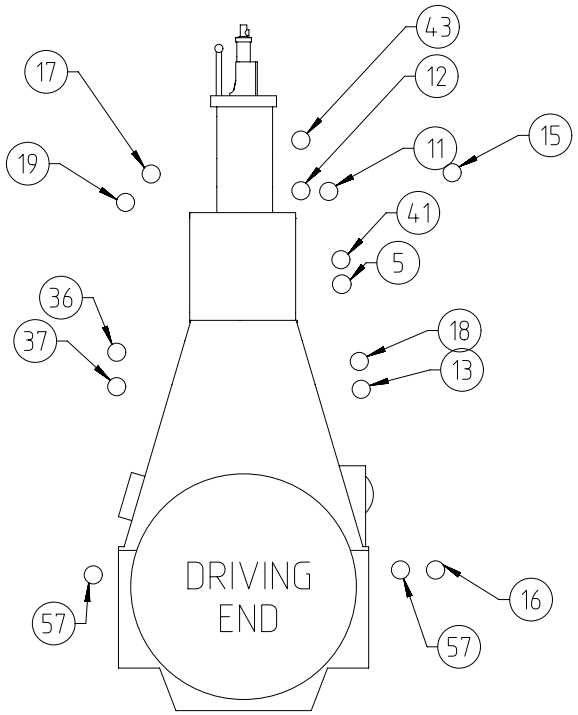
Bill Of Material

Dimension					iCER off-engine
Units [m] [kg]	Basic Material			Net Weight	0.001
Main Design	Design Group 9724	Q-Code XXXXX		Standard	WDS
Qty per	A4	Item ID PTAA037008		BOM Page/s	01/01

SPECIFICATION which must be met:

(19)	OUTLET - SAC condensate water, iCER - To EGC wastewater holding tank during iCER operation - The system components downstream of this connection until the pH-neutralisation dosing unit must be designed for low pH operation.
(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) (B)	INLET - SAC wash water - Optional connection. Only necessary if an external SAC washing system is installed. - Wash water supply: From external washing system - Wash water supply pressure: min. 3.0 bar - Wash water circulation rate: min. 4.5 m^3/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 bilge water tank or wash 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.
(17) (B)	OUTLET - SAC wash water - Optional connection. Only necessary if an external SAC washing system is installed. - To wash water collection tank during SAC cleaning.
(18)	OUTLET - SAC venting - Free flow outside of engine room



Prod. X52DF-2.1

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C
B	dki021	mhu019	19.12.2022	CNAA002848	Drawing Updated			4	3
A	rth101	mhu019	22.11.2022	CNAA002751	Drawing Updated			4	3
-	sde101	mhu019	29.06.2022	CNAA002055	new Design			-	-

WIN GD Winterthur Gas & Diesel

LEAKAGE COLLECTION/WASHING SYS.

iCER off-engine

separate BOM available

Dimension: iCER off-engine

Scale: - NX

Units [mm] [kg]

Basic Material

Net Weight: 0.001

Main Design

Design Group: 9724

Q-Code: XXXXX

Standard: WDS

Qty per

A3

Item ID: PTAA037008

Drawing Page/s: 1/2

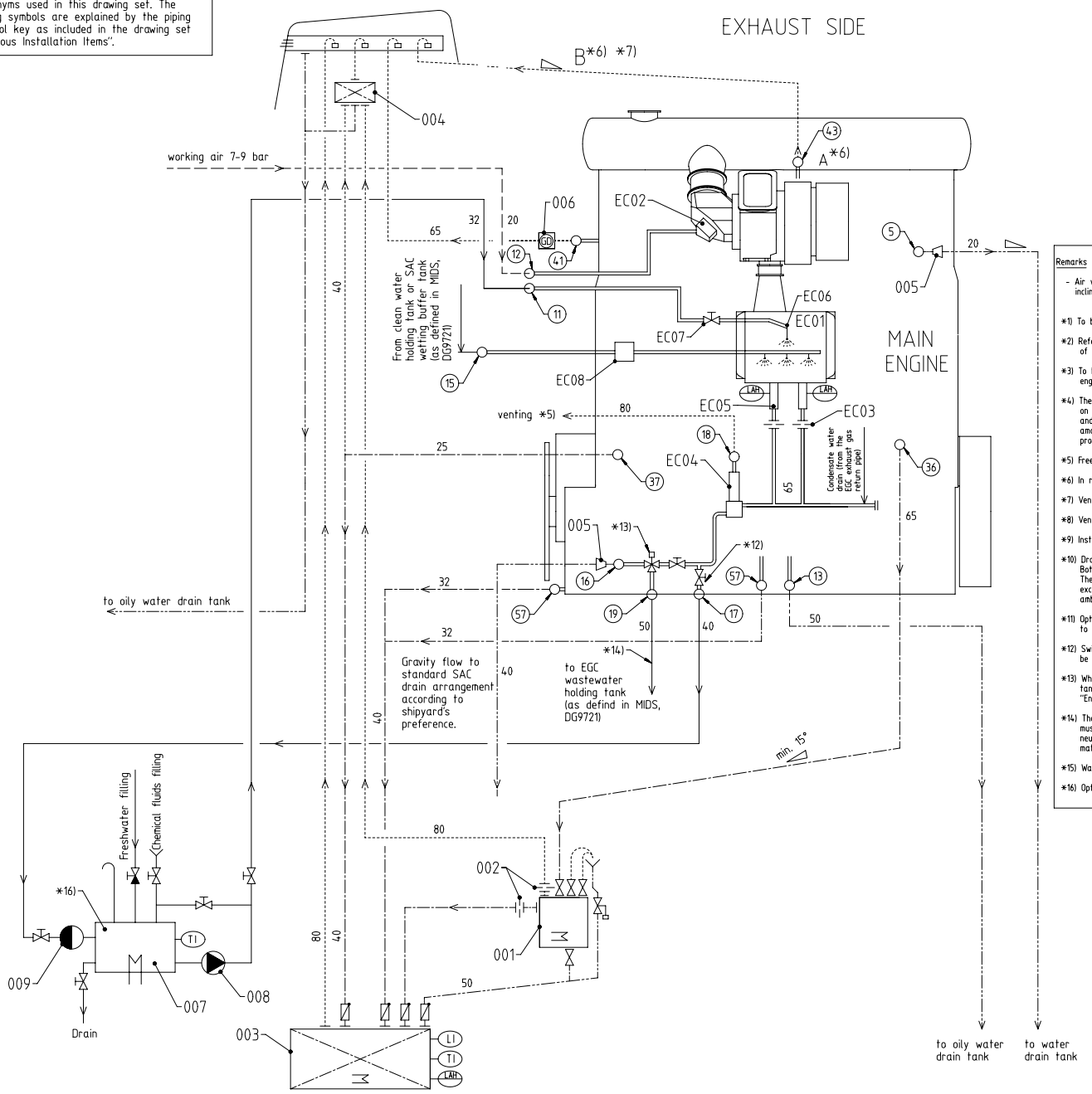
SURFACE PROTECTION SEE GROUP 0344

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".



Turbocharger type	A*7)	B*8)	Min. Inclination
1 x A165-L	65	65	≥ 5°
1 x A170-L	65	65	≥ 5°
1 x A175-L	65	65	≥ 5°
1 x A265-L	65	65	≥ 5°
1 x A270-L	65	65	≥ 5°
1 x MET42	50	50	≥ 3°
1 x MET48	65	65	≥ 3°
1 x MET53	65	65	≥ 3°
1 x MET60	80	80	≥ 3°
2 x A165-L	65	80	≥ 5°
2 x MET33MB	40	50	≥ 3°
2 x MET37MB	50	65	≥ 3°
2 x MET42MB	50	65	≥ 3°
2 x MET48MB	65	80	≥ 3°

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) Switching to the separate washing water collection tank must be carried out for SAC cleaning.

*13) While the iCER is in operation, drain to the EGC waste water holding tank. The solenoid valve is actuated by a signal from the "Engine Control System".

*14) 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.

*15) Wash water is heated to between 50 and 60 °C by a heating coil.

*16) Optional, only necessary if an external SAC washing system is installed.

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 wash water circulation tank *15)
Ⓑ 008	Chemical wash water circulation pump *16)
Ⓑ 009	Chemical wash water strainer (0.5-1.0 mm) *16)

Pos.	ENGINE CONNECTIONS *2)
(5)	OUTLET - Cylinder cooling water drain
Ⓑ (11)	INLET - SAC wash water *16)
(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) *14)
Ⓑ (17)	OUTLET - SAC wash water *12) *16)
(18)	OUTLET - SAC venting *5)
(19)	OUTLET - SAC condensate water, iCER *13)
(36)	OUTLET - Dirty oil piston underside
(37)	OUTLET - Leakage oil gland box
(41)	OUTLET - Venting crankcase
(43)	OUTLET - Venting turbocharger
(57)	OUTLET - Various leakages

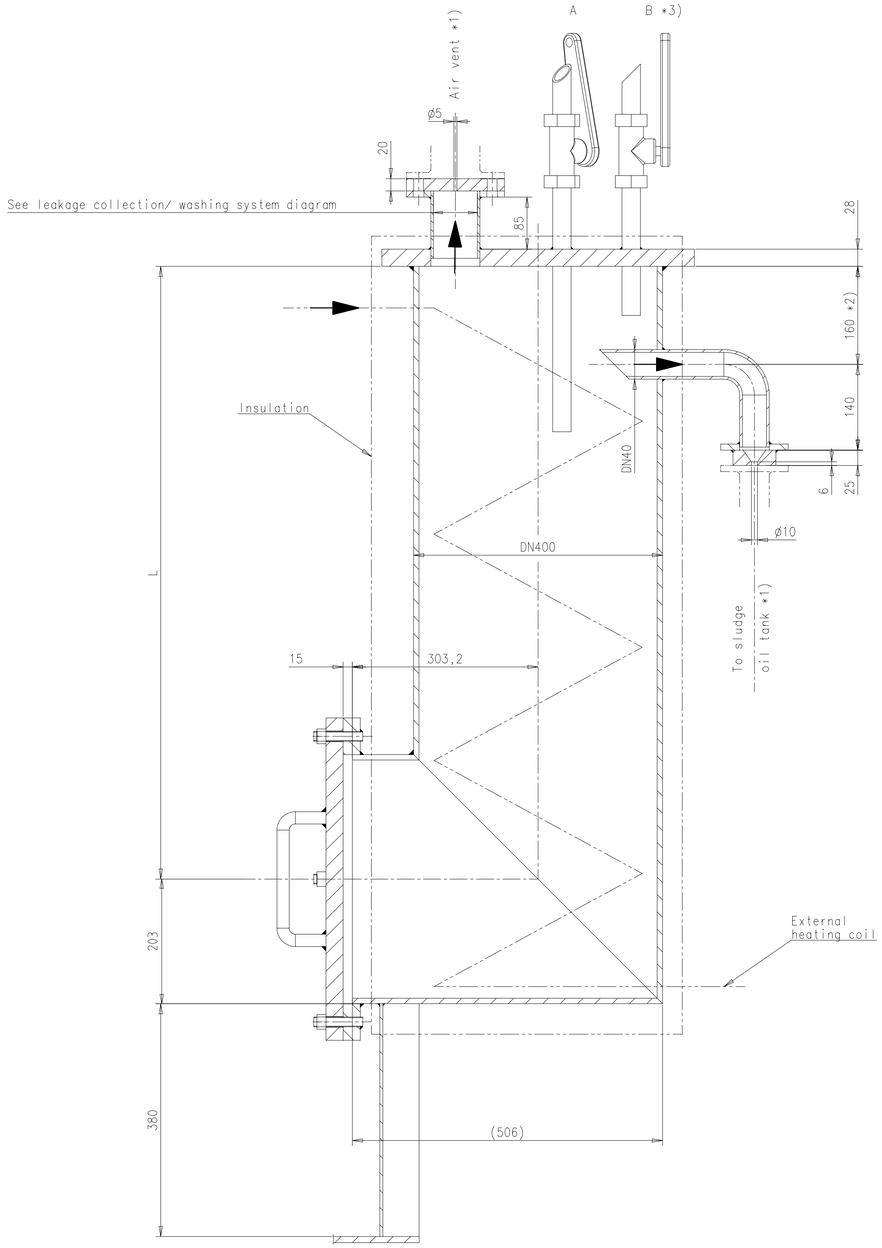
Pos.	ENGINE COMPONENTS *3)
EC01	Scavenge air cooler
EC02	Dry cleaning device
EC03	Throttling disc
EC04	Venting Unit
EC05	Condensate drain unit
EC06	SAC washing spray nozzle
EC07	SAC washing isolating valve
EC08	SAC wetting valve unit

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

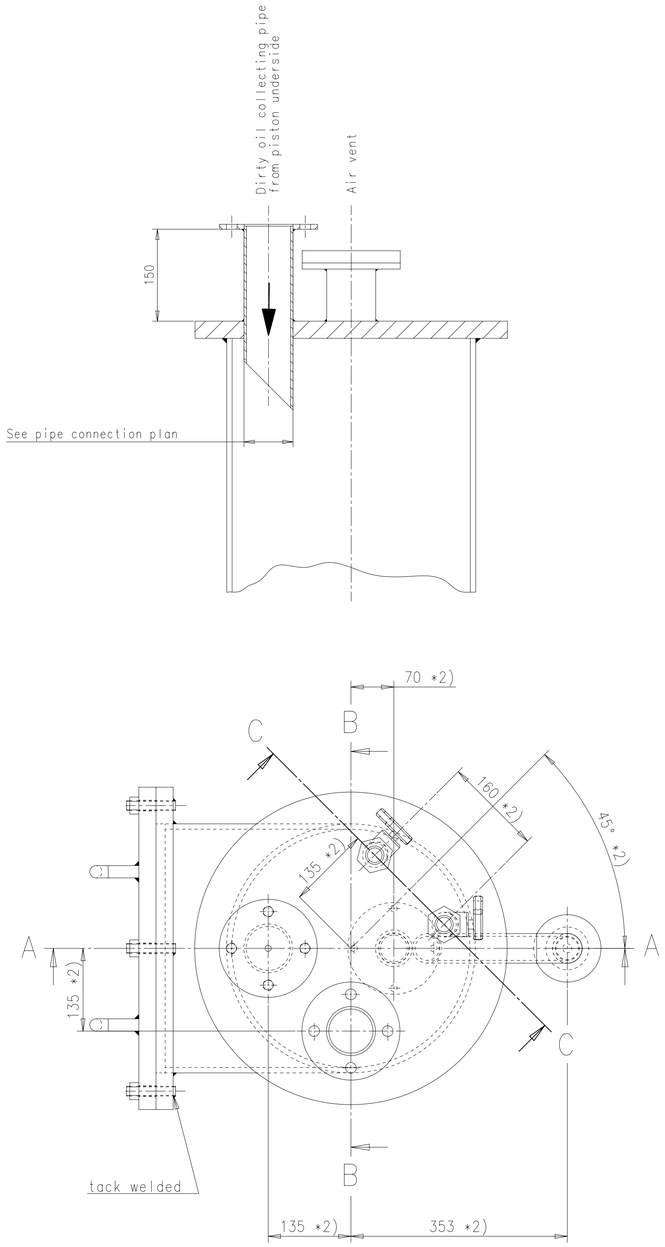
Status	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C
D	B	dki021	mhu039	19.12.2022	CNAA002848	Drawing Updated			4	3

[mm] [kg]	-	NX	A1	Item ID	PTAA037008	Drawing Pages	2/2

A-A



B-B 90°



Remarks:

*1) Orifice to be as shown

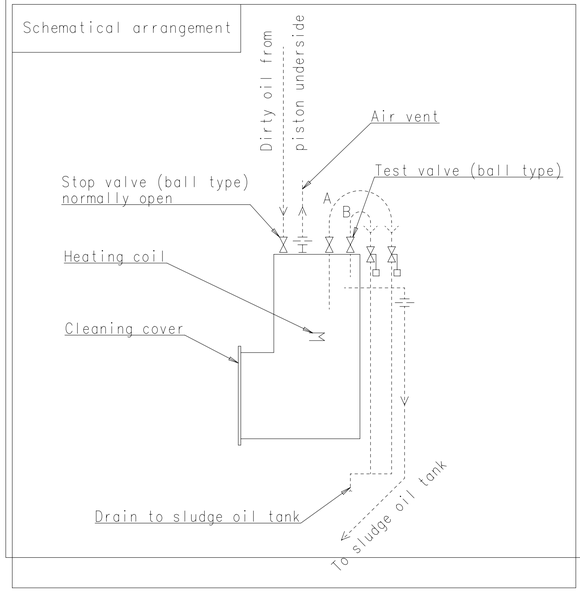
*2) Observe location of pipes with regard to each other

*3) Optional - Alternatives, such as level sensors, are possible

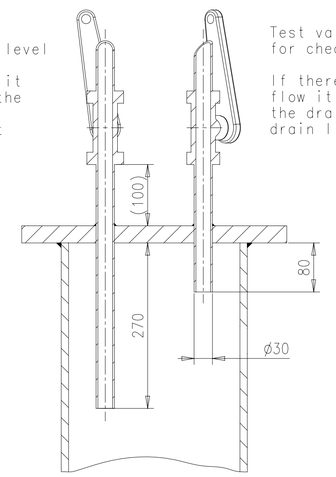
Details:

	L = 1000	L = 550
Cylinder bore size:	55-96	35-54
Capacity:	150 l	100 l
Working pressure:	4 bar	
Testing pressure:	6 bar	
Temperatur:	80°C	

Schematical arrangement



C-C 45°



Ⓓ
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.

Prod.	CX40DF RT-flex48T-D	RT-flex50-D RT-flex58T-D	RT-flex58T-D V1 RT-flex58T-D V2	RT-flex58T-E RT-flex68-D	RT-flex68-D_L RT-flex82C	RT-flex82TSCR-HHM-PILOT RTA68-D	X35	X35-B [...]

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
D	sde101	mhu019	19.01.2022	CNAA001373	drawing updated		4	3
C	sde101	mhu019	10.09.2018	EAAD089439	Legacy information. See corresponding ChangeNotice		4	-
B	dki021	mhu019	14.07.2017	EAAD087849	Legacy information. See corresponding ChangeNotice		4	-
-	WinGD	jba029	13.11.2009		-		-	-

Approved

WIN GD Winterthur Gas & Diesel

SLUDGE OIL TRAP

Dimension

Scale 1:5 | NX | Units [mm] [kg] | Basic Material | Net Weight 0.001

Main Design | Design Group 9724 | Q-Code XXXXX | Standard WDS

Qty per A1 | Item ID 107.425.369.500 | Drawing Page/s 1/1

SURFACE PROTECTION SEE GROUP 0344

TOLERANCING PRINCIPLE ISO8015

GENERAL TOLERANCES ACCORDING TO ISO2768-mK

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

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

Available executions

Execution No.	Material ID	Cylinder No.
001	PAAD359117	5-8

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.

Prod. X52DF-2.1

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
–	sna102				new Design			

WIN GD
Winterthur Gas & Diesel

LEAKAGE COLLECTION/WASHING SYS.

MIDS master drawing

separate BOM available

Dimension

Scale	–	NX	Units [mm] [kg]	Basic Material	Net Weight	0.001
Main Design			Design Group	9724	Q-Code XXXXX	Standard WDS
Qty per			A4	Item ID PTAA025616	Drawing Page/s	1/1

SEQ NO	QTY	Item ID	Item Name Dimension	Standard-ID	Basic Material	Net Weight
1	1	PAAD358931	LEAKAGE COLLECTION/WASHING SYS.			0.001

Prod.	5,6,7,8 X52DF-2.1								
Change History									
	-	dki021	mhu019	04.12.2020		-		-	-
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C

WIN GD
Winterthur Gas & Diesel

LEAKAGE COLLECTION/WASHING SYS.

Bill Of Material

Dimension							
Units	[m] [kg]	Basic Material				Net Weight	0.001
Main Design	Yes	Design Group	9724	Q-Code	XXXXX	Standard	WDS
Qty per	Engine	A4	Item ID	PAAD359117		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

Prod.	X52DF-2.1							

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
B	sde101	mhu019	08.03.2022	CNAA001599	Drawing Updated		4	3
A	mhu019	dst009	20.12.2021	CNAA001054	Drawing Updated		4	3
-	dki021	mhu019	04.12.2020		-		-	-

Approved

WIN GD
Winterthur Gas & Diesel

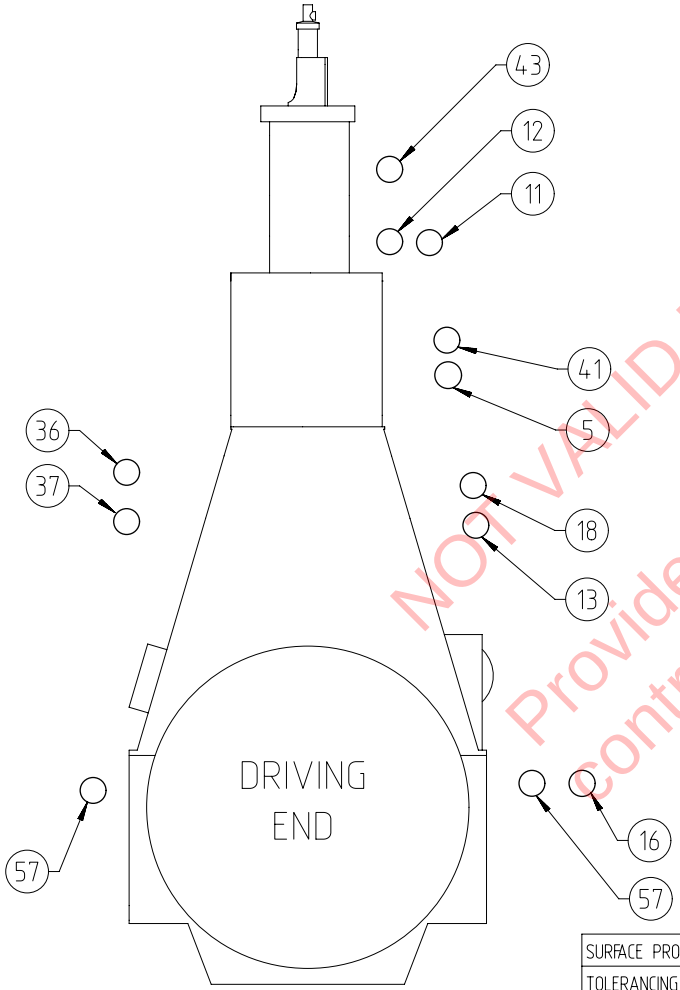
LEAKAGE COLLECTION/WASHING SYS.

Bill Of Material

Dimension					
Units [m] [kg]	Basic Material			Net Weight	0.001
Main Design	Design Group	9724	Q-Code XXXXX	Standard	WDS
Qty per	A4	Item ID	PAAD358931	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.



Prod. X52DF-2.1

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
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		-		-	-

Approved

WIN GD
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 XXXXX

Standard WDS

Qty per

A3

Item ID PAAD358931

Drawing Page/s 1/2

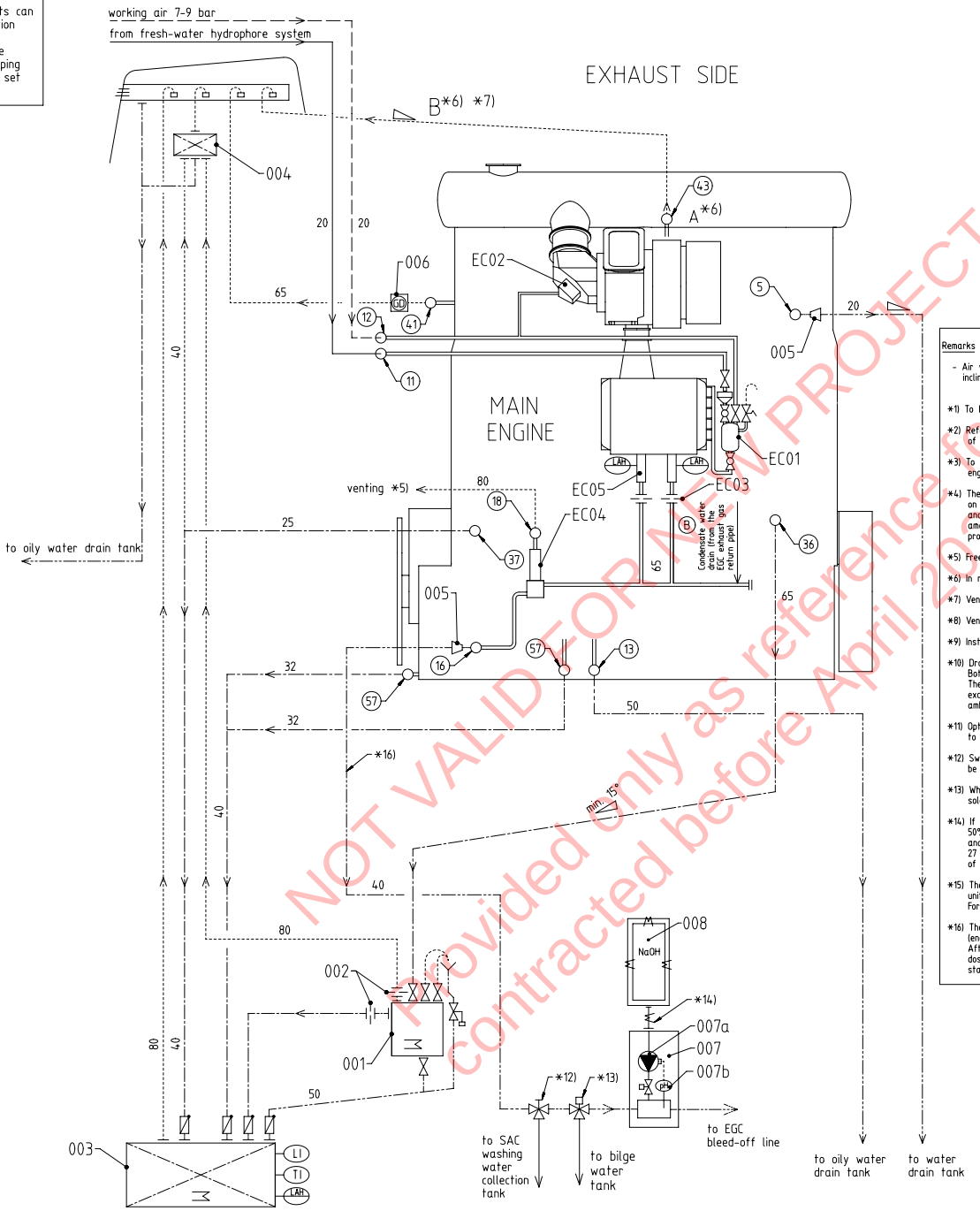
SURFACE PROTECTION SEE GROUP 0344

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".



Turbocharger type	A*7)	B*8)	Min. Inclination
1 x A165-L	65	65	≥ 5°
1 x A170-L	65	65	≥ 5°
1 x A175-L	65	65	≥ 5°
1 x A265-L	65	65	≥ 5°
1 x A270-L	65	65	≥ 5°
1 x MET42	50	50	≥ 3°
1 x MET48	65	65	≥ 3°
1 x MET53	65	65	≥ 3°
1 x MET60	80	80	≥ 3°
2 x A165-L	65	80	≥ 5°
2 x MET33MB	40	50	≥ 3°
2 x MET37MB	50	65	≥ 3°
2 x MET42MB	50	65	≥ 3°
2 x MET48MB	65	80	≥ 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 scavenge air receiver *10)
(16)	OUTLET - SAC condensate water *4) *10) *16)
(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 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) Switching to the separate washing water collection tank must be carried out for SAC cleaning.

*13) 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".

*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 iCER diesel Tier III mode. For installations with only iCER 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

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

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code
B	sde101	mhu009	08052022	CNAAD0E89	Drawing Updated	4 3

Approved

[mm] [kg] - NX A1 Item ID PAAD358931 Drawing Pages 2/2

MIDS - WinGD X52DF-2.1 – Leakage Collection & Washing System (DG9724)

TRACK CHANGES

DATE	SUBJECT	DESCRIPTION
2020-12-10	DRAWING SET	First web upload
2021-12-22	PAAD358931	Sytem drg – new revision
2022-03-10	PAAD358931 107.425.369.500	Sytem drgs – new revision
2022-06-30	PTAA037451 PTAA037008	System and main drgs – new drgs as a replacement for the previous drawing set added
2022-12-02	PTAA037008	System drg – new revision
2022-12-20	PTAA037008	System drg – new revision

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