Available executions

Execution No.	Material ID	Attribute 1: Emission class (Tier)			
		Tier II without SCR	Tier III HP-SCR on-engine	Tier III HP-SCR off-engine	Tier III LP-SCR off-engine
001	PAAD379323	X		X	X
002	PAAD379324		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. X52-S2.0

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
–	sna102	mhu019	24.05.2023	CNAA003753	new Design	Approved	-	-

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 PTAA025642

Drawing Page/s 1/1

SEQ NO	QTY	Item ID	Item Name / Dimension	Standard-ID	Basic Material	Net Weight
001	1	PAAD379264	LEAKAGE COLLECTION/WASHING SYS.			0.001

Prod.			
	5,6,7,8 X52-S2.0		

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
-	dki021	mhu019	26.04.2021	EAAD787404	-		-	-

WIN GD
Winterthur Gas & Diesel

LEAKAGE COLLECTION/WASHING SYS.

PAAD294071

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	PAAD379323		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.	X52-S2.0							

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C
B	sjo101	dst009	20.10.2023	CNAA004293	Drawing updated			4	3
A	npa101	mhu019	06.04.2023	CNAA003513	Drawing Updated			4	3
-	dki021	mhu019	26.04.2021	EAAD787404	-			-	-

WIN GD
Winterthur Gas & Diesel

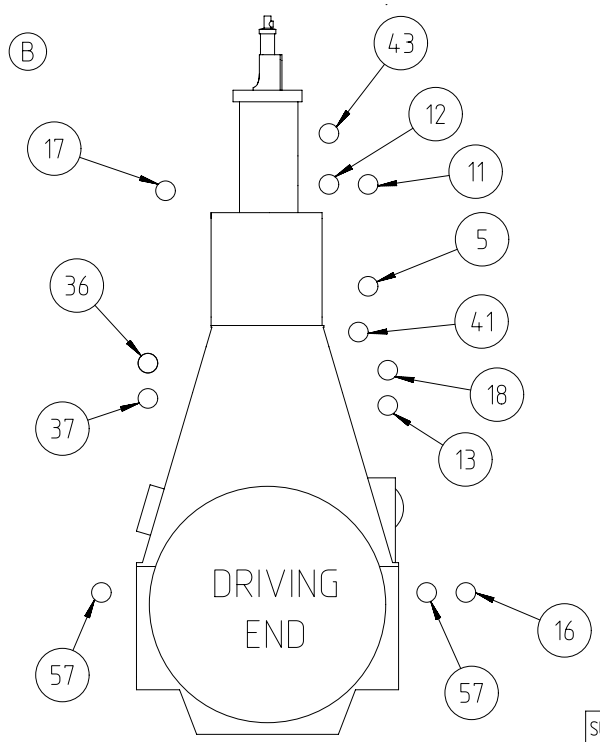
LEAKAGE COLLECTION/WASHING SYS.

Bill Of Material

Dimension					
Units [m] [kg]	Basic Material			Net Weight	0.001
Main Design	Design Group	9724	Q-Code X X M	Standard	WDS
Qty per	A4	Item ID	PAAD379264	BOM Page/s	01/01

SPECIFICATION which must be met:

36	OUTLET - Dirty oil piston underside - Flow with SAC pressure to sludge oil trap or appropriate arrangement - Minimum inclination of drain pipe: 60 %
37	OUTLET - Leakage oil gland box - Gravity flow to sludge tank or appropriate tank
41	OUTLET - Venting crank case - 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 washing water - Only in use if an optional SAC washing system is installed on the ship side. Otherwise blinded with a blind flange. - Washing water properties: Fresh water mixed with a chemical washing agent Mixing ratio according to chemical washing agent suppliers specification - Washing water supply pressure: 2.5 bar - Washing water temperature: 50°C - 60 °C - Washing water pump circulation rate: 3.8 m3/h - Washing water circulation tank capacity: 0.4 m3
12	INLET - Air for turbocharger cleaning - 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 appropriate tank
17 B	OUTLET - SAC washing water - Only in use if an optional SAC washing system is installed on the ship side. Otherwise blinded with a blind flange. - To chemical washing water circulation tank during SAC cleaning
18	OUTLET - SAC venting - Free flow outside of engine room

Prod. X52-S2.0

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C
B	sjo101	dst009	20.10.2023	CNAA004293	Drawing updated			4	3
A	npa101	mhu019	06.04.2023	CNAA003513	Drawing Updated			4	3
-	dki021	mhu019	26.04.2021	EAAD787404	-			-	-

WIN GD
Winterthur Gas & Diesel

LEAKAGE COLLECTION/WASHING SYS.

separate BOM available

Dimension

Scale - NX

Units [mm] [kg]

Basic Material

Net Weight 0.001

SURFACE PROTECTION SEE GROUP 0344

TOLERANCING PRINCIPLE ISO8015

GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Main Design

Design Group 9724

Q-Code X X M

Standard WDS

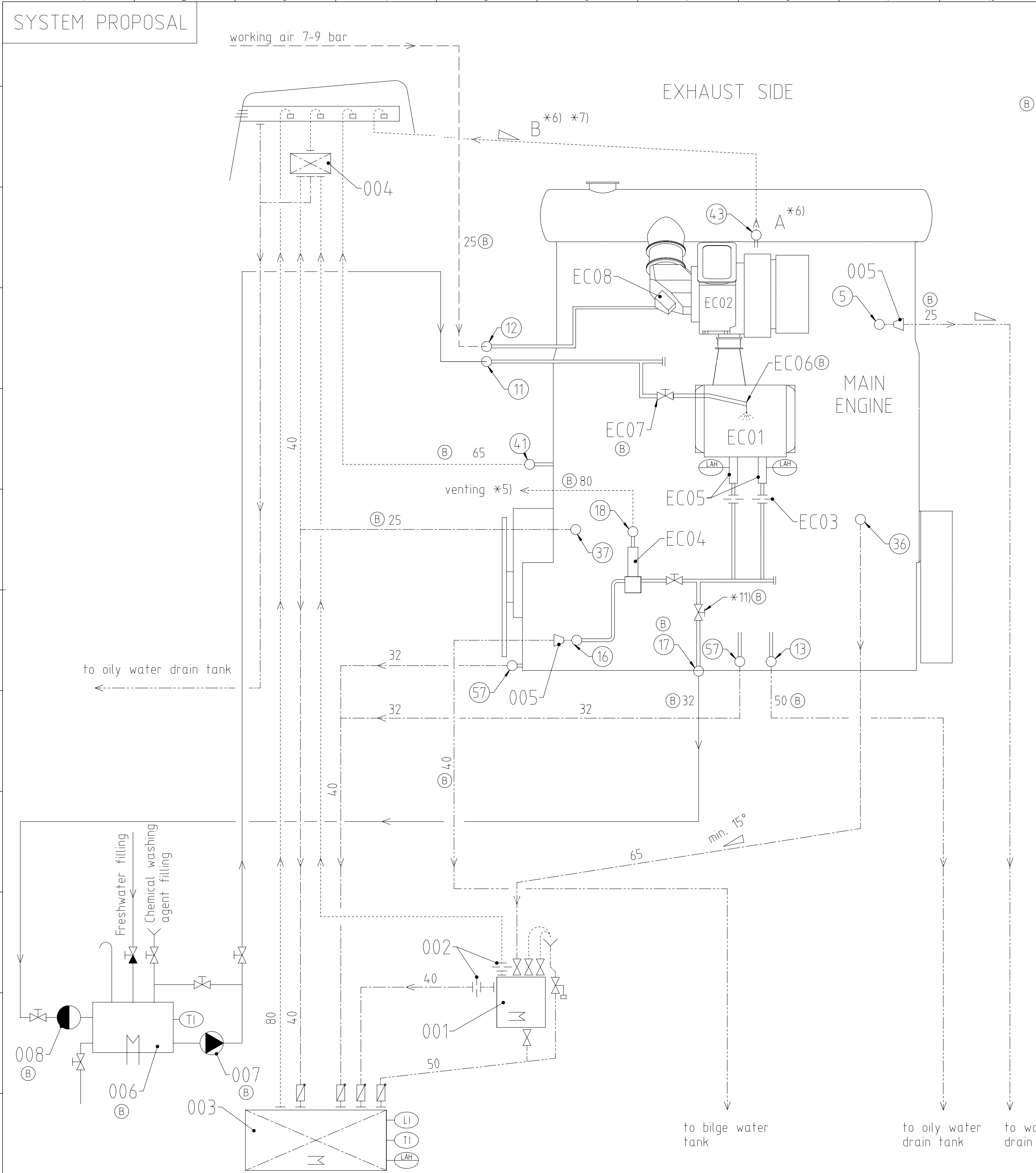
Qty per

A3

Item ID PAAD379264

Drawing Page/s 1/2

SYSTEM PROPOSAL



Turbocharger type	A*7)	B*8)	Min. Inclination
1x A165-L	65	65	≥ 5°
1x A170-L	65	65	≥ 5°
1x A175-L	65	65	≥ 5°
(B) 1x A260-L	65	65	≥ 5°
1x A265-L	65	65	≥ 5°
1x A270-L	65	65	≥ 5°
2x A165-L	65	80	≥ 5°
1x MET42MB	50	50	≥ 3°
1x MET48MB	65	65	≥ 3°
1x MET53MB	65	65	≥ 3°
1x MET60MB	80	80	≥ 3°
2x MET33MB	40	50	≥ 3°
2x MET37MB	50	65	≥ 3°
2x MET42MB	50	65	≥ 3°
2x MET48MB	65	80	≥ 3°
1x MET33MBII	40	50	≥ 3°
1x MET42MBII	50	50	≥ 3°
1x MET48MBII	65	65	≥ 3°
1x MET53MBII	65	65	≥ 3°
2x MET33MBII	40	50	≥ 3°
2x MET37MBII	50	65	≥ 3°
2x MET42MBII	50	65	≥ 3°

Pos.	SYSTEM COMPONENTS *1)
001	Sludge oil trap (according to separate drawing)
002	Throttling disc (size shown on separate sludge oil trap drawing)
003	Sludge or approriate tank
004	Air vent manifold
005	Transition piece (adaptor) *9)
(B) 006	Chemical washing water circulation tank *12)
(B) 007	Chemical washing water circulation pump
(B) 008	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 turbocharger cleaning
13	OUTLET - Oily water from scavenge air receiver *10)
16	OUTLET - SAC condensate water *4) *10)
(B) 17	OUTLET - SAC washing water
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 (SAC)
EC02	Turbo Charger (TC)
EC03	Throttling disc
EC04	Venting unit
EC05	Condensate drain unit
(B) EC06	SAC washing water spray nozzle
(B) EC07	SAC washing water isolating valve
EC08	TC dry cleaning device

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. Under extreme ambient conditions a maximum condensate quantity of up to 0.16 kg/kWh may be produced.
*5) Free flow venting outside of engine room.
*6) Depends on 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 air system. It is recommended to connect these drains to different tanks. The tanks must be designed with sufficiently sized vents to avoid excessive pressure in the tanks. The drain amount depends on the ambient conditions.
*11) Switching to the separate chemical washing water circulation tank must be carried out for SAC cleaning.
*12) Washing water is heated to between 50 and 60 °C by a heating coil.

Legend:
- 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

Change	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis
	B	sjo101	dst009	20.10.2023	CNAA004293	Drawing updated

[mm] [kg] – NX A1 Item ID PAAD379264 Drawing Page/s 2/2

SEQ NO	QTY	Item ID	Item Name / Dimension	Standard-ID	Basic Material	Net Weight
2	1	PAAD379278	LEAKAGE COLLECTION/WASHING SYS.			0.001

Prod.				
	5,6,7,8 X52-S2.0			

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
-	dki021	mhu019	26.04.2021	EAAD787404	-		-	-

WIN GD
Winterthur Gas & Diesel

LEAKAGE COLLECTION/WASHING SYS.

PAAD379324

Bill **O**f **M**aterial

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	PAAD379324		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.	X52-S2.0							

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
B	npa101	mhu019	09.07.2024	CNAA005646	Drawing updated		4	3
A	npa101	dst009	20.10.2023	CNAA004293	Drawing Updated		4	3
-	dki021	mhu019	26.04.2021	EAAD787404	-		-	-
						Approved		

WIN GD

LEAKAGE COLLECTION/WASHING SYS.

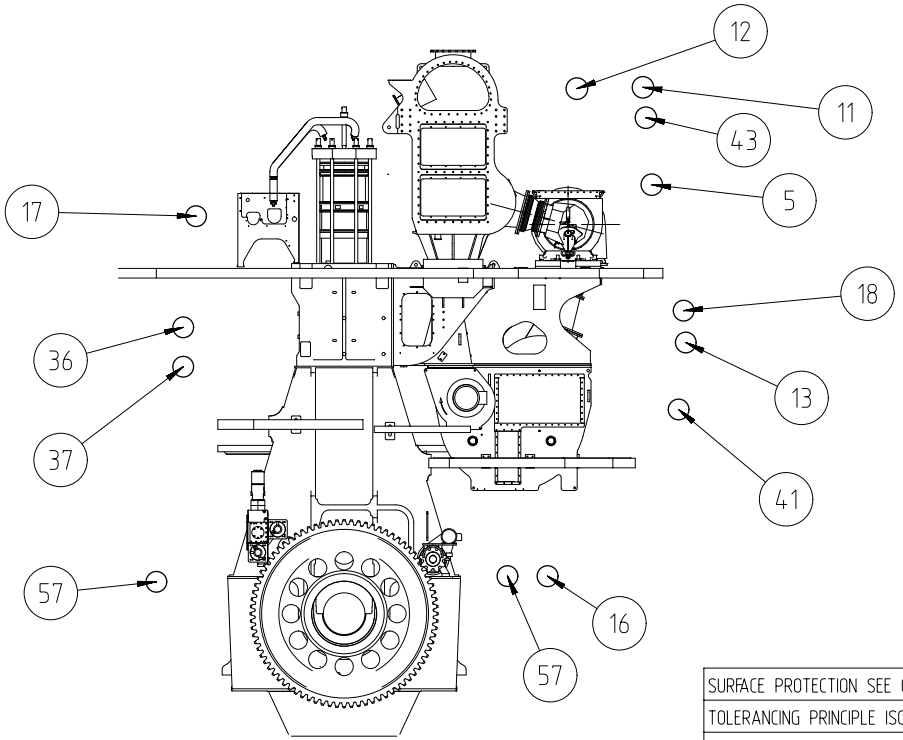
with iSCR

Bill Of Material

Dimension					with iSCR
Units [m] [kg]	Basic Material			Net Weight	0.001
Main Design	Design Group	9724	Q-Code X X M	Standard	WDS
Qty per	A4	Item ID	PAAD379278	BOM Page/s	01/01

SPECIFICATION which must be met:

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 crank case - 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 - Only in use if an optional SAC washing system is installed on the ship side. Otherwise blinded with a blind flange. - Washing water properties: Fresh water mixed with a chemical washing agent Mixing ratio according to chemical washing agent suppliers specification - Washing water supply pressure: 2.5 bar - Washing water temperature: 50°C - 60 °C - Washing water pump circulation rate: 3.8 m3/h - Washing water circulation tank capacity: 0.4 m3
12	INLET - Air for TC cleaning - 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 appropriate tank
17	OUTLET - SAC washing water - Only in use if an optional SAC washing system is installed on the ship side. Otherwise blinded with a blind flange. - To chemical washing water circulation tank during SAC cleaning
18	OUTLET - SAC venting - Free flow outside of engine room

Prod. X52-S2.0

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
B	npa101	mhu019	09.07.2024	CNAA005646	Drawing updated		4	3
A	npa101	dst009	20.10.2023	CNAA004293	Drawing Updated		4	3
-	dki021	mhu019	26.04.2021	EAAD787404	-		-	-

WIN GD Winterthur Gas & Diesel

LEAKAGE COLLECTION/WASHING SYS.
with iSCR

separate BOM available

Dimension: with iSCR

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 PAAD379278

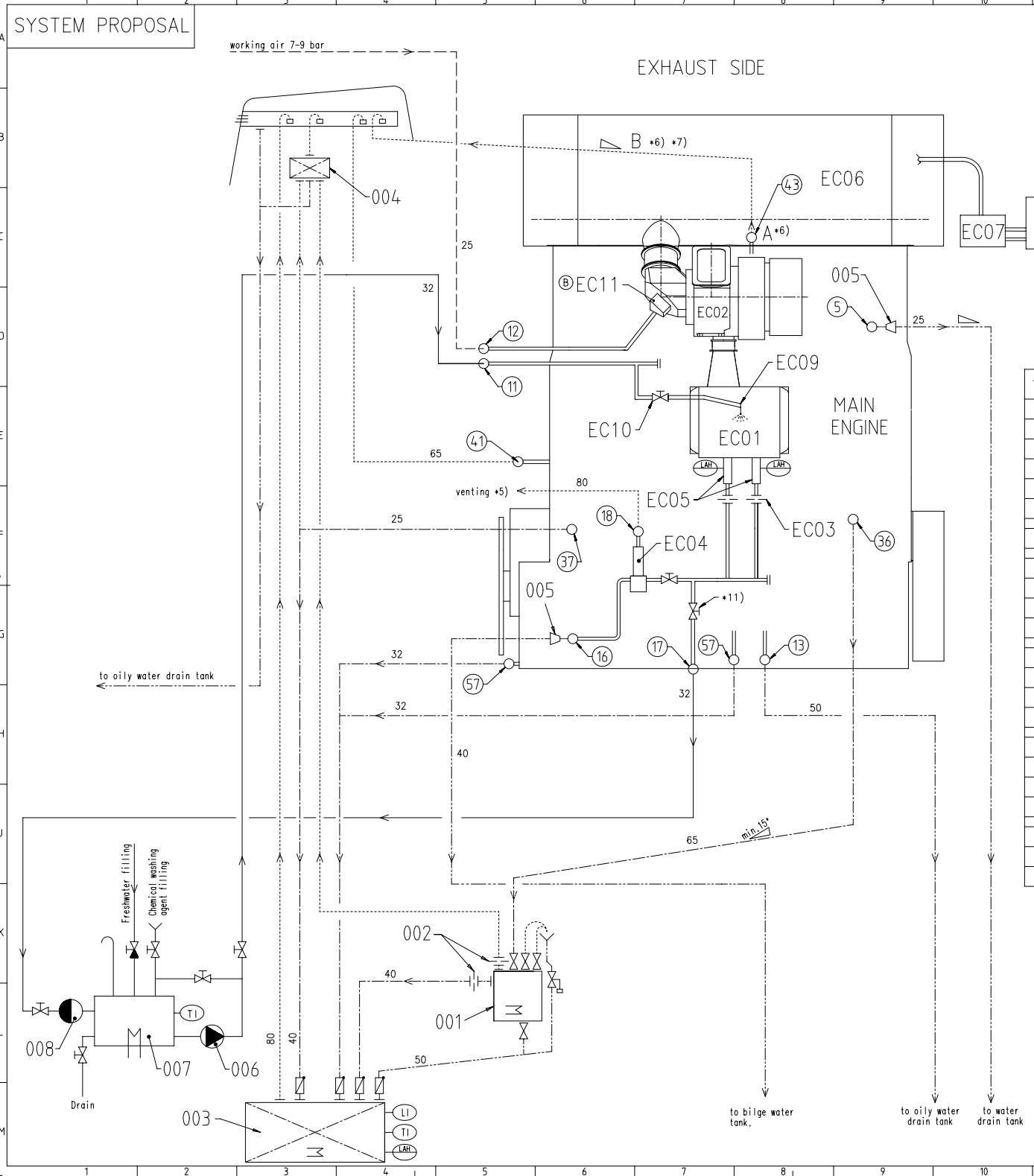
Drawing Page/s 1/2

SURFACE PROTECTION SEE GROUP 0344

TOLERANCING PRINCIPLE ISO8015

GENERAL TOLERANCES ACCORDING TO ISO2768-mK

SYSTEM PROPOSAL



Turbocharger type	A*7)	B*8)	Min. Inclination
1x A165-L	65	65	≥ 5°
1x A170-L	65	65	≥ 5°
1x A175-L	65	65	≥ 5°
1x A260-L	65	65	≥ 5°
1x A265-L	65	65	≥ 5°
1x A270-L	65	65	≥ 5°
2x A165-L	65	80	≥ 5°
1x MET42MB	50	50	≥ 3°
1x MET48MB	65	65	≥ 3°
1x MET53MB	65	65	≥ 3°
1x MET60MB	80	80	≥ 3°
2x MET33MB	40	50	≥ 3°
2x MET37MB	50	65	≥ 3°
2x MET42MB	50	65	≥ 3°
2x MET48MB	65	80	≥ 3°
1x MET33MBII	40	50	≥ 3°
1x MET42MBII	50	50	≥ 3°
1x MET48MBII	65	65	≥ 3°
1x MET53MBII	65	65	≥ 3°
2x MET33MBII	40	50	≥ 3°
2x MET37MBII	50	65	≥ 3°
2x MET42MBII	50	65	≥ 3°

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

Pos.	SYSTEM COMPONENTS *1)
001	Sludge oil trap (according to separate drawing)
002	Throttling disc (size shown on separate sludge oil trap drawing)
003	Sludge or approriate tank
004	Air vent manifold
005	Transition piece (adaptor) *9)
006	Chemical washing water circulation tank *12)
007	Chemical washing water circulation pump
008	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 TC cleaning
(13)	OUTLET - Oily water from scavenge air receiver *10)
(16)	OUTLET - SAC condensate water *4) *10)
(17)	OUTLET - SAC washing water
(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 (SAC)
EC02	Turbo Charger (TC)
EC03	Throttling disc
EC04	Venting Unit
EC05	Condensate drain unit
EC06	SCR reactor
EC07	Urea dosing unit
EC08	Urea pump unit
EC09	SAC washing water spray nozzle
EC10	SAC washing water isolating valve
EC11	TC dry cleaning device

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. Under extreme ambient conditions a maximum condensate quantity of up to 0.16 kg/kWh may be produced
*5) Free flow venting outside of engine room.
*6) Depends on TC 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 air system. It is recommended to connect these drains to different tanks. The tanks must be designed with sufficiently sized vents to avoid excessive pressure in the tanks. The drain amount depends on the ambient conditions.
*11) Switching to the separate chemical washing water circulation tank must be carried out for SAC cleaning.
*12) Washing water is heated to between 50 and 60 °C by a heating coil.

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

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis		
B	npa101	mhu009	09.07.2024	CMA006646	Drawing updated	4	3
					Approved	E	C

[mm] [kg] – NX A1 Item ID PAAD379278 Drawing Pages 2/2

Remarks:

*1) Orifice to be as shown

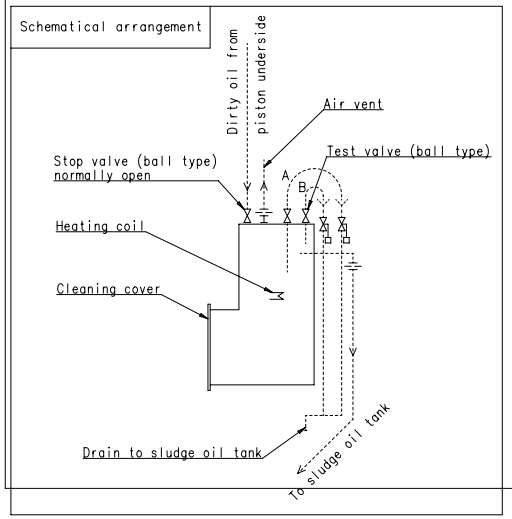
*2) Observe location of pipes with regard to each other

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

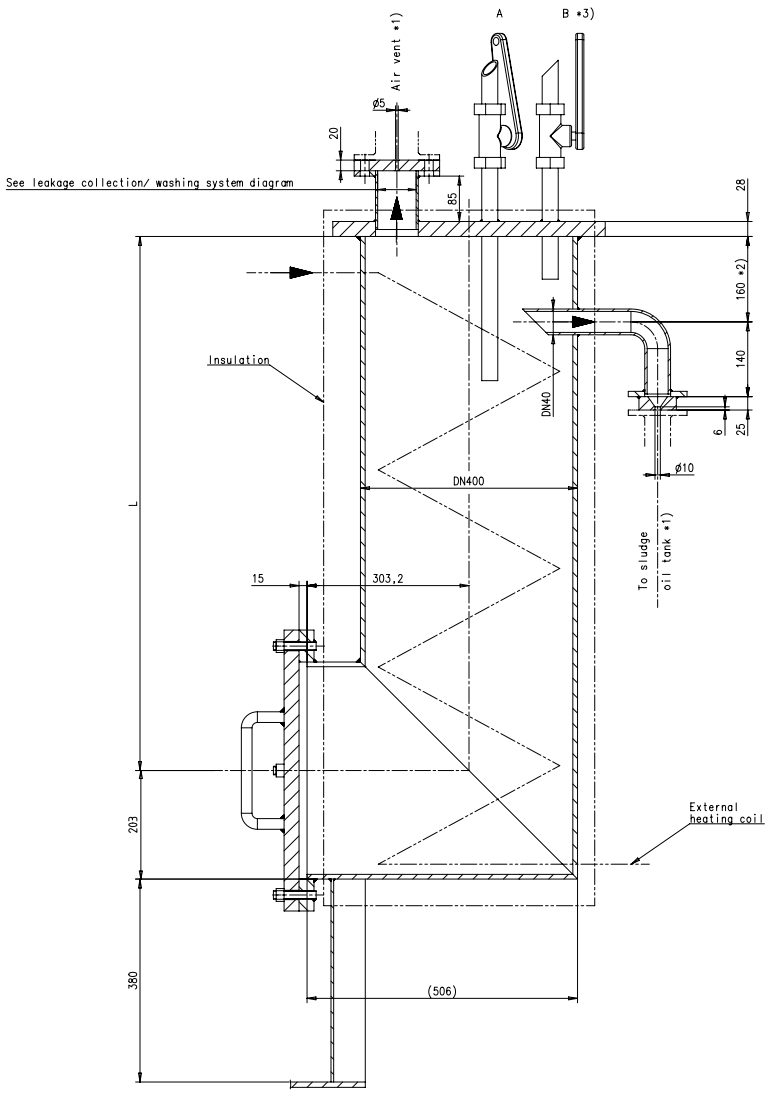
Details:

	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	

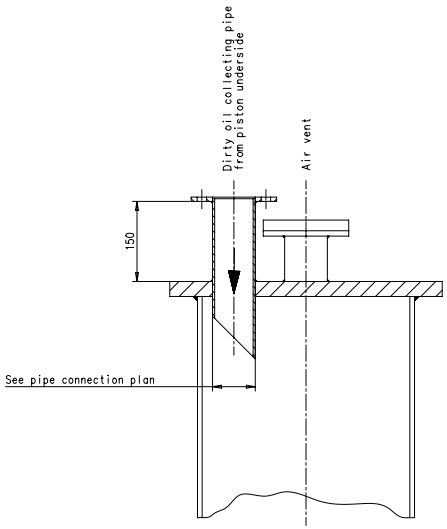
Schematical arrangement

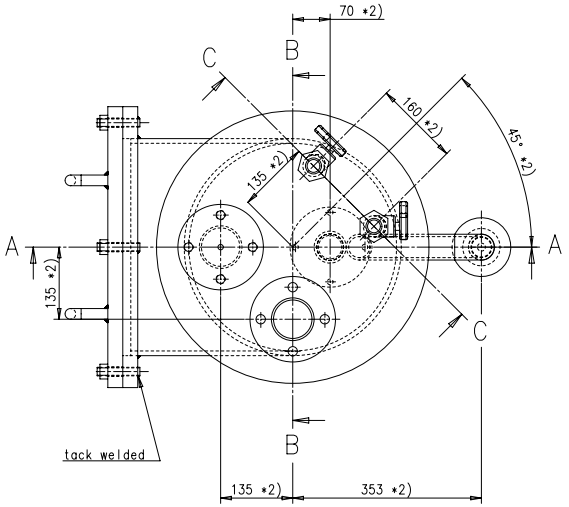


A-A



B-B 90°

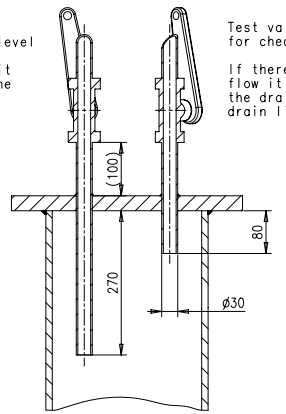




C-C 45°

Ⓓ
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.

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
D	sde101	mhu019	19.012022	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

Func: 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-flex82T RTA68-D | CR-HHM-PILOT X35 | X35-B [...]

WINGD Winterthur Gas & Diesel

SLUDGE OIL TRAP

Dimension

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

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

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

MIDS – Leakage Collection & Washing System (DG9724)

WinGD X52-S2.0

TRACK CHANGES

DATE	SUBJECT	DESCRIPTION
2021-05-10	DRAWING SET	First web upload
2023-04-06	PAAD379264-A	New drg. revision
2023-05-25	PAAD379323 PAAD379324	New drg. revisions
2023-10-20	PAAD379264 PAAD379278	New drg. revisions
2024-07-18	PAAD379278B	New execution

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