Available executions

Execution No.	Material ID	Cylinder No.	Attribute 1: Crankshaft parts		Attribute 2: Bedplate Split	
			1	2	standard	Weight Levelled
001	PTAA117991	6	X		X	
002	PAAD370399	7	X		X	
003	PTAA059869	8	X		X	
004	PTAA003754	8		X	X	
005	PAAD295494	9		X	X	
006	PAAD202723	10		X	X	
007	PAAD142162	11		X	X	
008	PAAD279802	12		X	X	
009	PAAD374048	12		X		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.	X92-B X92DF	X92DF-2.0		

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
–	npa101				new Design			

WIN GD

TOOL ENGINE ALIGNMENT

MIDS master drawing

separate BOM available

Dimension

Scale	–	NX	Units [mm] [kg]	Basic Material	Net Weight	0.001
Main Design			Design Group	9710-01	Q-Code X X M	Standard WDS
Qty per			A4	Item ID PTAA054057	Drawing Page/s	1/1

SEQ NO	QTY	Item ID	Item Name Dimension	Standard-ID	Basic Material	Net Weight
001	18	107.245.895.200	WEDGE			8.51
002	14	PAAD318478	HYDRAULIC JACK			
003	6	PAAD318479	SUPPORT PLATE			
004	8	PAAD318480	SUPPORT BLOCK			

Prod.				
6 X92DF-2.0 6 X92DF-A-1.0	6 X92DF-M-1.0			

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
-	npa101	mhu019	17.10.2024	CNAA006683	New MainDesign introduced		-	-

Approved

WIN GD

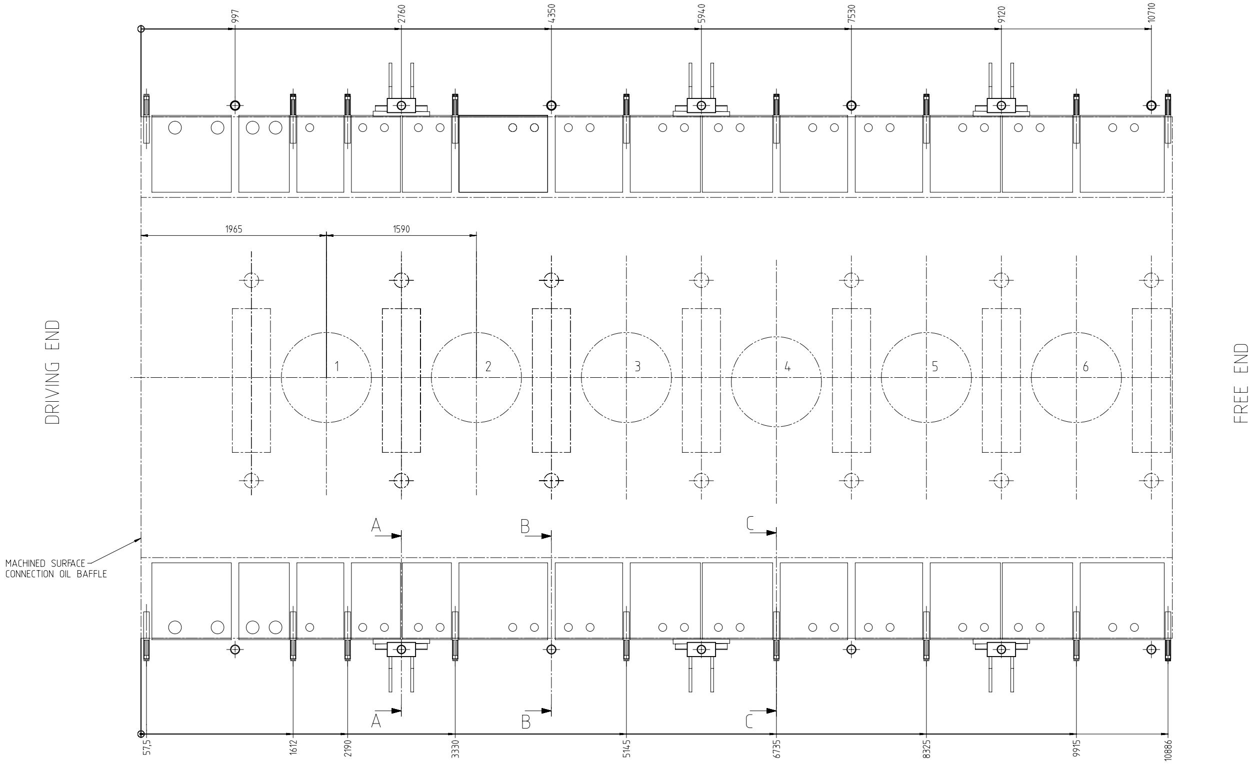
TOOL ENGINE ALIGNMENT

Alignment with: Wedges

Bill Of Material

Dimension

Units	[m] [kg]	Basic Material				Net Weight	136
Main Design	Yes	Design Group	9710-01	Q-Code	X X O	Standard	WDS
Qty per	Engine	A4	Item ID	PTAA117991		BOM Page/s	01/01



CAUTION

Risk:
Tool and/or bedplate damage

Countermeasure:
Avoid overloading of bedplate areas by observing the appropriate engine alignment/assembly procedure as follows:

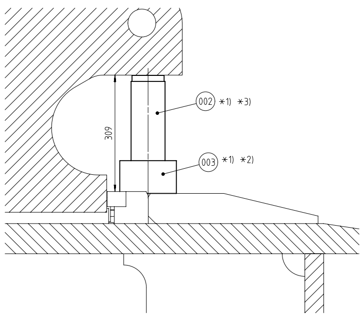
- Insert wedges and/or shims in all indicated positions.
- Lift the engine into the engine room and place it on levelled wedges and/or shims (wedges or shims must be inserted as deep as possible below the bedplate to ensure that the support point is as close as possible at the engine monoblock column)
- Apply hydraulic jacks to the protruding bedplate ribs nearby the relevant wedge and/or shim as indicated in the drawing.
- Start with the engine alignment by means of wedges and/or shims. Before adjusting the height of wedges and/or shims lift the engine by the hydraulic jacks. Any height adjustment must be performed in small steps - no more than 1 mm per step. Changes in height larger than the maximum allowance (1mm) require a gradual process where all wedges and/or shims are successively adjusted in stages, to ensure the best possible load distribution.

Remarks

*1) To be provided by the shipyard
*2) Height depending on the requirement (chock thickness in correlation with maximum permissible extension of the hydraulic jack)
*3) Hydraulic jack proposal
Type: Enerpac RCH-1003
Load at 700 bar: 931 kN

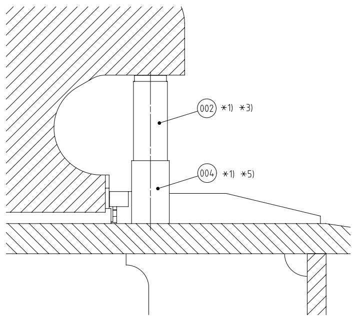
SECTION A-A

SCALE 1:5



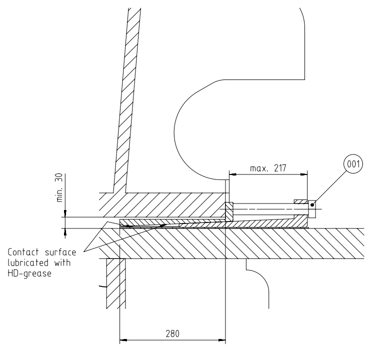
SECTION B-B

SCALE 1:5



SECTION C-C

SCALE 1:5



Prod.	6X92DF-2.0 6X92DF-A-1.0	6X92DF-M-1.0						
-	npa101	nfm019	17.10.2024	CNAA006683	New MainDesign introduced		-	-
Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis Approved	Activity Code	E	C

WIN GD

TOOL ENGINE ALIGNMENT
Alignment with: Wedges

separate BOM available		Dimension						
Scale 1:20	NX	Units [mm] [kg]	Basic Material				Net Weight	153.0
		Main Design	Yes	Design Group	9710-01	Q-Code X X 0	Standard	WDS
		Qty per	Engine	A0	Item ID	PTAA117991	Drawing Page/s	1/1

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

SEQ NO	QTY	Item ID	Item Name Dimension	Standard-ID	Basic Material	Net Weight
001	20	107.245.895.200	WEDGE			8.51
003	16	PAAD318478	HYDRAULIC JACK			
004	8	PAAD318479	SUPPORT PLATE			
005	8	PAAD318480	SUPPORT BLOCK			

Prod.			
7 X92-B 7 X92DF	7 X92DF-2.0 7 X92DF-A-1.0	7 X92DF-M-1.0	

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
A	npa101	mhu019	13.02.2024	CNAA005217	Drawing updated	4	4	3
-	sde101	mhu019	12.01.2021	EAAD786939	-	-	-	-

Approved

WIN GD
Winterthur Gas & Diesel

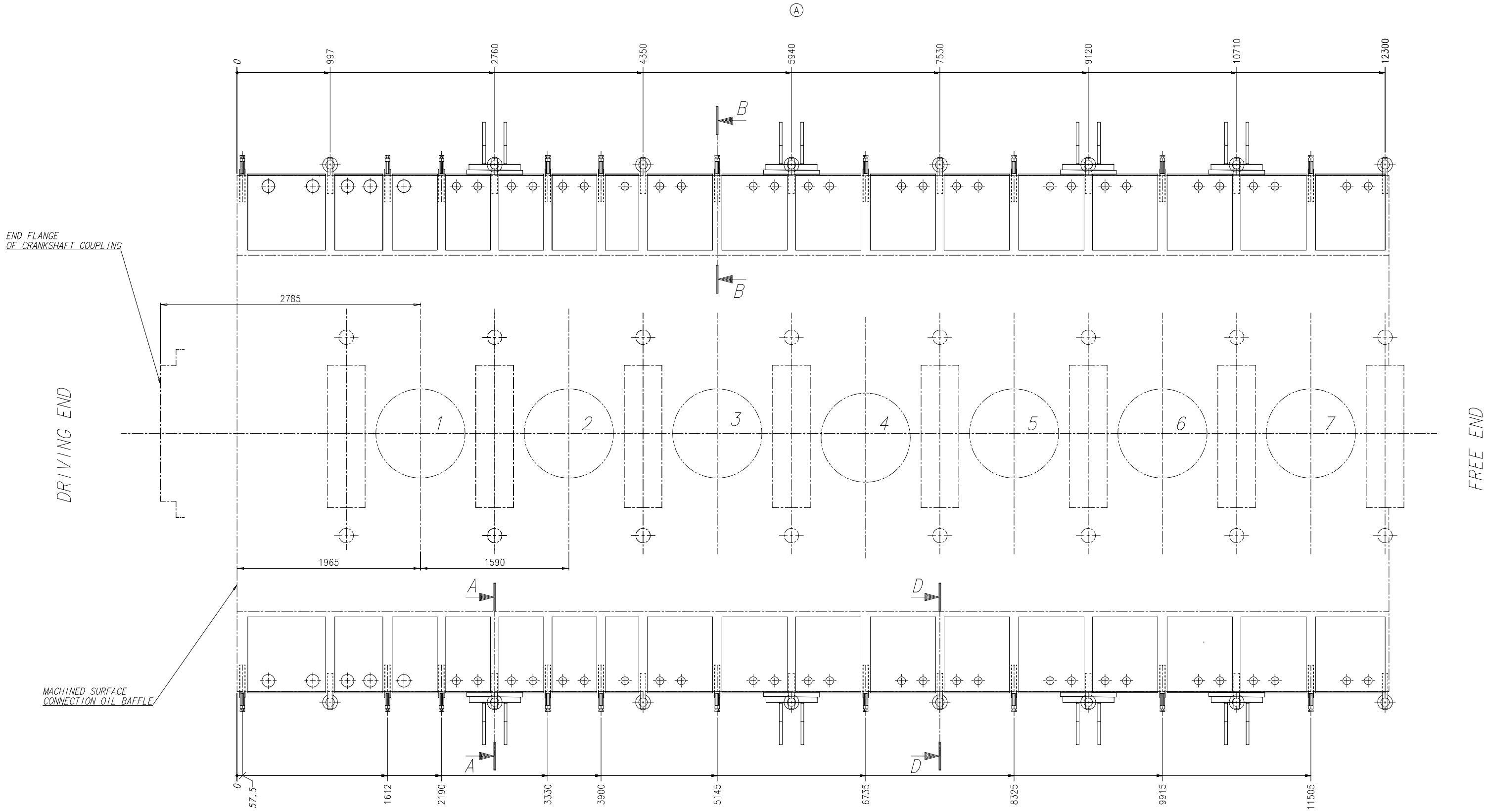
TOOL ENGINE ALIGNMENT

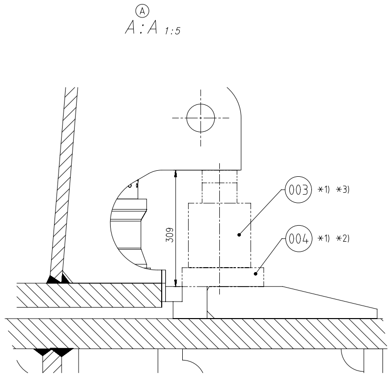
Alignment with: Wedges

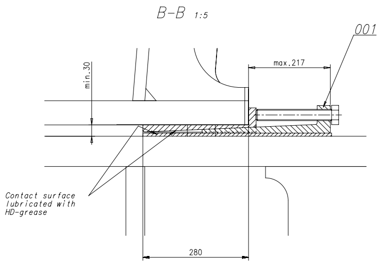
Bill Of Material

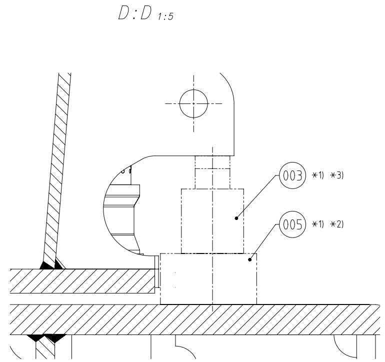
Dimension

Units	[m] [kg]	Basic Material				Net Weight	170.2
Main Design	Yes	Design Group	9710-01	Q-Code	X X O	Standard	WDS
Qty per	Engine	A4	Item ID	PAAD370399		BOM Page/s	01/01









CAUTION

Risk:
Tool and/or bedplate damage

Countermeasure:
Avoid overloading of bedplate areas by observing the appropriate engine alignment/assembly procedure as follows:

- Insert wedges and/or shims in all indicated positions.
- Lift the engine into the engine room and place it on levelled wedges and/or shims (wedges or shims must be inserted as deep as possible below the bedplate to ensure that the support point is as close as possible at the engine monoblock column)
- Apply hydraulic jacks to the protruding bedplate ribs nearby the relevant wedge and/or shim as indicated in the drawing.
- Start with the engine alignment by means of wedges and/or shims. Before adjusting the height of wedges and/or shims lift the engine by the hydraulic jacks. Any height adjustment must be performed in small steps - no more than 1 mm per step. Changes in height larger than the maximum allowance (1mm) require a gradual process where all wedges and/or shims are successively adjusted in stages, to ensure the best possible load distribution.

Remarks

*1) To be provided by the shipyard
*2) Height depending on the requirement
(chock thickness in correlation with maximum permissible extension of the hydraulic jack)
*3) Hydraulic jack proposal
Type: Enerpac RCH-1003
Load at 700 bar: 931 kN

Prod.	7X92-B 7X92DF	7X92DF-2.0 7X92DF-A-1.0	7X92DF-M-1.0					
Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
A	sjo101	mhu019	13.02.2024	CNAA005217	Drawing updated		4	3
-	sde101	mhu019	12.01.2021	EAAD786939	-		-	-

Approved

WIN GD Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT
Alignment with: Wedges

separate BOM available

Dimension			
Scale 1:20 NX	Units [mm] [kg]	Basic Material	Net Weight 170.2
Main Design Yes	Design Group 9710-01	Q-Code X X 0	Standard WDS
Qty per Engine	A0	Item ID PAAD370399	Drawing Page/s 1/1

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

SEQ NO	QTY	Item ID	Item Name Dimension	Standard-ID	Basic Material	Net Weight
001	22	107.245.895.200	WEDGE			8.51
002	20	PAAD318478	HYDRAULIC JACK			
003	12	PAAD318480	SUPPORT BLOCK			
004	8	PAAD318479	SUPPORT PLATE			

Prod.				
	8 X92-B 8 X92DF	8 X92DF-2.0 8 X92DF-M-1.0		

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C
A	npa101	mhu019	22.02.2024	CNAA005327	Drawing updated			4	3
-	npa101	mhu019	19.09.2023	CNAA004488	New MainDesign			-	-

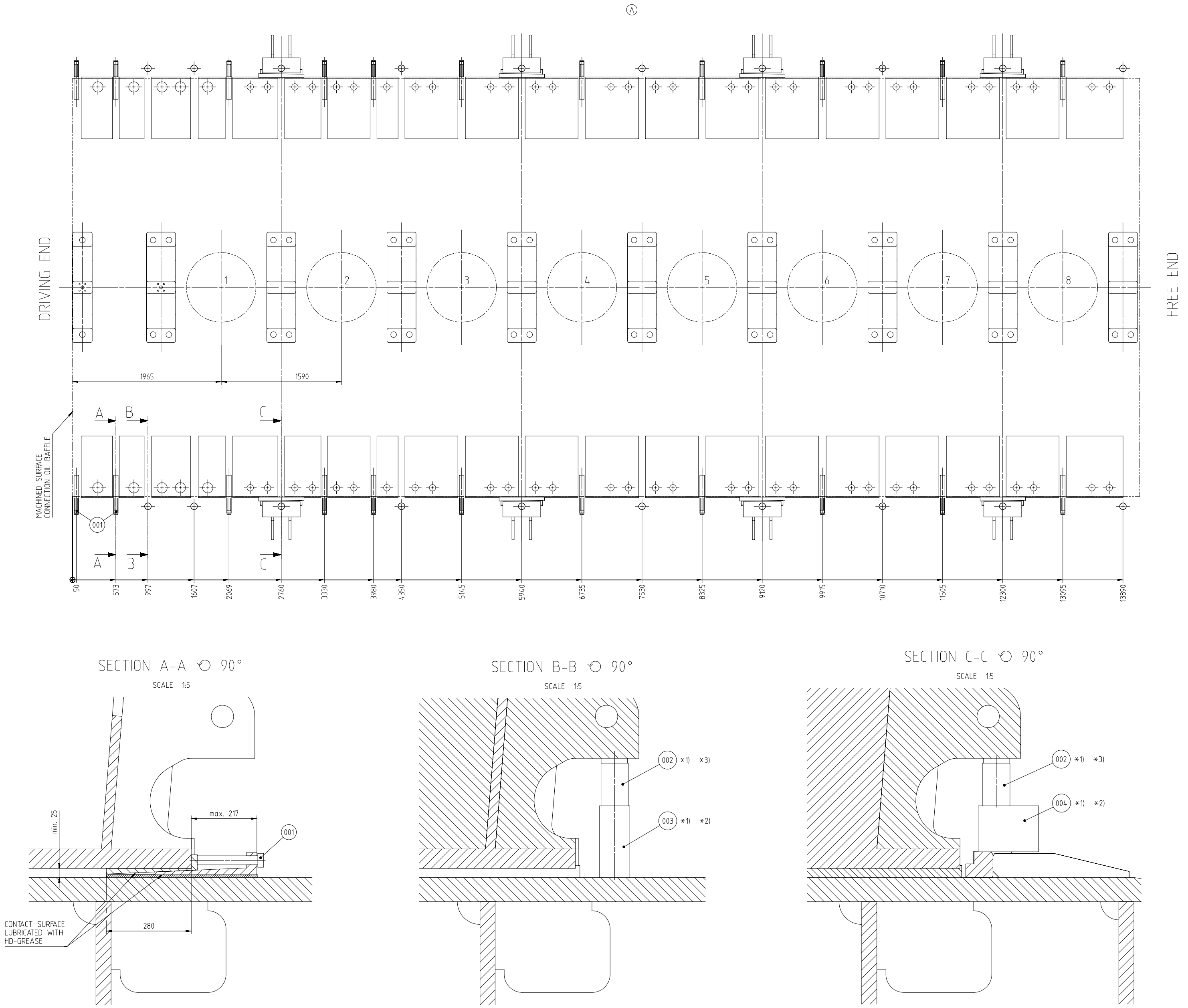
WIN GD
Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT

Alignment with: Wedges + Crankshaft Parts: 1

Bill Of Material

Dimension							
Units	[m] [kg]	Basic Material				Net Weight	187
Main Design	Yes	Design Group	9710-01	Q-Code	X X M	Standard	WDS
Qty per	Engine	A4	Item ID	PTAA059869		BOM Page/s	01/01



CAUTION

Risk:
Tool and/or bedplate damage

Countermeasure:
Avoid overloading of bedplate areas by observing the appropriate engine alignment/assembly procedure as follows:

- Insert wedges and/or shims in all indicated positions.
- Lift the engine into the engine room and place it on levelled wedges and/or shims (wedges or shims must be inserted as deep as possible below the bedplate to ensure that the support point is as close as possible at the engine monoblock column).
- Apply hydraulic jacks to the protruding bedplate ribs nearby the relevant wedge and/or shim as indicated in the drawing.
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Remarks

*1) To be provided by the shipyard.
*2) Height depending on the requirement
(chock thickness in correlation with maximum permissible extension of the hydraulic jack).
*3) Hydraulic jack proposal
Type: Enerpac RCH-1003
Load at 700 bar: 931 kN

Prod.	8X92-B 8X92DF	8X92DF-2.0 8X92DF-M-1.0						
Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved / Activity Code	E	C
A	npa101	mhu019	22.02.2024	CNAA005327	Drawing updated		4	3
-	npa101	mhu019	19.09.2023	CNAA004488	New MainDesign		-	-

WIN GD Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT

Alignment with: Wedges + Crankshaft Parts: 1

separate BOM available	Dimension		
Scale 1:20 NX	Units [mm] [kg]	Basic Material	Net Weight 187.0
	Main Design Yes	Design Group 9710-01 / Q-Code X X M	Standard WDS
	Qty per Engine A0	Item ID PTAA059869	Drawing Page/s 1/1

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

SEQ NO	QTY	Item ID	Item Name Dimension	Standard-ID	Basic Material	Net Weight
1	28	107.245.895.200	WEDGE			8.51
2	10	107.424.346.200	WEDGE NARROW TYPE		W-FU-235-JR	3.8
3	1	PAAD318478	TOOL ENGINE ALIGNMENT			75
4	1	PAAD318480	TOOL ENGINE ALIGNMENT			75
5	1	PAAD318479	TOOL ENGINE ALIGNMENT			75

Prod.				
	8 X92-B			

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
-	dki021	dst009	21.07.2021	CNAA000279	new Drawing		-	-

Approved

WIN GD
Winterthur Gas & Diesel

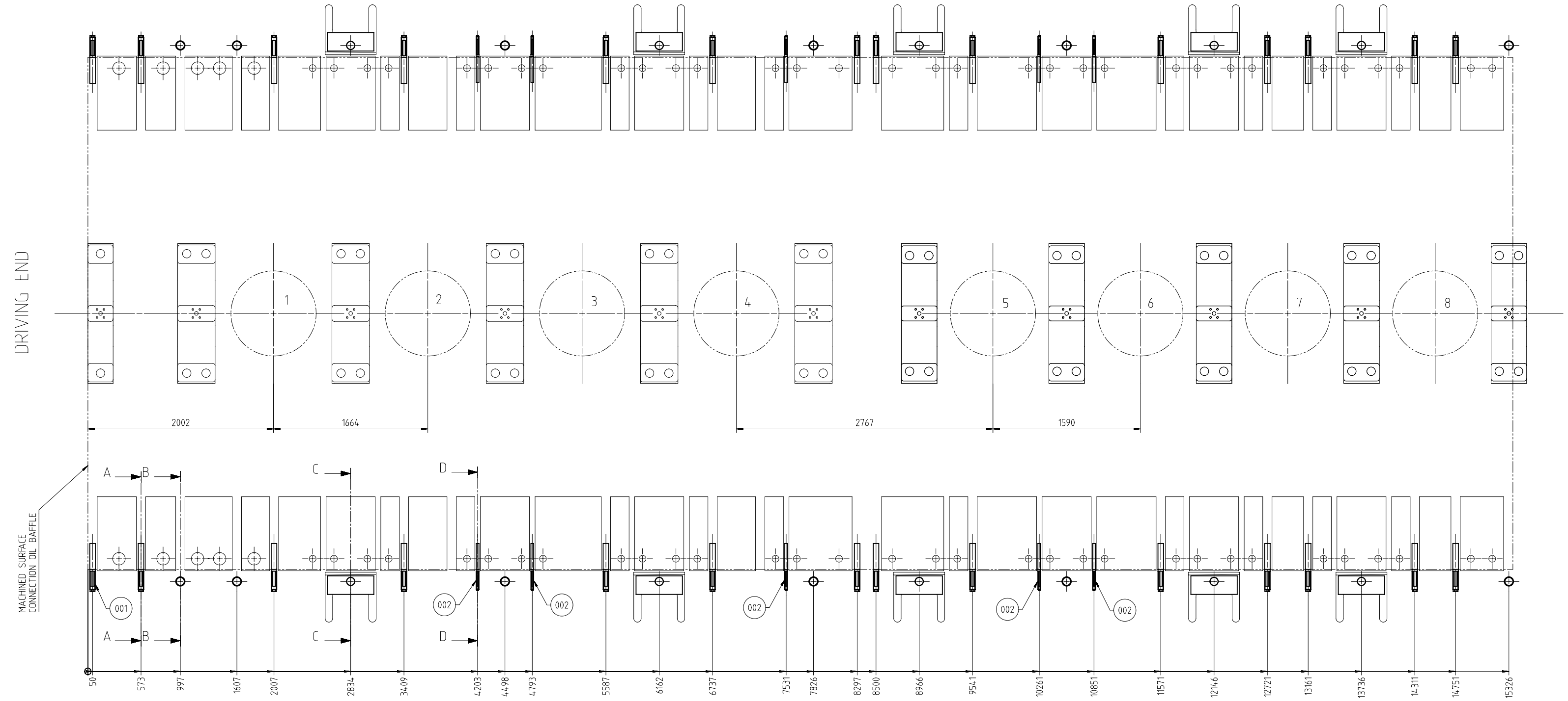
TOOL ENGINE ALIGNMENT

Alignment with: Wedges

Bill Of Material

Dimension

Units	[m] [kg]	Basic Material				Net Weight	276.3
Main Design	Yes	Design Group	9710-01	Q-Code	XXXXX	Standard	WDS
Qty per	Engine	A4	Item ID	PTAA003754		BOM Page/s	01/01



CAUTION

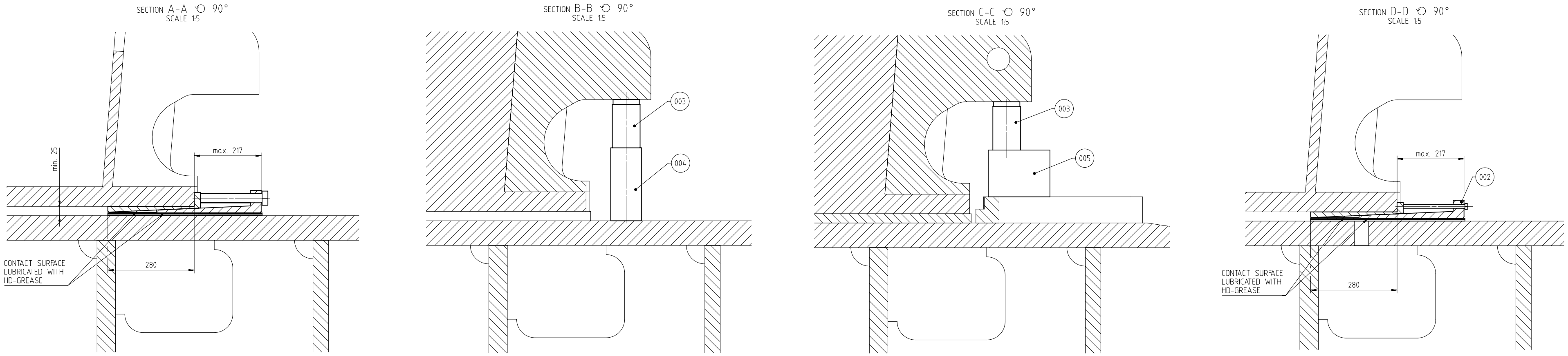
Risk:
Tool and/or bedplate damage

Countermeasure:
Avoid overloading of bedplate areas by observing the appropriate engine alignment/assembly procedure as follows:

- Insert wedges and/or shims in all indicated positions.
- Lift the engine into the engine room and place it on levelled wedges and/or shims (wedges or shims must be inserted as deep as possible below the bedplate to ensure that the support point is as close as possible at the engine monoblock column).
- Apply hydraulic jacks to the protruding bedplate ribs nearby the relevant wedge and/or shim as indicated in the drawing.
- Start with the engine alignment by means of wedges and/or shims. Before adjusting the height of wedges and/or shims lift the engine by the hydraulic jacks. Any height adjustment must be performed in small steps - no more than 1 mm per step. Changes in height larger than the maximum allowance (1mm) require a gradual process where all wedges and/or shims are successively adjusted in stages, to ensure the best possible load distribution.

Remarks

*1) To be provided by the shipyard.
*2) Height depending on the requirement (chock thickness in correlation with maximum permissible extension of the hydraulic jack).
*3) Hydraulic jack proposal
Type: Enerpac RCH-1003
Load at 700 bar: 931 kN



Prod.	8X92-B							
Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
-	dki021	dst009	21.07.2021	CNAA000279	new Design		-	-

TOOL ENGINE ALIGNMENT

Alignment with: Wedges

WIN GD Winterthur Gas & Diesel

separate BOM available	Dimension		
Scale 1:20 NX	Units [mm] [kg]	Basic Material	Net Weight 276.3
Main Design Yes	Design Group 9710-01	Q-Code XXXXX	Standard WDS
Qty per Engine	A0	Item ID PTAA003754	Drawing Page/s 1/1

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

SEQ NO	QTY	Item ID	Item Name Dimension	Standard-ID	Basic Material	Net Weight
1	24	107.245.895.200	WEDGE			7.511
2	2	107.424.346.200	WEDGE NARROW TYPE			3.357
3	22	PAAD318478	HYDRAULIC JACK			
4	10	PAAD318479	SUPPORT PLATE			
5	12	PAAD318480	SUPPORT BLOCK			

Prod.			
9 X92 9 X92-B	9 X92DF 9 X92DF-2.0	9 X92DF-A-1.0 9 X92DF-M-1.0	

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
C	sde101	mhu019	10.01.2023	CNAA002424	Drawing Updated	4	4	3
B	sde101	mhu019	17.01.2022	CNAA001401	Drawing Updated	4	4	3
A	sde101	mhu019	02.10.2019	EAAD090713	Legacy information. See corresponding ChangeNotice	4	4	3
-	sde101	dst009	11.06.2018		-	-	-	-

WIN GD
Winterthur Gas & Diesel

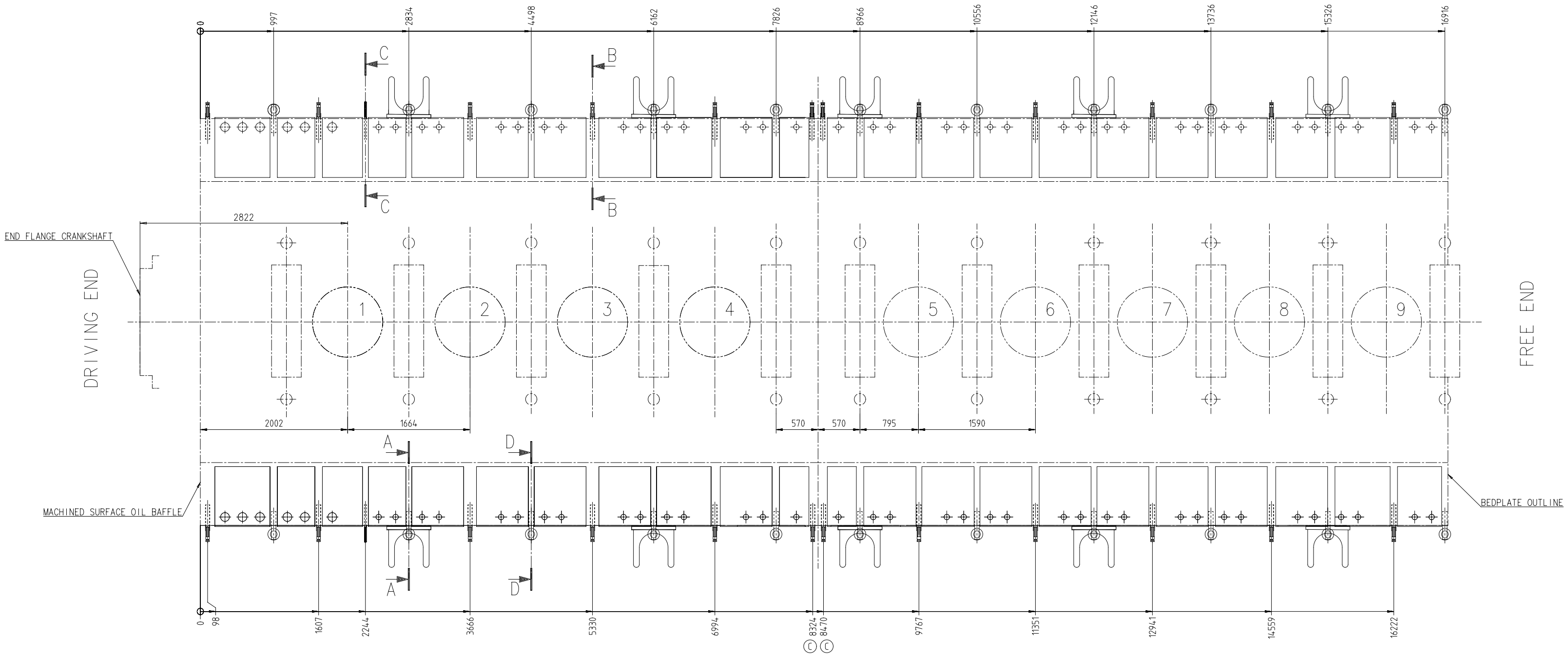
TOOL ENGINE ALIGNMENT

Alignment with: Wedges

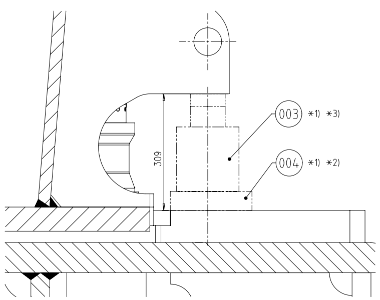
Bill Of Material

Dimension

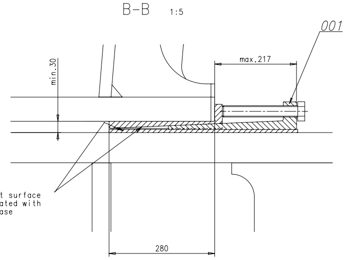
Units	[m] [kg]	Basic Material				Net Weight	211.8
Main Design	Yes	Design Group	9710-01	Q-Code	XXXXX	Standard	WDS
Qty per	Engine	A4	Item ID	PAAD295494		BOM Page/s	01/01



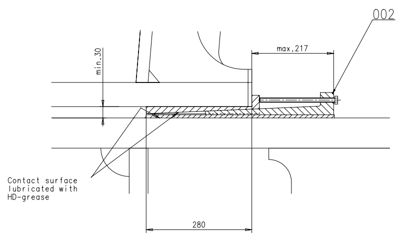
A:A 1:5



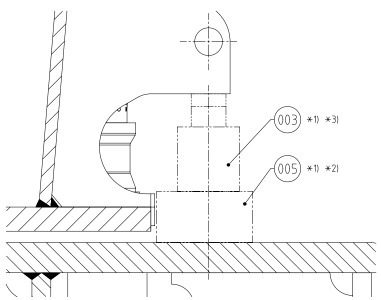
B-B 1:5



C-C 1:5



D:D 1:5



CAUTION

Risk:
Tool and/or bedplate damage

Countermeasure:
Avoid overloading of bedplate areas by observing the appropriate engine alignment/assembly procedure as follows:

- Insert wedges and/or shims in all indicated positions.
- Lift the engine into the engine room and place it on levelled wedges and/or shims (wedges or shims must be inserted as deep as possible below the bedplate to ensure that the support point is as close as possible at the engine monoblock column)
- Apply hydraulic jacks to the protruding bedplate ribs nearby the relevant wedge and/or shim as indicated in the drawing.
- Start with the engine alignment by means of wedges and/or shims. Before adjusting the height of wedges and/or shims lift the engine by the hydraulic jacks. Any height adjustment must be performed in small steps - no more than 1 mm per step. Changes in height larger than the maximum allowance (1mm) require a gradual process where all wedges and/or shims are successively adjusted in stages, to ensure the best possible load distribution.

Remarks

*1) To be provided by the shipyard
*2) Height depending on the requirement
(chock thickness in correlation with maximum permissible extension of the hydraulic jack)
*3) Hydraulic jack proposal
Type: Enerpac RCH-1003
Load at 700 bar: 931 kN

SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015

Prod.	9X92 9X92-B				9X92DF 9X92DF-2.0		
C	sde101	mhu019	10.01.2023	CNAA002424	Drawing Updated	4	3
B	sde101	mhu019	17.01.2022	CNAA001401	Drawing Updated	4	3
A	sde101	mhu019	02.10.2019	EAAD090713	Legacy information. See corresponding ChangeNotice	4	3
-	sde101	dst009	11.06.2018		-	-	-
Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis Approved Activity Code	E	C

Change History

WIN GD Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT
Alignment with: Wedges

separate BOM available | Dimension
Scale 1:25 | NX | Units [mm] [kg] | Basic Material | Net Weight 211.8

Main Design	Yes	Design Group	9710-01	Q-Code	XXXXX
Standard	WDS	Qty per	Engine	A0	
Item ID	PAAD295494	Drawing Page/s	1/1		

SEQ NO	QTY	Item ID	Item Name Dimension	Standard-ID	Basic Material	Net Weight
1	26	107.245.895.200	WEDGE			8.51
2	2	107.424.346.200	WEDGE NARROW TYPE		W-FU-235-JR	3.8
3	24	PAAD318478	HYDRAULIC JACK			
4	10	PAAD318479	SUPPORT PLATE			
5	14	PAAD318480	SUPPORT BLOCK			

Prod.				
	10 X92 10 X92-B	10 X92DF 10 X92DF-2.0		

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
B	ssh102	mhu019	17.01.2022	CNAA001401	Drawing Updated	4	3	
A	sde101	mhu019	02.10.2019	EAAD090713	Legacy information. See corresponding ChangeNotice	4	3	
-	dki021	bha009	11.09.2015		-	-	-	

Approved

WIN GD
Winterthur Gas & Diesel

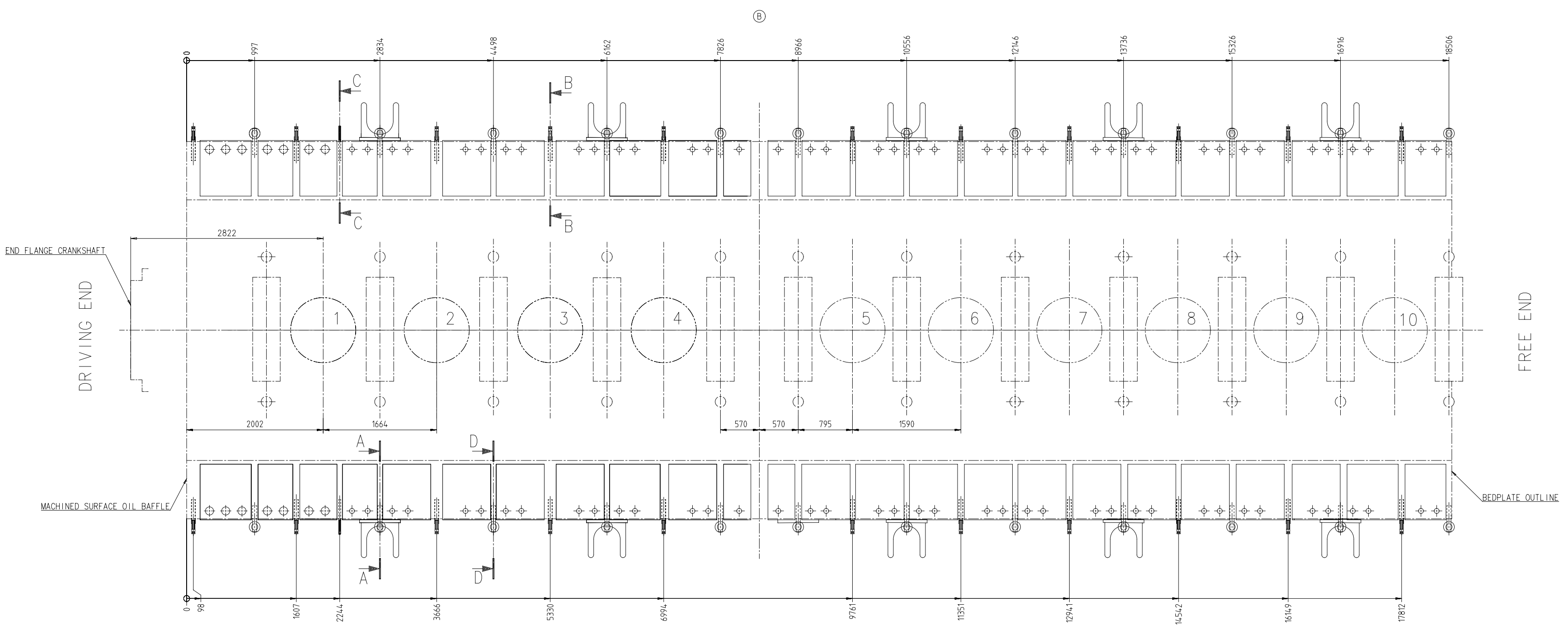
TOOL ENGINE ALIGNMENT

Alignment with: Wedges

Bill Of Material

Dimension

Units	[m] [kg]	Basic Material				Net Weight	228.9
Main Design	Yes	Design Group	9710-01	Q-Code	XXXXX	Standard	WDS
Qty per	Engine	A4	Item ID	PAAD202723		BOM Page/s	01/01



CAUTION

Risk:
Tool and/or bedplate damage

Countermeasure:
Avoid overloading of bedplate areas by observing the appropriate engine alignment/assembly procedure as follows:

- Insert wedges and/or shims in all indicated positions.
- Lift the engine into the engine room and place it on levelled wedges and/or shims (wedges or shims must be inserted as deep as possible below the bedplate to ensure that the support point is as close as possible at the engine monoblock column)
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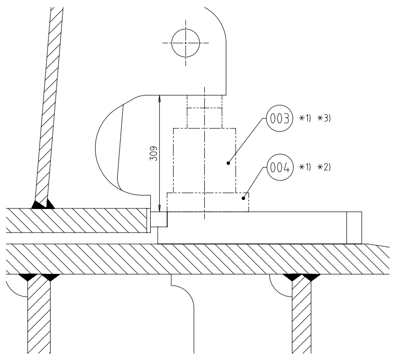
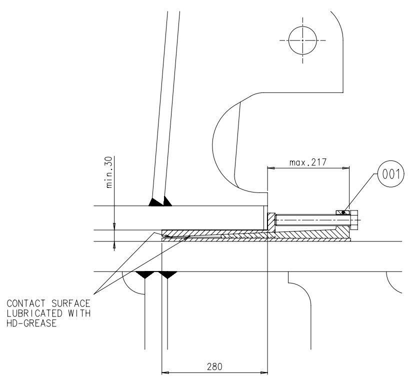
Remarks

*1) To be provided by the shipyard
*2) Height depending on the requirement
(chock thickness in correlation with maximum permissible extension of the hydraulic jack)
*3) Hydraulic jack proposal
Type: Enerpac RCH-1003
Load at 700 bar: 931 kN

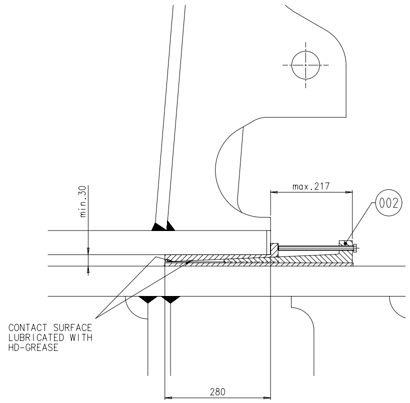
A-A 1:5



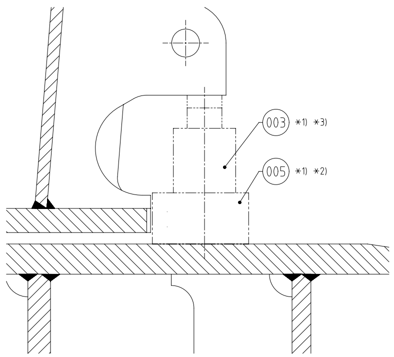
B-B 1:5



C-C 1:5



D-D 1:5



Prod.	10X92 10X92-B	10X92DF 10X92DF-2.0		

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
B	ssh102	mhu019	17.01.2022	CNAA001401	Drawing Updated		4	3
A	sde101	mhu019	02.10.2019	EAAD090713	Legacy information. See corresponding ChangeNotice		4	3
-	dki021	bha009	11.09.2015		-		-	-

Approved

WIN GD Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT

Alignment with: Wedges

separate BOM available

Scale 1:25	NX	Units [mm] [kg]	Basic Material	Net Weight 228.9
Main Design Yes	Design Group 9710-01	Q-Code XXXXX	Standard WDS
Qty per Engine	A0	Item ID PAAD202723	Drawing Page/s 1/1

Dimension

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

SEQ NO	QTY	Item ID	Item Name Dimension	Standard-ID	Basic Material	Net Weight
001	26	107.245.895.200	WEDGE			8.51
003	28	PAAD318478	HYDRAULIC JACK			
004	12	PAAD318479	SUPPORT PLATE			
005	16	PAAD318480	SUPPORT BLOCK			

Prod.			
11 X92 11 X92-B	11 X92DF 11 X92DF-2.0	11 X92DF-A-1.0	

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
B	sjo101	mhu019	13.02.2024	CNAA005217	Drawing Updated	4	3	
A	sde101	mhu019	02.10.2019	EAAD090713	Legacy information. See corresponding ChangeNotice	4	3	
-	grpadm	bha009	11.09.2015	EAAD778960	-	-	-	

Approved

WIN GD
Winterthur Gas & Diesel

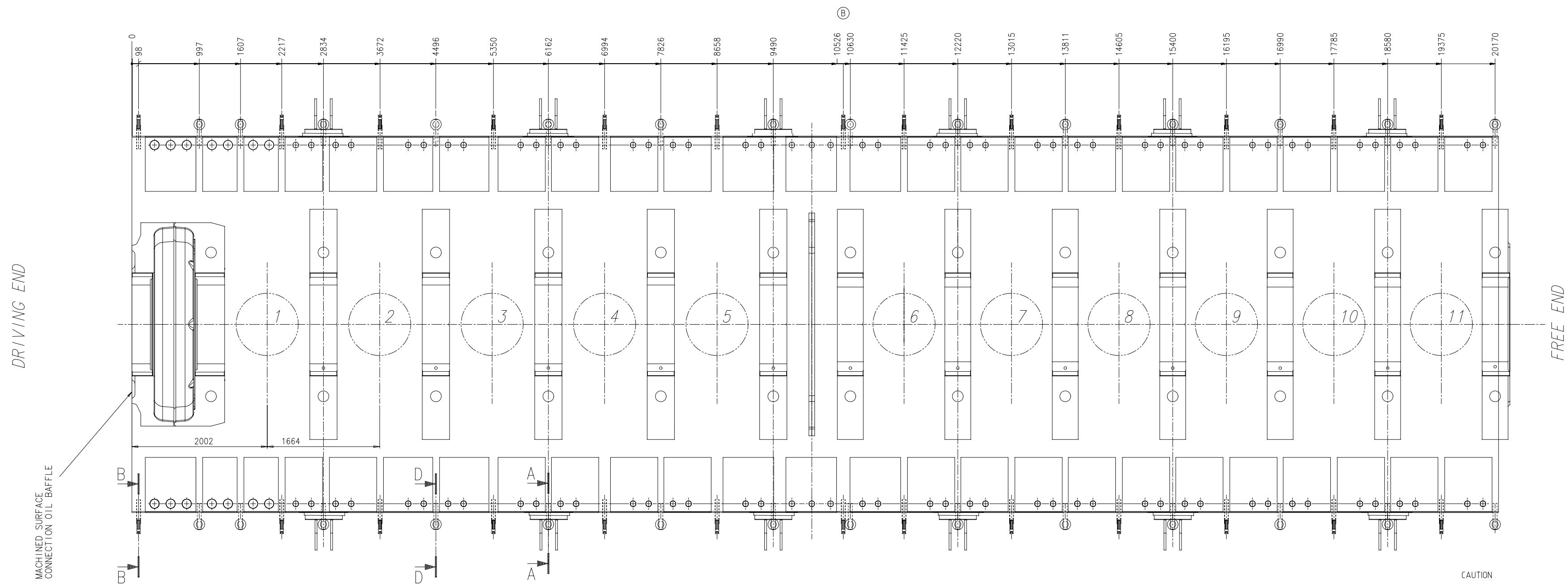
TOOL ENGINE ALIGNMENT

Alignment with: Wedges

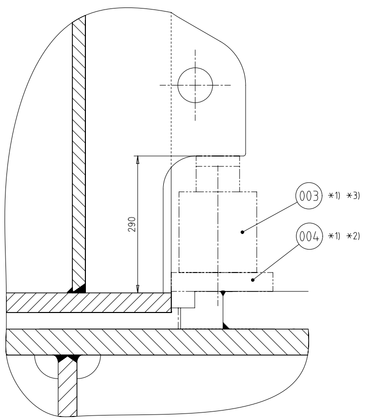
Bill Of Material

Dimension

Units	[m] [kg]	Basic Material				Net Weight	221.3
Main Design	Yes	Design Group	9710-01	Q-Code	X X O	Standard	WDS
Qty per	Engine	A4	Item ID	PAAD142162		BOM Page/s	01/01



A-A 1:5



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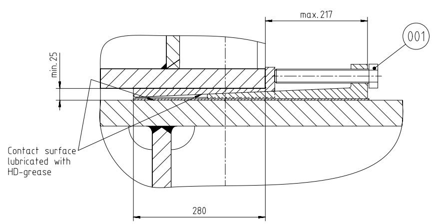
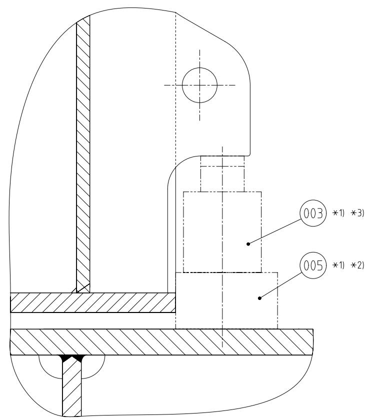


D-D 1:5



CAUTION

Risk:
Tool and/or bedplate damage

Countermeasure:
Avoid overloading of bedplate areas by observing the appropriate engine alignment/assembly procedure as follows:

- Insert wedges and/or shims in all indicated positions.
- Lift the engine into the engine room and place it on levelled wedges and/or shims (wedges or shims must be inserted as deep as possible below the bedplate to ensure that the support point is as close as possible at the engine monoblock column)
- Apply hydraulic jacks to the protruding bedplate ribs nearby the relevant wedge and/or shim as indicated in the drawing.
- Start with the engine alignment by means of wedges and/or shims. Before adjusting the height of wedges and/or shims lift the engine by the hydraulic jacks. Any height adjustment must be performed in small steps - no more than 1 mm per step. Changes in height larger than the maximum allowance (1mm) require a gradual process where all wedges and/or shims are successively adjusted in stages, to ensure the best possible load distribution.

Remarks

*1) To be provided by the shipyard
*2) Height depending on the requirement
(chock thickness in correlation with maximum permissible extension of the hydraulic jack)
*3) Hydraulic jack proposal
Type: Enerpac RCH-1003
Load at 700 bar: 931 kN

Prod.	11X92 11X92-B	11X92DF 11X92DF-2.0	11X92DF-A-1.0			

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	E	C
B	sjo101	mhu019	13.02.2024	CNAA005217	Drawing Updated	4	3
A	sde101	mhu019	02.10.2019	EAAD090713	Legacy information. See corresponding ChangeNotice	4	3
-	WinGD	bha009	11.09.2015	EAAD778960	-	-	-

Change History — Approved — Activity Code

WIN GD Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT
Alignment with: Wedges

separate BOM available

Scale 1:25	NX	Dimension	
Units [mm] [kg]	Basic Material	Net Weight 221.3	
Main Design Yes	Design Group 9710-01	Q-Code X X 0	Standard WDS
Qty per Engine	A0	Item ID PAAD142162	Drawing Page/s 1/1

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

SEQ NO	QTY	Item ID	Item Name Dimension	Standard-ID	Basic Material	Net Weight
1	28	107.245.895.200	WEDGE			8.51
3	30	PAAD318478	HYDRAULIC JACK			
4	12	PAAD318479	SUPPORT PLATE			
5	18	PAAD318480	SUPPORT BLOCK			

Prod.			
	12 X92 12 X92-B	12 X92DF 12 X92DF-2.0	12 X92DF-A-1.0 12 X92DF-M-1.0

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
B	sde101	mhu019	01.02.2023	CNAA003170	Main Design/Drawing Introduced		4	3
A	sde101	mhu019	02.10.2019	EAAD090713	Legacy information. See corresponding ChangeNotice		4	3
-	dki021	mhu019	17.11.2017	EAAD782032	-		-	-

WIN GD
Winterthur Gas & Diesel

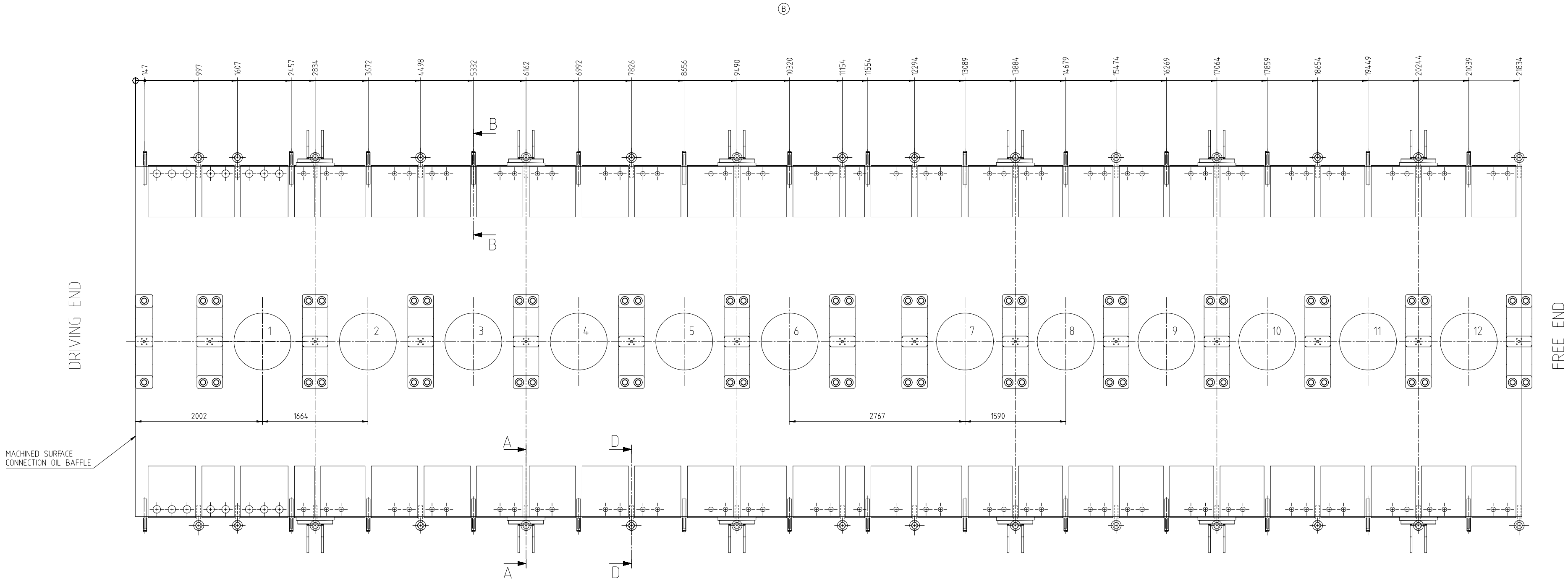
TOOL ENGINE ALIGNMENT

Alignment with Wedges

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

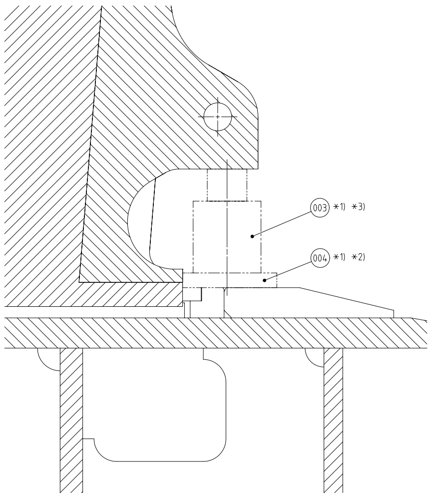
Dimension

Units	[m] [kg]	Basic Material				Net Weight	238.3
Main Design	Yes	Design Group	9710-01	Q-Code	XXXXX	Standard	WDS
Qty per	Engine	A4	Item ID	PAAD279802		BOM Page/s	01/01



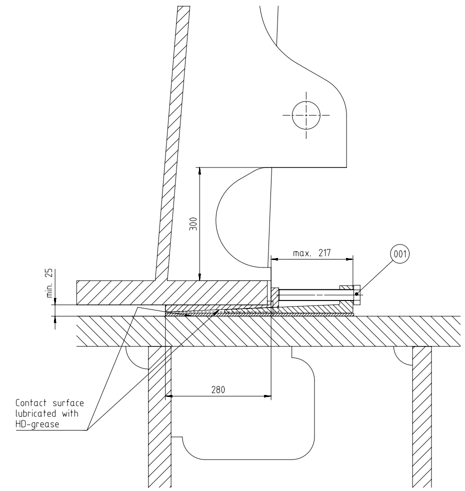
SECTION A-A

SCALE 1:5



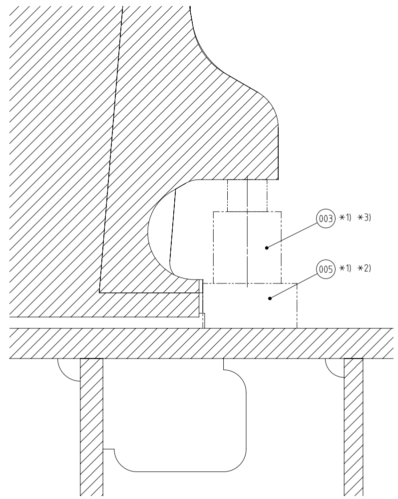
SECTION B-B

SCALE 1:5



SECTION D-D

SCALE 1:5



CAUTION

Risk:
Tool and/or bedplate damage

Countermeasure:
Avoid overloading of bedplate areas by observing the appropriate engine alignment/assembly procedure as follows:

- Insert wedges and/or shims in all indicated positions.
- Lift the engine into the engine room and place it on levelled wedges and/or shims (wedges or shims must be inserted as deep as possible below the bedplate to ensure that the support point is as close as possible at the engine monoblock column)
- Apply hydraulic jacks to the protruding bedplate ribs nearby the relevant wedge and/or shim as indicated in the drawing.
- Start with the engine alignment by means of wedges and/or shims. Before adjusting the height of wedges and/or shims lift the engine by the hydraulic jacks. Any height adjustment must be performed in small steps - no more than 1 mm per step. Changes in height larger than the maximum allowance (1mm) require a gradual process where all wedges and/or shims are successively adjusted in stages, to ensure the best possible load distribution.

Remarks

*1) To be provided by the shipyard
*2) Height depending on the requirement
(chock thickness in correlation with maximum permissible extension of the hydraulic jack)
*3) Hydraulic jack proposal
Type: Enerpac RCH-1003
Load at 700 bar: 931 kN

Prod.	12X92 12X92-B	12X92DF 12X92DF-2.0	12X92DF-A-1.0 12X92DF-M-1.0

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	E	C
B	sde101	mhu019	01.02.2023	CNAA003170	Main Design/Drawing Introduced	4	3
A	sde101	mhu019	02.10.2019	EAAD090713	Legacy information. See corresponding ChangeNotice	4	3
-	dki021	mhu019	17.11.2017	EAAD782032	-	-	-

Approved | Activity Code

WIN GD Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT
Alignment with Wedges

separate BOM available | Dimension

Scale 1:25 | NX | Units [mm] [kg] | Basic Material | Net Weight 238.3

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

Main Design	Yes	Design Group	9710-01	Q-Code	XXXXX	Standard	WDS
Qty per	Engine	A0	Item ID	PAAD279802		Drawing Page/s	1/1

SEQ NO	QTY	Item ID	Item Name / Dimension	Standard-ID	Basic Material	Net Weight
1	30	107.245.895.200	WEDGE			7.511
3	30	PAAD318478	HYDRAULIC JACK			
4	12	PAAD318479	SUPPORT PLATE			
5	18	PAAD318480	SUPPORT BLOCK			

Prod.			
12 X92-B 12 X92DF	12 X92DF-2.0		

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
A	sjo101	mhu019	13.02.2024	CNAA005217	Drawing Updated	4	4	3
-	sde101	mhu019	16.02.2021	EAAD787057	-	-	-	-

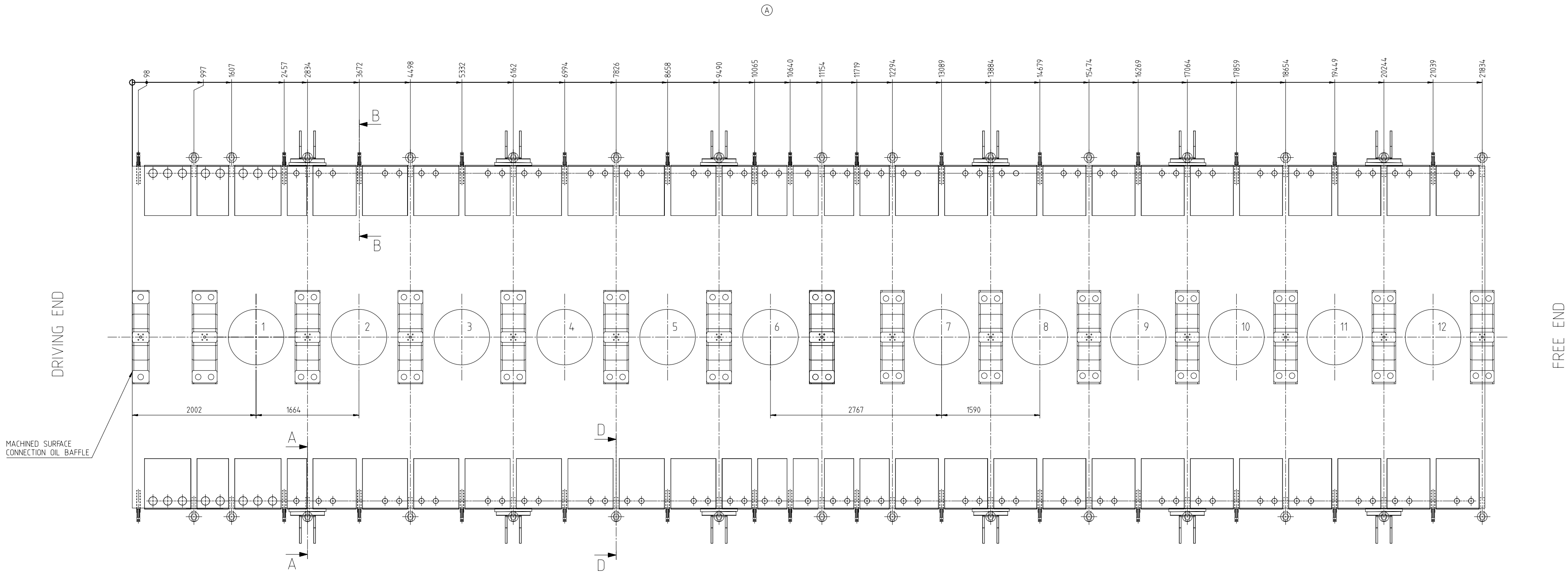
WIN GD
Winterthur Gas & Diesel

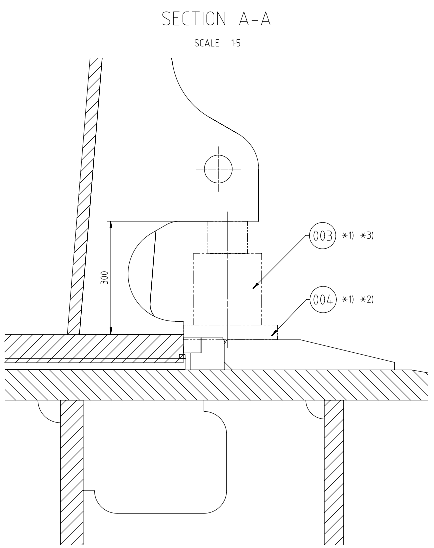
TOOL ENGINE ALIGNMENT

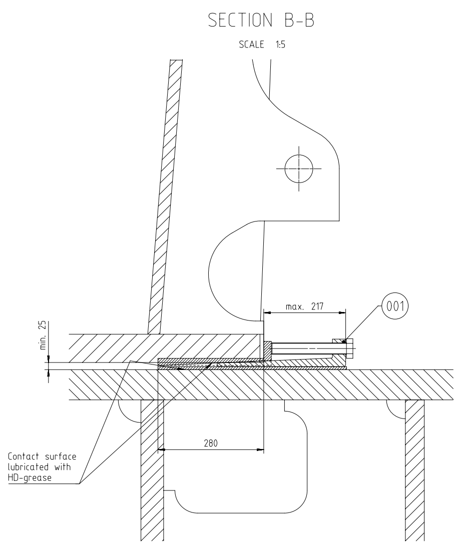
Alignment with: Wedges + STD bedplate split

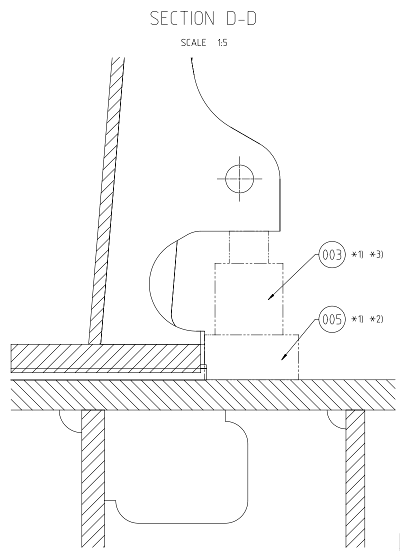
Bill Of Material

Dimension							
Units	[m] [kg]	Basic Material				Net Weight	225.3
Main Design	Yes	Design Group	9710-01	Q-Code	X X O	Standard	WDS
Qty per	Engine	A4	Item ID	PAAD374048		BOM Page/s	01/01









CAUTION

Risk:
Tool and/or bedplate damage

Countermeasure:
Avoid overloading of bedplate areas by observing the appropriate engine alignment/assembly procedure as follows:

- Insert wedges and/or shims in all indicated positions.
- Lift the engine into the engine room and place it on levelled wedges and/or shims (wedges or shims must be inserted as deep as possible below the bedplate to ensure that the support point is as close as possible at the engine monoblock column)
- Apply hydraulic jacks to the protruding bedplate ribs nearby the relevant wedge and/or shim as indicated in the drawing.
- Start with the engine alignment by means of wedges and/or shims. Before adjusting the height of wedges and/or shims lift the engine by the hydraulic jacks. Any height adjustment must be performed in small steps - no more than 1 mm per step. Changes in height larger than the maximum allowance (1mm) require a gradual process where all wedges and/or shims are successively adjusted in stages, to ensure the best possible load distribution.

Remarks

*1) To be provided by the shipyard
*2) Height depending on the requirement
(chock thickness in correlation with maximum permissible extension of the hydraulic jack)
*3) Hydraulic jack proposal
Type: Enerpac RCH-1003
Load at 700 bar: 931 kN

Prod.: 12X92-B, 12X92DF | 12X92DF-2.0

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C
A	sjo101	mhu019	13.02.2024	CNAA005217	Drawing Updated			4	3
-	sde101	mhu019	16.02.2021	EAAD787057	-			-	-

WIN GD
Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT

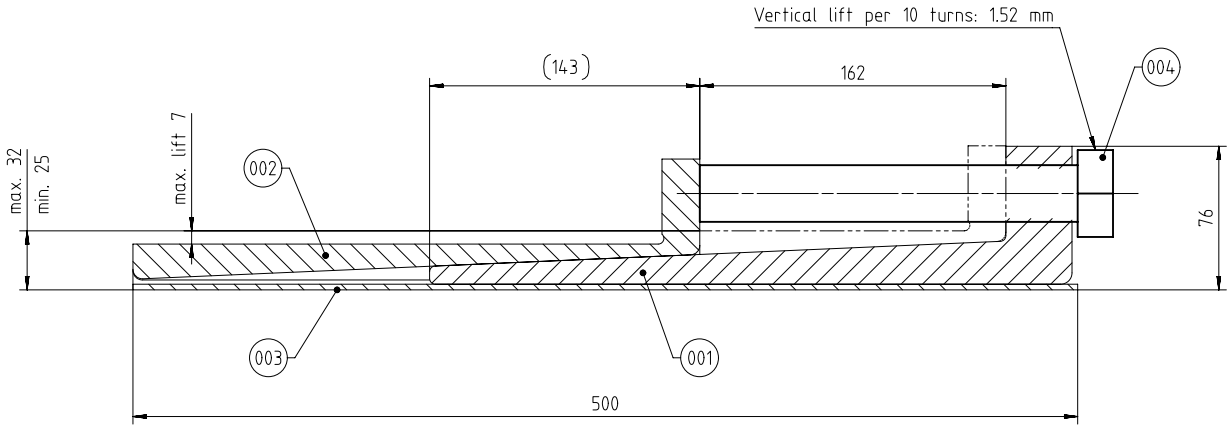
Alignment with: Wedges + STD bedplate split

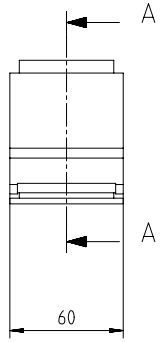
separate BOM available

Scale 1:25	NX	Dimension	
Units [mm] [kg]	Basic Material	Net Weight	225.3
Main Design: Yes	Design Group: 9710-01	Q-Code: X X 0	Standard: WDS
Qty per: Engine	A0	Item ID: PAAD374048	Drawing Page/s: 1/1

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

SECTION A-A





QTY	SEQ NO	Material ID	Material Name / Dimension, Occ	Standard or Drawing	Basic Material / Material Standard	Weight GR./NET
1	004	015.151.048.701	HEXAGON HEAD SCREW M30x200	ISO 4017	8.8	1,21
1	003	107.245.898.001	PLATE	107.245.898	W-FU-235-JR	1,0
1	002	107.246.894.001	KEY	107.246.894	W-FU-235-JR	3,0
1	001	107.246.895.001	KEY	107.246.895	W-FU-235-JR	3,3

Approved

Free space for lic.

Q-Code XXXXX

Standard ISO; JIS

Main Drw.

Modif.	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date
B	EAAD014493	05.02.2002	C 7-73.552	19.10.2009	D EAAD084635	27.06.2013	E EAAD091472	11.11.2019

WIN GD Winterthur Gas & Diesel

Product W-2S

WEDGE

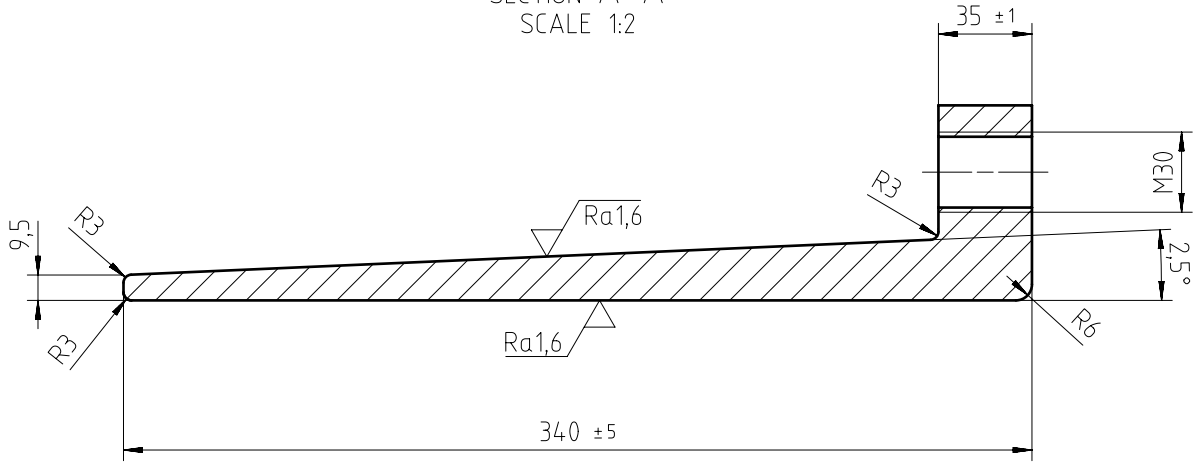
Schraeger Keil

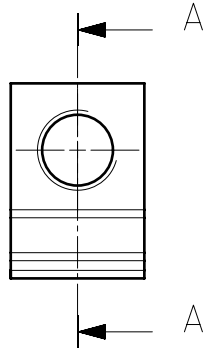
Units mm kg | NX | Basic Material | Net Weight 8,51

SURFACE PROTECTION SEE GROUP 0344	Made 10.07.1996 D.Scheffler	Scale 1:2	Size A2	Page 1/1	Material ID 107.245.895.200	
TOLERANCING PRINCIPLE ISO8015	Chkd	Design Group 9710-01	Drawing ID 107.245.895		Rev. E	
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd 30.08.1996 WCH001 Service User					

DID - DIMENSIONAL DRAWING - Confidential

SECTION A–A
SCALE 1:2





Ra50 (Ra1,6)

Approved

Free space for lic.									Q-Code XXXXX		Main Drw.
									Standard ISO; JIS		
Modif.	A	7-73.552	19.10.2009	B	EAAD091472	04.11.2019					
		Number	Drawn date		Number	Drawn date		Number	Drawn date		Number	Drawn date

WIN GD Winterthur Gas & Diesel

Product W-2S

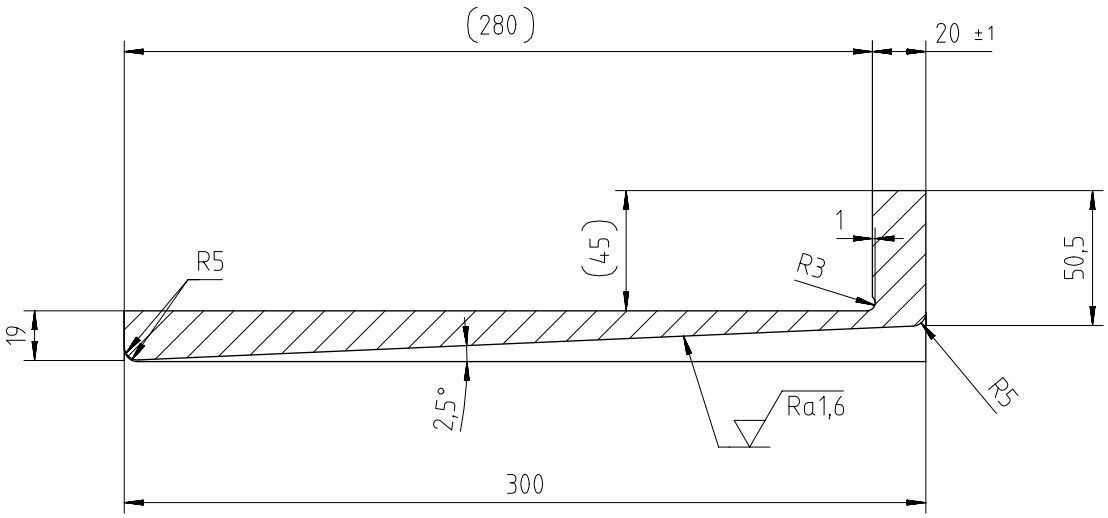
KEY

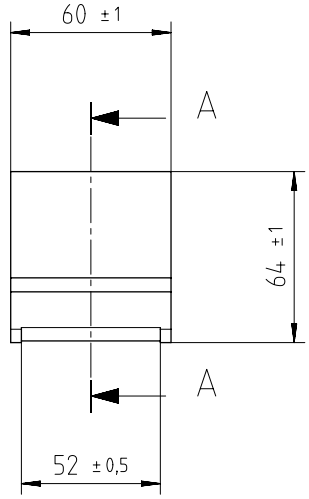
Keil

Units mm kg	NX		Basic Material W-FU-235-JR		Net Weight 3,3
SURFACE PROTECTION SEE GROUP 0344	Made 16.05.2001 D.ADMINISTRATOR		Scale 1:2	Size A3 / Page 1/1	Material ID 107.246.895.001
TOLERANCING PRINCIPLE ISO8015	Chkd		Design Group 9710-01	Drawing ID 107.246.895	Rev. B
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd 27.12.2001 WDMS2				

DID - DIMENSIONAL DRAWING - Confidential

SECTION A-A
SCALE 1:2





Ra50 (Ra1,6)

Approved

Free space for lic.								Q-Code XXXXX		Main Drw.	
								Standard ISO; JIS			
Modif.	A	7-73.552	19.10.2009	B	EAAD091472	05.11.2019					
		Number	Drawn date		Number	Drawn date		Number	Drawn date		

WIN GD Winterthur Gas & Diesel

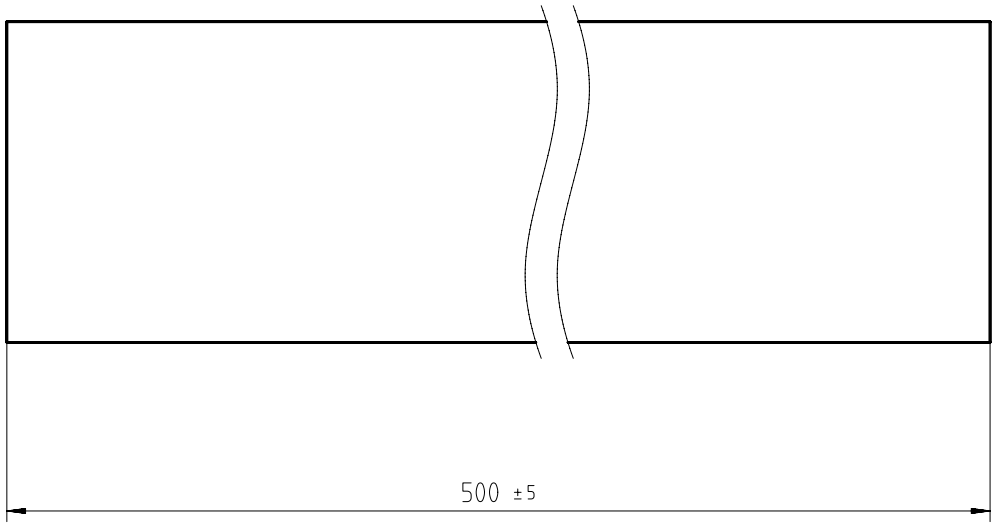
Product W-2S

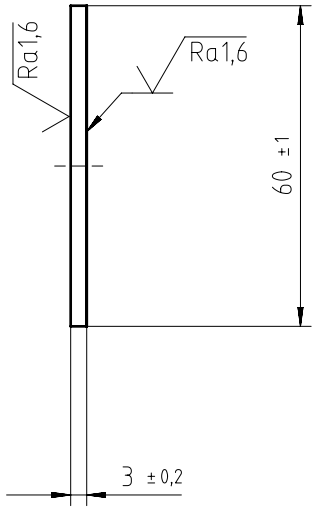
KEY

Keil

Units mm kg	NX		Basic Material W-FU-235-JR			Net Weight 3
SURFACE PROTECTION SEE GROUP 0344	Made 16.05.2001 D.ADMINISTRATOR		Scale 1:2	Size A3	Page 1/1	Material ID 107.246.894.001
TOLERANCING PRINCIPLE ISO8015	Chkd		Design Group 9710-01	Drawing ID 107.246.894		Rev. B
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd 27.12.2001 WDMS2					

DID - DIMENSIONAL DRAWING - Confidential





Ra50 (Ra1,6)

Approved

Free space for lic.								Q-Code XXXXX		Main Drw.	
								Standard ISO; JIS			
Modif.	A	EAAD014305	11.09.1996	B	EAAD091472	05.11.2019					
		Number	Drawn date		Number	Drawn date		Number	Drawn date		

WIN GD Winterthur Gas & Diesel

Product W-2S

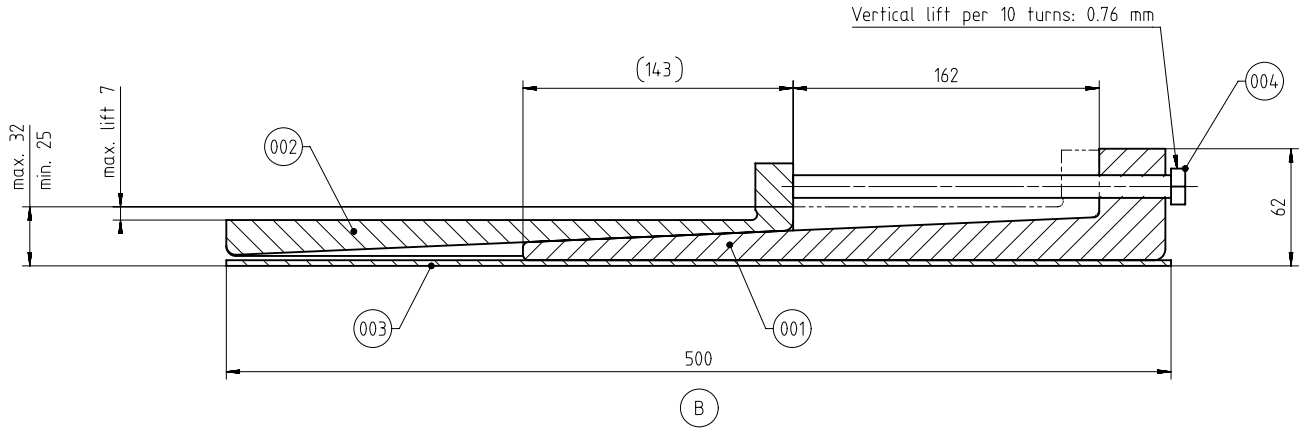
PLATE

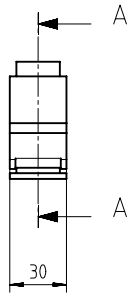
Blech

Units mm kg	NX		Basic Material W-FU-235-JR		Net Weight 1
SURFACE PROTECTION SEE GROUP 0344	Made 11.07.1996 D. Schaeffler		Scale 1:1	Size A3 / Page 1/1	Material ID 107.245.898.001
TOLERANCING PRINCIPLE ISO8015	Chkd		Design Group 9710-01	Drawing ID 107.245.898	Rev. B
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd 22.07.1996 MLU011 Lüthi				

DID - DIMENSIONAL DRAWING - Confidential

SECTION A-A





QTY	SEQ NO	Material ID	Material Name / Dimension, Occ	Standard or Drawing	Basic Material / Material Standard	Weight GR./NET
1	004	015.151.040.701	HEXAGON HEAD SCREW M12x200	ISO 4017	8.8	0,156
1	003	PAAD343262	PLATE	DAAD123406	W-FU-235-JR	0,4
1	002	107.424.348.001	KEY	107.424.348	W-FU-235-JR	1,5
1	001	107.424.347.001	KEY	107.424.347	W-FU-235-JR	1,7

Approved

Free space for lic.

Q-Code XXXXX

Standard ISO; JIS

Main Drw.

Modif.	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date
A	EAAD084635	27.06.2013	B	EAAD091472	06.11.2019			

WIN GD Winterthur Gas & Diesel

Product W-2S

WEDGE

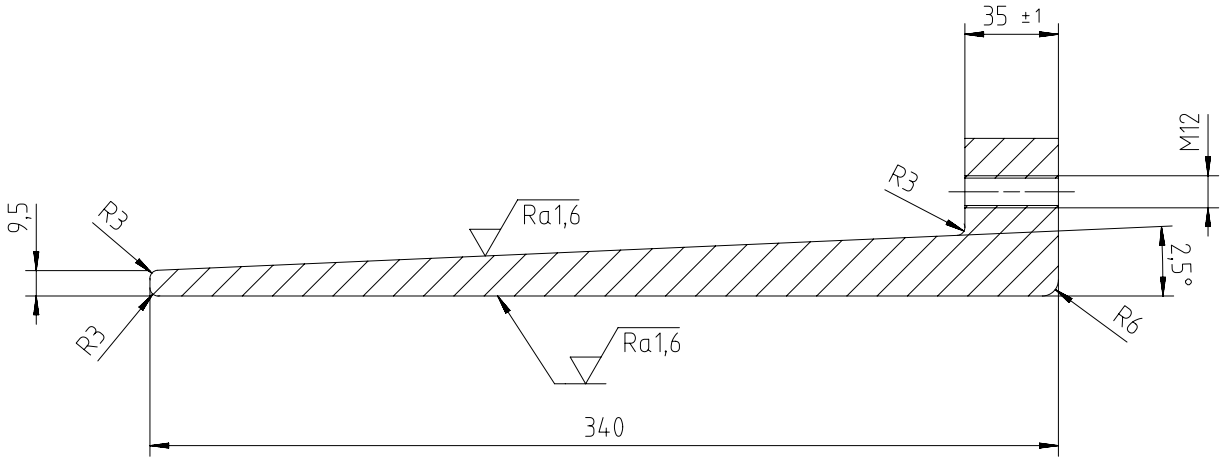
Schraeger Keil

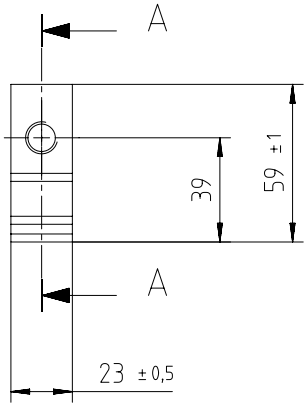
Units	mm kg	NX	Basic Material	W-FU-235-JR	Net Weight 3.8

SURFACE PROTECTION SEE GROUP 0344	Made	05.08.2009 jba029 J.BAUMANN	Scale 1:2	Size A2	Page 1/1	Material ID 107.424.346.200
TOLERANCING PRINCIPLE ISO8015	Chkd		Design Group 9710-01	Drawing ID 107.424.346		Rev. B
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd	28.09.2009 JBA029 Baumann				

DID - DIMENSIONAL DRAWING - Confidential

SECTION A–A





Ra50 (Ra1,6)

Approved

Free space for lic.								Q-Code XXXXX		Main Drw.	
								Standard ISO; JIS			
Modif.	A	EAAD091472	05.11.2019								
		Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date		

WIN GD Winterthur Gas & Diesel

Product W-2S

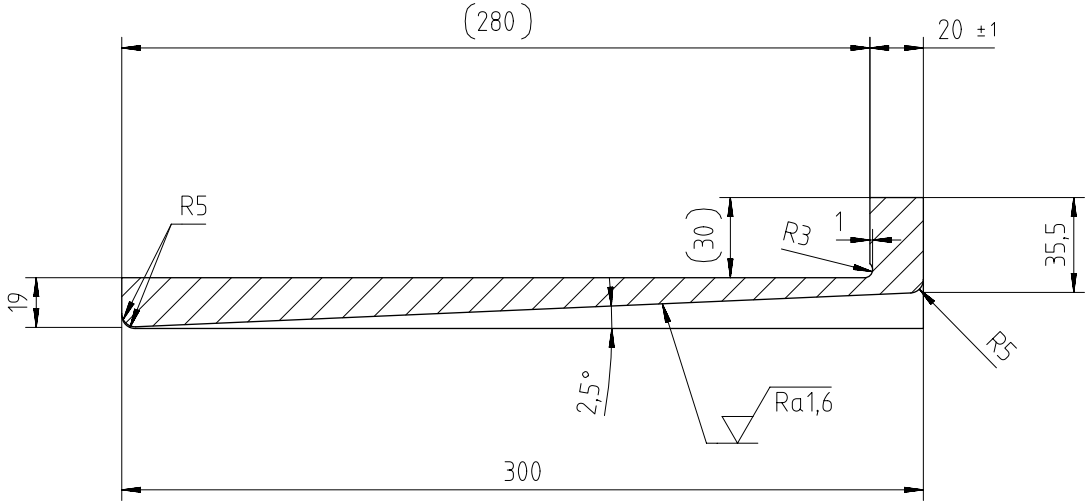
KEY

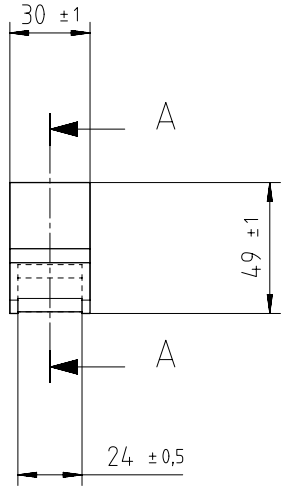
Keil

Units mm kg	NX	Basic Material W-FU-235-JR			Net Weight 1,7
SURFACE PROTECTION SEE GROUP 0344	Made 05.08.2009 J.BAUMANN	Scale 1:2	Size A3	Page 1/1	Material ID 107.424.347.001
TOLERANCING PRINCIPLE ISO8015	Chkd	Design Group 9710-01	Drawing ID 107.424.347		Rev. A
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd 28.09.2009 JBA029 Baumann				

DID - DIMENSIONAL DRAWING - Confidential

SECTION A-A





Ra50 (Ra1,6)

Approved

Free space for lic.									Q-Code XXXXX	Standard ISO; JIS	Main Drw.
Modif.	A	EAAD091472	06.11.2019								
		Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date		

WIN GD Winterthur Gas & Diesel

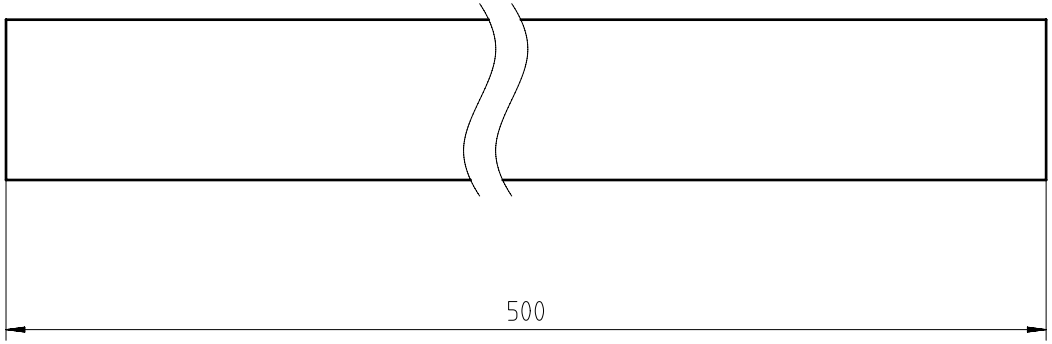
Product W-2S

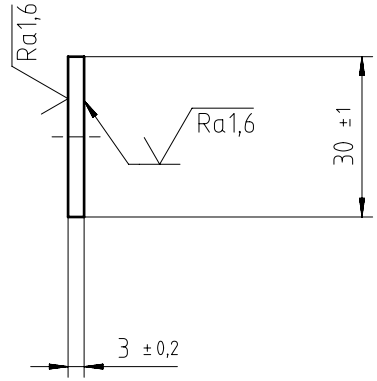
KEY

Keil

Units mm kg	NX		Basic Material W-FU-235-JR		Net Weight 1,5
SURFACE PROTECTION SEE GROUP 0344	Made 05.08.2009 J.BAUMANN	Scale 1:2	Size A3	Page 1/1	Material ID 107.424.348.001
TOLERANCING PRINCIPLE ISO8015	Chkd	Design Group 9710-01	Drawing ID 107.424.348		Rev. A
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd 28.09.2009 JBA029 Baumann				

DID - DIMENSIONAL DRAWING - Confidential





Ra50 (Ra1,6)

Approved

Free space for lic.									Q-Code XXXXX		Main Drw.
									Standard ISO; JIS		
Modif.		Number	Drawn date		Number	Drawn date		Number	Drawn date		Number	Drawn date

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Product W-2S	PLATE Blech			
Units mm kg	NX	Basic Material W-FU-235-JR		Net Weight 0,4
SURFACE PROTECTION SEE GROUP 0344	Made 06.11.2019 dki021 DH.Kim	Scale 1:1	Size A3 / Page 1/1	Material ID PAAD343262
TOLERANCING PRINCIPLE ISO8015	Chkd 26.11.2019 jpi101 Pickup	Design Group 9710-01	Drawing ID DAAD123406	Rev. –
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd 02.12.2019 mhu019 Hug			

DID - DIMENSIONAL DRAWING - Confidential

MIDS – Tool Engine Alignment (DG9710-01)

WinGD X92-B/DF/DF-2.0

TRACK CHANGES

DATE	SUBJECT	DESCRIPTION
2017-01-13	DRAWING SET	First web upload
2017-11-17	DAAD094562	Tool Arrangement, 12cyl drg - new added
2018-06-13	DAAD100823	Tool Arrangement, 9cyl drg - new added
2019-10-03	DAAD044462 DAAD044255 DAAD094562 DAAD070098 DAAD100823	Tool Arrangement drgs - new revision
2020-09-29	DAAD044462 107.245.895 107.246.895 107.246.894 107.245.898 107.424.346 107.424.347 107.424.348	System and wedge assembly drgs – new revision
2021-01-13	DAAD137841	Drawing set for 7 cyl. engine variant - added
2021-02-17	DAAD139723	Drawing set for 12 cyl. with weight levelled split design - added
2021-07-21	PTAA003754	8X92-B, 2-part CS, mid drive – new drawing
2022-01-20	PAAD202723 PAAD295494	Main drgs – new revisions
2022-01-20	PAAD295494	Main drg – new revision
2023-01-12	PAAD295494	Main drg – new revision

DISCLAIMER

2023-02-01	PAAD279802-B	Main drg – new revision
2023-11-20	PAAD279802-B	New MIDS-master revision
2024-02-15	PAAD374048-A PAAD142162-B PAAD370399-A	New revision
2024-02-22	PTAA059869-A	New revision
2024-10-18	PTAA117991_	New execution for 6 Cyl.

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