Available executions

Execution No.	Material ID	Cylinder No.	Attribute 1: Alignment tool type	
			SCREWS	WEDGES
001	PAAD215869	5	X	
002	PAAD346519	5		X
003	PAAD180542	6	X	
004	PAAD353044	6		X
005	PAAD276880	7	X	
006	PAAD353123	7		X
007	PAAD286613	8	X	
008	PAAD353218	8		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 X52DF	X52DF-1.1 X52DF-A-1.0	X52DF-M-1.0					

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis		Activity Code	E	C
–	sna102	mhu019	14.03.2023	CNAA003279	new Design	Approved		-	-

WIN GD
Winterthur Gas & Diesel

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 XXXXX	Standard WDS
Qty per			A4	Item ID PTAA025303		Drawing Page/s 1/1

SEQ NO	QTY	Item ID	Item Name Dimension	Standard-ID	Basic Material	Net Weight
001	22	PAAD005430	JACKING SCREW		W-FU-235-N-T	2.3
002	8	PAAD318478	HYDRAULIC JACK			
003	8	PAAD318480	SUPPORT BLOCK			

Prod.						
	4 RTX-7 5 X52	5 X52DF 5 X52DF-1.1	5 X52DF-2.1 5 X52DF-A-1.0	5 X52DF-M-1.0		

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
C	sjo101	mhu019	12.02.2024	CNAA005240	Drawing updated	4	4	3
B	sde101	mhu019	02.10.2019	EAAD090713	Legacy information. See corresponding ChangeNotice	4	4	3
A	jba039	mhu019	05.01.2017	EAAD087035	Legacy information. See corresponding ChangeNotice	4	4	-
-	20045800	bha009	23.12.2015	EAAD779403	-	-	-	-

WIN GD
Winterthur Gas & Diesel

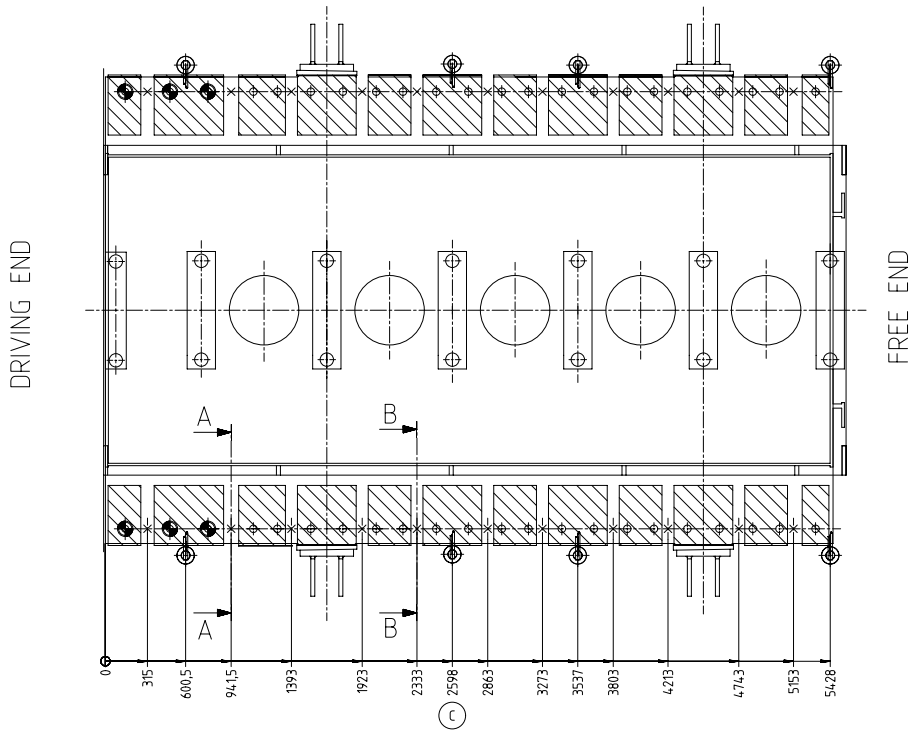
TOOL ENGINE ALIGNMENT

Alignment with: Jacking Screws

Bill Of Material

Dimension

Units	[m] [kg]	Basic Material				Net Weight	50.6
Main Design	Yes	Design Group	9710-01	Q-Code	X X O	Standard	WDS
Qty per	Engine	A4	Item ID	PAAD215869		BOM Page/s	01/01



CAUTION

Risk:
Tool and/or bedplate damage

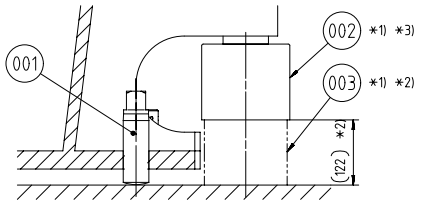
Countermeasure:
Avoid overloading of jacking screws and/or bedplate areas by observing the appropriate engine alignment/ assembly procedure as follows:

- Lift the engine into the engine room and place it on levelled , temporary blocks, underneath the bedplate beside the jacking screws.
- Screw in all jacking screws until touching the foundation top plate (the full number of jacking screws must be used)
- Apply hydraulic jacks to the protruding bedplate ribs nearby the jacking screws as indicated in the drawing.
- Remove the temporary blocks by slightly lifting the engine with the hydraulic jacks.
- Start with the engine alignment by means of jacking screws. Before turning a jacking screw, reduce its load by use of the hydraulic jacks. Any height adjustment must be performed in small steps - no more than 1 mm per step (equals to 1/2 screw turn, based on 2 mm thread pitch). Changes in height larger than the maximum allowance (1 mm) require a gradual process where all jacking screws are successively adjusted in stages, to ensure the best possible load distribution.

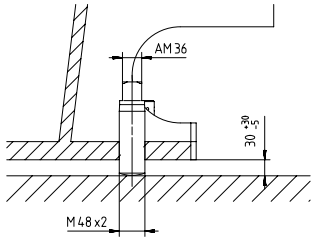
Remarks

*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 RCS-1002
Load at 700 bar: 880 kN

SECTION A-A
SCALE 1:5



SECTION B-B
SCALE 1:5



Proc.					4RTX-7 5X52	5X52DF 5X52DF-1.1	5X52DF-2.1 5X52DF-A-1.0	5X52DF-M-1.0
Change History	C	sja101	mhu039	12.02.2024	CNAA005240	Drawing updated	4	3
	B	sde101	mhu019	02.10.2019	EAAD090713	Legacy information. See corresponding ChangeNotice	4	3
	A	jba039	mhu019	05.01.2017	EAAD087035	Legacy information. See corresponding ChangeNotice	4	-
	-	20045898	hha009	23.12.2015	EAAD7794.03	-	-	-
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis Approved	Activity Code	E	C

WIN GD Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT
Alignment with: Jacking Screws

separate BOM available | Dimension

Scale 1:50 | NX | Units [mm] [kg] | Basic Material | Net Weight 50.60

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

Main Design	Yes	Design Group	9710-01	Q-Code	X X 0	Standard	WDS
Qty per	Engine	A1	Item ID	PAAD215869		Drawing Page/s	1/1

SEQ NO	QTY	Item ID	Item Name Dimension	Standard-ID	Basic Material	Net Weight
001	22	107.245.895.200	WEDGE			8.51
002	8	PAAD318478	HYDRAULIC JACK			
003	2	PAAD318479	SUPPORT PLATE			
004	6	PAAD318480	SUPPORT BLOCK			

Prod.			
	5 X52 5 X52DF	5 X52DF-1.1 5 X52DF-2.1	5 X52DF-A-1.0 5 X52DF-M-1.0

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
A	sjo101	mhu019	18.04.2024	CNAA005392	Drawing Updated		4	3
-	dki021	mhu019	19.12.2019	EAAD785317	-		-	-

Approved

WIN GD
Winterthur Gas & Diesel

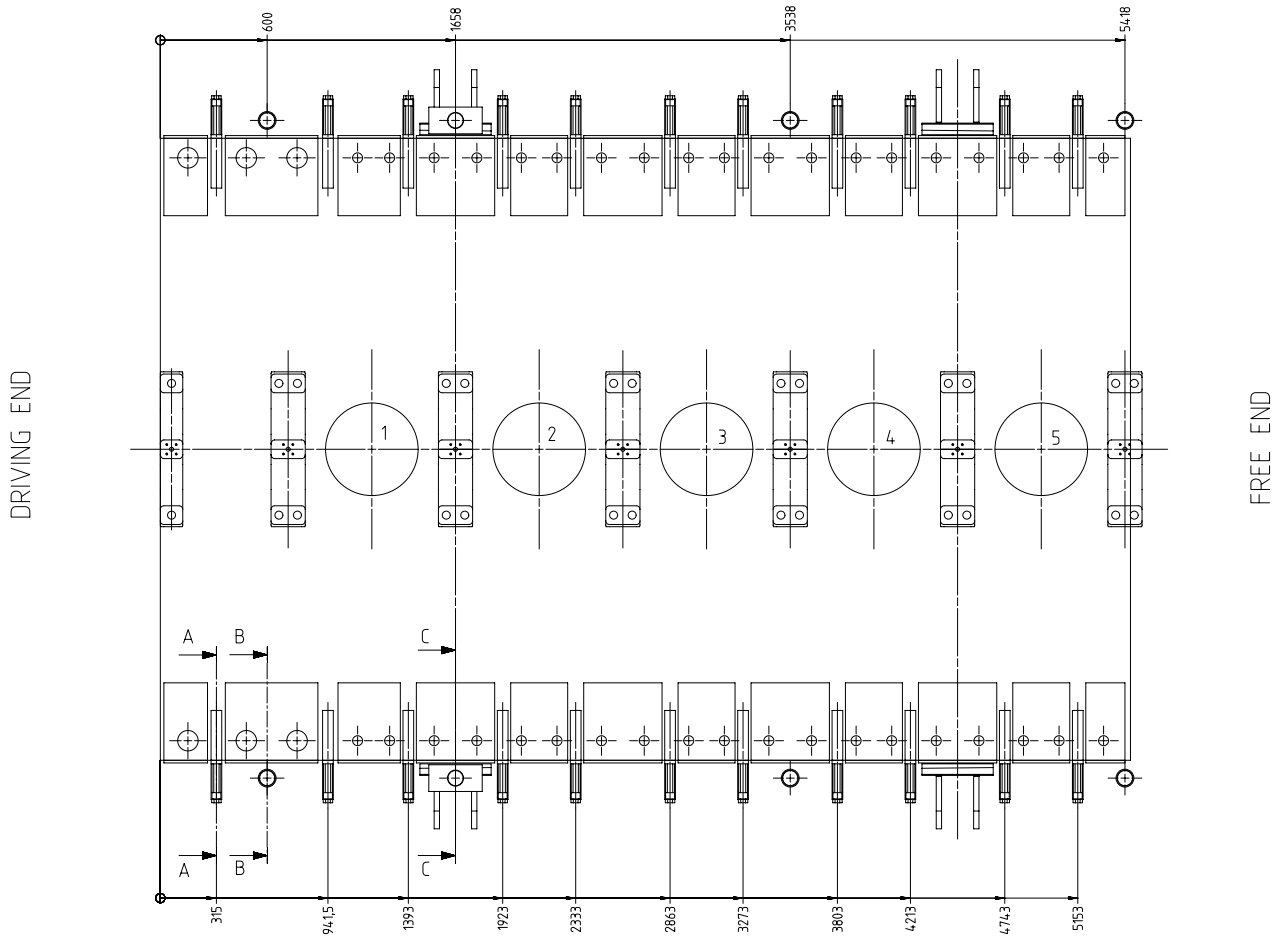
TOOL ENGINE ALIGNMENT

Alignment with: Wedges

Bill Of Material

Dimension

Units	[m] [kg]	Basic Material				Net Weight	187.2
Main Design	Yes	Design Group	9710-01	Q-Code	X X O	Standard	WDS
Qty per	Engine	A4	Item ID	PAAD346519		BOM Page/s	01/01



CAUTION

Risk:
Tool and/or bedplate damage

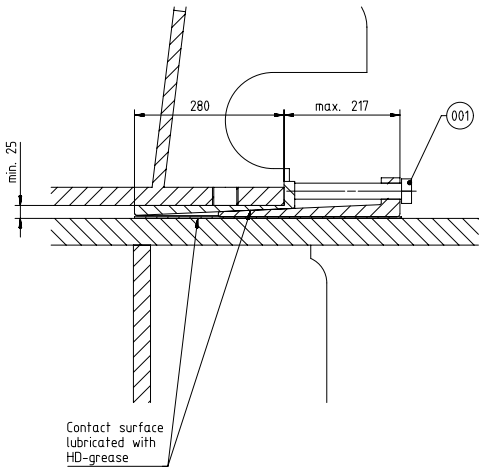
Countermeasure:
Avoid overloading of bedplate areas by observing the appropriate engine alignment/assembly procedure as follows:

- 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.

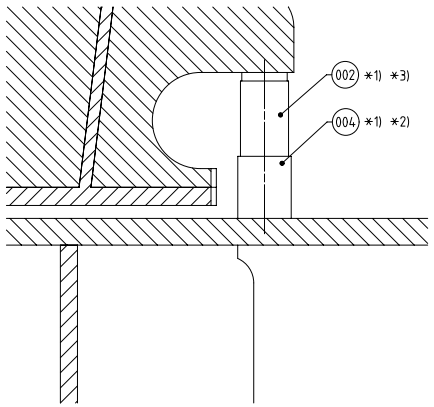
Remarks

*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 RCS-1002
Load at 700 bar: 887 kN

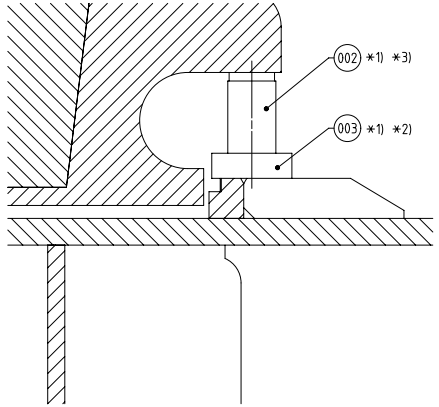
SECTION A-A ↻ 90°
SCALE 1:5



SECTION B-B ↻ 90°
SCALE 1:5



SECTION C-C ↻ 90°
SCALE 1:5



Prev.					5X52 5X52DF	5X52DF-1.1 5X52DF-2.1	5X52DF-A-1.0 5X52DF-M-1.0		
Change History	A	sja101	mhu039	18.04.2024	CWA005392	Drawing Updated		4	3
	-	dki021	mhu019	19.12.2019	EAAD785317	-		-	-
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C

WIN GD Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT
Alignment with: Wedges

separate BOM available

Dimension

Scale 1:15 | NX | Units [mm] [kg] | Basic Material | Net Weight 187.2

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

Main Design	Yes	Design Group	9710-01	Q-Code	X X 0	Standard	WDS
Qty per	Engine	A1	Item ID	PAAD346519		Drawing Page/s	1/1

SEQ NO	QTY	Item ID	Item Name / Dimension	Standard-ID	Basic Material	Net Weight
001	26	PAAD005430	JACKING SCREW		W-FU-235-N-T	2.3
002	8	PAAD318478	HYDRAULIC JACK			
003	8	PAAD318480	SUPPORT BLOCK			

Prod.			
6 X52 6 X52DF	6 X52DF-1.1 6 X52DF-2.1	6 X52DF-A-1.0 6 X52DF-M-1.0	

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
C	sjo101	mhu019	18.04.2024	CNAA005392	Drawing updated	Approved	4	3
B	sde101	mhu019	02.10.2019	EAAD090713	Legacy information. See corresponding ChangeNotice		4	3
A	jba039	mhu019	05.01.2017	EAAD087035	Legacy information. See corresponding ChangeNotice		4	-
-	wwa008	bha009	16.01.2015	EAAD778076	-		-	-

WIN GD
Winterthur Gas & Diesel

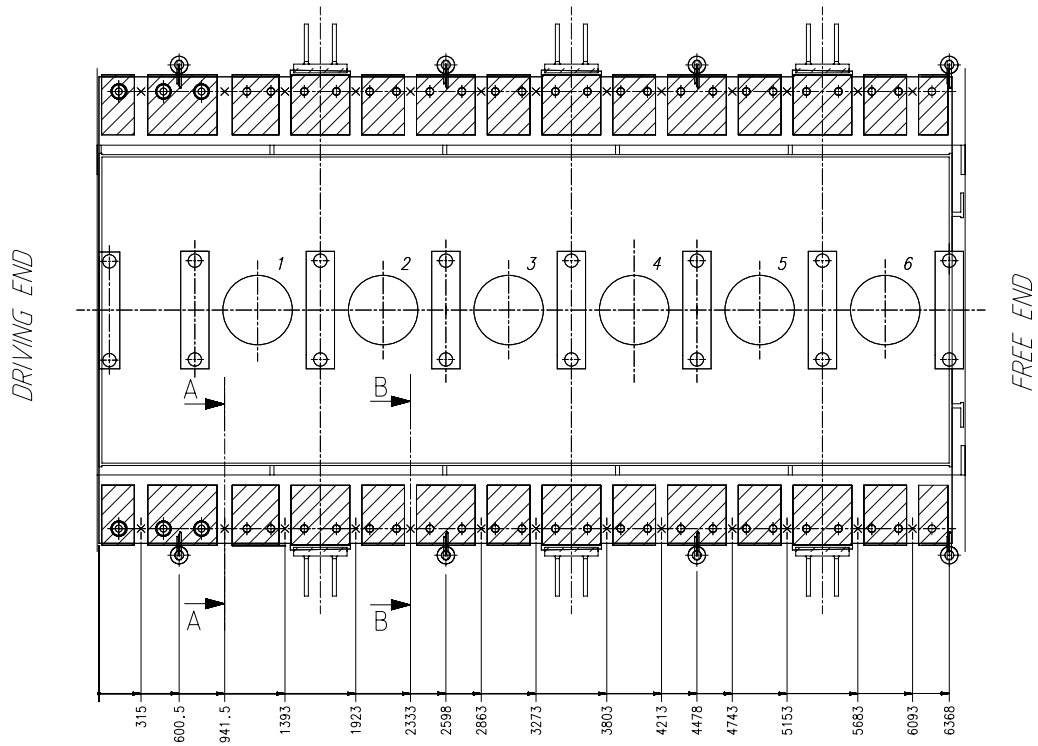
TOOL ENGINE ALIGNMENT

Alignment With: Jacking Screws

Bill Of Material

Dimension

Units	[m] [kg]	Basic Material				Net Weight	59.8
Main Design	Yes	Design Group	9710-01	Q-Code	X X O	Standard	WDS
Qty per	Engine	A4	Item ID	PAAD180542		BOM Page/s	01/01



CAUTION

Risk:
Tool and/or bedplate damage

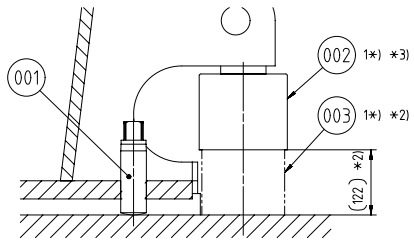
Countermeasure:
Avoid overloading of jacking screws and/or bedplate areas by observing the appropriate engine alignment/ assembly procedure as follows:

- Lift the engine into the engine room and place it on levelled , temporary blocks, underneath the bedplate beside the jacking screws.
- Screw in all jacking screws until touching the foundation top plate (the full number of jacking screws must be used)
- Apply hydraulic jacks to the protruding bedplate ribs nearby the jacking screws as indicated in the drawing.
- Remove the temporary blocks by slightly lifting the engine with the hydraulic jacks.
- Start with the engine alignment by means of jacking screws. Before turning a jacking screw, reduce its load by use of the hydraulic jacks. Any height adjustment must be performed in small steps - no more than 1 mm per step (equals to 1/2 screw turn, based on 2 mm thread pitch). Changes in height larger than the maximum allowance (1 mm) require a gradual process where all jacking screws are successively adjusted in stages, to ensure the best possible load distribution.

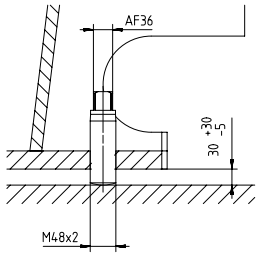
Remarks

*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 RCS-1002
Load at 700 bar: 880 kN

SECTION A-A
SCALE 1:5



SECTION B-B
SCALE 1:5



Proc.					6X52 6X52DF	6X52DF-1.1 6X52DF-2.1	6X52DF-A-1.0 6X52DF-M-1.0		
Change History	C	sja101	mhu039	18.04.2024	CNAA005392	Drawing updated		4	3
	B	sde101	mhu019	02.10.2019	EAAD090713	Legacy information. See corresponding ChangeNotice		4	3
	A	jba039	mhu019	05.01.2017	EAAD087035	Legacy information. See corresponding ChangeNotice		4	-
	-	wwa008	bha009	16.01.2015	EAAD778076	-		-	-
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved Activity Code	E	C

WIN GD Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT
Alignment With: Jacking Screws

separate BOM available | Dimension | Scale 1:50 | NX | Units [mm] [kg] | Basic Material | Net Weight 59.80

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

Main Design	Yes	Design Group	9710-01	Q-Code	X X 0	Standard	WDS
Qty per	Engine	A1	Item ID	PAAD180542		Drawing Page/s	1/1

SEQ NO	QTY	Item ID	Item Name Dimension	Standard-ID	Basic Material	Net Weight
001	26	107.245.895.200	WEDGE			8.51
002	8	PAAD318478	HYDRAULIC JACK			
003	8	PAAD318480	SUPPORT BLOCK			

Prod.			
	6 X52 6 X52DF	6 X52DF-1.1 6 X52DF-2.1	6 X52DF-A-1.0 6 X52DF-M-1.0

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C
A	sjo101	mhu019	18.04.2024	CNAA005392	Drawing Updated			4	3
-	dki021	mhu019	18.05.2020	EAAD785897	-			-	-

WIN GD
Winterthur Gas & Diesel

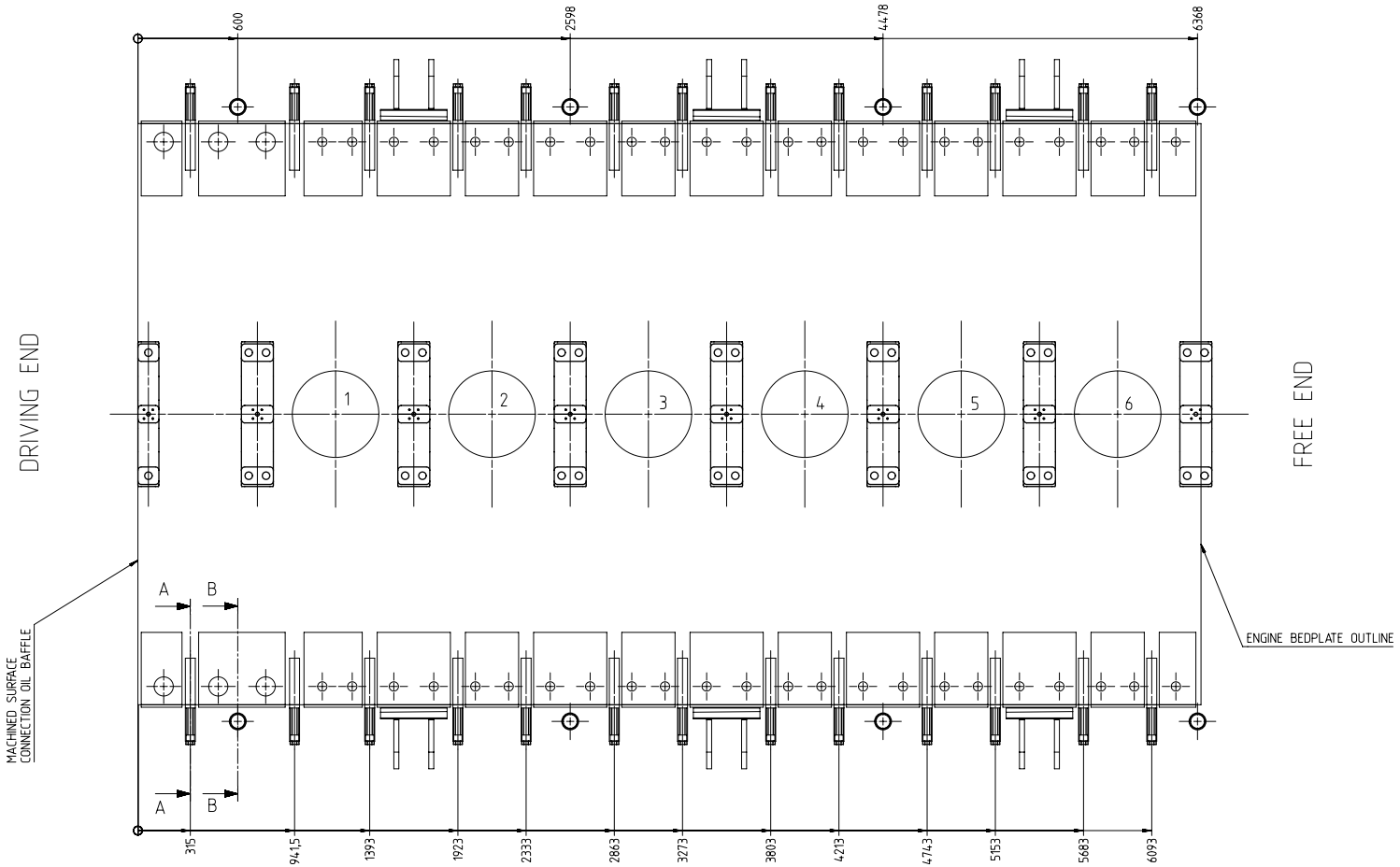
TOOL ENGINE ALIGNMENT

Alignment with: Wedges

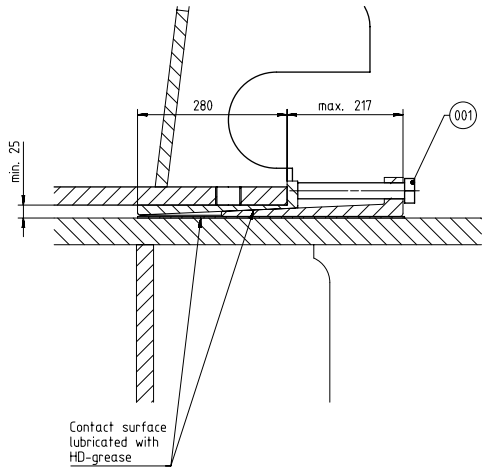
Bill Of Material

Dimension

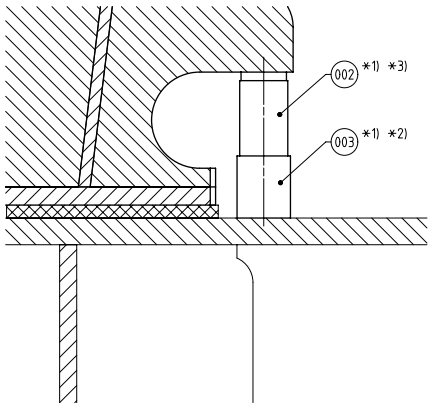
Units	[m] [kg]	Basic Material				Net Weight	221.3
Main Design	Yes	Design Group	9710-01	Q-Code	X X O	Standard	WDS
Qty per	Engine	A4	Item ID	PAAD353044		BOM Page/s	01/01



SECTION A-A ↻ 90°
SCALE 1:5



SECTION B-B ↻ 90°
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 RCS-1002
Load at 700 bar: 887 kN

Proj.					6X52 6X52DF	6X52DF-1.1 6X52DF-2.1	6X52DF-A-1.0 6X52DF-M-1.0		
Change History	A	sjo101	mhu039	18.04.2024	CNA005392	Drawing Updated		4	3
	-	dki021	mhu019	18.05.2020	EAAD785897	-		-	-
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C

WIN GD Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT
Alignment with: Wedges

separate BOM available | Dimension | Scale 1:15 | NX | Units [mm] [kg] | Basic Material | Net Weight 221.3

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

Main Design	Yes	Design Group	9710-01	Q-Code	X X 0	Standard	WDS
Qty per	Engine	A1	Item ID	PAAD353044		Drawing Page/s	1/1

SEQ NO	QTY	Item ID	Item Name / Dimension	Standard-ID	Basic Material	Net Weight
001	30	PAAD005430	JACKING SCREW		W-FU-235-N-T	2.3
002	8	PAAD318478	HYDRAULIC JACK			
003	8	PAAD318480	SUPPORT BLOCK			

Prod.			
7 X52 7 X52DF	7 X52DF-1.1 7 X52DF-2.1	7 X52DF-A-1.0 7 X52DF-M-1.0	

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C
B	sjo101	mhu019	18.04.2024	CNAA005392	Drawing Updated			4	3
A	sde101	mhu019	02.10.2019	EAAD090713	Legacy information. See corresponding ChangeNotice			4	3
-	dki021	hdo002	12.10.2017	EAAD781895	-			-	-

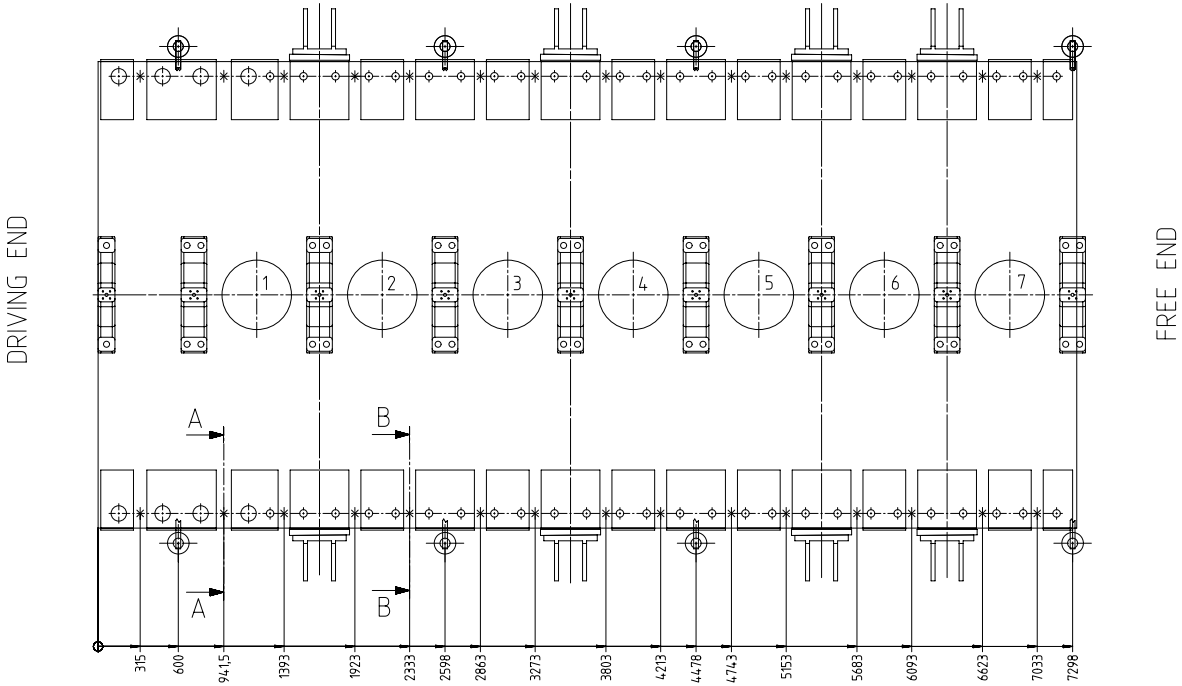
WIN GD
Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT

Alignment With: Jacking Screws

Bill Of Material

Dimension							
Units	[m] [kg]	Basic Material				Net Weight	69
Main Design	Yes	Design Group	9710-01	Q-Code	X X O	Standard	WDS
Qty per	Engine	A4	Item ID	PAAD276880		BOM Page/s	01/01



CAUTION

Risk:
Tool and/or bedplate damage

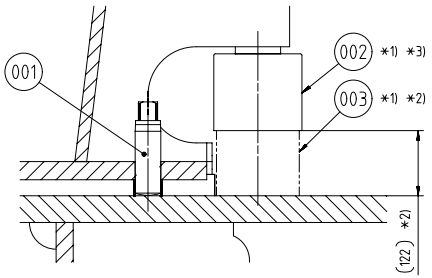
Countermeasure:
Avoid overloading of jacking screws and/or bedplate areas by observing the appropriate engine alignment/ assembly procedure as follows:

- Lift the engine into the engine room and place it on levelled , temporary blocks, underneath the bedplate beside the jacking screws.
- Screw in all jacking screws until touching the foundation top plate (the full number of jacking screws must be used)
- Apply hydraulic jacks to the protruding bedplate ribs nearby the jacking screws as indicated in the drawing.
- Remove the temporary blocks by slightly lifting the engine with the hydraulic jacks.
- Start with the engine alignment by means of jacking screws. Before turning a jacking screw, reduce its load by use of the hydraulic jacks. Any height adjustment must be performed in small steps - no more than 1 mm per step (equals to 1/2 screw turn, based on 2 mm thread pitch). Changes in height larger than the maximum allowance (1 mm) require a gradual process where all jacking screws are successively adjusted in stages, to ensure the best possible load distribution.

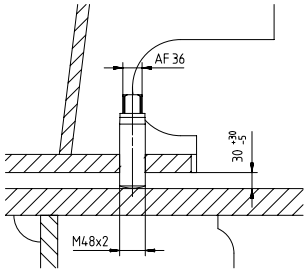
Remarks

*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 RCS-1002
Load at 700 bar: 880 kN

SECTION A-A
SCALE 1:5



SECTION B-B
SCALE 1:5



Proc.					7X52 7X52DF	7X52DF-1.1 7X52DF-2.1	7X52DF-A-1.0 7X52DF-M-1.0		
Change History	B	sjo101	mhu019	18.04.2024	CNAA005392	Drawing Updated		4	3
	A	sde101	mhu019	02.10.2019	EAAD090713	Legacy information. See corresponding ChangeNotice		4	3
	-	dki021	hdo002	12.10.2017	EAAD781895	-		-	-
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C

Approved

WIN GD Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT
Alignment With: Jacking Screws

separate BOM available

Dimension

Scale 1:25 NX | Units [mm] [kg] | Basic Material | Net Weight 69.00

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

Main Design	Yes	Design Group	9710-01	Q-Code	X X 0	Standard	WDS		
Qty per	Engine	A1	Item ID	PAAD276880		Drawing Page/s	1/1		

SEQ NO	QTY	Item ID	Item Name / Dimension	Standard-ID	Basic Material	Net Weight
001	30	107.245.895.200	WEDGE			8.51
002	8	PAAD318478	HYDRAULIC JACK			
003	8	PAAD318480	SUPPORT BLOCK			

Prod.			
	7 X52 7 X52DF	7 X52DF-1.1 7 X52DF-2.1	7 X52DF-A-1.0 7 X52DF-M-1.0

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C
A	sjo101	mhu019	18.04.2024	CNAA005392	Drawing Updated			4	3
-	dki021	mhu019	18.05.2020	EAAD785897	-			-	-

WIN GD
Winterthur Gas & Diesel

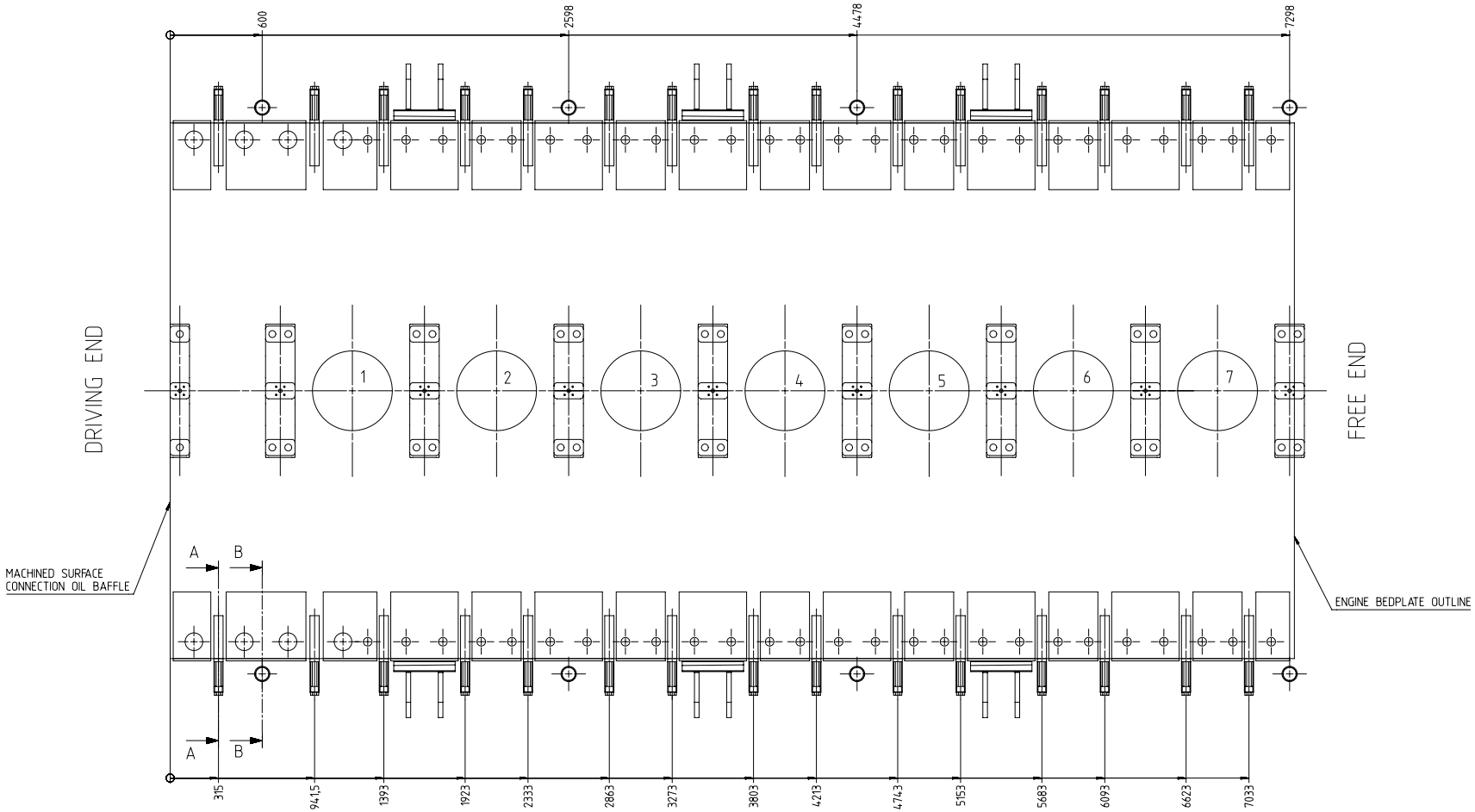
TOOL ENGINE ALIGNMENT

Alignment with: Wedges

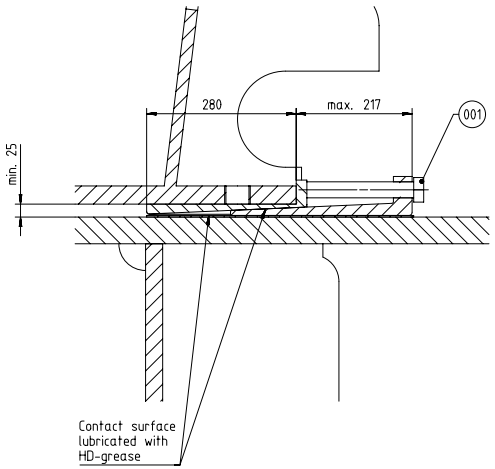
Bill Of Material

Dimension

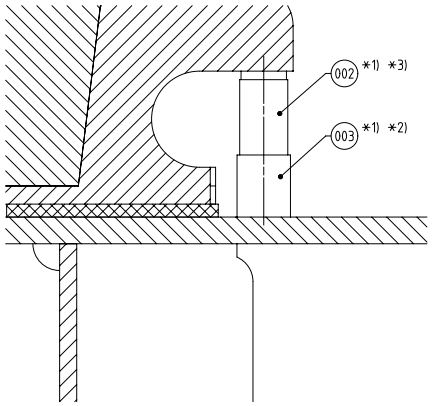
Units	[m] [kg]	Basic Material				Net Weight	0
Main Design	Yes	Design Group	9710-01	Q-Code	X X O	Standard	WDS
Qty per	Engine	A4	Item ID	PAAD353123		BOM Page/s	01/01



SECTION A-A ↻ 90°
SCALE 1:5



SECTION B-B ↻ 90°
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 RCS-1002
Load at 700 bar: 887 kN

Proj.					7X52 7X52DF	7X52DF-1.1 7X52DF-2.1	7X52DF-A-1.0 7X52DF-M-1.0		
Change History	A	sjo101	mhu039	18.04.2024	CNA005392	Drawing Updated		4	3
	-	dki021	mhu019	18.05.2020	EAAD785897	-		-	-
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C

WIN GD Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT
Alignment with: Wedges

separate BOM available | Dimension | Scale 1:15 | NX | Units [mm] [kg] | Basic Material | Net Weight 255.3

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

Main Design	Yes	Design Group	9710-01	Q-Code	X X 0	Standard	WDS
Qty per	Engine	A1	Item ID	PAAD353123		Drawing Page/s	1/1

SEQ NO	QTY	Item ID	Item Name / Dimension	Standard-ID	Basic Material	Net Weight
001	34	PAAD005430	JACKING SCREW		W-FU-235-N-T	2.3
002	10	PAAD318478	TOOL ENGINE ALIGNMENT			75
003	10	PAAD318480	TOOL ENGINE ALIGNMENT			75

Prod.			
8 X52 8 X52DF	8 X52DF-1.1 8 X52DF-2.1	8 X52DF-A-1.0 8 X52DF-M-1.0	

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Approved	Activity Code	E	C
B	sjo101	mhu019	18.04.2024	CNAA005392	Drawing Updated			4	3
A	dki021	mhu019	06.12.2019	EAAD091472	Legacy information. See corresponding ChangeNotice			4	-
-	sde101	mhu019	03.05.2018	EAAD782607	-			-	-

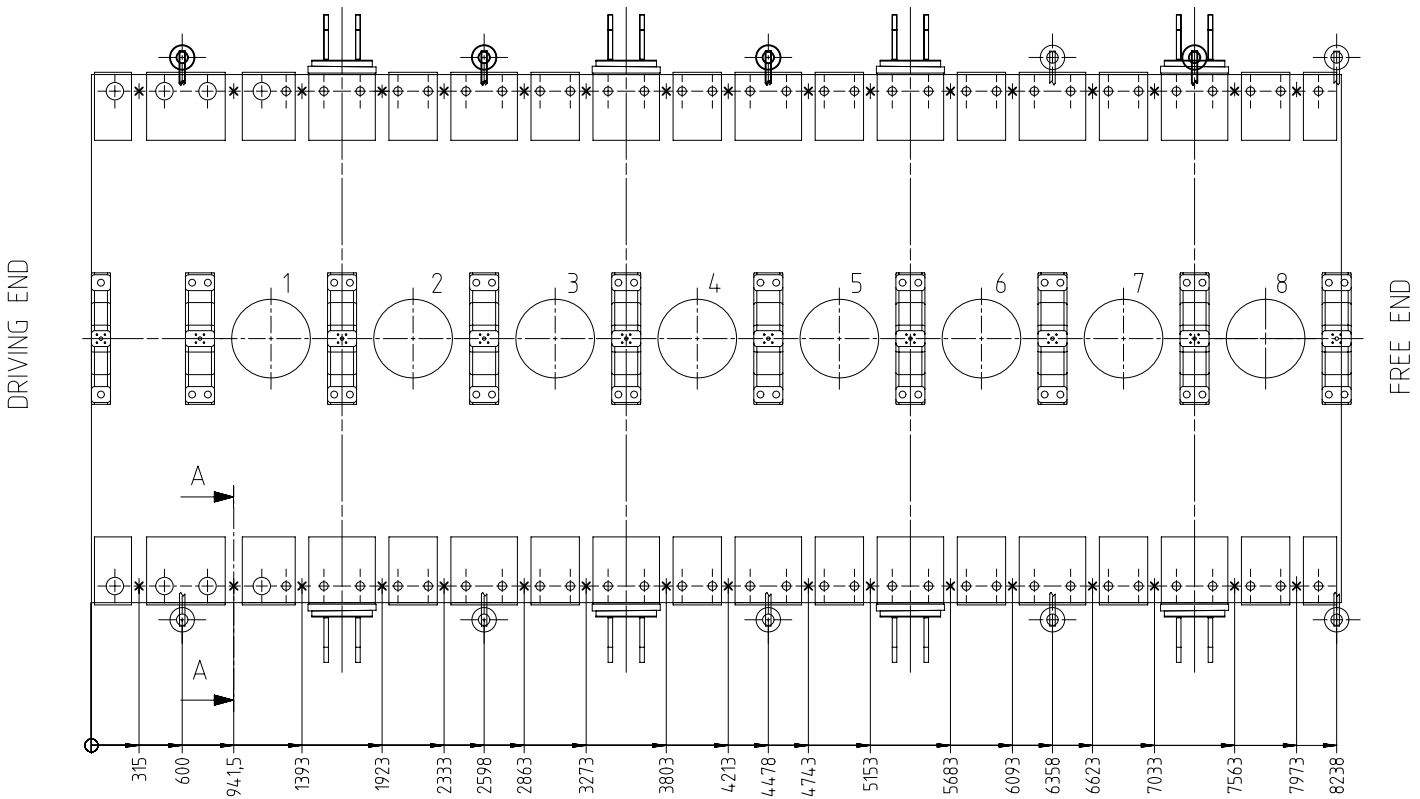
WIN GD
Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT

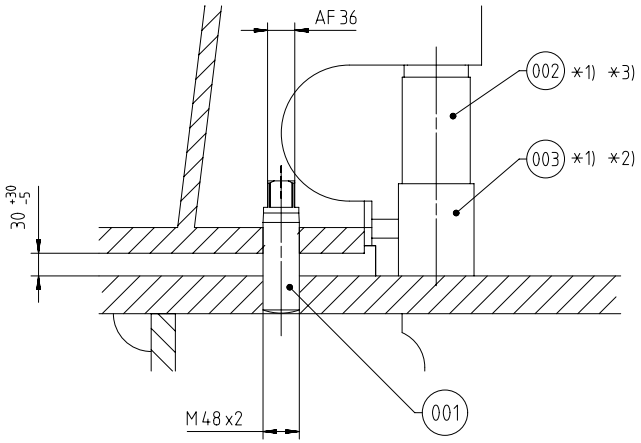
Alignment With: Jacking Screws

Bill Of Material

Dimension						
Units	[m] [kg]	Basic Material			Net Weight	78.2
Main Design	Yes	Design Group	9710-01	Q-Code X X O	Standard	WDS
Qty per	Engine	A4	Item ID PAAD286613		BOM Page/s	01/01



A – A 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-1002
Load at 700 bar: 880 kN

Prod.	8X52 8X52DF	8X52DF-1,1 8X52DF-2,1	8X52DF-A-1,0 8X52DF-M-1,0

Change History

	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
B	sjo101	mhu019	18.04.2024	CNAA005392	Drawing Updated		4	3
A	dki021	mhu019	06.12.2019	EAAD091472	Legacy information. See corresponding ChangeNotice		4	-
-	sde101	mhu019	03.05.2018	EAAD782607	-		-	-

Approved

WIN GD Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT

Alignment With: Jacking Screws

separate BOM available

Dimension

Scale 1:25 NX

Units [mm] [kg]

Basic Material

Net Weight 78.20

SURFACE PROTECTION SEE GROUP 0344

TOLERANCING PRINCIPLE ISO8015

GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Main Design	Yes	Design Group	9710-01	Q-Code	X X 0	Standard	WDS
Qty per	Engine	A2	Item ID	PAAD286613		Drawing Page/s	1/1

SEQ NO	QTY	Item ID	Item Name Dimension	Standard-ID	Basic Material	Net Weight
001	34	107.245.895.200	WEDGE			8.51
002	10	PAAD318478	HYDRAULIC JACK			
003	10	PAAD318480	SUPPORT BLOCK			

Prod.			
	8 X52 8 X52DF	8 X52DF-1.1 8 X52DF-2.1	8 X52DF-A-1.0 8 X52DF-M-1.0

Change History

Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis	Activity Code	E	C
A	sjo101	mhu019	18.04.2024	CNAA005392	Drawing Updated		4	3
-	dki021	mhu019	18.05.2020	EAAD785897	-		-	-

Approved

WIN GD
Winterthur Gas & Diesel

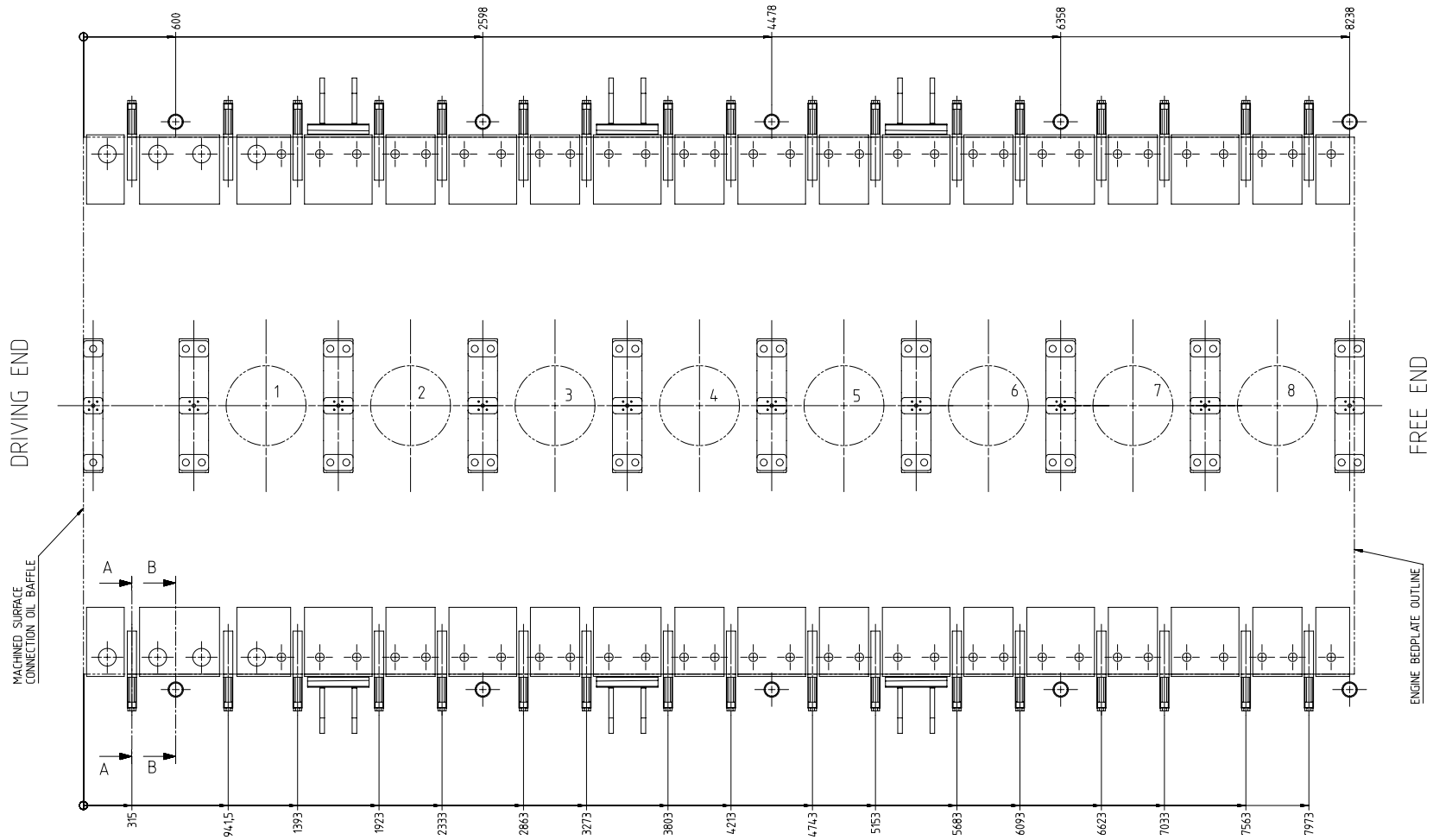
TOOL ENGINE ALIGNMENT

Alignment with: Wedges

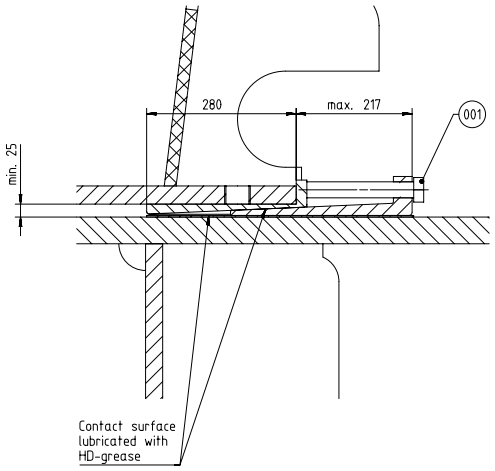
Bill Of Material

Dimension

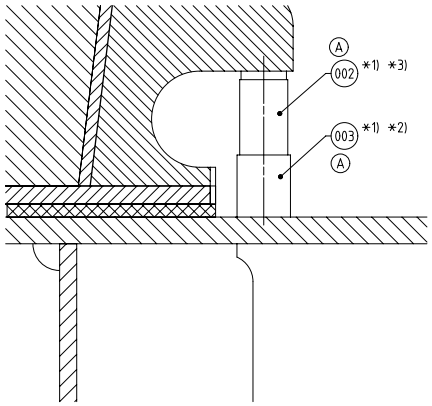
Units	[m] [kg]	Basic Material				Net Weight	289.3
Main Design	Yes	Design Group	9710-01	Q-Code	X X O	Standard	WDS
Qty per	Engine	A4	Item ID	PAAD353218		BOM Page/s	01/01



SECTION A-A ↻ 90°
SCALE 1:5



SECTION B-B ↻ 90°
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 RCS-1002
Load at 700 bar: 887 kN

Proj.					8X52 8X52DF	8X52DF-1.1 8X52DF-2.1	8X52DF-A-1.0 8X52DF-M-1.0		
Change History	A	sja101	mhu039	18.04.2024	CNA005392	Drawing Updated		4	3
	-	dki021	mhu019	18.05.2020	EAA0785897	-		-	-
	Rev.	Creator	Approver	Approval Date	Change ID	Change Synopsis Approved	Activity Code	E	C

WIN GD Winterthur Gas & Diesel

TOOL ENGINE ALIGNMENT
Alignment with: Wedges

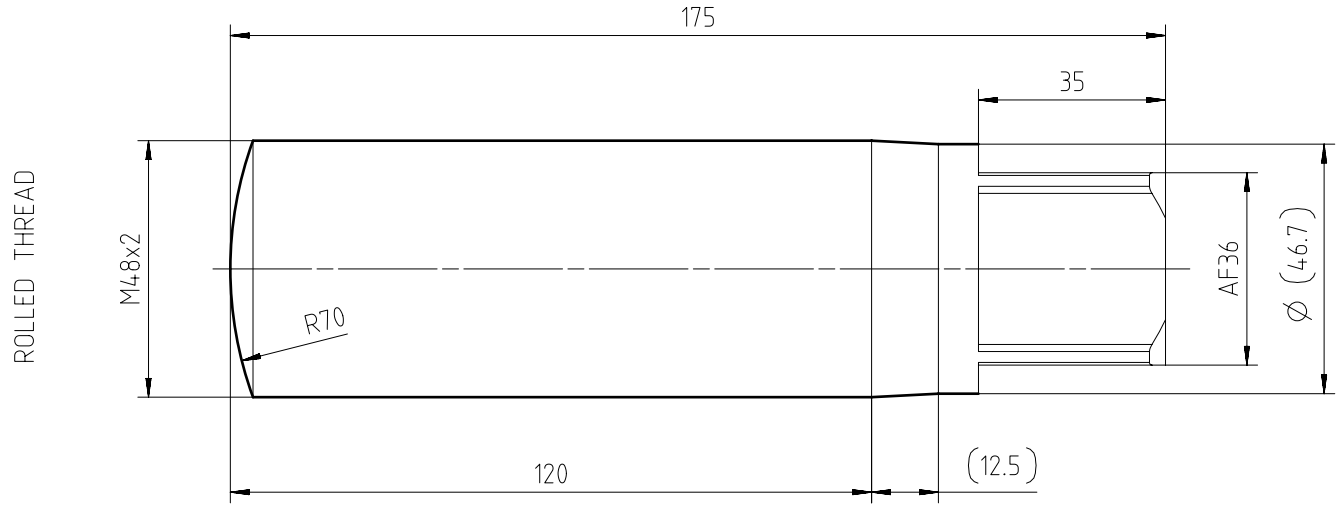
separate BOM available

Dimension

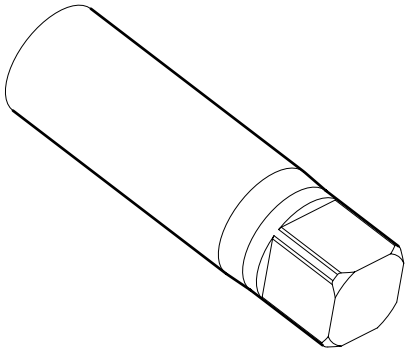
Scale 1:15 NX Units [mm] [kg] Basic Material Net Weight 289.3

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

Main Design	Yes	Design Group	9710-01	Q-Code	X X 0	Standard	WDS
Qty per	Engine	A1	Item ID	PAAD353218		Drawing Page/s	1/1



M 1:2



Free space for lic.									Q-Code XXXXX		Main Drw.
									Standard ISO; JIS		
Modif.	A	EAAD087035	22.11.2016								
		Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date		

WIN GD Winterthur Gas & Diesel

Product W-2S

JACKING SCREW

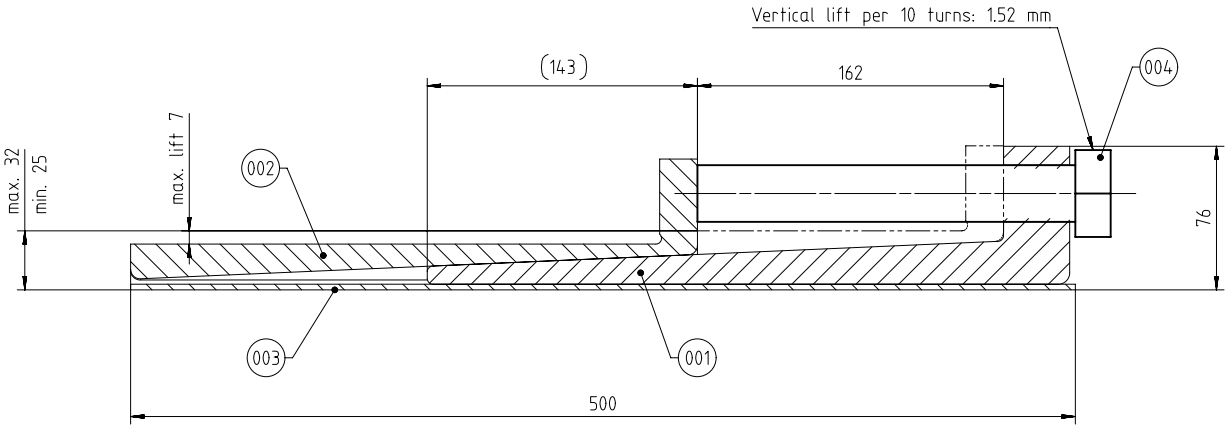
Abdrueckschraube

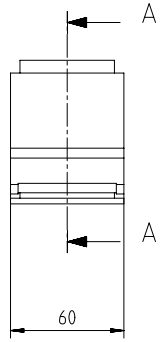
Units mm kg	NX		Basic Material W-FU-235-N-T			Net Weight 2,3
SURFACE PROTECTION SEE GROUP 0344	Made	04.06.2010 jba029 Baumann	Scale 1:1	Size A3	Page 1/1	Material ID PAAD005430
TOLERANCING PRINCIPLE ISO8015	Chkd	15.06.2010 wwr001 Wroblewski	Design Group 9710-01	Drawing ID DAAD006054		Rev. A
GENERAL TOLERANCES ACCORDING TO ISO2768-mK	Appd	17.06.2010 dst009 Strödecke				

Approved

ILD - INSTALLATION DRAWING - Internal

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

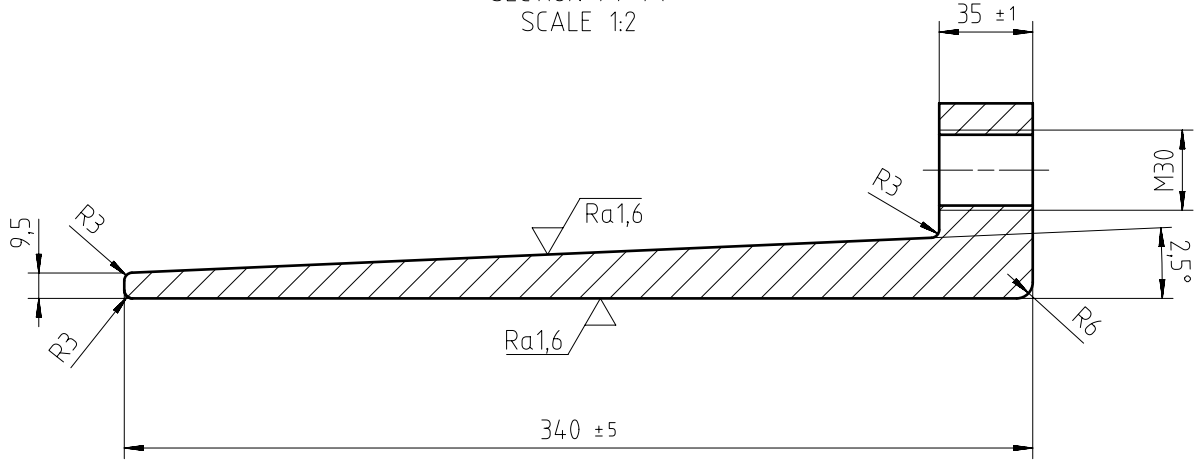
Schraeger Keil

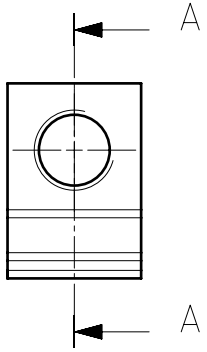
Units mm kg | NX | Basic Material | Net Weight 8,51

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

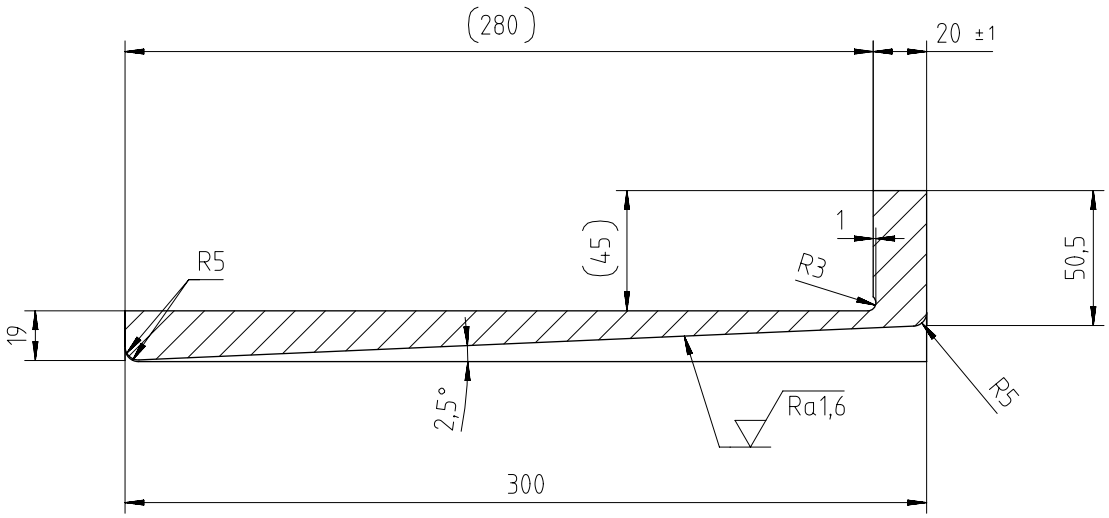
KEY

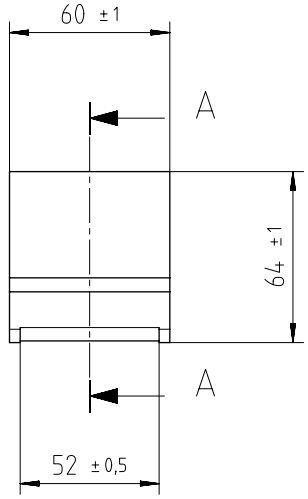
Keil

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	Number	Drawn date

WIN GD Winterthur Gas & Diesel

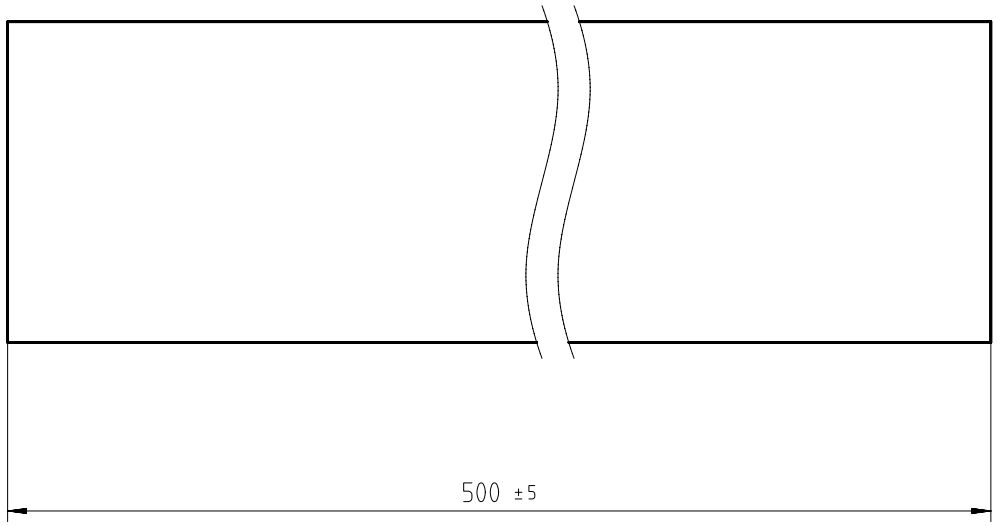
Product W-2S

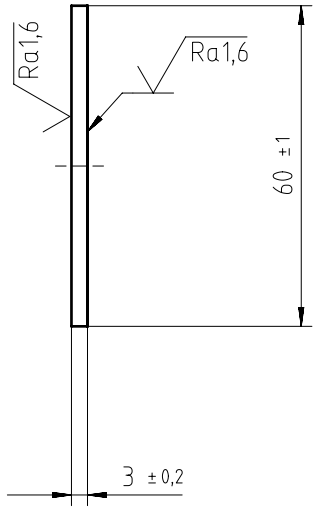
KEY

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





$\sqrt{Ra50}$ ($\sqrt{Ra1,6}$)

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	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				

Approved

DID - DIMENSIONAL DRAWING - Confidential

MIDS - TOOL-ENGINE-ALIGNMENT (DG9710-01)

WinGD X52 /X52DF/X52DF-1.1/X52DF-A-1.0/X52DF-M-1.0

TRACK CHANGES

DATE	SUBJECT	DESCRIPTION
2017-02-15	DRAWING SET	First web upload
2017-08-08	DAAD074045	Main drg. - new drawing revision
2017-08-08	DAAD062536	Main drg. - new revision
2017-10-17	DAAD093280	Main drg. – new for 7 cyl. engine version
2018-05-03	DAAD097346	Main drg.– new for 8 cyl. engine version
2019-10-03	DAAD074045 DAAD062536 DAAD093280	Main drgs – new revision
2019-12-19	DAAD125392	Main drg, 5cyl with wedges – new execution added
2020-09-11	DAAD128844 DAAD128894 DAAD128966	Main drgs, 6,7,8 cyl with wedges – added
2024-02-15	PAAD215869-C	New revision
2024-05-02	PAAD286613-B PAAD346519-A PAAD353044-A PAAD353123-A PAAD353218-A PAAD180542-C PAAD276880-B	New revisions

Winterthur Gas & Diesel Ltd.
Winterthur Gas & Diesel AG.
Winterthur Gas & Diesel S.A.

Schützenstrasse 3
PO Box 414, CH-8401
Winterthur, Switzerland

Tel. +41 (0)52 264 8844
Fax +41 (0)52 264 8866

www.wingd.com