## Available executions

| Execution No. | Material ID | Cylinder No. | Attribute 1: Engine execution | | Attribute 2: Stays location | | |
|---|---|---|---|---|---|---|---|
| | | | STANDARD | LEFT | FUEL PUMP SIDE | EXHAUST SIDE | BOTH SIDES |
| 001 | PAAD300929 | 5 | | X | | | X |
| 002 | PAAD300931 | 5 | | X | | X | |
| 003 | PAAD300932 | 5 | | X | X | | |
| 004 | PAAD300935 | 5 | X | | | | X |
| 005 | PAAD300937 | 5 | X | | | X | |
| 006 | PAAD300939 | 5 | X | | X | | |
| 007 | PAAD300922 | 6-8 | | X | | | X |
| 008 | PAAD300924 | 6-8 | | X | | X | |
| 009 | PAAD300925 | 6-8 | | X | X | | |
| 010 | PAAD300926 | 6-8 | X | | | | X |
| 011 | PAAD300927 | 6-8 | X | | | X | |
| 012 | PAAD300928 | 6-8 | 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.

This publication is designed to provide accurate and authoritative information with regard to the subject-matter covered as it was available at the time of printing. However, the publication deals with complicated technical matters suited only for specialists in the area, and the design of the subject-products is subject to regular improvements, modifications and changes. Consequently, the publisher and copyright owner of this publication cannot accept any responsibility or liability for any eventual errors or omissions in this document or for discrepancies arising from the features of any actual item in the respective product being different from those shown in this publication. The publisher and copyright owner shall under no circumstances be held liable for any financial consequential damages or other loss, or any other damage or injury, suffered by any party making use of this publication or the information contained herein.

| Prod. | X52DF<br>X52DF-1.1 | | | |
|---|---|---|---|---|

Change History

| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|
| - | sna102 | | | | New Master Design | | | |

WIN GD

# ENGINE STAYS
MIDS master drawing

separate BOM available

Dimension

| Scale | - | NX | Units [mm] [kg] | Basic Material | Net Weight | 0.001 |
|---|---|---|---|---|---|---|
| Main Design | | | Design Group | 9715 | Q-Code X X M | Standard WDS |
| Qty per | | | A4 | Item ID PTAA025559 | | Drawing Page/s 1/1 |

Copyright WinGD Ltd. All rights reserved.
By taking possession of the drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of WinGD Ltd.

| SEQ NO | QTY | Item ID | Item Name<br>Dimension | Standard-ID | Basic Material | Net Weight |
|---|---|---|---|---|---|---|
| 001 | 1 | PAAD294622 | ENGINE STAYS<br>Longitudinal Stays | | | 3590 |
| 002 | 1 | PAAD294782 | ENGINE STAYS<br>BS, LEFT | | | 5777 |

| Prod. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 5 X52DF | | | | | | | |

Change History

| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|
| C | sna102 | mhu019 | 11.11.2022 | CNAA002688 | Main Design/Drawing Introduced | | 4 | 3 |
| B | sde101 | mhu019 | 12.11.2020 | EAAD095177 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| A | dki021 | mhu019 | 08.10.2018 | EAAD089852 | Legacy information. See corresponding ChangeNotice | | 4 | - |
| - | dki021 | mhu019 | 17.07.2018 | | - | | - | - |

Approved

WIN GD
Winterthur Gas & Diesel

# ENGINE STAYS

**B**ill **O**f **M**aterial

Dimension

Copyright **Winterthur Gas & Diesel Ltd.** All rights reserved. By taking possession of the document the recipient recognizes and honours these rights. Neither the whole nor any part of this document may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of **Winterthur Gas & Diesel Ltd.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Units | [m] [kg] | Basic Material | | | | Net Weight | 9367 |
| Main Design | Yes | Design Group | 9715 | Q-Code | XXXXX | Standard | WDS |
| Qty per | Engine | A4 | Item ID | PAAD300929 | | BOM Page/s | 01/01 |

| SEQ NO | QTY | Item ID | Item Name<br>Dimension | Standard-ID | Basic Material | Net Weight |
|---|---|---|---|---|---|---|
| 001 | 1 | PAAD294622 | ENGINE STAYS<br>Longitudinal Stays | | | 3590 |
| 002 | 1 | PAAD294763 | ENGINE STAYS<br>ES, LEFT | | | 0.001 |

| Prod. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 5 X52DF | | | | | | | |

Change History

| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|
| C | sna102 | mhu019 | 11.11.2022 | CNAA002688 | Main Design/Drawing Introduced | | 4 | 3 |
| B | sde101 | mhu019 | 12.11.2020 | EAAD095177 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| A | dki021 | mhu019 | 08.10.2018 | EAAD089852 | Legacy information. See corresponding ChangeNotice | | 4 | - |
| - | dki021 | mhu019 | 17.07.2018 | | - | | - | - |

Approved

WIN GD
Winterthur Gas & Diesel

# ENGINE STAYS

**B**ill **O**f **M**aterial

Dimension

Copyright **Winterthur Gas & Diesel Ltd.** All rights reserved. By taking possession of the document the recipient recognizes and honours these rights. Neither the whole nor any part of this document may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of **Winterthur Gas & Diesel Ltd.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Units | [m] [kg] | Basic Material | | | | Net Weight | 3590 |
| Main Design | Yes | Design Group | 9715 | Q-Code | XXXXX | Standard | WDS |
| Qty per | Engine | A4 | Item ID | PAAD300931 | | BOM Page/s | 01/01 |

| SEQ NO | QTY | Item ID | Item Name<br>Dimension | Standard-ID | Basic Material | Net Weight |
|---|---|---|---|---|---|---|
| 001 | 1 | PAAD294622 | ENGINE STAYS<br>Longitudinal Stays | | | 3590 |
| 002 | 1 | PAAD294661 | ENGINE STAYS<br>FS, LEFT | | | 0.001 |

| Prod. | 5 X52DF | | | |
|---|---|---|---|---|

Change History

| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|
| C | sna102 | mhu019 | 11.11.2022 | CNAA002688 | Main Design/Drawing Introduced | | 4 | 3 |
| B | sde101 | mhu019 | 12.11.2020 | EAAD095177 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| A | dki021 | mhu019 | 08.10.2018 | EAAD089852 | Legacy information. See corresponding ChangeNotice | | 4 | - |
| - | dki021 | mhu019 | 17.07.2018 | | - | | - | - |
| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Approved | Activity Code | E | C |

WIN GD
Winterthur Gas & Diesel

# ENGINE STAYS

**B**ill **O**f **M**aterial

Dimension

Copyright **Winterthur Gas & Diesel Ltd.** All rights reserved. By taking possession of the document the recipient recognizes and honours these rights. Neither the whole nor any part of this document may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of **Winterthur Gas & Diesel Ltd.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Units | [m] [kg] | Basic Material | | | | Net Weight | 3590 |
| Main Design | Yes | Design Group | 9715 | Q-Code | XXXXX | Standard | WDS |
| Qty per | Engine | A4 | Item ID | PAAD300932 | | BOM Page/s | 01/01 |

| SEQ NO | QTY | Item ID | Item Name<br>Dimension | Standard-ID | Basic Material | Net Weight |
|---|---|---|---|---|---|---|
| 001 | 1 | PAAD294622 | ENGINE STAYS<br>Longitudinal Stays | | | 3590 |
| 002 | 1 | PAAD294648 | ENGINE STAYS<br>BS, STD | | | 5777 |

| Prod. | | | | |
|---|---|---|---|---|
| | 5 X52DF | | | |

Change History

| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|
| C | sna102 | mhu019 | 11.11.2022 | CNAA002688 | Main Design/Drawing Introduced | | 4 | 3 |
| B | sde101 | mhu019 | 12.11.2020 | EAAD095177 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| A | dki021 | mhu019 | 08.10.2018 | EAAD089852 | Legacy information. See corresponding ChangeNotice | | 4 | - |
| - | dki021 | mhu019 | 17.07.2018 | | - | | - | - |

WIN GD
Winterthur Gas & Diesel

# ENGINE STAYS

**Bill Of Material**

Dimension

Copyright **Winterthur Gas & Diesel Ltd.** All rights reserved. By taking possession of the document the recipient recognizes and honours these rights. Neither the whole nor any part of this document may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of **Winterthur Gas & Diesel Ltd.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Units | [m] [kg] | Basic Material | | | | Net Weight | 9367 |
| Main Design | Yes | Design Group | 9715 | Q-Code | XXXXX | Standard | WDS |
| Qty per | Engine | A4 | Item ID | PAAD300935 | | BOM Page/s | 01/01 |

| SEQ NO | QTY | Item ID | Item Name<br>Dimension | Standard-ID | Basic Material | Net Weight |
|---|---|---|---|---|---|---|
| 001 | 1 | PAAD294622 | ENGINE STAYS<br>Longitudinal Stays | | | 3590 |
| 002 | 1 | PAAD294628 | ENGINE STAYS<br>ES, STD | | | 0.001 |

| Prod. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 5 X52DF | | | | | | | |

Change History

| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|
| C | sna102 | mhu019 | 11.11.2022 | CNAA002688 | Main Design/Drawing Introduced | | 4 | 3 |
| B | sde101 | mhu019 | 12.11.2020 | EAAD095177 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| A | dki021 | mhu019 | 08.10.2018 | EAAD089852 | Legacy information. See corresponding ChangeNotice | | 4 | - |
| - | dki021 | mhu019 | 17.07.2018 | | - | | - | - |

Approved

WIN GD
Winterthur Gas & Diesel

# ENGINE STAYS

**Bill Of Material**

Dimension

Copyright **Winterthur Gas & Diesel Ltd.** All rights reserved. By taking possession of the document the recipient recognizes and honours these rights. Neither the whole nor any part of this document may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of **Winterthur Gas & Diesel Ltd.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Units | [m] [kg] | Basic Material | | | | Net Weight | 3590 |
| Main Design | Yes | Design Group | 9715 | Q-Code | XXXXX | Standard | WDS |
| Qty per | Engine | A4 | Item ID | PAAD300937 | | BOM Page/s | 01/01 |

| SEQ NO | QTY | Item ID | Item Name<br>Dimension | Standard-ID | Basic Material | Net Weight |
|---|---|---|---|---|---|---|
| 001 | 1 | PAAD294622 | ENGINE STAYS<br>Longitudinal Stays | | | 3590 |
| 002 | 1 | PAAD294642 | ENGINE STAYS<br>FS, STD | | | 0.001 |

| Prod. | 5 X52DF | | | |
|---|---|---|---|---|

Change History

| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|
| C | sna102 | mhu019 | 11.11.2022 | CNAA002688 | Main Design/Drawing Introduced | | 4 | 3 |
| B | sde101 | mhu019 | 12.11.2020 | EAAD095177 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| A | dki021 | mhu019 | 08.10.2018 | EAAD089852 | Legacy information. See corresponding ChangeNotice | | 4 | - |
| - | dki021 | mhu019 | 17.07.2018 | | - | | - | - |

WIN GD
Winterthur Gas & Diesel

# ENGINE STAYS

**B**ill **O**f **M**aterial

Copyright **Winterthur Gas & Diesel Ltd.** All rights reserved. By taking possession of the document the recipient recognizes and honours these rights. Neither the whole nor any part of this document may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of **Winterthur Gas & Diesel Ltd.**

Dimension

| Units | [m] [kg] | Basic Material | | | Net Weight | 3590 |
|---|---|---|---|---|---|---|
| Main Design | Yes | Design Group | 9715 | Q-Code XXXXX | Standard | WDS |
| Qty per | Engine | A4 | Item ID | PAAD300939 | BOM Page/s | 01/01 |

| SEQ NO | QTY | Item ID | Item Name / Dimension | Standard-ID | Basic Material | Net Weight |
|---|---|---|---|---|---|---|
| 001 | 1 | PAAD294782 | ENGINE STAYS<br>BS, LEFT | | | 5777 |

| Prod. | 6,7,8 X52DF | | | |
|---|---|---|---|---|

Change History

| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|
| C | sna102 | mhu019 | 11.11.2022 | CNAA002688 | Main Design/Drawing Introduced | | 4 | 3 |
| B | sde101 | mhu019 | 12.11.2020 | EAAD095177 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| A | dki021 | mhu019 | 08.10.2018 | EAAD089852 | Legacy information. See corresponding ChangeNotice | | 4 | - |
| - | dki021 | mhu019 | 17.07.2018 | | - | | - | - |
| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Approved / Activity Code | E | C |

WIN GD
Winterthur Gas & Diesel

# ENGINE STAYS

**Bill Of Material**

Dimension

Copyright **Winterthur Gas & Diesel Ltd.** All rights reserved. By taking possession of the document the recipient recognizes and honours these rights. Neither the whole nor any part of this document may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of **Winterthur Gas & Diesel Ltd.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Units | [m] [kg] | Basic Material | | | | Net Weight | 5777 |
| Main Design | Yes | Design Group | 9715 | Q-Code | XXXXX | Standard | WDS |
| Qty per | Engine | A4 | Item ID | PAAD300922 | | BOM Page/s | 01/01 |

| SEQ NO | QTY | Item ID | Item Name / Dimension | Standard-ID | Basic Material | Net Weight |
|---|---|---|---|---|---|---|
| 001 | 1 | PAAD294763 | ENGINE STAYS<br>ES, LEFT | | | 0.001 |

| Prod. | | | | |
|---|---|---|---|---|
| | 6,7,8 X52DF | | | |

Change History

| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|
| C | sna102 | mhu019 | 11.11.2022 | CNAA002688 | Main Design/Drawing Introduced | | 4 | 3 |
| B | sde101 | mhu019 | 12.11.2020 | EAAD095177 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| A | dki021 | mhu019 | 08.10.2018 | EAAD089852 | Legacy information. See corresponding ChangeNotice | | 4 | - |
| - | dki021 | mhu019 | 17.07.2018 | | - | | - | - |
| | | | | | | Approved | | |

WIN GD
Winterthur Gas & Diesel

# ENGINE STAYS

**Bill Of Material**

Dimension

Copyright **Winterthur Gas & Diesel Ltd.** All rights reserved. By taking possession of the document the recipient recognizes and honours these rights. Neither the whole nor any part of this document may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of **Winterthur Gas & Diesel Ltd.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Units | [m] [kg] | Basic Material | | | | Net Weight | 0.001 |
| Main Design | Yes | Design Group | 9715 | Q-Code | XXXXX | Standard | WDS |
| Qty per | Engine | A4 | Item ID | PAAD300924 | | BOM Page/s | 01/01 |

| SEQ NO | QTY | Item ID | Item Name / Dimension | Standard-ID | Basic Material | Net Weight |
|---|---|---|---|---|---|---|
| 001 | 1 | PAAD294661 | ENGINE STAYS<br>FS, LEFT | | | 0.001 |

| Prod. | | | | |
|---|---|---|---|---|
| | 6,7,8 X52DF | | | |

Change History

| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|
| C | sna102 | mhu019 | 11.11.2022 | CNAA002688 | Main Design/Drawing Introduced | | 4 | 3 |
| B | sde101 | mhu019 | 12.11.2020 | EAAD095177 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| A | dki021 | mhu019 | 08.10.2018 | EAAD089852 | Legacy information. See corresponding ChangeNotice | | 4 | - |
| - | dki021 | mhu019 | 17.07.2018 | | - | | - | - |
| | | | | | | Approved | | |

WIN GD
Winterthur Gas & Diesel

# ENGINE STAYS

**Bill Of Material**

Dimension

Copyright **Winterthur Gas & Diesel Ltd.** All rights reserved. By taking possession of the document the recipient recognizes and honours these rights. Neither the whole nor any part of this document may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of **Winterthur Gas & Diesel Ltd.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Units | [m] [kg] | Basic Material | | | | Net Weight | 0.001 |
| Main Design | Yes | Design Group | 9715 | Q-Code | XXXXX | Standard | WDS |
| Qty per | Engine | A4 | Item ID | PAAD300925 | | BOM Page/s | 01/01 |

| SEQ NO | QTY | Item ID | Item Name / Dimension | Standard-ID | Basic Material | Net Weight |
|---|---|---|---|---|---|---|
| 001 | 1 | PAAD294648 | ENGINE STAYS<br>BS, STD | | | 5777 |

| Prod. | 6,7,8 X52DF | | | | | | | |
|---|---|---|---|---|---|---|---|---|

Change History

| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|
| C | sna102 | mhu019 | 11.11.2022 | CNAA002688 | Main Design/Drawing Introduced | | 4 | 3 |
| B | sde101 | mhu019 | 12.11.2020 | EAAD095177 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| A | dki021 | mhu019 | 08.10.2018 | EAAD089852 | Legacy information. See corresponding ChangeNotice | | 4 | - |
| - | dki021 | mhu019 | 17.07.2018 | | - | | - | - |
| | | | | | | Approved | | |

WIN GD
Winterthur Gas & Diesel

# ENGINE STAYS

**B**ill **O**f **M**aterial

Dimension

Copyright **Winterthur Gas & Diesel Ltd.** All rights reserved. By taking possession of the document the recipient recognizes and honours these rights. Neither the whole nor any part of this document may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of **Winterthur Gas & Diesel Ltd.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Units | [m] [kg] | Basic Material | | | | Net Weight | 5777 |
| Main Design | Yes | Design Group | 9715 | Q-Code | XXXXX | Standard | WDS |
| Qty per | Engine | A4 | Item ID | PAAD300926 | | BOM Page/s | 01/01 |

| SEQ NO | QTY | Item ID | Item Name / Dimension | Standard-ID | Basic Material | Net Weight |
|---|---|---|---|---|---|---|
| 001 | 1 | PAAD294628 | ENGINE STAYS<br>ES, STD | | | 0.001 |

| Prod. | 6,7,8 X52DF | | | |
|---|---|---|---|---|

Change History

| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|
| C | sna102 | mhu019 | 11.11.2022 | CNAA002688 | Main Design/Drawing Introduced | | 4 | 3 |
| B | sde101 | mhu019 | 12.11.2020 | EAAD095177 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| A | dki021 | mhu019 | 08.10.2018 | EAAD089852 | Legacy information. See corresponding ChangeNotice | | 4 | - |
| - | dki021 | mhu019 | 17.07.2018 | | - | | - | - |

Approved

WIN GD
Winterthur Gas & Diesel

# ENGINE STAYS

**B**ill **O**f **M**aterial

Dimension

Copyright **Winterthur Gas & Diesel Ltd.** All rights reserved. By taking possession of the document the recipient recognizes and honours these rights. Neither the whole nor any part of this document may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of **Winterthur Gas & Diesel Ltd.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Units | [m] [kg] | Basic Material | | | | Net Weight | 0.001 |
| Main Design | Yes | Design Group | 9715 | Q-Code | XXXXX | Standard | WDS |
| Qty per | Engine | A4 | Item ID | PAAD300927 | | BOM Page/s | 01/01 |

| SEQ NO | QTY | Item ID | Item Name / Dimension | Standard-ID | Basic Material | Net Weight |
|---|---|---|---|---|---|---|
| 001 | 1 | PAAD294642 | ENGINE STAYS<br>FS, STD | | | 0.001 |

| Prod. | 6,7,8 X52DF | | | |
|---|---|---|---|---|

Change History

| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|
| C | sna102 | mhu019 | 11.11.2022 | CNAA002688 | Main Design/Drawing Introduced | | 4 | 3 |
| B | sde101 | mhu019 | 12.11.2020 | EAAD095177 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| A | dki021 | mhu019 | 08.10.2018 | EAAD089852 | Legacy information. See corresponding ChangeNotice | | 4 | - |
| - | dki021 | mhu019 | 17.07.2018 | | - | | - | - |
| | | | | | | Approved | | |

WIN GD
Winterthur Gas & Diesel

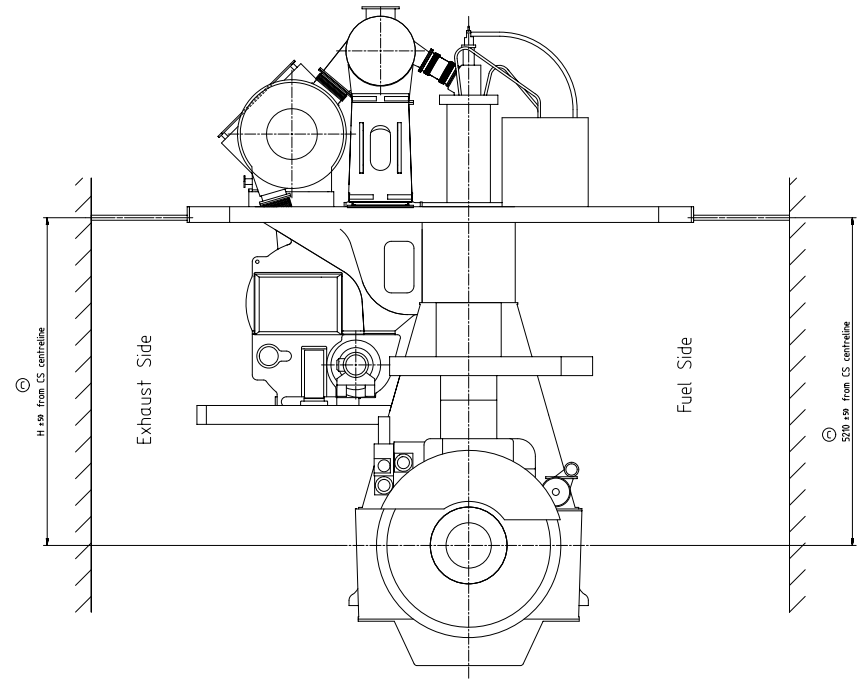
# ENGINE STAYS

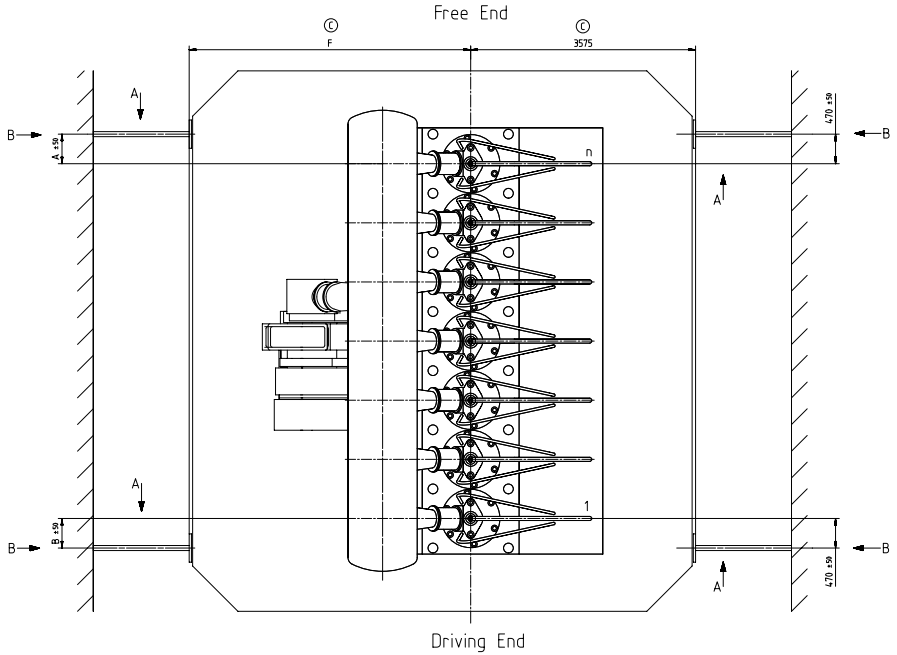
**B**ill **O**f **M**aterial

Dimension

Copyright **Winterthur Gas & Diesel Ltd.** All rights reserved. By taking possession of the document the recipient recognizes and honours these rights. Neither the whole nor any part of this document may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of **Winterthur Gas & Diesel Ltd.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Units | [m] [kg] | Basic Material | | | | Net Weight | 0.001 |
| Main Design | Yes | Design Group | 9715 | Q-Code | XXXXX | Standard | WDS |
| Qty per | Engine | A4 | Item ID | PAAD300928 | | BOM Page/s | 01/01 |



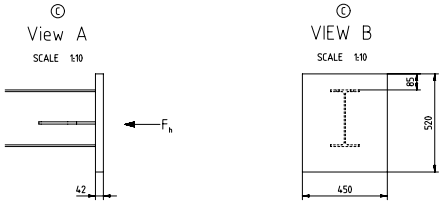

Remark:
The Engine outline view is drawn for a 7 cylinder with 1 TC. However, the specification of the stays attachment points in relation to the foremost/aft cylinder is vaild for all cylinder numbers and TC configulation. TC specific stay positions are provided in the table on right hand side.

Ⓒ

Position of stay attachment points on platform side

| No. of Cyl. | Turbocharger type | A | B | F | H |
|---|---|---|---|---|---|
| 5 | 1 x A170-L | ON REQUEST | | | |
| | 1 x A265-L | | | | |
| | 1 x MET66MB | | | | |
| 6 | 1 x A175-L | ON REQUEST | | | |
| | 1 x A265-L | | | | |
| | 1 x A270-L | | | | |
| | 1 x MET66MB | | | | |
| 7 | 1 x A175-L | ON REQUEST | | | |
| | 1 x A270-L | 470 | 470 | 4475 | 5210 |
| | 1 x MET60MB | 470 | 470 | 4475 | 5210 |
| | 1 x MET66MB | 470 | 470 | 4475 | 5210 |
| | 1 x MET71MB | ON REQUEST | | | |
| | 2 x A165-L | | | | |
| | 2 x MET48MB | | | | |
| 8 | 2 x A165-L | ON REQUEST | | | |
| | 2 x MET53MB | | | | |

Layout of stays attachment points on platform side according to WinGD standard design




Requirements on stays attachment points at ship hull side (per engine stay)

| | | | |
|---|---|---|---|
| Max. force acting on ship's hull | $Fh_{max.}$ | (kN) | *1) |
| Minimum stiffness | $k_{min.}$ | (N/m) | 0.5 x $10^9$ |
| Permissible deflection per 100 kN | $Def_{max.}$ | (mm) | 0.2 |

*1) Maximum engine force resulting from lateral moments of X/H type at the project specific rating plus stays pre-tensioning force according to satys supplier's specification

Ⓒ

Requirements for application of hydraulic stays on fuel side AND exhaust side

- The selected stays must have makers' acceptance for both side engine installation.
- Installed on fuel side (FS) AND exhaust side (ES).
- The amount of stays must be determined based on the requirement and stays suppliers specification. The transferred forces must be taken into consideration. The engine forces and moments are defined in the relevant engine dynamic data sheet "Forces and Moments" which is linked in the Marine Installation Manual (MIM). Stay pre-tensioning forces (max. piston hydraulic force) must also be considered and are provided by the stays supplier.
- The stay attachment point requirements must be crosschecked with the specification. The maximum forces transferred by the selected stays type must be within the range as defined on this drawing for standard engine execution. If the total force per stay exceeds the permissible range, reinforcement of the platform attachment points can be requested from the engine builder.
- The stays must adapt to the ship hull deformation and reduce the static reaction force acting on the engine and ship hull attachment points.
- The stays must increase the total stiffness of the system to avoid harmful resonance conditions. The dynamic stiffness of the stays (dynamic spring rate) is provided by the stays supplier.
- The stays must dampen accordingly to ensure that the acceptable vibrations (RMS limits) for the WinGD 2-stroke engine are met.
- The performance of the stays must be checked during sea trial by vibration measurements.
- The installation and commissioning of the stays must be in accordance with the supplier's instructions.

| | | | |
|---|---|---|---|
| Max. permissible force in lateral direction | $F_h$ | (kN) | ± 320 |
| Stiffness | k | (N/m) | 0.5 x $10^9$ |
| Permissible vertical stays displacement | $Def_v$ | (mm) | ± 50 |
| Permissible horizontal stays displacement | $Def_h$ | (mm) | ± 50 |
| Permissible angular stays displacement | $Def_\alpha$ | (°) | 2 |

| Rev. | Creator | Date Author | Approval | Date | Change Nr. | Change Synopsis | Approved | Activity Code | Page |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | XS207 | | | |
| C | sde101 | rthu108 | 12.03.2020 | | CM003408 | Drawing Updated | | | 4 3 |
| B | sde101 | mhu019 | 12.11.2019 | | EAAD095177 | Legacy information. See corresponding ChangeNotice | | | 4 3 |
| A | dhi021 | mhu019 | 06.10.2018 | | EAAD089852 | Legacy information. See corresponding ChangeNotice | | | 4 - |
| - | dhi021 | mhu019 | 17.07.2018 | | | - | | | - - |

Drawing Release

ENGINE STAYS

Dimension: BS, LEFT

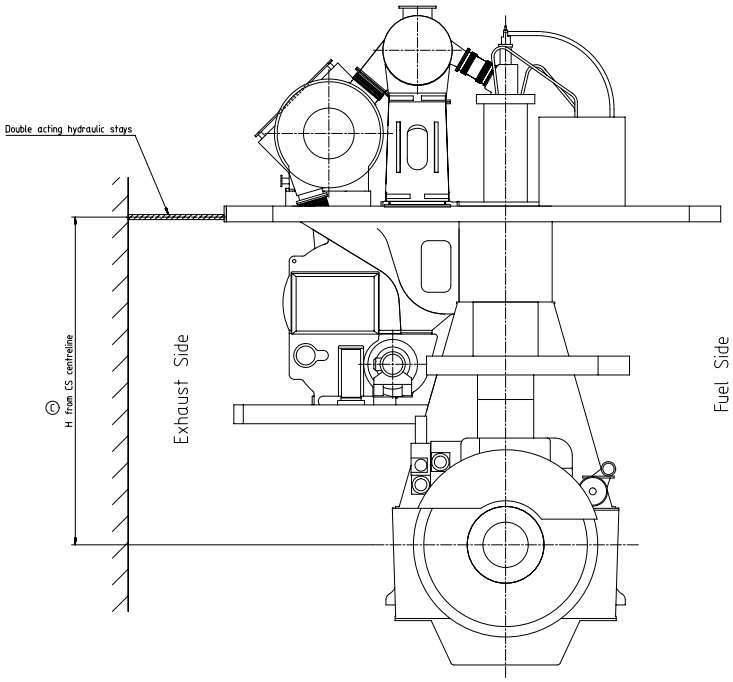
Scale: 1:30 | NX | Units: [mm] [kg] | Basic Material: | Net Weight: 0.001

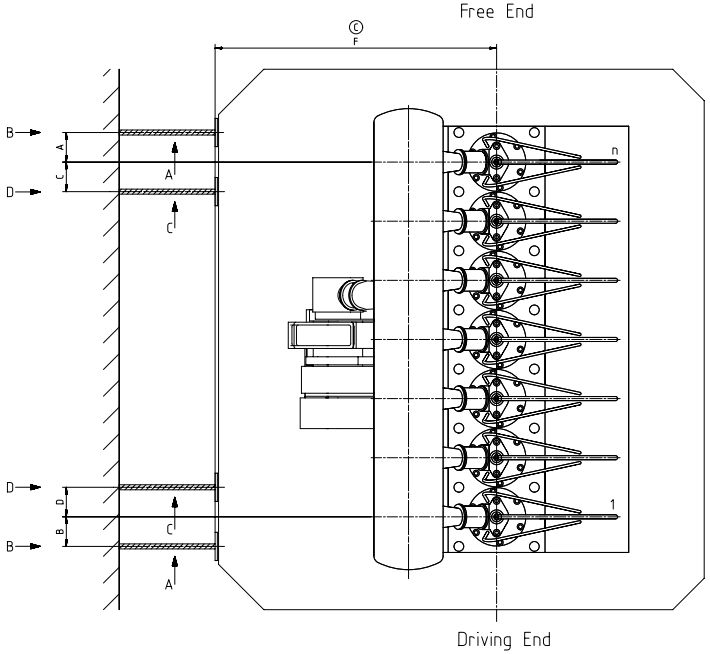
SURFACE PROTECTION SEE GROUP 8344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of this drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be copied, used for any purpose, communicated, marketing or any other purpose nor exposed in any way not made accessible to third persons without the previous written consent of Winterthur Gas & Diesel Ltd.

Main Design | Design Group: 9715 | Co-Code: XXXXX | Standard: WDS

City per: | Size: A0 | Item ID: PAAD294782 | Drawing Pages: 1/1




Remark:
The Engine outline view is drawn for a 7 cylinder with 1 TC. However, the specification of the stays attachment points in relation to the foremost/aft cylinder is vaild for all cylinder numbers and TC configulation. TC specific stay positions are provided in the table on right hand side.

Ⓒ

Position of stay attachment points on platform side

| No. of Cyl. | Turbocharger type | A | B | C | D | F | H |
|---|---|---|---|---|---|---|---|
| 5 | 1 x A170-L | ON REQUEST | | | | | |
| | 1 x A265-L | | | | | | |
| | 1 x MET66MB | | | | | | |
| 6 | 1 x A175-L | ON REQUEST | | | | | |
| | 1 x A265-L | | | | | | |
| | 1 x A270-L | | | | | | |
| | 1 x MET66MB | | | | | | |
| 7 | 1 x A175-L | ON REQUEST | | | | | |
| | 1 x A270-L | 470 | 470 | 470 | 470 | 4475 | 5210 |
| | 1 x MET60MB | 470 | 470 | 470 | 470 | 4475 | 5210 |
| | 1 x MET66MB | 470 | 470 | 470 | 470 | 4475 | 5210 |
| | 1 x MET71MB | ON REQUEST | | | | | |
| | 2 x A165-L | | | | | | |
| | 2 x MET48MB | | | | | | |
| 8 | 2 x A165-L | ON REQUEST | | | | | |
| | 2 x MET53MB | | | | | | |

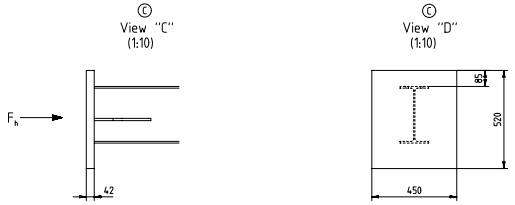
Requirements on stays attachment points at ship hull side (per engine stay)

| | | | |
|---|---|---|---|
| Max. force acting on ship's hull | $Fh_{max}$ | (kN) | *1) |
| Minimum stiffness | $k_{min.}$ | (N/m) | 0.5 x $10^9$ |
| Permissible deflection per 100 kN | $Def_{max.}$ | (mm) | 0.2 |

*1) Maximum engine force resulting from lateral moments of X/H type at the project specific rating plus stays pre-tensioning force according to satys supplier's specification

Provided stay attachment points on engine / platform side

Layout of "inner" attachment points according to WinGD standard design




Layout of "outer" attachment points according to WinGD standard design


Ⓒ

Requirements for application of hydraulic stays on exhaust side

- The selected stays must have makers' acceptance for one side engine installation.
- Installed on exhaust side (ES).
- The amount of stays must be determined based on the requirement and stays suppliers specification. The transferred forces must be taken into consideration. The engine forces and moments are defined in the relevant engine dynamic data sheet "Forces and Moments" which is linked in the Marine Installation Manual (MIM). Stay pre-tensioning forces (max. piston hydraulic force) must also be considered and are provided by the stays supplier.
- The stay attachment point requirements must be crosschecked with the specification. The maximum forces transferred by the selected stays type must be within the range as defined on this drawing for standard engine execution. If the total force per stay exceeds the permissible range, reinforcement of the platform attachment points can be requested from the engine builder.
- The stays must adapt to the ship hull deformation and reduce the static reaction force acting on the engine and ship hull attachment points.
- The stays must increase the total stiffness of the system to avoid harmful resonance conditions. The dynamic stiffness of the stays (dynamic spring rate) is provided by the stays supplier.
- The stays must dampen accordingly to ensure that the acceptable vibrations (RMS limits) for the WinGD 2-stroke engine are met.
- The performance of the stays must be checked during sea trial by vibration measurements.
- Stay position in the vertical direction, respectively the distance to the bottom side of the upper platform beam must be arranged in a way that sufficient space for welding and application of the max. admissible stays inclination remains.
- The installation and commissioning of the stays must be in accordance with the supplier's instructions.

| | | | |
|---|---|---|---|
| Max. permissible force in lateral direction | $F_h$ | (kN) | ± 90 |
| Stiffness | k | (N/m) | 0.5 x $10^9$ |
| Permissible vertical stays displacement | $Def_v$ | (mm) | ± 50 |
| Permissible horizontal stays displacement | $Def_h$ | (mm) | ± 50 |
| Permissible angular stays displacement | $Def_\alpha$ | (°) | 2 |

| | | | |
|---|---|---|---|
| Max. permissible force in lateral direction | $F_h$ | (kN) | ± 320 |
| Stiffness | k | (N/m) | 0.5 x $10^9$ |
| Permissible vertical stays displacement | $Def_v$ | (mm) | ± 50 |
| Permissible horizontal stays displacement | $Def_h$ | (mm) | ± 50 |
| Permissible angular stays displacement | $Def_\alpha$ | (°) | 2 |

| Rev. | Creator | Rev.Index | Approval Date | Change Nr. | Change Synopsis | Approved | Activity Code | Y |
|---|---|---|---|---|---|---|---|---|
| C | sdel01 | rthu109 | 12.03.2020 | CM#031408 | Drawing Updated | | 4 | 3 |
| B | sdel01 | mhu019 | 12.11.2019 | EAAD095177 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| A | dkri21 | mhu019 | 08.10.2018 | EAAD089852 | Legacy information. See corresponding ChangeNotice | | 4 | - |
| - | dkri21 | mhu019 | 17.07.2018 | | - | | - | - |

XS20T

WinGD Winterthur Gas & Diesel

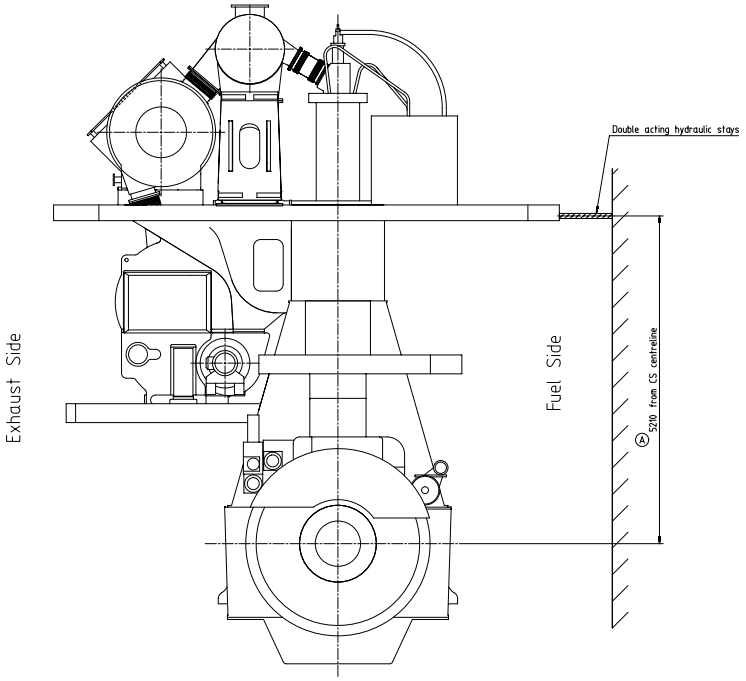
ENGINE STAYS

Dimension: ES, LEFT
Scale: 1:30 | NX | Units: [mm] [kg] | Basic Material | Net Weight: 0.001

SURFACE PROTECTION SEE GROUP 1944
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of this drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be copied, used for any purpose, information, marketing or any other purpose not explicitly by the way not made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.

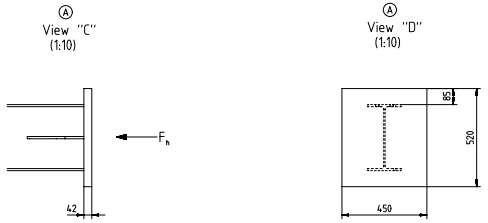
Main Design | Design Group: 9715 | Co-Code: XXXXX | Standard: WDS
Qty per: | Item to: A0 | PAAD294763 | Drawing Pagers: 1/1




Remark:
The Engine outline view is drawn for a 7 cylinder with 1 TC. However, the specification of the stays attachment points in relation to the foremost/aft cylinder is vaild for all cylinder numbers and TC configulation. TC specific stay positions are provided in the table on right hand side.

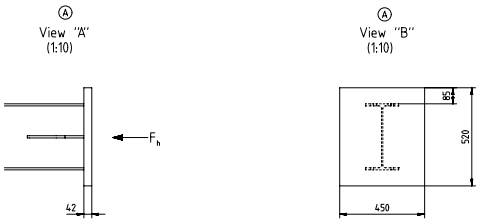
Provided stay attachment points on engine / platform side

Layout of "inner" attachment points according to WinGD standard design




| | | | |
|---|---|---|---|
| Max. permissible force in lateral direction | $F_h$ | (kN) | ± 90 |
| Stiffness | $k_{min.}$ | (N/m) | 0.5 x $10^9$ |
| Deflection per 100 kN | $Def_{max.}$ | (mm) | 0.2 |

Layout of "outer" attachment points according to WinGD standard design




| | | | |
|---|---|---|---|
| Max. permissible force in lateral direction | $F_h$ | (kN) | ± 320 |
| Stiffness | $k_{min.}$ | (N/m) | 0.5 x $10^9$ |
| Deflection per 100 kN | $Def_{max.}$ | (mm) | 0.2 |

Ⓐ

Requirements for application of hydraulic stays on fuel side

- The selected stays must have makers' acceptance for one side engine installation.
- Installed on fuel side (FS).
- The amount of stays must be determined based on the requirement and stays suppliers specification. The transferred forces must be taken into consideration. The engine forces and moments are defined in the relevant engine dynamic data sheet "Forces and Moments" which is linked in the Marine Installation Manual (MIM). Stay pre-tensioning forces (max. piston hydraulic force) must also be considered and are provided by the stays supplier.
- The stay attachment point requirements must be crosschecked with the specification. The maximum forces transferred by the selected stays type must be within the range as defined on this drawing for standard engine execution. If the total force per stay exceeds the permissible range, reinforcement of the platform attachment points can be requested from the engine builder.
- The stays must adapt to the ship hull deformation and reduce the static reaction force acting on the engine and ship hull attachment points.
- The stays must increase the total stiffness of the system to avoid harmful resonance conditions. The dynamic stiffness of the stays (dynamic spring rate) is provided by the stays supplier.
- The performance of the stays must be checked during sea trial by vibration measurements.
- Stay position in the vertical direction, respectively the distance to the bottom side of the upper platform beam must be arranged in a way that sufficient space for welding and application of the max. admissible stays inclination remains.
- The installation and commissioning of the stays must be in accordance with the supplier's instructions.

Ⓐ

Requirements on stays attachment points at ship hull side (per engine stay)

| | | | |
|---|---|---|---|
| Max. force acting on ship's hull | $Fh_{max}$ | (kN) | *1) |
| Minimum stiffness | $k_{min.}$ | (N/m) | 0.5 x $10^9$ |
| Permissible deflection per 100 kN | $Def_{max.}$ | (mm) | 0.2 |

*1) Maximum engine force resulting from lateral moments of X/H type at the project specific rating plus stays pre-tensioning force according to satys supplier's specification

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| XS20T | | | | | | | | |
| A | sch101 | rtb.DEB | 12.02.2022 | CMMX03408 | Drawing Updated | | 4 | 3 |
| - | dvk021 | mhu019 | 17.07.2019 | | - | | - | - |
| Rev. | Creator | Rev.Mgr | Approval Date | Change Nr. | Change Synopsis | Approved | Activity Code | Y | N |

WinGD Winterthur Gas & Diesel

ENGINE STAYS

Dimension: FS, LEFT

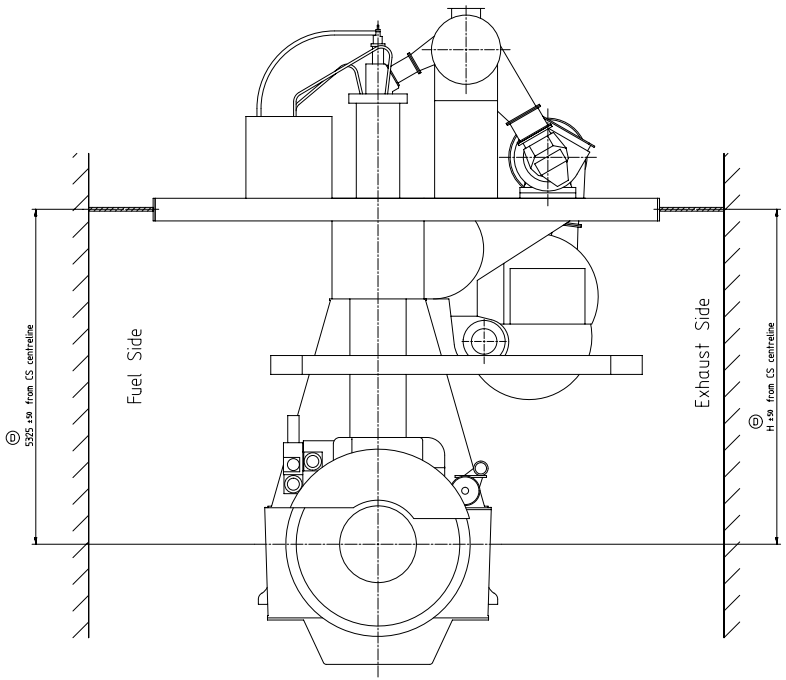
Scale: 1:30 | NX | Units: [mm] [kg] | Basic Material: | Net Weight: 0.001

SURFACE PROTECTION SEE GROUP 1944
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-MK

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. No (sharing) possession of this drawing (or its contents) recognizes and bestows these rights. Neither the whole nor any part of this drawing may be used, copied, or disclosed for any information, marketing or any other purpose not explicitly in any way not made accessible to third parties without the written consent of Winterthur Gas & Diesel Ltd.

Main Design | Design Group: 9715 | G-Code: XXXXX | Standard: WDS

Qty per: | Item ID: A0 PAAD294661 | Drawing Pages: 1/1




Remark:
The Engine outline view is drawn for a 6 cylinder with 1 TC. However, the specification of the stays attachment points in relation to the foremost/aft cylinder is vaild for all cylinder numbers and TC configulation. TC specific stay positions are provided in the table on right hand side.

Ⓓ

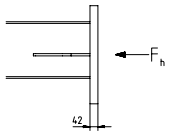
Position of stay attachment points on platform side

| No. of Cyl. | Turbocharger type | A | B | D | H |
|---|---|---|---|---|---|
| 5 | 1 x A265-L | 470 | 470 | 4475 | 5325 |
| 5 | 1 x A165 | 470 | 470 | 4475 | 5325 |
| 6 | 1 x A265-L | 470 | 470 | 4475 | 5325 |
| 7 | 1 x MET60MB | 470 | 470 | 4475 | 5325 |
| | 1 x MET66MB | 470 | 470 | 4475 | 5325 |
| 8 | ON REQUEST | | | | |

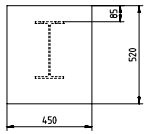
| No. of Cyl. | Turbocharger type | HP-SCR Interface | A | B | D | H |
|---|---|---|---|---|---|---|
| 7 | 1 x A270-L | X | 470 | 470 | 3700 | 5105 |

Layout of stays attachment points on platform side according to WinGD standard design

Ⓓ
View "A"
(1:10)




Ⓓ
View "B"
(1:10)




Requirements on stays attachment points at ship hull side (per engine stay)

| | | | |
|---|---|---|---|
| Max. force acting on ship's hull | $Fh_{max.}$ | (kN) | *1) |
| Minimum stiffness | $k_{min.}$ | (N/m) | 0.5 x $10^9$ |
| Permissible deflection per 100 kN | $Def_{max.}$ | (mm) | 0.2 |

*1) Maximum engine force resulting from lateral moments of X/H type at the project specific rating plus stays pre-tensioning force according to satys supplier's specification

Ⓓ

Requirements for application of hydraulic stays on fuel side AND exhaust side

- The selected stays must have makers' acceptance for both side engine installation.
- Installed on fuel side (FS) AND exhaust side (ES).
- The amount of stays must be determined based on the requirement and stays suppliers specification. The transferred forces must be taken into consideration. The engine forces and moments are defined in the relevant engine dynamic data sheet "Forces and Moments" which is linked in the Marine Installation Manual (MIM). Stay pre-tensioning forces (max. piston hydraulic force) must also be considered and are provided by the stays supplier.
- The stay attachment point requirements must be crosschecked with the specification. The maximum forces transferred by the selected stays type must be within the range as defined on this drawing for standard engine execution. If the total force per stay exceeds the permissible range, reinforcement of the platform attachment points can be requested from the engine builder.
- The stays must adapt to the ship hull deformation and reduce the static reaction force acting on the engine and ship hull attachment points.
- The stays must increase the total stiffness of the system to avoid harmful resonance conditions. The dynamic stiffness of the stays (dynamic spring rate) is provided by the stays supplier.
- The stays must dampen accordingly to ensure that the acceptable vibrations (RMS limits) for the WinGD 2-stroke engine are met.
- The performance of the stays must be checked during sea trial by vibration measurements.
- The installation and commissioning of the stays must be in accordance with the supplier's instructions.

| | | | |
|---|---|---|---|
| Max. permissible force in lateral direction | $F_h$ | (kN) | ± 320 |
| Stiffness | k | (N/m) | 0.5 x $10^9$ |
| Permissible vertical stays displacement | $Def_v$ | (mm) | ± 50 |
| Permissible horizontal stays displacement | $Def_h$ | (mm) | ± 50 |
| Permissible angular stays displacement | $Def_\alpha$ | (°) | 2 |

| Ind. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | X52DF | | | | | | | |
| D | sde101 | rthL08 | 12.03.2022 | CM#033408 | Drawing Updated | | 4 | 3 |
| C | sde101 | mhu019 | 27.10.2020 | EAAD092791 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| B | sde101 | mhu019 | 05.07.2019 | EAAD090959 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| - | dhl021 | mhu019 | 17.07.2018 | | - | | - | - |
| Rev. | Creator | Rev.Ver. | Approval Date | Change #) | Change Synopsis | Approved | Activity Code | F |

WinGD Winterthur Gas & Diesel

ENGINE STAYS

Dimension: BS, STD

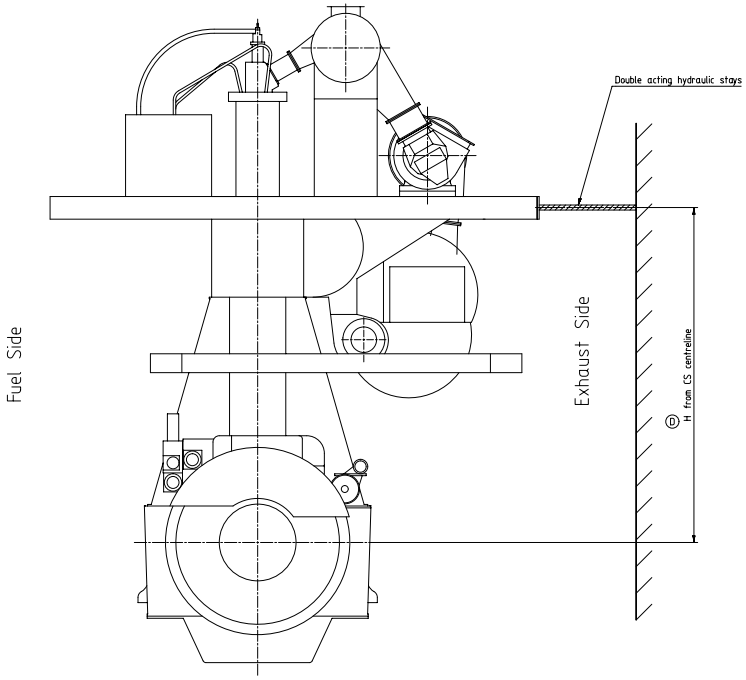
Scale: 1:30 | NX | Units: [mm] [kg] | Basic Material | Net Weight: 0.001

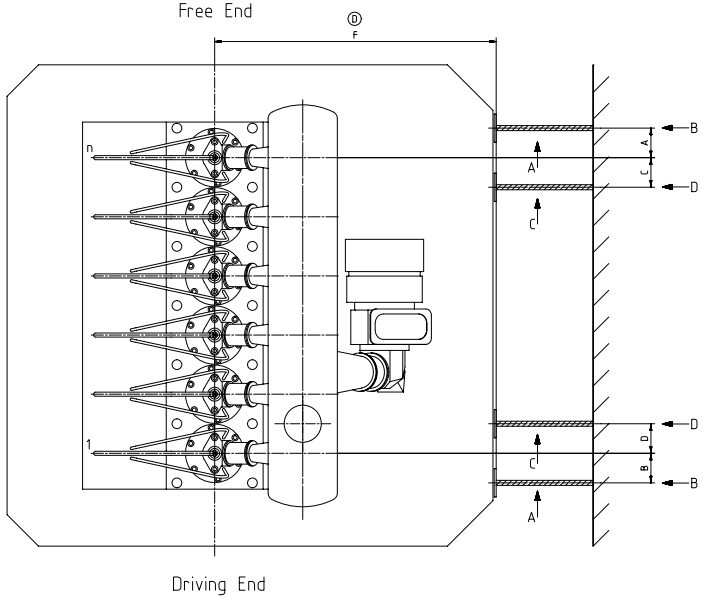
SURFACE PROTECTION SEE GROUP 9344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of this drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be copied, used for any purpose whatsoever, marketing or any other purpose nor supplied to any way not made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.

Main Design | Design Group: 9715 | Co-Code: XXXXX | Standard: WDS

Qty per: | Item ID: A0 PAAD294648 | Drawing Pages: 1/1




Remark:
The Engine outline view is drawn for a 6 cylinder with 1 TC. However, the specification of the stays attachment points in relation to the foremost/aft cylinder is vaild for all cylinder numbers and TC configulation. TC specific stay positions are provided in the table on right hand side.

Ⓓ

Position of stay attachment points on platform side

| No. of Cyl. | Turbocharger type | A | B | C | D | F | H |
|---|---|---|---|---|---|---|---|
| 5 | 1 x A265-L | 470 | 470 | 470 | 470 | 4475 | 5210 |
| 5 | 1 x A165 | 470 | 470 | 470 | 470 | 4475 | 5210 |
| 6 | 1 x A265-L | 470 | 470 | 470 | 470 | 4475 | 5210 |
| 7 | 1 x MET60MB | 470 | 470 | 470 | 470 | 4475 | 5210 |
| | 1 x MET66MB | 470 | 470 | 470 | 470 | 4475 | 5210 |
| 8 | 2 X A165 | 470 | 470 | 470 | 470 | 4475 | 5210 |

| No. of Cyl. | Turbocharger type | HP-SCR Interface | A | B | C | D | F | H |
|---|---|---|---|---|---|---|---|---|
| 7 | 1 x A270-L | X | 470 | 470 | 470 | 470 | 3700 | 5105 |

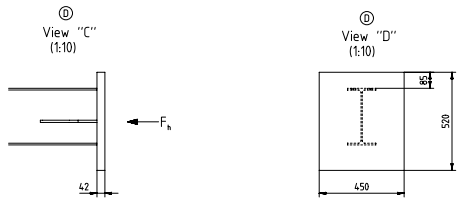
Requirements on stays attachment points at ship hull side (per engine stay)

| | | | |
|---|---|---|---|
| Max. force acting on ship's hull | $Fh_{max}$ | (kN) | *1) |
| Minimum stiffness | $k_{min.}$ | (N/m) | 0.5 x $10^9$ |
| Permissible deflection per 100 kN | $Def_{max.}$ | (mm) | 0.2 |

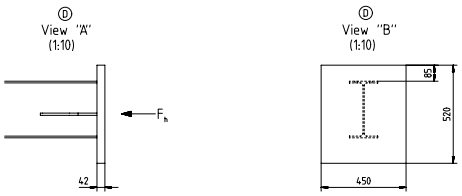
*1) Maximum engine force resulting from lateral moments of X/H type at the project specific rating plus stays pre-tensioning force according to satys supplier's specification

Provided stay attachment points on engine / platform side

Layout of "inner" attachment points according to WinGD standard design




Layout of "outer" attachment points according to WinGD standard design




Ⓓ

Requirements for application of hydraulic stays on exhaust side

- The selected stays must have makers' acceptance for one side engine installation.
- Installed on exhaust side (ES).
- The amount of stays must be determined based on the requirement and stays suppliers specification. The transferred forces must be taken into consideration. The engine forces and moments are defined in the relevant engine dynamic data sheet "Forces and Moments" which is linked in the Marine Installation Manual (MIM). Stay pre-tensioning forces (max. piston hydraulic force) must also be considered and are provided by the stays supplier.
- The stay attachment point requirements must be crosschecked with the specification. The maximum forces transferred by the selected stays type must be within the range as defined on this drawing for standard engine execution. If the total force per stay exceeds the permissible range, reinforcement of the platform attachment points can be requested from the engine builder.
- The stays must adapt to the ship hull deformation and reduce the static reaction force acting on the engine and ship hull attachment points.
- The stays must increase the total stiffness of the system to avoid harmful resonance conditions. The dynamic stiffness of the stays (dynamic spring rate) is provided by the stays supplier.
- The stays must dampen accordingly to ensure that the acceptable vibrations (RMS limits) for the WinGD 2-stroke engine are met.
- The performance of the stays must be checked during sea trial by vibration measurements.
- Stay position in the vertical direction, respectively the distance to the bottom side of the upper platform beam must be arranged in a way that sufficient space for welding and application of the max. admissible stays inclination remains.
- The installation and commissioning of the stays must be in accordance with the supplier's instructions.

| | | | |
|---|---|---|---|
| Max. permissible force in lateral direction | $F_h$ | (kN) | ± 90 |
| Stiffness | k | (N/m) | 0.5 x $10^9$ |
| Permissible vertical stays displacement | $Def_v$ | (mm) | ± 50 |
| Permissible horizontal stays displacement | $Def_h$ | (mm) | ± 50 |
| Permissible angular stays displacement | $Def_a$ | (°) | 2 |

| | | | |
|---|---|---|---|
| Max. permissible force in lateral direction | $F_h$ | (kN) | ± 320 |
| Stiffness | k | (N/m) | 0.5 x $10^9$ |
| Permissible vertical stays displacement | $Def_v$ | (mm) | ± 50 |
| Permissible horizontal stays displacement | $Def_h$ | (mm) | ± 50 |
| Permissible angular stays displacement | $Def_a$ | (°) | 2 |

| Rev. | Creator | Date/Time | Approved | Date | Change Nr. | Change Synopsis | Approved | Activity Code | P | L |
|---|---|---|---|---|---|---|---|---|---|---|
| D | sde101 | rthL01 | 12.03.2021 | | CM#031408 | Drawing Updated | | | 4 | 3 |
| C | sde101 | mhu019 | 27.10.2020 | | EAAD092791 | Legacy information. See corresponding ChangeNotice | | | 4 | 3 |
| B | sde101 | mhu019 | 05.07.2019 | | EAAD090959 | Legacy information. See corresponding ChangeNotice | | | 4 | 3 |
| - | dhk021 | mhu019 | 17.07.2018 | | | - | | | - | - |

XS2DT

WinGD Winterthur Gas & Diesel

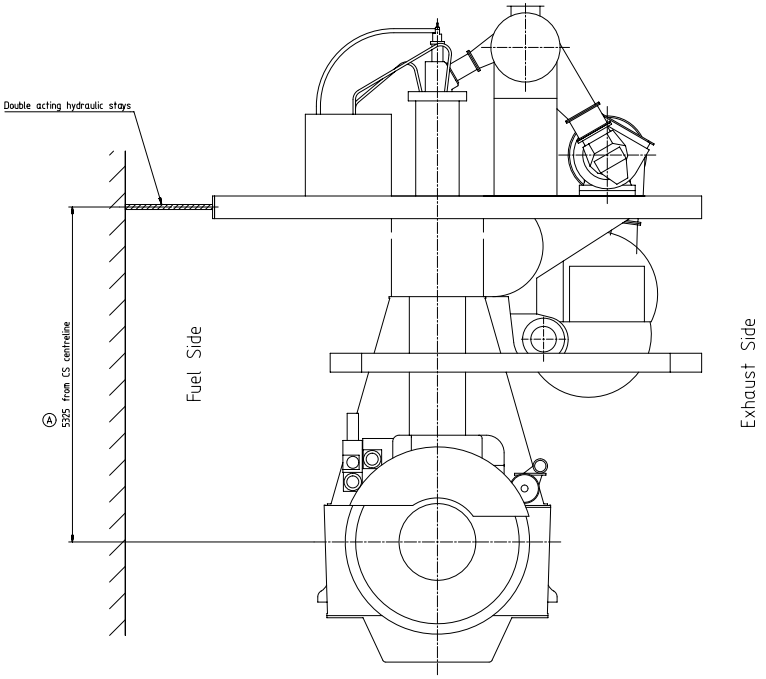
ENGINE STAYS

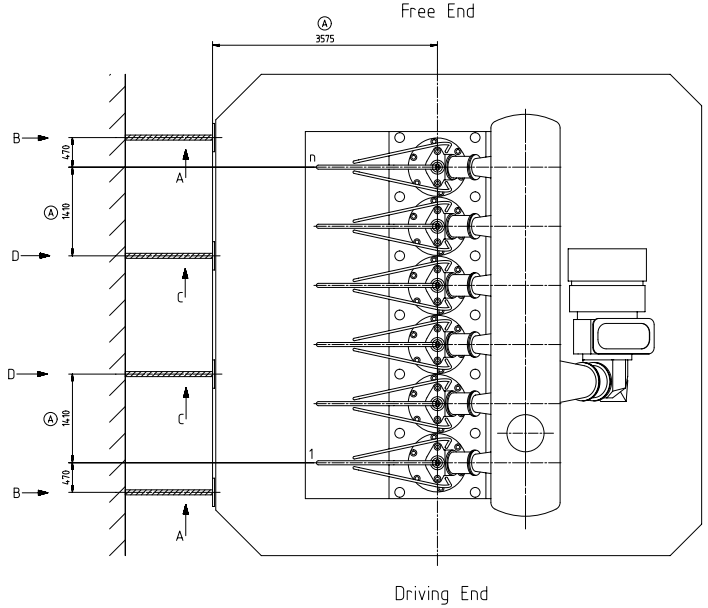
Dimension: ES, STD
Scale: 1:30 | NX | Units: [mm] [kg] | Basic Material: | Net Weight: 0.001

SURFACE PROTECTION SEE GROUP 1944
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of this drawing/doc. you acquire recognized and exclusive these rights. Neither the whole nor any part of the information contained in or disclosed in this drawing/doc. may be used, duplicated or disclosed without the prior written consent of Winterthur Gas & Diesel Ltd.

Main Design | Design Group: 9715 | Co-Code: XXXXX | Standard: WDS
Qty per: | Item to: A0 | PAAD294628 | Drawing Pages: 1/1

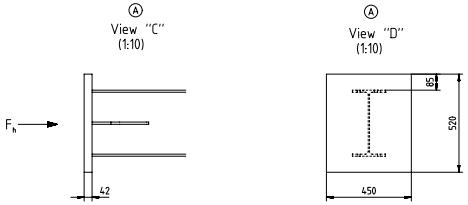



Remark:
The Engine outline view is drawn for a 6 cylinder with 1 TC. However, the specification of the stays attachment points in relation to the foremost/aft cylinder is vaild for all cylinder numbers and TC configulation. TC specific stay positions are provided in the table on right hand side.

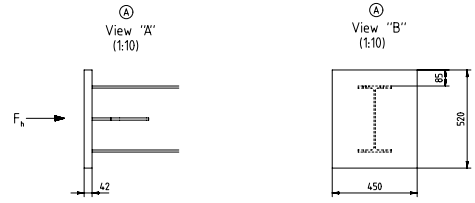
Provided stay attachment points on engine / platform side

Layout of "inner" attachment points according to WinGD standard design




| | | | |
|---|---|---|---|
| Max. permissible force in lateral direction | $F_h$ | (kN) | ± 90 |
| Stiffness | $k_{min.}$ | (N/m) | 0.5 x $10^9$ |
| Deflection per 100 kN | $Def_{max.}$ | (mm) | 0.2 |

Layout of "outer" attachment points according to WinGD standard design




| | | | |
|---|---|---|---|
| Max. permissible force in lateral direction | $F_h$ | (kN) | ± 320 |
| Stiffness | $k_{min.}$ | (N/m) | 0.5 x $10^9$ |
| Deflection per 100 kN | $Def_{max.}$ | (mm) | 0.2 |

Ⓐ

Requirements for application of hydraulic stays on fuel side

- The selected stays must have makers' acceptance for one side engine installation.
- Installed on fuel side (FS).
- The amount of stays must be determined based on the requirement and stays suppliers specification. The transferred forces must be taken into consideration. The engine forces and moments are defined in the relevant engine dynamic data sheet "Forces and Moments" which is linked in the Marine Installation Manual (MIM). Stay pre-tensioning forces (max. piston hydraulic force) must also be considered and are provided by the stays supplier.
- The stay attachment point requirements must be crosschecked with the specification. The maximum forces transferred by the selected stays type must be within the range as defined on this drawing for standard engine execution. If the total force per stay exceeds the permissible range, reinforcement of the platform attachment points can be requested from the engine builder.
- The stays must adapt to the ship hull deformation and reduce the static reaction force acting on the engine and ship hull attachment points.
- The stays must increase the total stiffness of the system to avoid harmful resonance conditions. The dynamic stiffness of the stays (dynamic spring rate) is provided by the stays supplier.
- The performance of the stays must be checked during sea trial by vibration measurements.
- Stay position in the vertical direction, respectively the distance to the bottom side of the upper platform beam must be arranged in a way that sufficient space for welding and application of the max. admissible stays inclination remains.
- The installation and commissioning of the stays must be in accordance with the supplier's instructions.

Ⓐ

Requirements on stays attachment points at ship hull side (per engine stay)

| | | | |
|---|---|---|---|
| Max. force acting on ship's hull | $Fh_{max}$ | (kN) | ∗1) |
| Minimum stiffness | $k_{min.}$ | (N/m) | 0.5 x $10^9$ |
| Permissible deflection per 100 kN | $Def_{max.}$ | (mm) | 0.2 |

∗1) Maximum engine force resulting from lateral moments of X/H type at the project specific rating plus stays pre-tensioning force according to satys supplier's specification

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | XS20T | | | |
| A | sch101 | rtfu109 | 13.03.2023 | CHANGE1408 | Drawing Updated | 4 | 3 |
| - | dvk021 | rtfu019 | 17.07.2019 | | - | - | - |
| Rev. | Creator | Rel.Mbr. | Approval Date | Change Nr. | Change Synopsis | Approved | Activity Code |

WinGD Winterthur Gas & Diesel

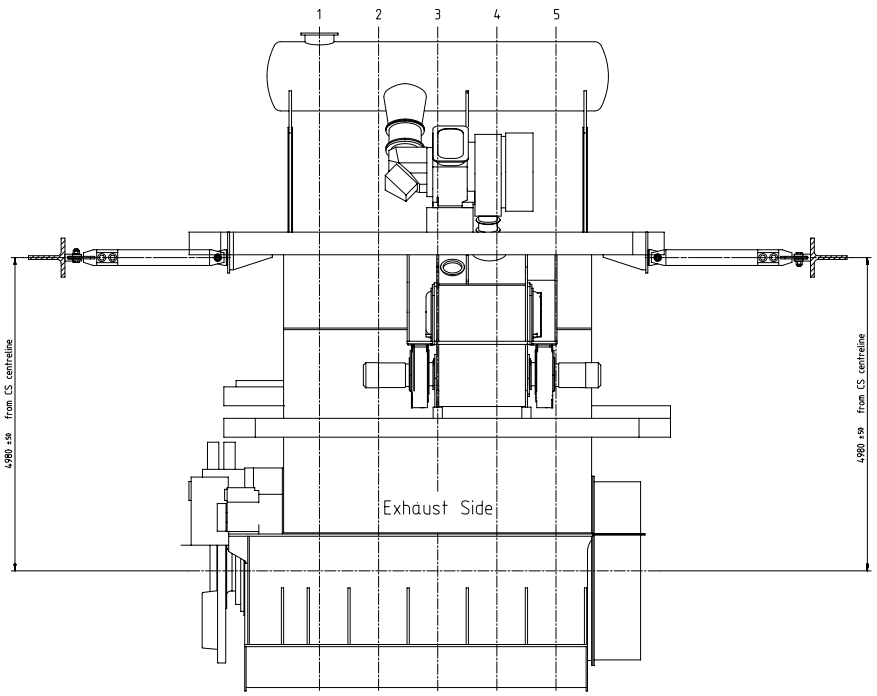
ENGINE STAYS

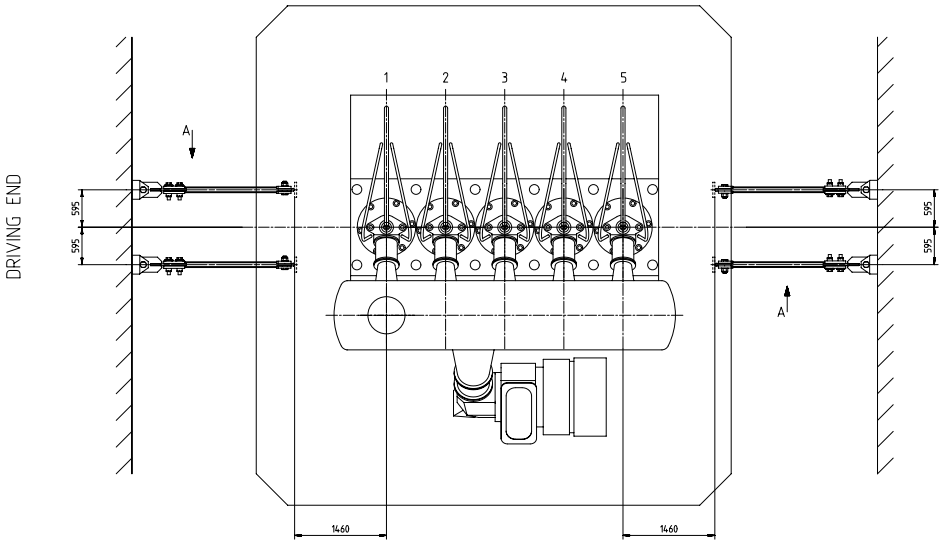
Dimension: FS, STD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Scale: 1:30 | NX | Units: [mm] [kg] | Basic Material | | | Net Weight | 0.001 |
| SURFACE PROTECTION SEE GROUP 9344 | | Main Design | | Design Group | 9715 | Co-Code XXXXX | Standard WDS |
| TOLERANCING PRINCIPLE ISO8015 | | Qty per | | A0 | Item no. | PAAD294642 | Drawing Pages 1/1 |
| GENERAL TOLERANCES ACCORDING TO ISO2768-mK | | | | | | | |

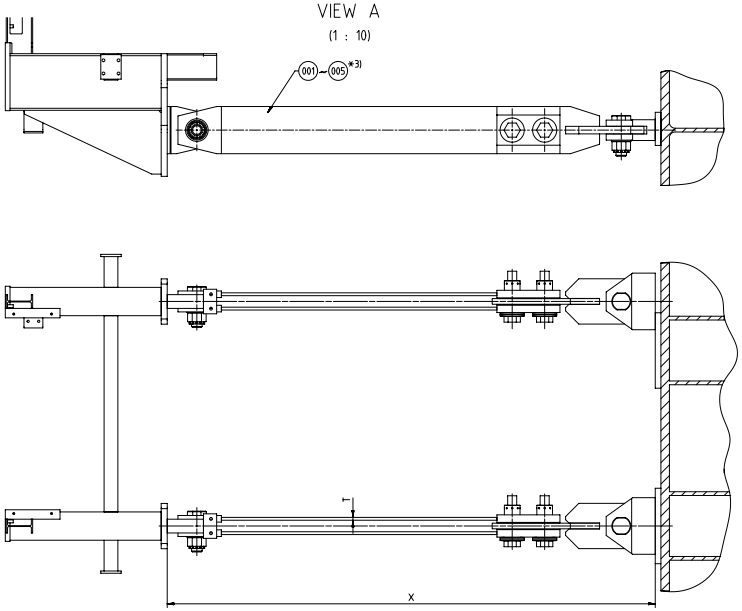
Copyright Winterthur Gas & Diesel Ltd. All rights reserved. All rights in relation to this drawing are reserved. No part of this drawing may be reproduced, used, exploited or disclosed except with our prior written permission. We reserve all rights in the event of the grant of a patent or the registration of a utility model or design. Any use or exploitation contrary to the aforesaid rights is unlawful and especially forbidden without our written permission. It is forbidden to alter or remove this notice or any other proprietary notice. Failure to comply is actionable damage. In case of doubt, you should contact us.

## Application of longitudinal stays *1)




## VIEW A
(1 : 10)




Specification for application of stays according to WinGD design

Stays of friction type *1)
- Transmission of tensile and compressive forces.
- Attached on engine driving end (DE) or free end (FE).

Requirements for ship side attachment point

| | | | |
|---|---|---|---|
| Max. force acting on ship's hull *2) | $Fh_{max.}$ | (kN) | 90 |
| Minimum stiffness | $k_{min.}$ | (N/m) | 0.8 x $10^9$ |
| Permissible deflection per 100 kN | $Def_{max.}$ | (mm) | 0.125 |

*1) Stays of friction type must be only installed in longitudinal direction. As an alternative also stays of hydraulic type can be applied.

*2) Relevant engine forces resulting from lateral moments of X/H-type at R1 rating are considered. The provided value represents the transmitted force per stay (2 pcs per side) which has to be considered for the layout of the attachment points on ship hull side.

| Pos. No. *3) | Material ID | X ( mm ) | T ( mm ) |
|---|---|---|---|
| 001 | PAAD046700 | 2000 - 2280 | 15 |
| 002 | PAAD046701 | 2281 - 2560 | 20 |
| 003 | PAAD046702 | 2561 - 2840 | 25 |
| 004 | PAAD046703 | 2841 - 3120 | 30 |
| 005 | PAAD046704 | 3121 - 3400 | 35 |

X defines the clear width between engine attachment points and ship side (to be determined by shipyard)

X min. = 2000 mm
X max. = 3400 mm

*3) Depending on the requirement either the stay execution of Pos. 001, 002, 003, 004 or Pos. 005 has to be selected.

| Pos | Qty | Material ID | Material Name / Dimension, Qu | Standard or Drawing | Basic Material Material Standard | Weight GR.NET |
|---|---|---|---|---|---|---|
| 1 | 006 | 107.246.429.500 | ASSEMBLY INSTRUCTIONS | 107.246.429 | | 0,001 |
| 2 | 005 | PAAD046704 | ENGINE STAYS/ FRICTION TYPE | DAAD018242 | | 417 |
| 2 | 004 | PAAD046703 | ENGINE STAYS/ FRICTION TYPE | DAAD018242 | | 387 |
| 2 | 003 | PAAD046702 | ENGINE STAYS/ FRICTION TYPE | DAAD018242 | | 359 |
| 2 | 002 | PAAD046701 | ENGINE STAYS/ FRICTION TYPE | DAAD018242 | | 330 |
| 2 | 001 | PAAD046700 | ENGINE STAYS/ FRICTION TYPE | DAAD018242 | | 302 |

D-Code: XXXXX
Standard: ISO, JIS

Product: 5X52DF (STD or LEFT)

ENGINE STAYS
Stays locations DE or FE
Motorabstuetzung

| | | | | | | |
|---|---|---|---|---|---|---|
| Units | mm kg | NX | Basic Material | | Net Weight 3599 | |
| Made | 08.05.2018 | dki021 DH.Kim | Scale 1:30 | Size A0 | Page 1/1 | Material ID PAAD294622 |
| Chkd | 17.07.2018 | wwa008 Wang | Design Group 9715 | Drawing ID DAAD100387 | | Rev. – |
| Appd | 17.07.2018 | mhu019 Hug | | | | |

SURFACE PROTECTION SEE GROUP 9344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of this drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.

# Friction type stays according to WinGD design

ONLY to be installed
in longitudinal direction on
engine driving end or free end

Please consult WinGD directly in case you have a specific question or need support.

DISCLAIMER

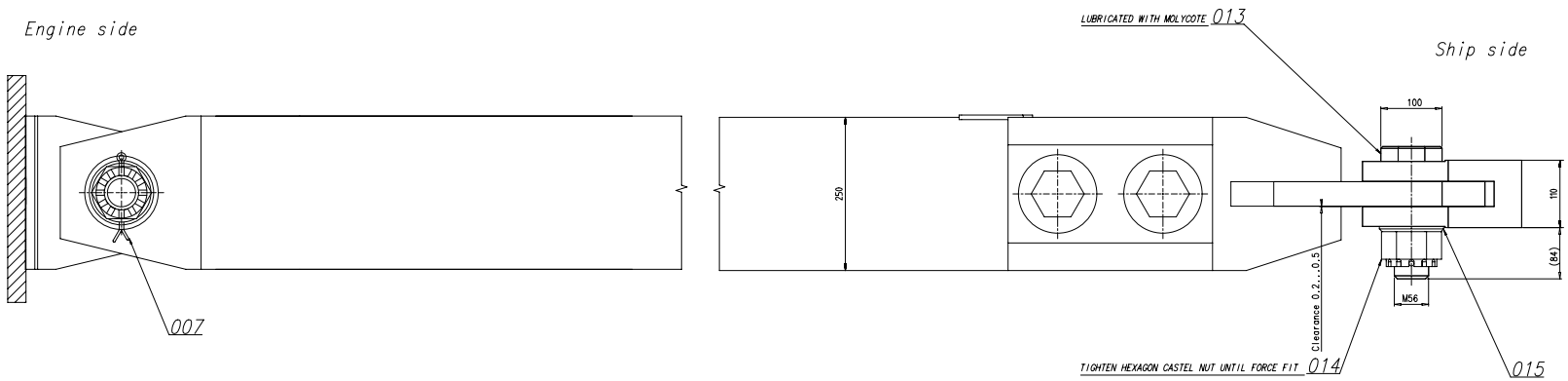
© Copyright by Winterthur Gas & Diesel Ltd.
All rights reserved. No part of this document may be reproduced or copied in any form or by any means (electronic, mechanical, graphic, photocopying, recording, taping or other information retrieval systems) without the prior written permission of the copyright owner.

THIS PUBLICATION IS DESIGNED TO PROVIDE AN ACCURATE AND AUTHORITATIVE INFORMATION WITH REGARD TO THE SUBJECT-MATTER COVERED AS WAS AVAILABLE AT THE TIME OF PRINTING. HOWEVER, THE PUBLICATION DEALS WITH COMPLICATED TECHNICAL MATTERS SUITED ONLY FOR SPECIALISTS IN THE AREA, AND THE DESIGN OF THE SUBJECT-PRODUCTS IS SUBJECT TO REGULAR IMPROVEMENTS, MODIFICATIONS AND CHANGES. CONSEQUENTLY, THE PUBLISHER AND COPYRIGHT OWNER OF THIS PUBLICATION CAN NOT ACCEPT ANY RESPONSIBILITY OR LIABILITY FOR ANY EVENTUAL ERRORS OR OMISSIONS IN THIS BOOKLET OR FOR DISCREPANCIES ARISING FROM THE FEATURES OF ANY ACTUAL ITEM IN THE RESPECTIVE PRODUCT BEING DIFFERENT FROM THOSE SHOWN IN THIS PUBLICATION. THE PUBLISHER AND COPYRIGHT OWNER SHALL UNDER NO CIRCUMSTANCES BE HELD LIABLE FOR ANY FINANCIAL CONSEQUENTIAL DAMAGES OR OTHER LOSS, OR ANY OTHER DAMAGE OR INJURY, SUFFERED BY ANY PARTY MAKING USE OF THIS PUBLICATION OR THE INFORMATION CONTAINED HEREIN.

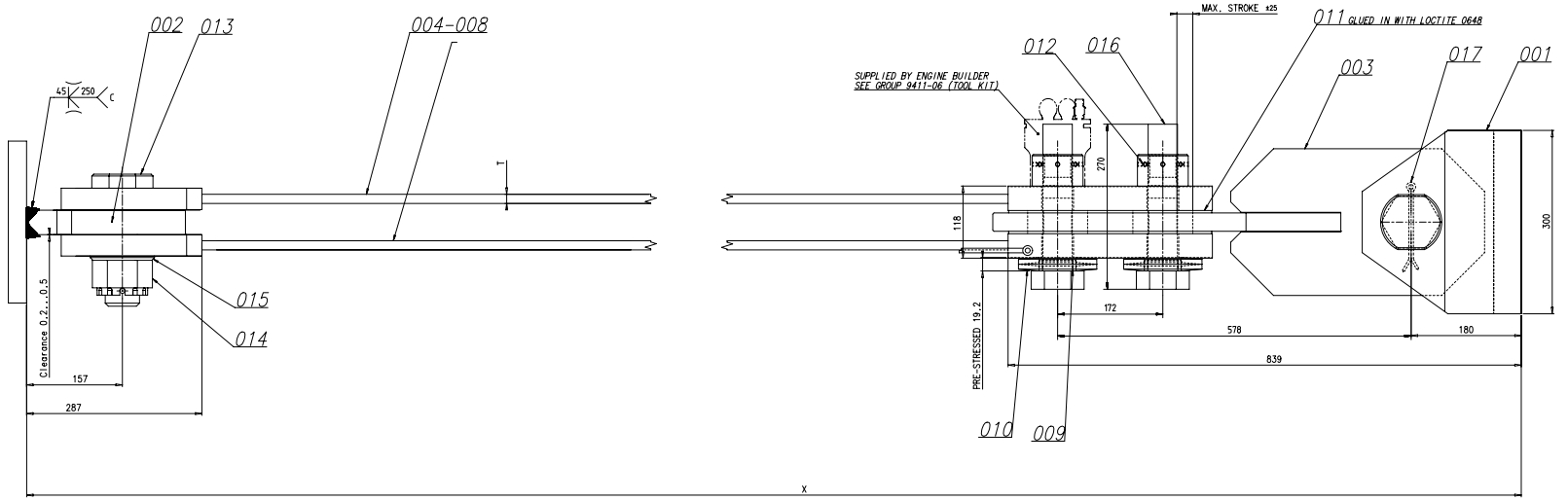
Winterthur Gas & Diesel Ltd.
Winterthur Gas & Diesel AG.
Winterthur Gas & Diesel S.A.

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

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




| Material ID | X ( mm ) | T ( mm ) |
|---|---|---|
| PAAD046700 | 2000-2280 | 15 |
| PAAD046701 | 2281-2560 | 20 |
| PAAD046702 | 2561-2840 | 25 |
| PAAD046703 | 2841-3120 | 30 |
| PAAD046704 | 3121-3400 | 35 |




NOTE:
---
X= CLEAR WIDTH BETWEEN ENGINE AND SHIP SIDE; TO BE DETERMINED BY SHIPYARD (SEE MAIN DRAWING)

| Net Weight 417 | 387 | 359 | 339 | 302 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 2 | 2 | 2 | 2 | 017 | 015.509.017.503 | SPLIT PIN 8x100 | ISO 1234 | Steel Zn-plated | 0,04 |
| 2 | 2 | 2 | 2 | 2 | 016 | 015.151.024.781 | HEXAGON HEAD BOLT M48x240 | ISO 4014 | 88 | 4,29 |
| 2 | 2 | 2 | 2 | 2 | 015 | 015.500.102.330 | WASHER 58 | DIN 125-1 | Steel blank | 0,425 |
| 2 | 2 | 2 | 2 | 2 | 014 | 015.201.304.610 | CASTLE NUT M56 | Acc. WinGD | C45E;S45C | 1,63 |
| 2 | 2 | 2 | 2 | 2 | 013 | PAAD026437 | BOLT | DAAD012368 | C45E S45C | 7,17 |
| 2 | 2 | 2 | 2 | 2 | 012 | 107.345.876.008 | ROUND NUT M48 | 107.345.876 | W-FA-420Mo-QT | 1,42 |
| 2 | 2 | 2 | 2 | 2 | 011 | PAAD902269 | SHIM 4THICK | DAAD902593 | | 2,3 |
| 4 | 4 | 4 | 4 | 4 | 010 | 107.246.311.001 | DISC SPRING 125 X 61 X 8 | 107.246.311 | | 0,55 |
| 2 | 2 | 2 | 2 | 2 | 009 | 107.246.316.001 | RING 60 x 50 x 17 | 107.246.316 | RSt 37-2 | 0,12 |
| 2 | - | - | - | - | 008 | PAAD902262 | ENGINE STAYS | DAAD902592 | | 137 |
| - | 2 | - | - | - | 007 | PAAD902268 | ENGINE STAYS | DAAD902592 | | 122 |
| - | - | 2 | - | - | 006 | PAAD902257 | ENGINE STAYS | DAAD902592 | | 108 |
| - | - | - | 2 | - | 005 | PAAD902247 | ENGINE STAYS | DAAD902592 | | 93,8 |
| - | - | - | - | 2 | 004 | PAAD902252 | ENGINE STAYS | DAAD902592 | | 79,6 |
| 1 | 1 | 1 | 1 | 1 | 003 | PAAD902231 | CLAMPING PART | DAAD902576 | | 54,9 |
| 1 | 1 | 1 | 1 | 1 | 002 | PAAD026436 | SUPPORT | DAAD012141 | W-FU-355-J0 | 15,6 |
| 1 | 1 | 1 | 1 | 1 | 001 | PAAD026295 | SUPPORT | DAAD012142 | W-FU-235-J0 | 35,4 |
| Quantity | | | | | SDD NO | Material ID | Material Name Dimension, Dia | Drawing or Drawing | Basic Material Material Standard | Weight GR/NET |

| PAAD046704 | PAAD046703 | PAAD046702 | PAAD046701 | PAAD046700 |
|---|---|---|---|---|
| Material ID | | | | |

| Mod. | Number | Drawn date | Number | Drawn date | Number | Drawn date | Number | Drawn date |
|---|---|---|---|---|---|---|---|---|
| | A AAD086524 | 19.04.2016 | B AAD095725 | 18.01.2021 | | | | |

Main Dim.
Q-Code XXXXX
Standard ISO, JIS

WinGD Winterthur Gas & Diesel

Product W-2S

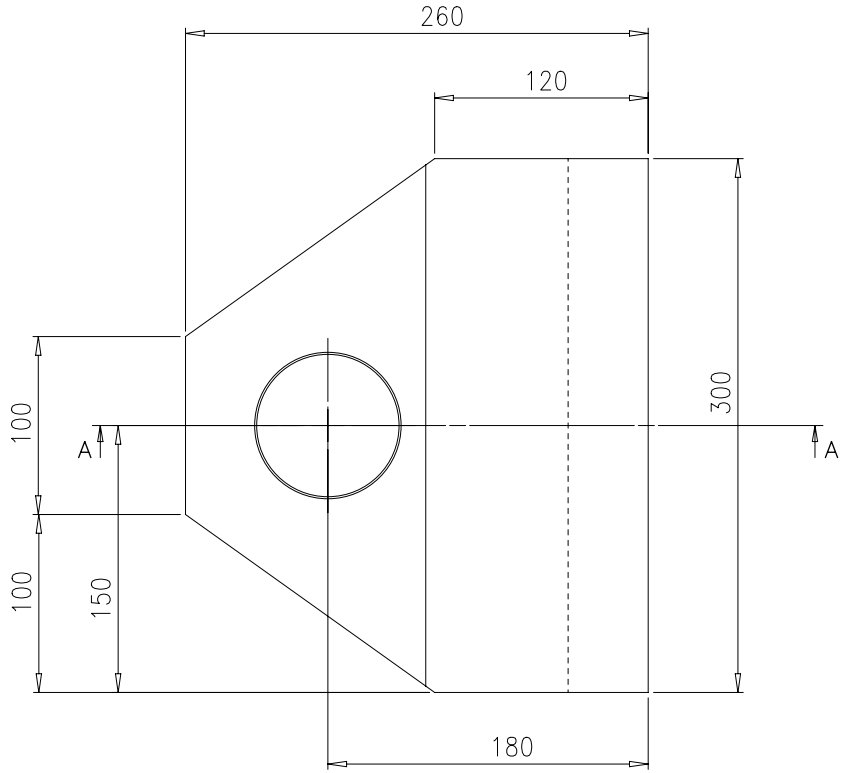
ENGINE STAYS/ FRICTION TYPE

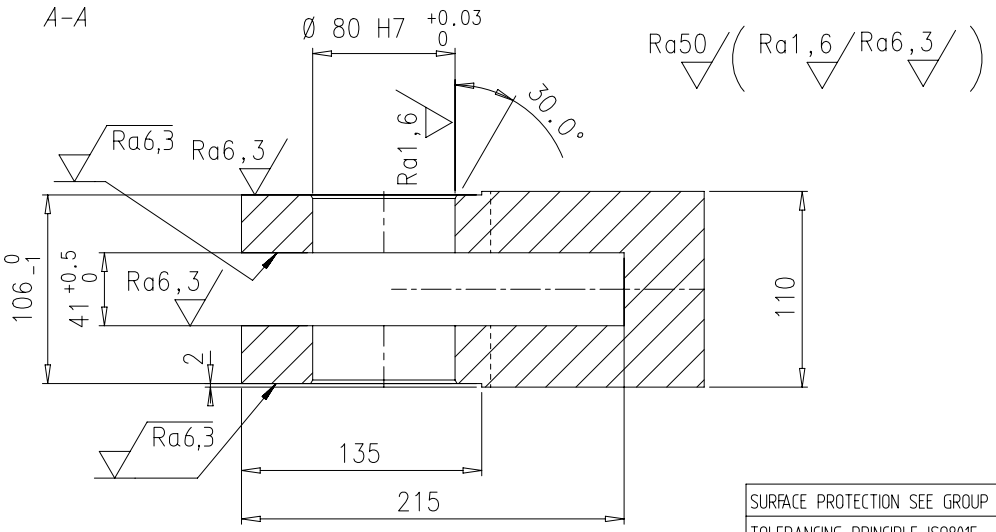
Motorenabstuetzung mit Reibbelag

| Units | mm kg | NX | Basic Material | Net Weight |
|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| SURFACE PROTECTION SEE GROUP 9344 | Made | 10.06.2011 | sfe006 Feuerstein | Scale 1:3 | Size A0 | Page 1/1 |
| TOLERANCING PRINCIPLE ISO8015 | Chkd | 11.07.2011 | wwr001 Wroblewski | Design Group 9715 | Drawing ID DAAD018242 | Rev. B |
| GENERAL TOLERANCES ACCORDING TO ISO2768-mK | Appd | 11.07.2011 | dst009 Stridsklev | | | |

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of this drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.
PROPRIETARY DRAWING - CONFIDENTIAL




| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Free space for lic. | | | | | | | | | Q-Code XXXXX | | Main Drw. |
| | | | | | | | | | Standard ISO; JIS | | |
| Modif. | A | EAAD095725 | 28.04.2021 | B | EAAD096559 | 29.04.2021 | | | | | |
| | | Number | Drawn date | | Number | Drawn date | | Number | Drawn date | | Number | Drawn date |

WIN GD Winterthur Gas & Diesel

Product W-2S

SUPPORT
TO ENGINE STAYS, FRICTION
SUPPORT
zu Motorabstuetzung

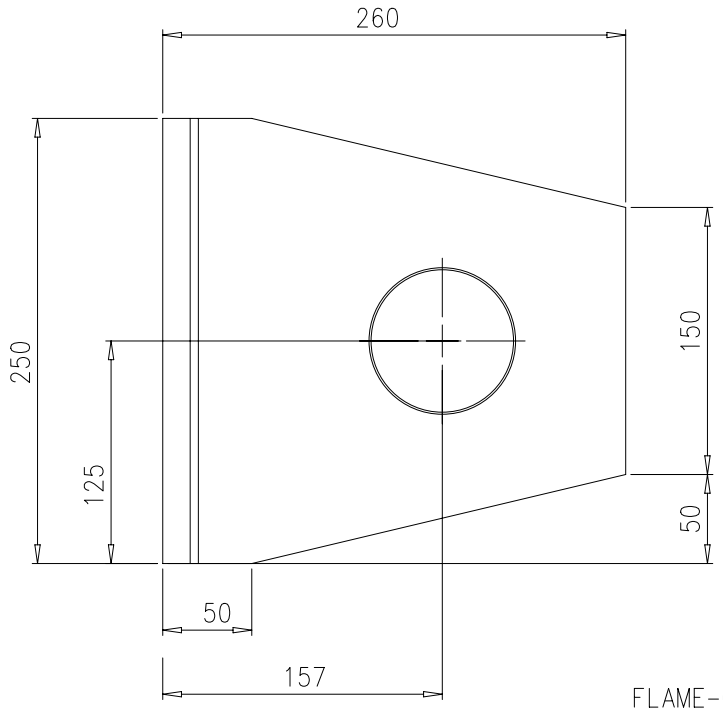
| | | | | | |
|---|---|---|---|---|---|
| Units mm kg | NX | Basic Material W-FU-235-J0 | | | Net Weight 35,4 |
| Made 17.12.2010 mhu019 M.Hug | | Scale 1:3 | Size A3 | Page 1/1 | Material ID PAAD026295 |
| Chkd 19.01.2011 sfe006 Feuerstein | | Design Group 9715 | Drawing ID DAAD012142 | | Rev. B |
| Appd 19.01.2011 dst009 Strödecke | | | | | |

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

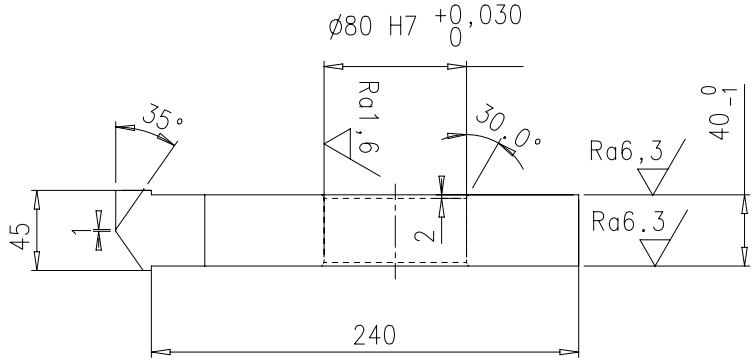
Approved

PD - PRODUCTION DRAWING - Confidential

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of the drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.




Ra50 FLAME-CUT (Ra1,6 / Ra6,3)




| Prod. | RT-flex48T-D RT-flex50 | RT-flex50-B RT-flex50-D | RT-flex58T-D V2 RT-flex58T-E | CR-HHM-PILOT X35 | X35-B X40 | X40-B X52 | X52DF X52DF-1.1 | X62 [...] |
|---|---|---|---|---|---|---|---|---|

Change History

| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|
| C | dki021 | mhu019 | 15.05.2023 | CNAA003572 | Drawing update | | 4 | 3 |
| B | sde101 | mhu019 | 30.04.2021 | EAAD096559 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| A | sde101 | mhu019 | 28.04.2021 | EAAD095725 | Legacy information. See corresponding ChangeNotice | | 4 | 3 |
| – | WinGD | dst009 | 19.01.2011 | EAAD771307 | – | | – | – |

Approved

WIN GD Winterthur Gas & Diesel

# SUPPORT
## TO ENGINE STAYS, FRICTION

Dimension

| Scale | Units | Basic Material | | Net Weight |
|---|---|---|---|---|
| 1:3 NX | [mm] [kg] | W-FU-355-J0 | | 15.60 |

| Main Design | Design Group | Q-Code | Standard |
|---|---|---|---|
| | 9715 | XXXXX | WDS |

| Qty per | | Item ID | Drawing Page/s |
|---|---|---|---|
| | A3 | PAAD026436 | 1/2 |

SURFACE PROTECTION SEE GROUP 0344

TOLERANCING PRINCIPLE ISO8015

GENERAL TOLERANCES ACCORDING TO ISO2768-mK

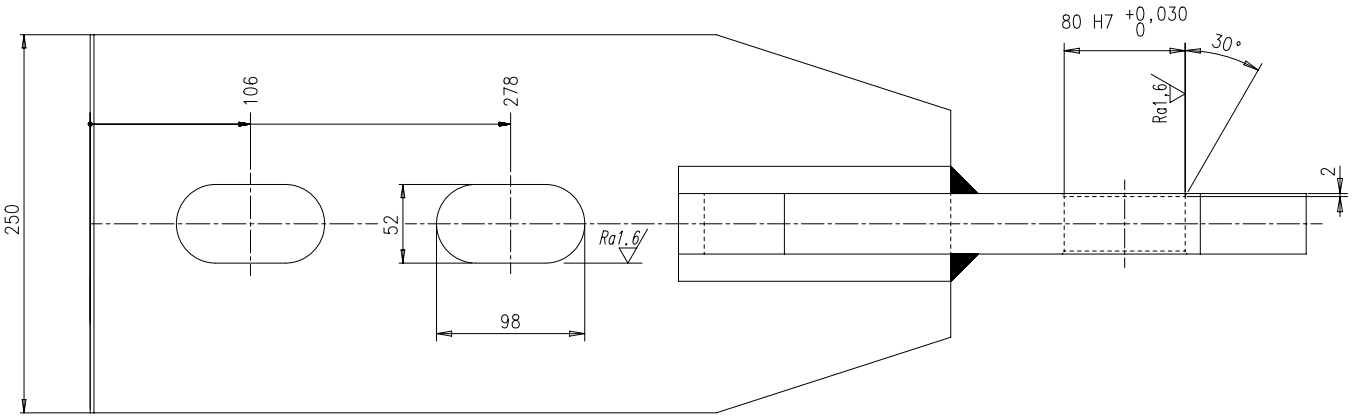
Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of the drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.

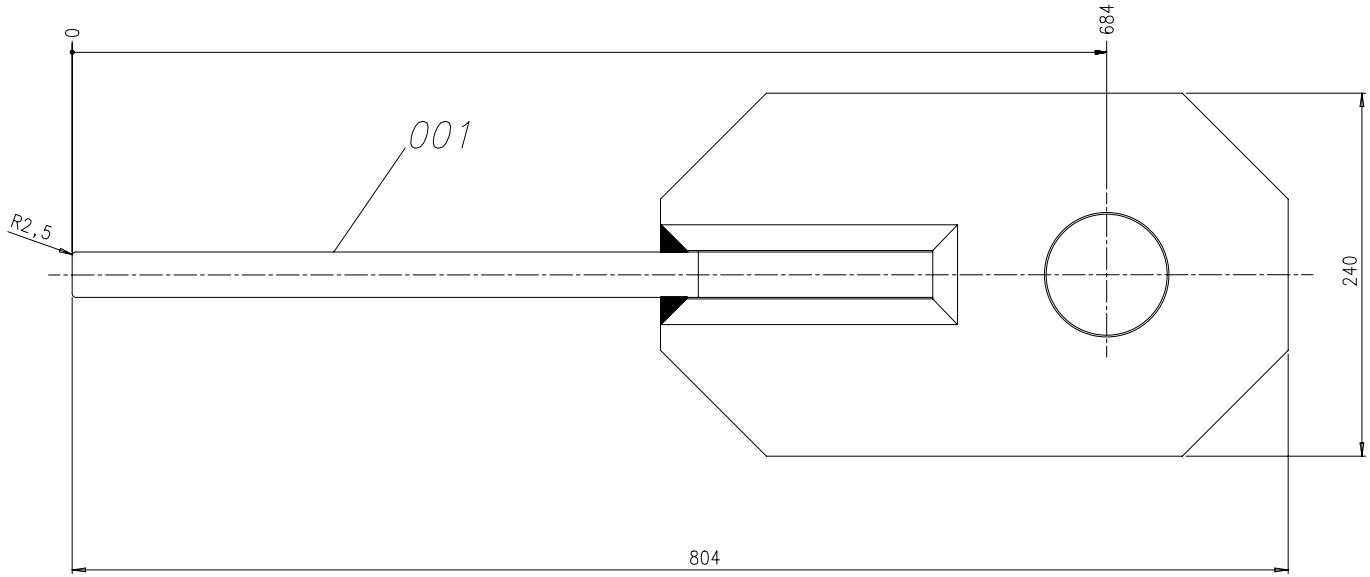
| Product | | |
|---|---|---|
| [...]<br>X62-S2.0<br>X72<br>X72-B<br>X72DF<br>X72DF-1.1<br>X72DF-1.2<br>X72DF-2.1 | X72DF-2.2 | |

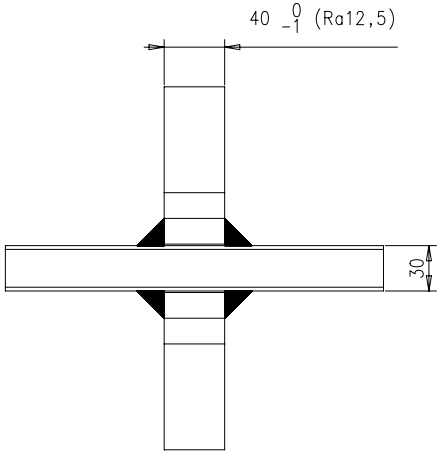
| Change | Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | | Activity Code | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | C | dki021 | mhu019 | 15.05.2023 | CNAA003572 | Drawing update | Approved | | 4 | 3 |
| | | | | | | | | | E | C |

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of the drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.

| [mm] [kg] | 1:1 | A4 | Item ID | PAAD026436 | Drawing Page/s | 2/2 |
|---|---|---|---|---|---|---|
| | NX | | | | | |




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 001 | PAAD902230 | CLAMPING PART | | DAAD902577 | | 55,0 |
| QTY | SEQ NO | Material ID | Material Name / Dimension, Occ | | Standard or Drawing | Basic Material / Material Standard | Weight GR./NET |
| Free space for lic. | | | | | | Q-Code: XXXXX<br>Standard: ISO; JIS | Main Drw. |
| Modif. | A | EAAD095725 | 28.04.2021 | B | EAAD096559 | 29.04.2021 | |
| | | Number | Drawn date | | Number | Drawn date | Number / Drawn date |

WIN GD Winterthur Gas & Diesel

Product: W-2S

CLAMPING PART
MACHINED, TO ENGINE STAYS
Klemmteil
bearbeitet, zu Motorabstützung

| | | | | | |
|---|---|---|---|---|---|
| Units: mm kg | NX | | Basic Material | | Net Weight 55 |
| SURFACE PROTECTION SEE GROUP 0344 | Made | 31.05.2011 Pradip Soman | Scale 1:3 | Size A2 / Page 1/1 | Material ID PAAD902231 |
| TOLERANCING PRINCIPLE ISO8015 | Chkd | 07.07.2011 mhu019 Hug | Design Group 9715 | Drawing ID DAAD902576 | Rev. B |
| GENERAL TOLERANCES ACCORDING TO ISO2768-mK | Appd | 07.07.2011 dst009 Strödecke | | | |

Approved

DIN - DIMENSIONAL DRAWING - Confidential

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of the drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.

| SEQ NO | QTY | Item ID | Item Name | Dimension | Standard-ID | Basic Material | Net Weight |
|---|---|---|---|---|---|---|---|
| 1 | 1 | PAAD902253 | PLATE | 40 THICK | | S355J2G3 | 24.71 |
| 2 | 1 | PAAD902229 | PLATE | 30 THICK | | S235JRG2 | 30.13 |

| Prod. | RT-flex48T-D<br>RT-flex50 | RT-flex50-B<br>RT-flex50-D | RT-flex58T-D V2<br>RT-flex58T-E | SCR-HHM-PILOT<br>X35-B | X40-B<br>X52 | X52DF<br>X62 | X62-B<br>X62DF | X62DF-1.1<br>[...] |
|---|---|---|---|---|---|---|---|---|

Change History

| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| A | sde101 | mhu019 | 19.01.2022 | CNAA001373 | Drawing Updated | 4 | 4 | 3 |
| - | sfe006 | dst009 | 07.07.2011 | | - | - | - | - |

Approved

WIN GD
Winterthur Gas & Diesel

# CLAMPING PART

## WELDED, TO ENGINE STAYS

**B**ill **O**f **M**aterial

Dimension

Copyright **Winterthur Gas & Diesel Ltd.** All rights reserved. By taking possession of the document the recipient recognizes and honours these rights. Neither the whole nor any part of this document may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of **Winterthur Gas & Diesel Ltd.**

| | | | | | |
|---|---|---|---|---|---|
| Units [m] [kg] | Basic Material | | | Net Weight | 54.84 |
| Main Design | Design Group | 9715 | Q-Code XXXXX | Standard | WDS |
| Qty per | A4 | Item ID | PAAD902230 | BOM Page/s | 01/02 |

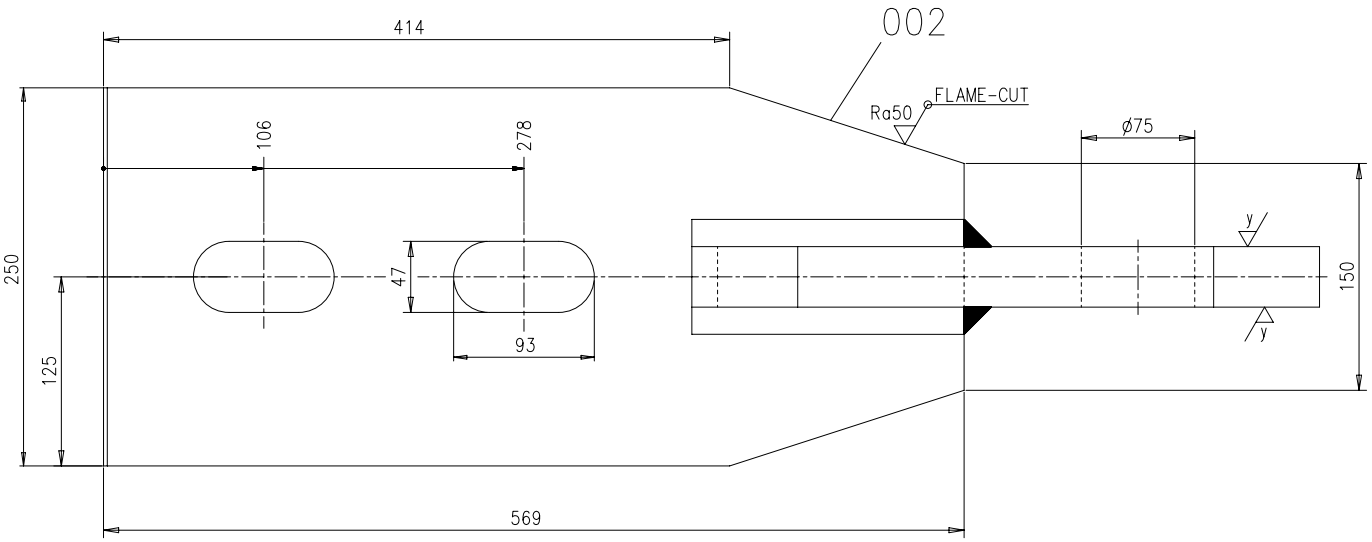
| SEQ NO | QTY | Item ID | Item Name / Dimension | Standard-ID | Basic Material | Net Weight |
|---|---|---|---|---|---|---|

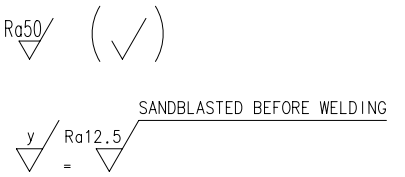
| Product | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | [...]<br>X62DF-2.1<br>X72<br>X72-B<br>X72DF<br>X72DF-1.1<br>X72DF-1.2<br>X72DF-2.1 | X72DF-2.2 | | | | | | | |

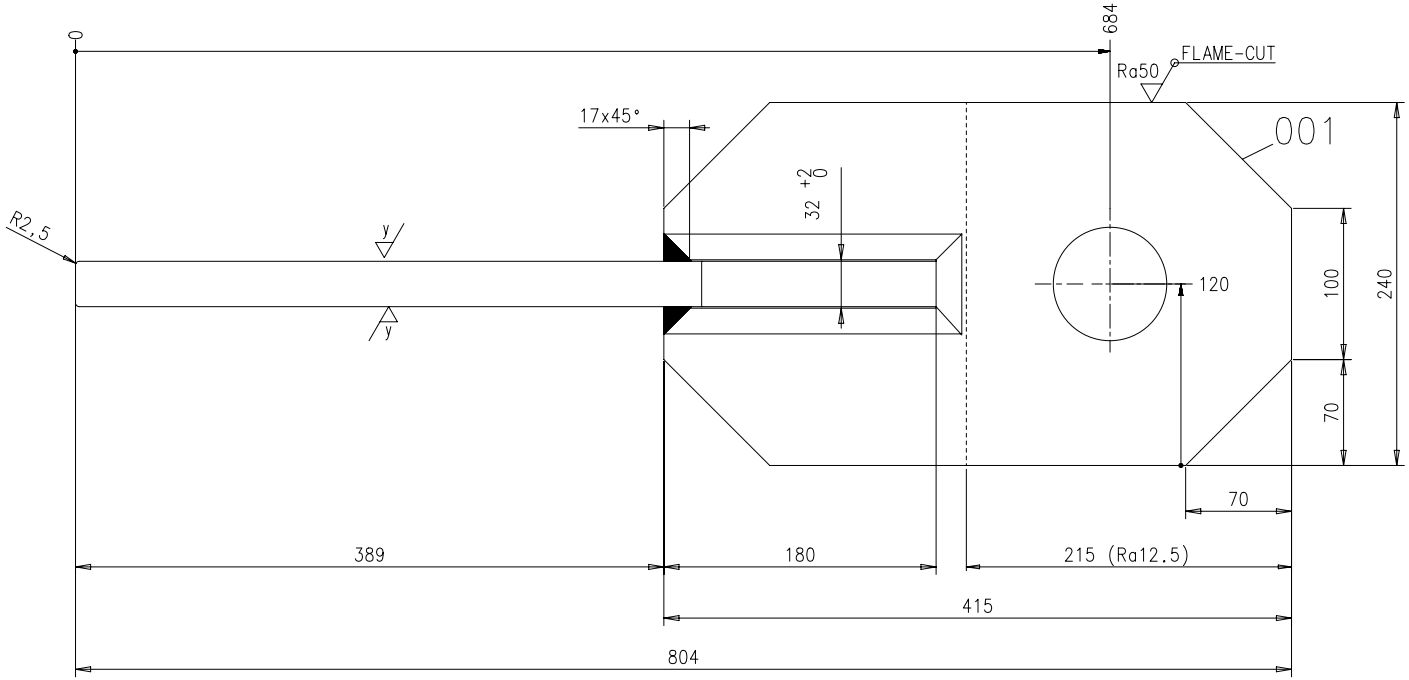
| Change | Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | | Activity Code | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | A | sde101 | mhu019 | 19.01.2022 | CNAA001373 | Drawing Updated | | | 4 | 3 |
| | | | | | | | Approved | | E | C |

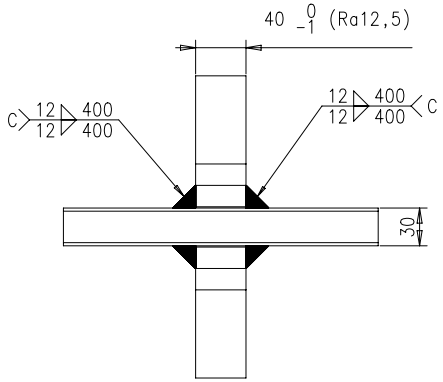
Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of the document the recipient recognizes and honours these rights. Neither the whole nor any part of this document may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.

| Units | [m] [kg] | A4 | Item ID | PAAD902230 | BOM Page/s | 02/02 |
|---|---|---|---|---|---|---|




| Prod. | RT-flex48T-D RT-flex50-D | RT-flex58T-D V2 RT-flex58T-E | CR-HHM-PILOT X35-B | X40-B X52 | X52DF X62 | X62-B X62DF | X62DF-1.1 X62DF-2.1 | X72 [...] |
|---|---|---|---|---|---|---|---|---|

| Change History | Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |
|---|---|---|---|---|---|---|---|---|---|
| | A | sde101 | mhu019 | 19.01.2022 | CNAA001373 | new Design | | 4 | 3 |
| | – | sfe006 | dst009 | 07.07.2011 | | – | | – | – |

WIN GD Winterthur Gas & Diesel

# CLAMPING PART
## WELDED, TO ENGINE STAYS

Dimension

| Scale | Units | Basic Material | Net Weight |
|---|---|---|---|
| 1:3 NX | [mm] [kg] | | 55.04 |

| Main Design | Design Group | Q-Code | Standard |
|---|---|---|---|
| | 9715 | XXXXX | WDS |

| Qty per | Item ID | Drawing Page/s |
|---|---|---|
| A2 | PAAD902230 | 1/2 |

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

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of the drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.

| Product |
| --- |
| [...] |
| X72-B |
| X72DF |
| X72DF-1.1 |
| X72DF-1.2 |
| X72DF-2.1 |
| X72DF-2.2 |

| Change | Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | A | sde101 | mhu019 | 19.01.2022 | CNAA001373 | new Design | | 4 | 3 |
| | | | | | | Approved | Activity Code | E | C |

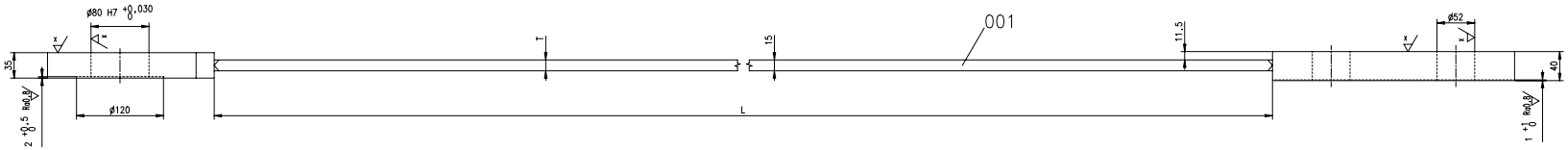
Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of the drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.

| [mm] [kg] | 1:1 | A4 | Item ID | PAAD902230 | Drawing Page/s | 2/2 |
| --- | --- | --- | --- | --- | --- | --- |
| | NX | | | | | |


bearbeitet nach dem Schweissen
MACHINED AFTER WELDING

Ra1.7

PAAD902252



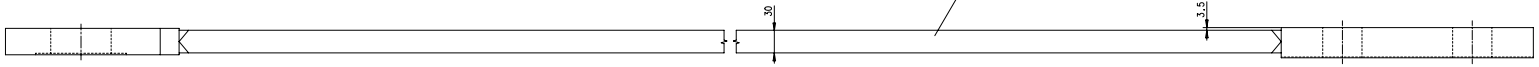

| MATERIAL ID | DIMENSIONS IN MM | | |
|---|---|---|---|
| | X | T | L |
| PAAD902252 | 2000-2280 | 15 | X - 1126 |
| PAAD902247 | 2281-2560 | 20 | |
| PAAD902257 | 2561-2840 | 25 | |
| PAAD902268 | 2841-3120 | 30 | |
| PAAD902262 | 3121-3400 | 35 | |

Fuer Mass X siehe H-Zeichnung
FOR MEASURE X SEE MAIN DRAWING

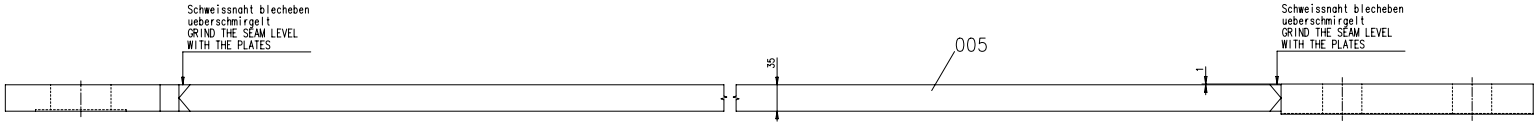
PAAD902247


PAAD902257


PAAD902268




PAAD902262




| Net Weight | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 137 | 122 | 108 | 93,8 | 79,6 | | | | | | | |
| 1 | - | - | - | - | 005 | PAAD902259 | ENGINE STAYS | DAAD902591 | | | 137 |
| - | 1 | - | - | - | 004 | PAAD902264 | ENGINE STAYS | DAAD902591 | | | 122 |
| - | - | 1 | - | - | 003 | PAAD902254 | ENGINE STAYS | DAAD902591 | | | 108 |
| - | - | - | 1 | - | 002 | PAAD902242 | ENGINE STAYS | DAAD902591 | | | 93,8 |
| - | - | - | - | 1 | 001 | PAAD902249 | ENGINE STAYS | DAAD902591 | | | 79,6 |
| Quantity | | | | | SEQ NO | Material ID | Material Name Dimension, Qty | Drawing or Drawing | Basic Material Material Standard | | Weight GR/NET |

| PAAD902262 | PAAD902268 | PAAD902257 | PAAD902254 | PAAD902247 | PAAD902252 |
|---|---|---|---|---|---|
| Material ID | | | | | Spr. Nr. Name |

G-Code XXXXX
Standard ISO, JIS

| Mod | Mod | Number | Drawn date | Number | Drawn date | Number | Drawn date | Number | Drawn date |
|---|---|---|---|---|---|---|---|---|---|
| | A | DAAD095725 | 28.04.2021 | B DAAD096059 | 29.04.2021 | | | | |

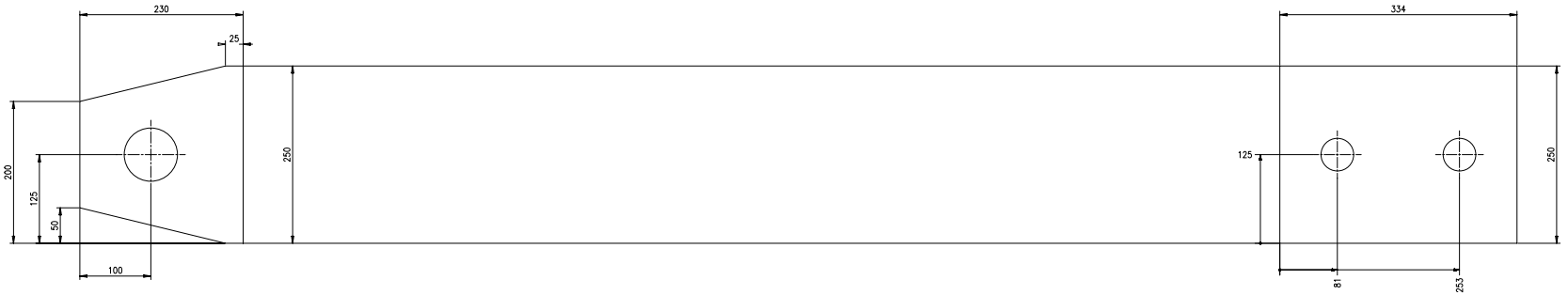
Product W-2S

ENGINE STAYS
MACHINED, TO ENGINE STAYS
Motorabstuetzung
bearbeitet zu motorabstuzung

| Units | mm kg | NX | Basic Material | Net Weight |
|---|---|---|---|---|
| Made | 01.06.2011 Pradip Saman | Scale 1:3 | Size A0 | Page 1/1 |
| Chkd | 07.07.2011 wwr001 Wroblewski | Design Group | Material ID | |
| Appd | 07.07.2011 ds009 Skrobacka | Drawing ID 9715 DAAD902592 | | Rev. B |

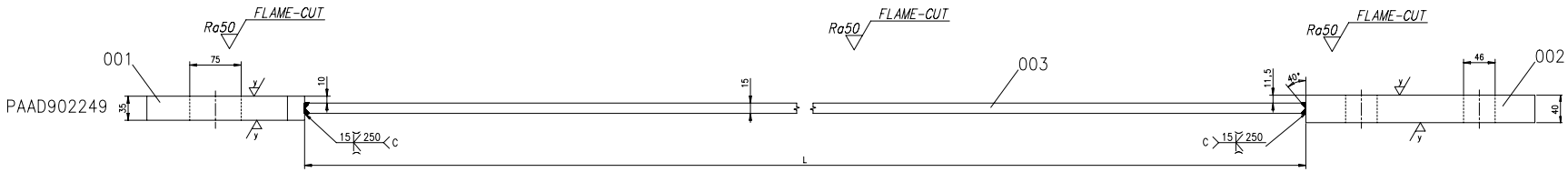
SURFACE PROTECTION SEE GROUP 9744
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Copyright Wärtsilä Gas & Diesel Ltd. All rights reserved. By taking possession of this drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Wärtsilä Gas & Diesel Ltd.



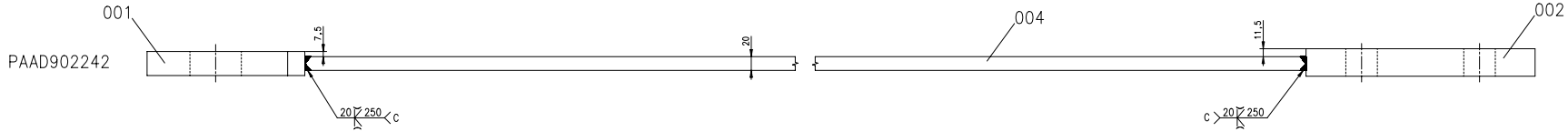

SANDBLASTED BEFORE WELDING

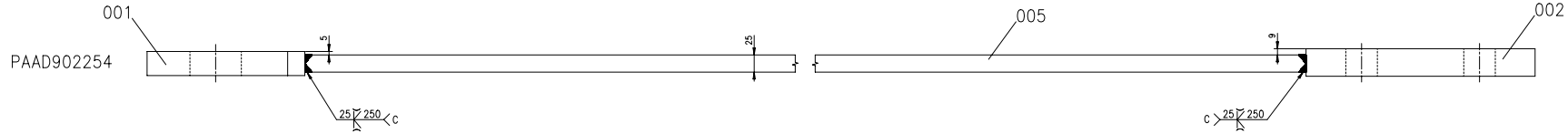
y Ra12.5

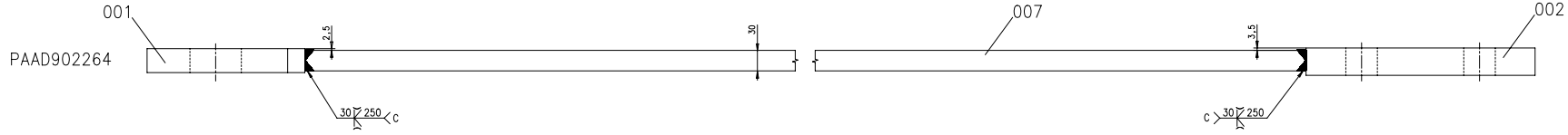


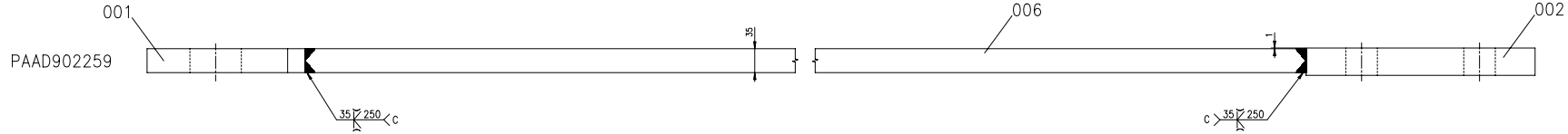

| MATERIAL ID | DIMENSIONS IN MM | | |
|---|---|---|---|
| | X | T | L |
| PAAD902249 | 2000-2280 | 15 | X - 1126 |
| PAAD902242 | 2281-2560 | 20 | |
| PAAD902254 | 2561-2840 | 25 | |
| PAAD902264 | 2841-3120 | 30 | |
| PAAD902259 | 3121-3400 | 35 | |

Fuer Mass X siehe H-Zeichnung
FOR MEASURE X SEE MAIN DRAWING




| Net Weight 197 | 122 | 108 | 93,8 | 79,6 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | - | - | - | 007 | PAAD902251 | PLATE 30THICK | DAAD902591 | W-FU-235-JR | 85,4 |
| - | 1 | - | - | - | 006 | PAAD902250 | PLATE 35Thick | DAAD902591 | W-FU-235-JR | 99,6 |
| - | - | 1 | - | - | 005 | PAAD902248 | PLATE 25THICK | DAAD902591 | W-FU-235-JR | 71,2 |
| - | - | - | 1 | - | 004 | PAAD902244 | PLATE 20THICK | DAAD902591 | W-FU-235-JR | 56,9 |
| - | - | - | - | 1 | 003 | PAAD902246 | PLATE 15THICK | DAAD902591 | W-FU-235-JR | 42,7 |
| 1 | 1 | 1 | 1 | 1 | 002 | PAAD902245 | PLATE 40THICK | DAAD902591 | W-FU-235-JR | 25,2 |
| 1 | 1 | 1 | 1 | 1 | 001 | PAAD902243 | PLATE 35THICK | DAAD902591 | W-FU-235-JR | 11,8 |
| Quantity | | | | | BOM NO | Material ID | Material Name | Drawing# or Dimension, Qty | Basic Material Material Standard | Weight GR/MET |

| PAAD902259 | PAAD902264 | PAAD902254 | PAAD902249 | PAAD902242 |
|---|---|---|---|---|
| Material ID | | | | |

Q-Code XXXXX
Standard ISO, JIS
Main Drw.

| Mod | Ⓐ EAAD895725 | 28.04.2021 | Ⓑ EAAD896559 | 29.04.2021 | | | | |
|---|---|---|---|---|---|---|---|---|
| | Number | Drawn date | Number | Drawn date | Number | Drawn date | Number | Drawn date |

WINGD Winterthur Gas & Diesel

Product W-2S

ENGINE STAYS
WELDED, TO ENGINE STAYS
Motorabstuetzung
geschweisst, zu Motarabstuetzung

| Units | mm kg | NX | Basic Material | Net Weight |
|---|---|---|---|---|
| Mode | 01.06.2011 Pradip Saman | Scale 1:3 | Size A0 | Page 1/1 |
| Chkd | 07.07.2011 wwr001 Wroblewski | Design Group ID 9715 | Drawing ID DAAD902591 | Rev. B |
| Appd | 07.07.2011 dst009 Stoldecke | | | |

SURFACE PROTECTION SEE GROUP 9744
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of this drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.

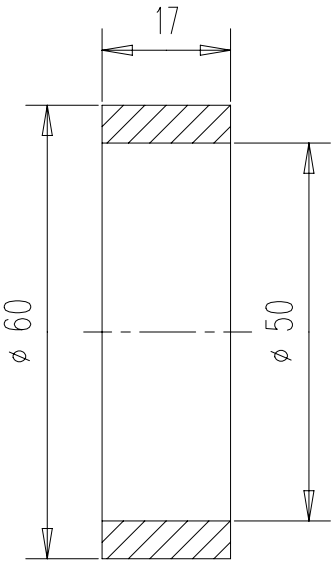
SURFACE PROTECTION SEE GROUP 0344

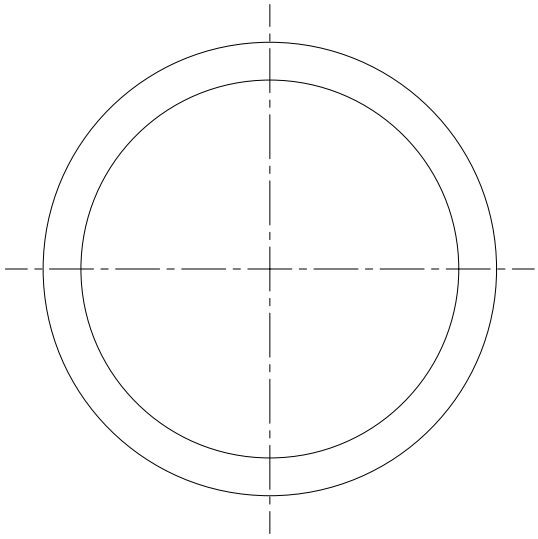
TOLERANCING PRINCIPLE ISO8015

GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Ra12,5

SHARP EDGES REMOVED



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 | EAAD083026 | 25.07.2011 | | | | | | |
| B | EAAD095725 | 28.04.2021 | | | | | | |
| C | EAAD096559 | 29.04.2021 | | | | | | |

WIN GD Winterthur Gas & Diesel

Product W-2S

RING
TO ENGINE STAYS, FRICTION TYPE
Ring

| | | | | | |
|---|---|---|---|---|---|
| Units mm kg | NX | Basic Material W-FU-235-JR | | | Net Weight 0,12 |
| Made 08.09.1998 S. Sylianou | | Scale 1:1 | Size A4 | Page 1/1 | Material ID 107.246.316.001 |
| Chkd | | Design Group 9715 | Drawing ID 107.246.316 | | Rev. C |
| Appd 08.09.1998 WCH001 Service User | | | | | |

Copyright Winterthur Gas & Diesel Ltd. All rights reserved.
By taking possession of the drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.

ASD - ASSEMBLY DRAWING - Internal

# 001 DISC SPRING

| | |
|---|---|
| MATERIAL | 50 Cr V 4 |
| MODULUS OF ELASTICITY | E = 2,06 x $10^5$ N/mm2 |
| OPERATING TEMPERATURE | -50...+200 °C |
| SURFACE PROTECTION | PHOSPHATED AND OILED (RUST PREVENTING OIL) |

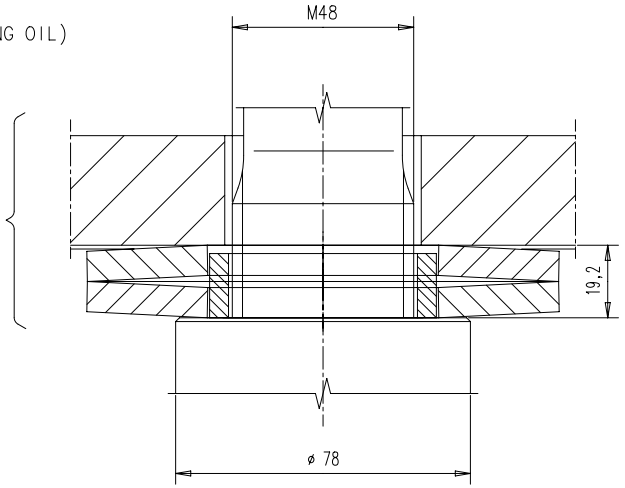
FOR ASSEMBLY OF THE DISC SPRING PACKET SEE SKETCH

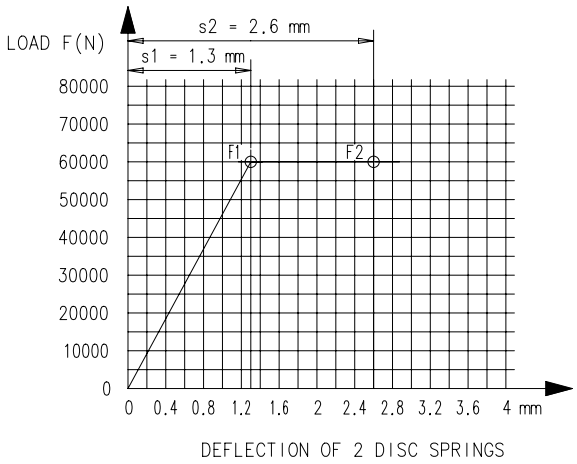
F1 = 60000 N BY DEFLECTION s1 = 1.3 mm OF 1 DISC

F2 = F1 BY DEFLECTION s2 = 2.6 mm OF 2 DISCS

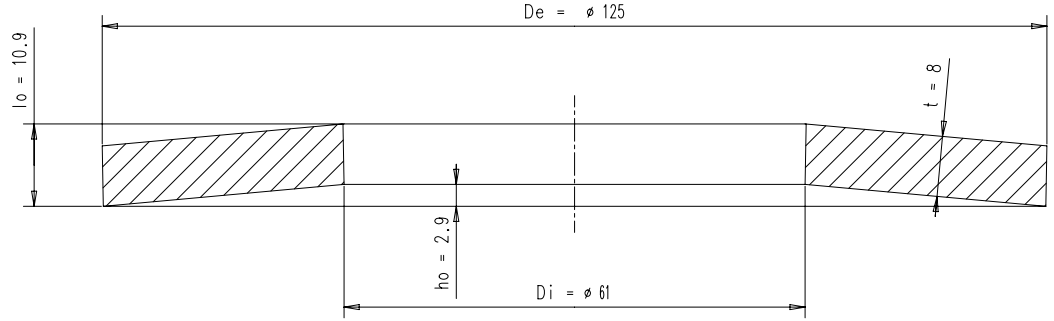
$\frac{ho}{s} = 0.50$

$s = \frac{ho}{0.50}$




DEFLECTION OF 2 DISC SPRINGS




SUPPLIER: URS INGOLD
P.O. Box 180
Oelestrasse 7
CH-3800 Interlaken

Approved

Free space for lic.

Q-Code XQXXX

Standard ISO; JIS

Main Drw.

| Modif. | Number | Drawn date | Number | Drawn date | Number | Drawn date | Number | Drawn date |
|---|---|---|---|---|---|---|---|---|
| A | 7-29.688 | 25.10.2004 | B EAAD083026 | 25.07.2011 | C EAAD095725 | 28.04.2021 | D EAAD096559 | 29.04.2021 |

WIN GD Winterthur Gas & Diesel

Product W-2S

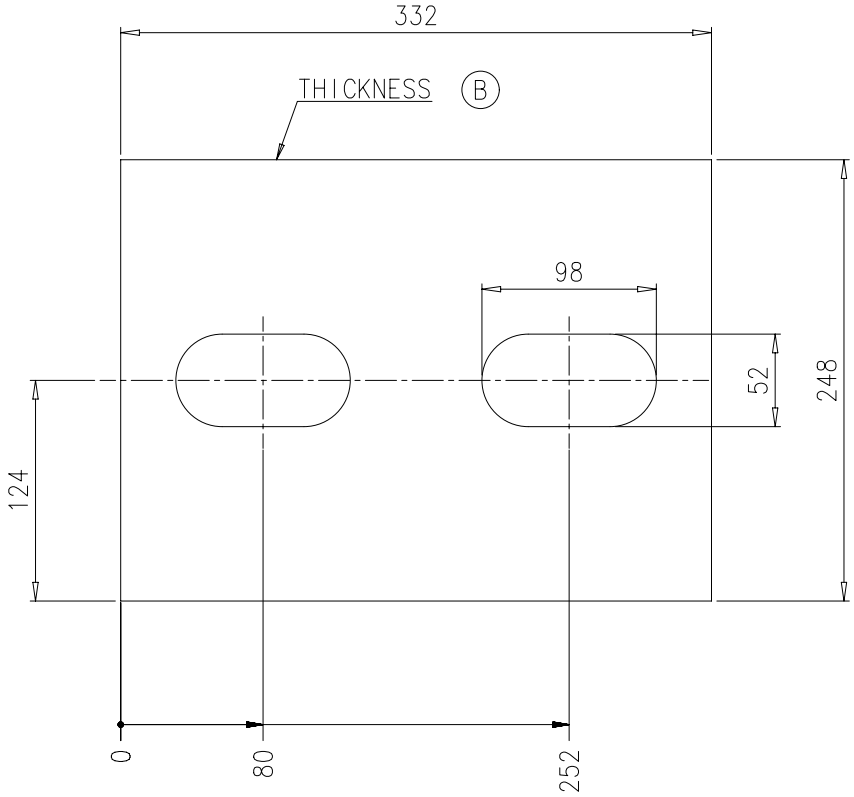
DISC SPRING
TO ENGINE STAYS, FRICTION TYPE
Tellerfeder

Units mm kg | NX | Basic Material | Net Weight 0,55

| | | | | | |
|---|---|---|---|---|---|
| SURFACE PROTECTION SEE GROUP 0344 | Made 08.09.1998 S. Natali | Scale - | Size A2 | Page 1/1 | Material ID 107.246.311.001 |
| TOLERANCING PRINCIPLE ISO8015 | Chkd | Design Group 9715 | Drawing ID 107.246.311 | | Rev. D |
| GENERAL TOLERANCES ACCORDING TO ISO2768-mK | Appd 08.09.1998 WCH001 Service User | | | | |

DID - DIMENSIONAL DRAWING - Confidential

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of the drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.




B

## SPECIFICATION:

TECHNICAL DATA: AVERAGE COEFFICIENT OF FRICTION DRY: $\mu$ = 0,42
MAX. PERMISSIBLE SURFACE PRESSURE: p= 250N/cm²

MATERIAL: ASBESTOS FREE FRICTION MATERIAL,
ALSO SUITABLE FOR USING IN OIL.

| Free space for lic. | | | | | | | | | | | | Q-Code XXXXX | Main Drw. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | Standard ISO; JIS | |
| Modif. | A | EAAD095725 | 28.04.2021 | B | EAAD096559 | 29.04.2021 | | | | | | | |
| | | Number | Drawn date | | Number | Drawn date | | Number | Drawn date | | Number | Drawn date | |

WIN GD Winterthur Gas & Diesel

Product W-2S

SHIM
TO ENGINE STAYS, FRICTION
Beilage
zu Motorabstutzung

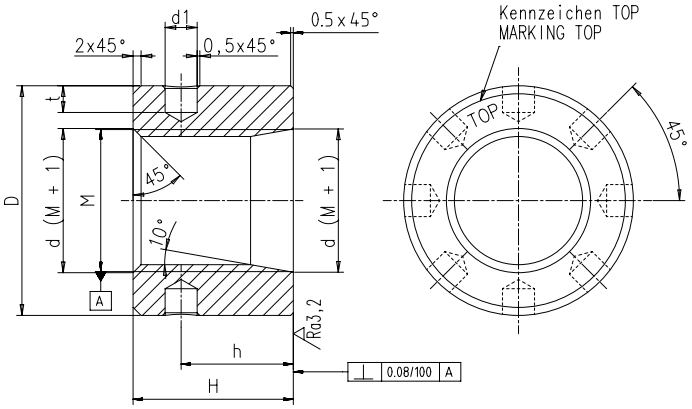
| Units mm kg | NX | Basic Material | Net Weight 2,3 |
|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| SURFACE PROTECTION SEE GROUP 0344 | Made | 31.05.2011 Pradip Soman | Scale 1:3 | Size A3 | Page 1/1 | Material ID PAAD902269 |
| TOLERANCING PRINCIPLE ISO8015 | Chkd | 07.07.2011 mhu019 Hug | Design Group 9715 | Drawing ID DAAD902593 | | Rev. B |
| GENERAL TOLERANCES ACCORDING TO ISO2768-mK | Appd | 07.07.2011 dst009 Ströcke | | | | |

Approved

DID - DIMENSIONAL DRAWING - Confidential

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of the drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.




| POS. | M | D | d | H | h | d1 | t |
|---|---|---|---|---|---|---|---|
| 001 | M27 | 47 | 28 | 29 | 20 | $6\ ^{+0.2}_{0}$ | 7 |
| 002 | M30 | 52 | 31 | 33 | 23 | $6\ ^{+0.2}_{0}$ | 7 |
| 003 | M33 | 57 | 34 | 36 | 25 | $6\ ^{+0.2}_{0}$ | 7 |
| 004 | M36 | 62 | 37 | 39 | 27 | $6\ ^{+0.2}_{0}$ | 7 |
| 005 | M39 | 67 | 40 | 42 | 29 | $6\ ^{+0.2}_{0}$ | 7 |
| 006 | M42 | 73 | 43 | 46 | 32 | $6\ ^{+0.2}_{0}$ | 7 |
| 007 | M45 | 78 | 46 | 49 | 34 | $6\ ^{+0.2}_{0}$ | 7 |
| 008 | M48 | 83 | 49 | 52 | 36 | $6\ ^{+0.2}_{0}$ | 7 |
| 009 | M52 | 90 | 53 | 56 | 39 | $6\ ^{+0.2}_{0}$ | 7 |
| 010 | M56 | 97 | 57 | 61 | 43 | $9.5\ ^{+0.2}_{0}$ | 10 |
| 011 | M60 | 104 | 61 | 65 | 46 | $9.5\ ^{+0.2}_{0}$ | 10 |
| 012 | M64 | 110 | 65 | 70 | 49 | $9.5\ ^{+0.2}_{0}$ | 10 |
| 013 | M68 | 117 | 69 | 74 | 52 | $9.5\ ^{+0.2}_{0}$ | 10 |
| 014 | M72 | 124 | 73 | 78 | 55 | $9.5\ ^{+0.2}_{0}$ | 10 |
| 015 | M76 | 131 | 77 | 82 | 57 | $9.5\ ^{+0.2}_{0}$ | 10 |
| 016 | M80 | 138 | 81 | 87 | 61 | $14\ ^{+0.2}_{0}$ | 15 |
| 017 | M85 | 146 | 86 | 92 | 64 | $14\ ^{+0.2}_{0}$ | 15 |
| 018 | M90 | 155 | 91 | 98 | 69 | $14\ ^{+0.2}_{0}$ | 15 |
| 019 | M95 | 164 | 96 | 103 | 72 | $14\ ^{+0.2}_{0}$ | 15 |
| 020 | M100 | 172 | 101 | 108 | 76 | $14\ ^{+0.2}_{0}$ | 15 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Ra6,3 (Ra3,2)

| MATERIAL: | W-FA-42CrMo-QT (D) |
|---|---|
| D >40 – ≤100 | vergütet Rm = 900–1100 N/mm² HEAT TREATED |
| D >100 – ≤160 | vergütet Rm = 800–950 N/mm² HEAT TREATED |
| D >160 – ≤250 | vergütet Rm = 750–900 N/mm² HEAT TREATED |

| QTY | SEQ NO | Material ID | Material Name / Dimension, Occ | Standard or Drawing | Basic Material / Material Standard | Weight GR./NET |
|---|---|---|---|---|---|---|
| 1 | 020 | 107.345.876.020 | ROUND NUT M100 | 107.345.876 | W-FA-42CrMo-QT | 13,2 |
| 1 | 019 | 107.345.876.019 | ROUND NUT M95 | 107.345.876 | W-FA-42CrMo-QT | 11,4 |
| 1 | 018 | 107.345.876.018 | ROUND NUT M90 | 107.345.876 | W-FA-42CrMo-QT | 9,7 |
| 1 | 017 | 107.345.876.017 | ROUND NUT M85 | 107.345.876 | W-FA-42CrMo-QT | 8,1 |
| 1 | 016 | 107.345.876.016 | ROUND NUT M80 | 107.345.876 | W-FA-42CrMo-QT | 6,8 |
| 1 | 015 | 107.345.876.015 | ROUND NUT M76 | 107.345.876 | W-FA-42CrMo-QT | 5,9 |
| 1 | 014 | 107.345.876.014 | ROUND NUT M72 | 107.345.876 | W-FA-42CrMo-QT | 5,0 |
| 1 | 013 | 107.345.876.013 | ROUND NUT M68 | 107.345.876 | W-FA-42CrMo-QT | 4,2 |
| 1 | 012 | 107.345.876.012 | ROUND NUT M64 | 107.345.876 | W-FA-42CrMo-QT | 3,5 |
| 1 | 011 | 107.345.876.011 | ROUND NUT M60 | 107.345.876 | W-FA-42CrMo-QT | 2,9 |
| 1 | 010 | 107.345.876.010 | ROUND NUT M56 | 107.345.876 | W-FA-42CrMo-QT | 2,36 |
| 1 | 009 | 107.345.876.009 | ROUND NUT M52 | 107.345.876 | W-FA-42CrMo-QT | 1,86 |
| 1 | 008 | 107.345.876.008 | ROUND NUT M48 | 107.345.876 | W-FA-42CrMo-QT | 1,42 |
| 1 | 007 | 107.345.876.007 | ROUND NUT M45 | 107.345.876 | W-FA-42CrMo-QT | 1,2 |
| 1 | 006 | 107.345.876.006 | ROUND NUT M42 | 107.345.876 | W-FA-42CrMo-QT | 0,96 |
| 1 | 005 | 107.345.876.005 | ROUND NUT M39 | 107.345.876 | W-FA-42CrMo-QT | 0,79 |
| 1 | 004 | 107.345.876.004 | ROUND NUT M36 | 107.345.876 | W-FA-42CrMo-QT | 0,63 |
| 1 | 003 | 107.345.876.003 | ROUND NUT M33 | 107.345.876 | W-FA-42CrMo-QT | 0,49 |
| 1 | 002 | 107.345.876.002 | ROUND NUT M30 | 107.345.876 | W-FA-42CrMo-QT | 0,37 |
| 1 | 001 | 107.345.876.001 | ROUND NUT M27 | 107.345.876 | W-FA-42CrMo-QT | 0,25 |

Free space for Mc. | Q-Code XQXXX | Main Drw.
Standard ISO; JIS

| Modif. | Number | Drawn date | Number | Drawn date | Number | Drawn date | Number | Drawn date |
|---|---|---|---|---|---|---|---|---|
| | A EAAD700017 | 13.01.2011 | B EAAD084319 | 06.02.2013 | C EAAD087822 | 28.07.2017 | D EAAD095725 | 18.01.2021 |

WINGD Winterthur Gas & Diesel

Product W-2S

ROUND NUT

Rundmutter

Units mm kg | NX | Basic Material | Net Weight

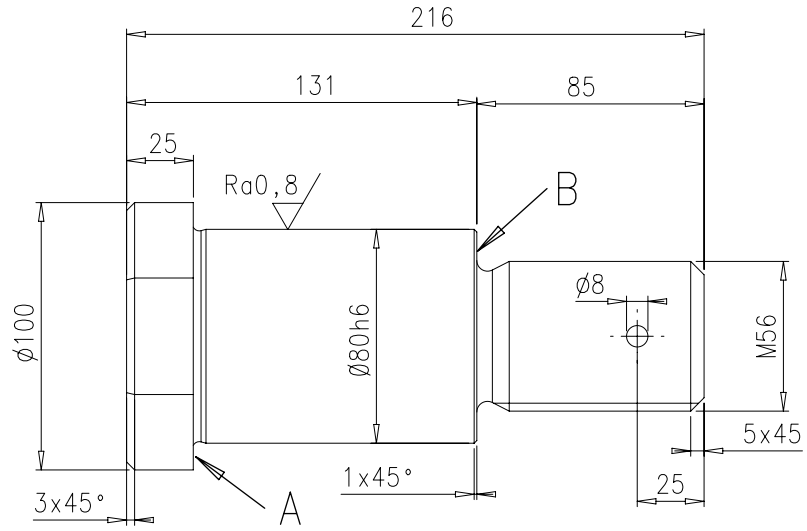
SURFACE PROTECTION SEE GROUP 0344
TOLERANCING PRINCIPLE ISO8015
GENERAL TOLERANCES ACCORDING TO ISO2768-mK

Made 19.08.2004 pne001 P.Neracher
Chkd
Appd 20.08.2004 PNE001 Neracher

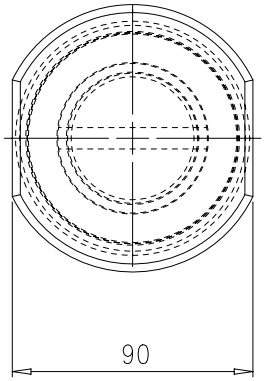
Scale 1:1 | Size A1 | Page 1/1 | Material ID
Design Group 3306
Drawing ID 107.345.876 | Rev. D

3D - DIMENSIONAL DRAWING - Confidential
Approved

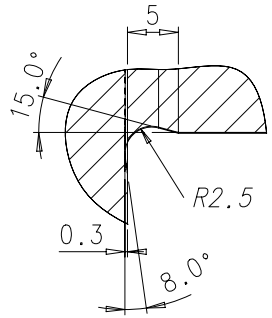
Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of the drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.



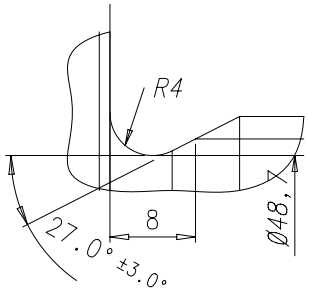

Ra3,2 (√) NORMALIIZED, SHARP EDGES REMOVED, BURNSHED




A M2:1




B M2:1




| Prod. | RT-flex48T-D RT-flex50 | RT-flex50-B RT-flex50-D | RT-flex58T-D V2 RT-flex58T-E | SCR-HHM-PILOT X35 | X35-B X40 | X40-B X52 | X52DF X52DF-1.1 | X62 [...] |
|---|---|---|---|---|---|---|---|---|

Change History

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| C | dki021 | mhu019 | 15.05.2023 | CNAA003572 | Drawing update | 4 | 3 |
| B | sde101 | mhu019 | 30.04.2021 | EAAD096559 | Legacy information. See corresponding ChangeNotice | 4 | 3 |
| A | sde101 | mhu019 | 28.04.2021 | EAAD095725 | Legacy information. See corresponding ChangeNotice | 4 | 3 |
| – | WinGD | dst009 | 19.01.2011 | EAAD771307 | – | – | – |
| Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | Activity Code | E | C |

WIN GD Winterthur Gas & Diesel

# BOLT
TO ENGINE STAYS, FRICTION

Dimension

| | | | | | |
|---|---|---|---|---|---|
| Scale 1:2 | NX | Units [mm] [kg] | Basic Material W-FU-325-N | Net Weight | 7.170 |
| Main Design | | Design Group 9715 | Q-Code XXXXX | Standard | WDS |
| Qty per | | A3 | Item ID PAAD026437 | Drawing Page/s | 1/2 |

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

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of the drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.

| Product | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| [...]<br>X62-S2.0<br>X72<br>X72-B<br>X72DF<br>X72DF-1.1<br>X72DF-1.2<br>X72DF-2.1 | X72DF-2.2 | | | | | | | |

| Change | Rev. | Creator | Approver | Approval Date | Change ID | Change Synopsis | | Activity Code | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | C | dki021 | mhu019 | 15.05.2023 | CNAA003572 | Drawing update | Approved | | 4 | 3 |
| | | | | | | | | | E | C |

Copyright Winterthur Gas & Diesel Ltd. All rights reserved. By taking possession of the drawing the recipient recognizes and honours these rights. Neither the whole nor any part of this drawing may be used in any way for construction, fabrication, marketing or any other purpose nor copied in any way nor made accessible to third parties without the previous written consent of Winterthur Gas & Diesel Ltd.

| [mm] [kg] | 1:1 | A4 | Item ID | PAAD026437 | Drawing Page/s | 2/2 |
|---|---|---|---|---|---|---|
| | NX | | | | | |

# MIDS - Engine Stays (DG9715)

WinGD X52DF/ X52DF-1.1

## TRACK CHANGES

| DATE | SUBJECT | DESCRIPTION |
|---|---|---|
| 2018-07-19 | DRAWING SET | First web upload |
| 2018-10-05 | DAAD103409<br>DAAD100390<br>DAAD100398<br>DAAD100444<br>DAAD100451 | new revision |
| 2019-07-17 | DAAD100390<br>DAAD100398 | new revision |
| 2020-11-25 | DAAD103409<br>DAAD100390<br>DAAD100398<br>DAAD100444<br>DAAD100451<br>107.345.876 | new revision |
| 2021-05-19 | DAAD018242<br>DAAD012142<br>DAAD012141<br>DAAD012457<br>DAAD902591<br>DAAD902592<br>107.246.316<br>107.246.311<br>DAAD902593<br>107.345.876<br>DAAD012368_ | new revision |

**DISCLAIMER**

© Copyright by WinGD Ltd.
All rights reserved. No part of this document may be reproduced or copied in any form or by any means (electronic, mechanical, graphic, photocopying, recording, taping or other information retrieval systems) without the prior written permission of the copyright owner.

THIS PUBLICATION IS DESIGNED TO PROVIDE AN ACCURATE AND AUTHORITATIVE INFORMATION WITH REGARD TO THE SUBJECT-MATTER COVERED AS WAS AVAILABLE AT THE TIME OF PRINTING. HOWEVER, THE PUBLICATION DEALS WITH COMPLICATED TECHNICAL MATTERS SUITED ONLY FOR SPECIALISTS IN THE AREA, AND THE DESIGN OF THE SUBJECT-PRODUCTS IS SUBJECT TO REGULAR IMPROVEMENTS, MODIFICATIONS AND CHANGES. CONSEQUENTLY, THE PUBLISHER AND COPYRIGHT OWNER OF THIS PUBLICATION CAN NOT ACCEPT ANY RESPONSIBILITY OR LIABILITY FOR ANY EVENTUAL ERRORS OR OMISSIONS IN THIS BOOKLET OR FOR DISCREPANCIES ARISING FROM THE FEATURES OF ANY ACTUAL ITEM IN THE RESPECTIVE PRODUCT BEING DIFFERENT FROM THOSE SHOWN IN THIS PUBLICATION. THE PUBLISHER AND COPYRIGHT OWNER SHALL UNDER NO CIRCUMSTANCES BE HELD LIABLE FOR ANY FINANCIAL CONSEQUENTIAL DAMAGES OR OTHER LOSS, OR ANY OTHER DAMAGE OR INJURY, SUFFERED BY ANY PARTY MAKING USE OF THIS PUBLICATION OR THE INFORMATION CONTAINED HEREIN.

WinGD Ltd.
WinGD AG.
WinGD 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

| | | |
|---|---|---|
| 2022-09-29 | PAAD294628<br>PAAD294642<br>PAAD294648<br>PAAD294661<br>PAAD294763<br>PAAD294782 | new revision |
| 2025-10-14 | PAAD300929-C<br>PAAD300931-C<br>PAAD300932-C<br>PAAD300935-C<br>PAAD300937-C<br>PAAD300939-C<br>PAAD300922-C<br>PAAD300924-C<br>PAAD300925-C<br>PAAD300926-C<br>PAAD300927-C<br>PAAD300928-C<br>PAAD026436-C<br>PAAD902231-B<br>PAAD902230-A<br>PAAD026437-C | new revision |

**DISCLAIMER**

© Copyright by WinGD Ltd.
All rights reserved. No part of this document may be reproduced or copied in any form or by any means (electronic, mechanical, graphic, photocopying, recording, taping or other information retrieval systems) without the prior written permission of the copyright owner.

THIS PUBLICATION IS DESIGNED TO PROVIDE AN ACCURATE AND AUTHORITATIVE INFORMATION WITH REGARD TO THE SUBJECT-MATTER COVERED AS WAS AVAILABLE AT THE TIME OF PRINTING. HOWEVER, THE PUBLICATION DEALS WITH COMPLICATED TECHNICAL MATTERS SUITED ONLY FOR SPECIALISTS IN THE AREA, AND THE DESIGN OF THE SUBJECT-PRODUCTS IS SUBJECT TO REGULAR IMPROVEMENTS, MODIFICATIONS AND CHANGES. CONSEQUENTLY, THE PUBLISHER AND COPYRIGHT OWNER OF THIS PUBLICATION CAN NOT ACCEPT ANY RESPONSIBILITY OR LIABILITY FOR ANY EVENTUAL ERRORS OR OMISSIONS IN THIS BOOKLET OR FOR DISCREPANCIES ARISING FROM THE FEATURES OF ANY ACTUAL ITEM IN THE RESPECTIVE PRODUCT BEING DIFFERENT FROM THOSE SHOWN IN THIS PUBLICATION. THE PUBLISHER AND COPYRIGHT OWNER SHALL UNDER NO CIRCUMSTANCES BE HELD LIABLE FOR ANY FINANCIAL CONSEQUENTIAL DAMAGES OR OTHER LOSS, OR ANY OTHER DAMAGE OR INJURY, SUFFERED BY ANY PARTY MAKING USE OF THIS PUBLICATION OR THE INFORMATION CONTAINED HEREIN.

WinGD Ltd.
WinGD AG.
WinGD 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