WIN GD
Winterthur Gas & Diesel

Technical Information Note
020

Date:	2020-12-21

Removal of the iCAT system as a standard feature from all DF engines

All DF engines

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1 Introduction

WinGD has decided to remove the iCAT (integrated Cylinder lubricant Auto Transfer) system as standard from all Dual-Fuel (DF) engines associated with the fuel types MGO, MDO and HFO (with up to a maximum of 0.50% sulphur content m/m). The recent regulations limiting the sulphur content in fuels (the global 0.50% sulphur cap) permits the use of certain BN40 to 60 oils which are capable and approved of for handling both modes, gas and diesel mode operation, with a single grade cylinder lubricating oil. Consequently, the iCAT system will only be available as an optional application for customers who prefer to have it for enhanced flexibility.

The engine documentation will be updated accordingly for the affected engine types.

The latest list of validated cylinder lubricating oils is available on the WinGD webpage under the following link:

https://www.wingd.com/en/documents/w-2s/tribology/fuel-lubricants-water/validated-cylinder-oils-for-wingd-engines.pdf/

2 Single cylinder lubricating oil installations

Only a single grade cylinder lubricating oil is used which is suitable for engine operation in both gas mode and diesel mode (with liquid fuels containing up to a maximum 0.50% sulphur content m/m).

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

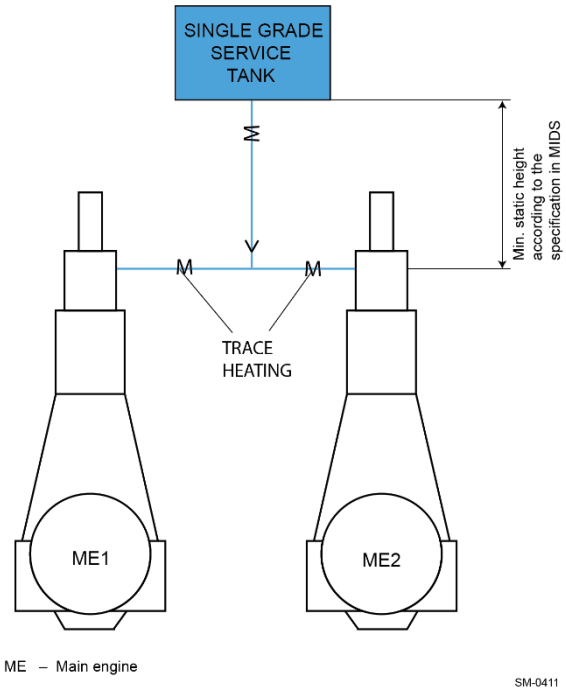

Figure 1: Single grade cylinder lubricating oil application

3 Dual cylinder lubricating oil installations without iCAT

Two different cylinder lubricating oil grades are used if no applicable single grade cylinder lubricating oil is selected (e.g. for commercial reasons). A manual changeover valve on the ship side must be installed if the optional iCAT is not applied.

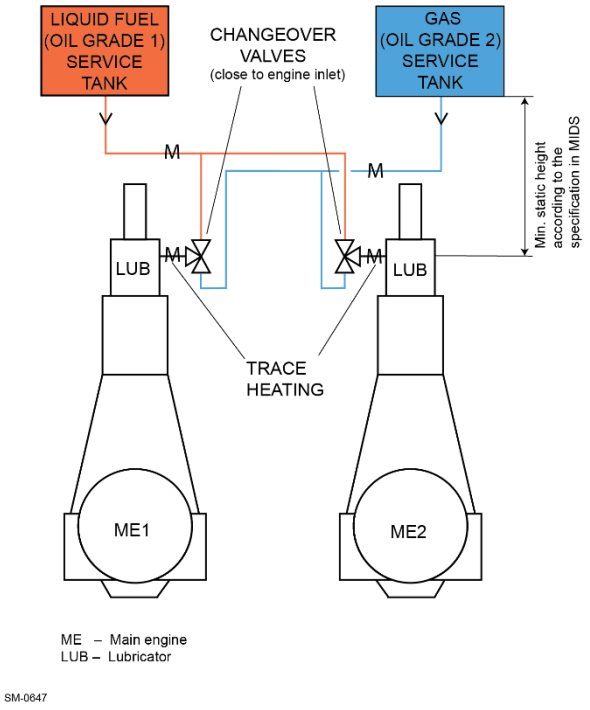

Figure 2: Dual cylinder lubricating oil installation without iCAT, enabling independent gas and liquid fuel (maximum 0.50% sulphur m/m) operation with a manual changeover valve

4 Dual cylinder lubricating oil installations with iCAT as an optional application

The iCAT system will still be offered as an optional application for customers who prefer to have it for enhanced operational flexibility.

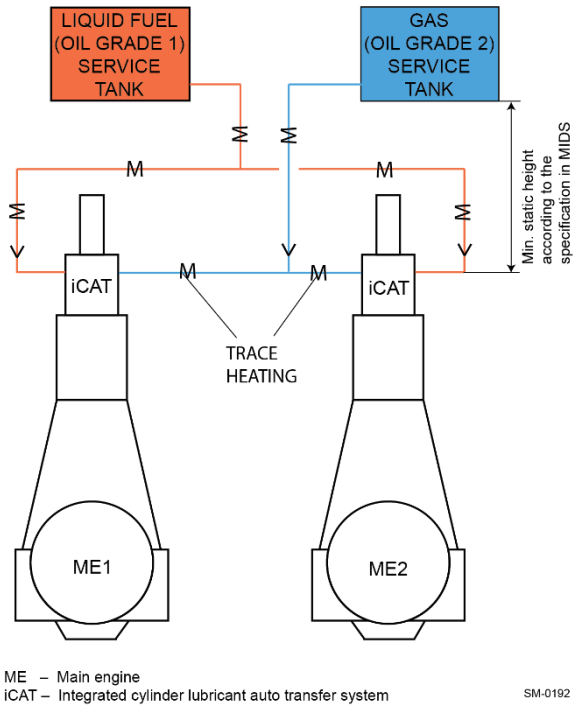

Figure 3: Dual cylinder lubricating oil installation with iCAT as an optional application, enabling independent gas and liquid fuel (maximum 0.50% sulphur m/m) operation with automatic iCAT changeover

5 Operation of an existing iCAT system with one grade cylinder lubricating oil

Some operators showed interest in using one grade cylinder lubricating oil on existing vessels. For these reasons, WinGD prepared a dedicated document, the Service Letter SL-0016 (released Sept 2020) which outlines and describes in detail the required steps to follow. This Service Letter is attached in the appendix of this document, and it can also be found on WinGD's Customer Portal.

6 Appendix

WIN GD
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Service Letter **SL-0016**

Operating the X-DF iCAT system with one grade cylinder lubricating oil

Date:	11 September 2020

Implementation: When needed

For the WinGD X52DF/X62DF and X72DF engines

Information for:

Owners and operators of X52DF, 62DF and X72DF engines.

Summary:

Description of how to operate the iCAT system with only one grade cylinder lubricating oil, and how to switch back to two oils.

This Service Letter applies to the WinGD X52DF, X62DF and X72DF engines, which have WinGD's unique 'iCAT' (integrated Cylinder lubricant Auto Transfer) system. The iCAT system enables quick changeover between low and high BN cylinder lubricating oils, as required for the changeover between the operating modes.

Inquiries were received where operators intended to use only one grade cylinder lubricating oil for both gas and liquid fuel mode operation. This Service Letter describes how this can be executed by disabling the iCAT system, as well as how to revert back to the use of two grades cylinder oils on board a vessel.

Yours faithfully

Adrian Siegfried
Product Manager
X62DF / X72DF

Wolfgang Dunker
General Manager
License Management

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1 Introduction

WinGD X-DF engines can switch freely between gas and liquid fuel mode operation. Traditionally, gas mode (or MGO) operation required a low BN cylinder lubricating oil (BN 15 - 40), whereas diesel mode operation with HFO (and higher sulphur content) required a high BN (e.g. BN100) cylinder lubricating oil. To ensure that the right cylinder lubricating oil is always available and corresponding to the fuel in use, WinGD introduced the iCAT (integrated Cylinder lubricants Auto Transfer) system on the X-DF engines in mid-2017 as standard for all X-DF engines that operate with two different fuels (including higher sulphur content in fuels pre-2020).

Recently, inquiries were received from operators wishing to use only one grade cylinder lubricating oil for their engines. The recent regulations limiting the sulphur content in fuels (the global 0.50% sulphur cap) permits the use of certain BN40 to 60 oils which are capable of handling both gas and diesel mode operation. Based on this, the iCAT can be deactivated as it is no longer switching (regardless of whether gas or liquid fuel mode is selected), and only one cylinder lubricating oil tank will then be used.
This Service Letter explains the necessary steps to disabling the iCAT system.

It shall be added though that upon operator's decision it still (can) make sense to use a very low BN (e.g. BN15) for gas operation and a higher (e.g. BN40) for diesel operation with 0.5% S fuels. In such a case iCAT must remain operational.

More information regarding cylinder lubricating oil selection and the list of validated products can be found in the following documents:

Lubricants for WinGD engines
https://www.wingd.com/en/documents/w-2s/tribology/fuel-lubricants-water/lubricants-for-wingd-engines-v6.pdf/

Validated Cylinder Oils for WinGD engines
https://www.wingd.com/en/documents/w-2s/tribology/fuel-lubricants-water/validated-cylinder-oils-for-wingd-engines-v5.pdf/

2 Operating iCAT with one grade cylinder lubricating oil (deactivating the iCAT switching function)

For operating the iCAT with only one grade cylinder oil make sure to use only the HBN cylinder oil supply. The further steps are described below:

1) The Kongsberg menu (chosen as example IAS) as shown in Figure 1 below is required to perform the next steps. From the Home screen, select the following tabs in the given order: *Parameter change* → *Fuel Mode control* → *Lub. Oil Control*. The page will appear as shown below in Figure 1 Figure 1.
2) Now turn the "UNIC lub. Oil control (25.101 B)" setting **OFF** on the Remote Control System (RCS).
3) Turn the "Enable Auto Lub. oil Transfer (25.101 A)" setting **OFF** on the RCS.
4) Set the value for the "Sulfur content" to 0% for both MDO and HFO in the RCS (refer to Figure 2).
5) Manually select Low BN cylinder oil as the active cylinder oil (also Figure 2).

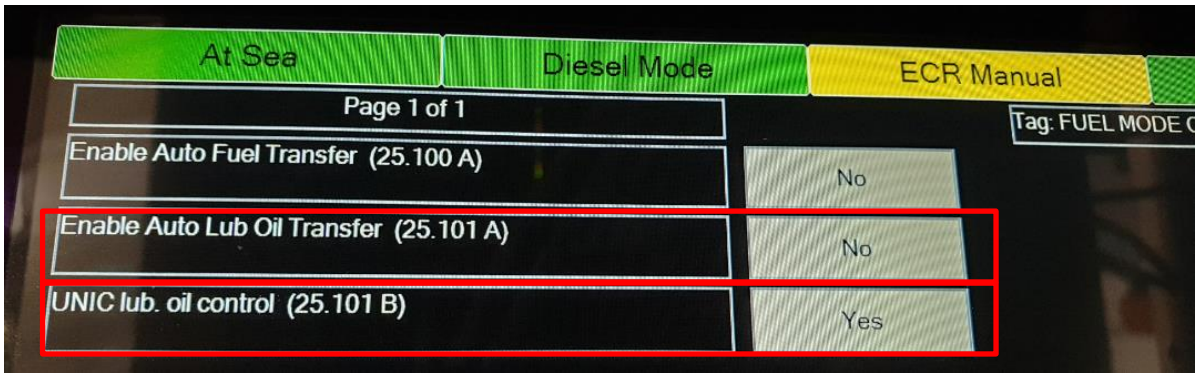

Figure 1: Kongsberg IAS screen (example)

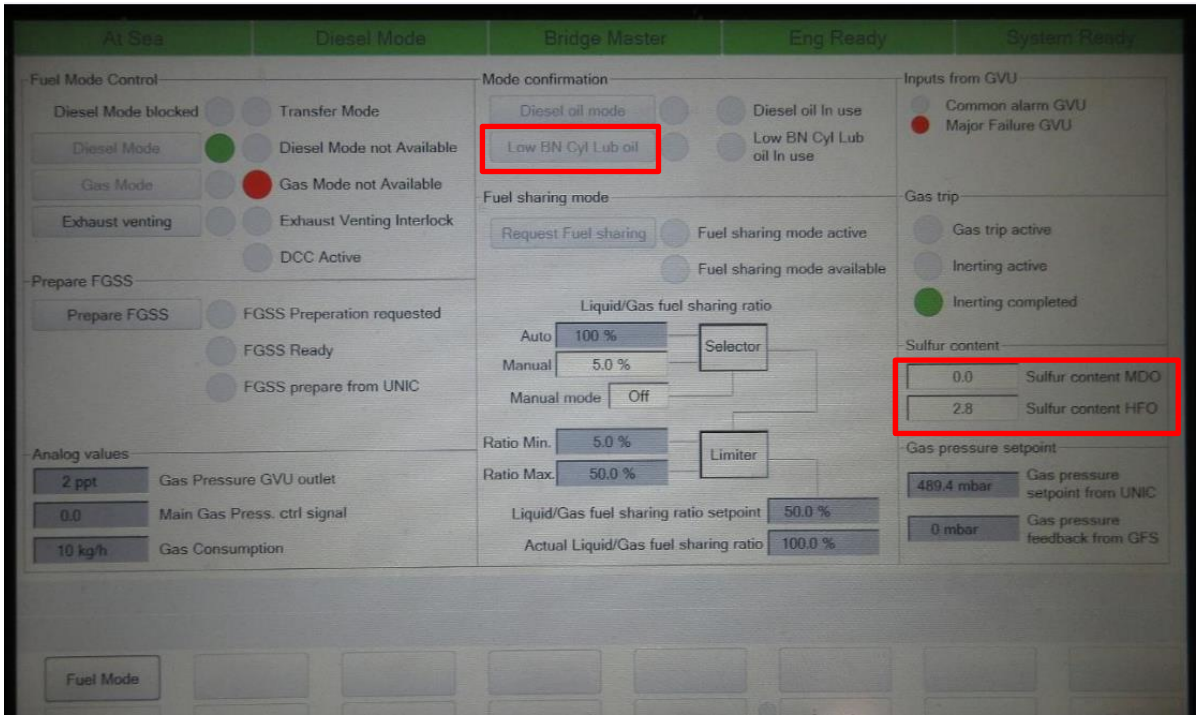

Figure 2: Kongsberg main Fuel Mode control screen (example)

6) Enter the desired lubricating oil feed rate on the LowBN and Gas columns in the LDU page (refer to the red box in Figure 3). For more details refer to the Operation Manual.

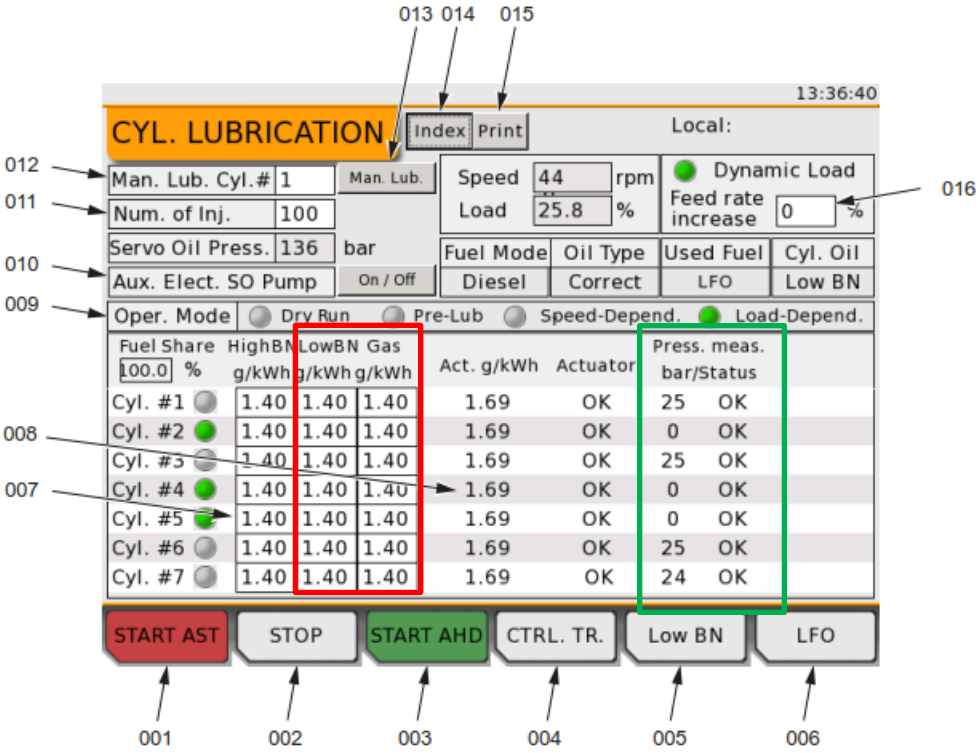

Figure 3: LDU-20 page - Cylinder lubrication in the Operation Manual

7) Check if cylinder lubricating pumps indicate pressure during operation – see above green rectangle.

Note: When only one cylinder oil pipeline is being used, the heating system (yard side) on the inactive cylinder oil supply pipeline can be deactivated.

It is furthermore recommended to perform at the next opportunity a piston underside inspection / inspection through the scavenge air ports to verify piston running conditions. Details hereto can be found the WinGD's piston running guide which can be found on https://www.wingd.com

3 Switching iCAT back to two grade cylinder lubricating oils

To switch the iCAT system back to normal operating mode with two cylinder oils, perform the following steps. Ensure that both cylinder oil tanks contain oil.

1) Turn "UNIC lub. Oil control (25.101 B)" **ON** on the RCS
2) Turn "Enable Auto Lub. oil Transfer (25.101 A)" **ON** on the RCS
3) Set the actual value of Sulphur for both fuels in RCS (e.g. 0% LNG, 0.5% HFO)
4) Enable cylinder oil 'automatic selection' in the RCS
5) Enter the desired lubricating oil feed rate on the LowBN and Gas column in LDU.
6) The heating system (yard side) to be reactivated/switched on again.

4 Contacts

How to contact WinGD

For questions about the content of this Service Letter, or if you need WinGD's assistance, please contact your nearest WinGD representative office.
If you don't have the contact details at hand, please follow the link "Contact us" on the WinGD webpage:

https://www.wingd.com/en/about-wingd/contact-us/

Contact details of WinGD Service Partners:

For engine maintenance-, operation- support, service and other questions about operation and Service, please contact the following link "Service Partners" on the WinGD webpage to find further information about our Service Partners CMS and Wärtsilä Services Switzerland which can provide worldwide support.

https://www.wingd.com/en/service-support/service-partners/