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JAPAN ENGINE CORPORATION

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(1/3)

|   |             |                   |
|---|-------------|-------------------|
| Subject :<br>Japan Engine Corporation<br>The possible works of each Authorized Repair Agent (ARA) | Application | UEC Diesel Engine |
|   | Type        | All UEC           |
|   | No.         | USI-10016E Rev.4  |
| <b>If necessary</b>   |             |                   |

Japan Engine Corporation (J-Eng) has ARA worldwide in order to carry out on board maintenance work and main engine parts repair & reconditioning work correctly & assuredly for UEC Diesel Engines.

However, since the business field is different and unclear every each ARA, we categorized and made the ability map of ARA business field based on the contract with ARA and J-Eng's judgment.

The ability works of ARA are shown on the attached tables as general work items except turbocharger (Please refer to the following items). Therefore, as for the detailed ability works, please confirm to the ARA directly.

In case of order to ARA for parts repair, please confirm the availability of the repair in advance. Because the special technique and knowledge is necessary for the main engine parts repair business, and the available parts of repair are different according to each ARA's ability.

This table shows ARA ability as of Jan. 2020. There is possibility that the ability works of ARA is added or removed hereafter. As for the latest information, please contact J-Eng.

① Overhauling, inspection and maintenance work on board

- Overhauling parts around combustion chamber and the concerning works
- Overhauling all kinds of bearing and the concerning works
- Overhauling fuel pumps and adjustment works
- Other general works

② Main engine parts repair

- Maintenance for fuel injection valve (nozzle tip)
- Maintenance for cylinder lubricating valves (cylinder lubricating oil valves)
- Maintenance for fuel pump (lapping of holder seat)
- Repair for exhaust valves (spindle and seat)
- Repair for cylinder cover
- Repair for piston head
- Repair for other general parts

As for the piston head inconel coating (anti-corrosion material) and piston rod repair, please contact us (J-Eng).

As for the ARA contact address, please refer to the following home page (link to ARA).

Home Page : <https://www.j-eng.co.jp/en/afterservice/ara/index.html>

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|             |  |          |                       |                                |
|-------------|--|----------|-----------------------|--------------------------------|
| Plan record | Newly issued 9th Mar. 2018 T.Y, D.Y, N.J<br>MSI-1455 Rev.8 (24th Jan.2017)<br>Rev.1 8th Mar. 2019 T.Y, T.N, D.Y<br>Rev.2 29th Jan. 2020 T.Y, K.K, D.Y<br>Rev.3 27th Apr. 2020 K.Y, H.H, D.Y<br>Rev.4 7th Dec. 2020 K.Y, H.H, D.Y | Approved | <i>K. Yoshida</i>     | SERVICE ENGINEERING DEPARTMENT |
|             |  | Checked  | <i>H. Hirabayashi</i> | SERVICE ENGINEERING SECTION    |
|             |  | Designed | <i>D. Yasuda</i>      | DATE OF REVISED: 7th Dec. 2020 |

## Authorized Repair Agent (ARA) Ability Map (1/2)

7th Dec. 2020

|   | On Board Work | Parts Repair and Reconditioning Work |                     |                         |             |            |             |
|---|---------------|--------------------------------------|---------------------|-------------------------|-------------|------------|-------------|
|   |               | Fuel Nozzle Tip                      | Cyl. Lub. Oil Valve | Fuel Pump (Holder seat) | Exh. Valve  | Cyl. Cover | Piston Head |
| <b>Europe</b>                                 |               |                                      |                     |                         |             |            |             |
| <b>Germany</b>                                |               |                                      |                     |                         |             |            |             |
| Scan Motoren Handels und Service GmbH         | ○             | —                                    | —                   | —                       | —           | —          | —           |
| <b>Greece</b>                                 |               |                                      |                     |                         |             |            |             |
| Metlokast Hellas L.T.D                        | ○             | —                                    | —                   | —                       | ○           | ○          | ○           |
| <b>Italy</b>                                  |               |                                      |                     |                         |             |            |             |
| La Meccanica Turbo Diesel S.r.l.              | —             | —                                    | —                   | ○                       | —           | —          | —           |
| <b>Netherlands</b>                            |               |                                      |                     |                         |             |            |             |
| Fuji Trading (Marine) B.V.                    | ○             | —                                    | —                   | —                       | —           | —          | —           |
| Goltens Rotterdam B.V.                        | ○             | —                                    | —                   | —                       | ○           | ○          | ○           |
| <b>Poland</b>                                 |               |                                      |                     |                         |             |            |             |
| Cassiopeia Ltd.                               | ○             | —                                    | —                   | —                       | —           | —          | —           |
| <b>Turkey</b>                                 |               |                                      |                     |                         |             |            |             |
| Master Makina Ltd.                            | ○ * *         | ○                                    | ○                   | ○                       | ○           | ○          | ○           |
| <b>Middle East</b>                            |               |                                      |                     |                         |             |            |             |
| <b>United Arab Emirates</b>                   |               |                                      |                     |                         |             |            |             |
| Albwardy Marine Engineering (LLC)             | —             | —                                    | —                   | —                       | ○           | ○          | —           |
| Diesel Marine International Dubai (LLC)       | —             | —                                    | —                   | —                       | ○           | ○          | ○           |
| Goltens Co. Ltd. Dubai Branch                 | ○             | ○                                    | —                   | ○                       | ○           | ○          | ○           |
| Nico International U.A.E.                     | ○             | —                                    | —                   | —                       | —           | —          | —           |
| <b>Asia</b>                                   |               |                                      |                     |                         |             |            |             |
| <b>China</b>                                  |               |                                      |                     |                         |             |            |             |
| Azuma Engineering (Shanghai) Co., Ltd.        | —             | —                                    | —                   | —                       | —           | —          | ○           |
| Ningbo DMI Ship Services&Engineering Co.,Ltd. | —             | —                                    | —                   | —                       | ○           | ○          | ○           |
| Fischer Engineering Co., Ltd.                 | ○             | —                                    | —                   | —                       | —           | —          | —           |
| Goltens Shanghai Co., Ltd.                    | ○             | ○                                    | ○                   | ○                       | ○ seat only | ○          | ○           |
| Shanghai Henry Marine Service Co.,Ltd.        | ○             | —                                    | —                   | —                       | —           | —          | —           |
| Toei Engineering (Shanghai) Co., Ltd.         | —             | —                                    | —                   | —                       | ○           | ○          | ○           |
| WinKong Marine Engineering Co., Ltd.          | ○             | —                                    | —                   | —                       | ○           | ○          | ○           |

○ : Available

— : Not available

○ \* : Helical &amp; Roll process available for Piston thread part

○ \* \* : Dock S/V available

## Authorized Repair Agent (ARA) Ability Map (2/2)

7th Dec. 2020

|                                       | On Board Work | Parts Repair and Reconditioning Work |                     |                         |            |            |             |
|---------------------------------------|---------------|--------------------------------------|---------------------|-------------------------|------------|------------|-------------|
|                                       |               | Fuel Nozzle Tip                      | Cyl. Lub. Oil Valve | Fuel Pump (Holder seat) | Exh. Valve | Cyl. Cover | Piston Head |
| <b>Asia</b>                           |               |                                      |                     |                         |            |            |             |
| <b>Japan</b>                          |               |                                      |                     |                         |            |            |             |
| Azuma Machinery Co.,Ltd.              | —             | ○                                    | —                   | ○                       | —          | —          | —           |
| Azuma Kako Co., Ltd.                  | —             | —                                    | —                   | —                       | ○          | ○          | ○           |
| Hakuyo Seiko Co., Ltd.                | —             | ○                                    | ○                   | ○                       | —          | —          | —           |
| Polestar Marine Engineering Co. Ltd.  | —             | —                                    | —                   | —                       | ○          | ○          | ○           |
| Sinsei Kogyo Co., Ltd.                | ○             | —                                    | —                   | —                       | —          | —          | —           |
| Spindle Giken Co., Ltd.               | —             | ○                                    | ○                   | ○                       | —          | —          | —           |
| Toei Engineering Co., Ltd.            | ○ * *         | —                                    | —                   | —                       | ○          | ○          | ○           |
| <b>Singapore</b>                      |               |                                      |                     |                         |            |            |             |
| AC Marine Pte Ltd.                    | ○ * *         | —                                    | —                   | —                       | —          | —          | —           |
| Azuma Engineering (S) Pte. Ltd.       | —             | ○                                    | —                   | ○                       | ○          | ○          | ○ *         |
| Brightsun Marine Pte Ltd.             | —             | —                                    | —                   | —                       | ○          | ○          | ○           |
| Daikai Engineering Pte. Ltd.          | ○             | —                                    | —                   | —                       | —          | —          | —           |
| Goltens Singapore Pte. Ltd.           | ○             | —                                    | —                   | ○                       | —          | —          | —           |
| Goltens Toei Singapore Pte. Ltd.      | —             | —                                    | —                   | —                       | ○          | ○          | ○           |
| Spindle Giken (S) Pte. Ltd.           | ○             | ○                                    | ○                   | ○                       | —          | —          | —           |
| <b>South Korea</b>                    |               |                                      |                     |                         |            |            |             |
| Jonghap Polestar Engineering Co. Ltd. | —             | —                                    | —                   | —                       | ○          | ○          | ○           |
| <b>Taiwan</b>                         |               |                                      |                     |                         |            |            |             |
| Azuma Engineering Ltd.                | —             | ○                                    | —                   | —                       | ○          | ○          | ○           |
| <b>North America</b>                  |               |                                      |                     |                         |            |            |             |
| <b>Canada</b>                         |               |                                      |                     |                         |            |            |             |
| Marine Tech Industries Ltd.           | ○             | —                                    | —                   | —                       | ○          | —          | ○           |
| <b>United States of America</b>       |               |                                      |                     |                         |            |            |             |
| Goltens Service Co., Inc. Miami       | ○             | ○                                    | ○                   | —                       | ○          | ○          | ○           |
| Motor-Services Hugo Stamp, Inc.       | ○             | —                                    | —                   | —                       | ○          | ○          | —           |
| United World Enterprise, Inc.         | ○ * *         | —                                    | —                   | —                       | —          | —          | —           |
| <b>South America</b>                  |               |                                      |                     |                         |            |            |             |
| <b>Brazil</b>                         |               |                                      |                     |                         |            |            |             |
| Metallock Brasil Ltda.                | ○             | —                                    | —                   | —                       | ○          | ○          | ○           |

○ : Available

— : Not available

○ \* : Helical &amp; Roll process available for Piston thread part

○ \* \* : Dock S/V available