



# Design Appraisal Document

Lloyd's Register EMEA  
Copenhagen Technical Support Office  
Strandvejen 104A  
DK-2900 Hellerup  
Denmark  
copenhagen-technical-support@lr.org

Date  
**14 May 2020**

Please quote this reference number on all future communications  
**M/I122189/2000261/JLJ**

## Machinery General Design Appraisal

Client : CC Jensen A/S, Svendborg, Denmark  
Manufacturer : CC Jensen A/S, Svendborg, Denmark  
Subject : Type HDU 27 – Hydraulic/Lube Oil Purifier

This Machinery General Design Appraisal is valid for a period of 5 years from the date of issue or until a change of the Rules, whichever comes first.

1. The Documents listed in paragraph 1 of the appendix have been examined for compliance with **LR Rules and Regulations for the Classification of Ships July 2019 incorporating Notice No. 1, 2, 3 and 4, Part 5, Chapters 11, 12, 13 and 14** as applicable and have been assigned an appraisal status as indicated subject to the following:
2. **Product Description**

|                    |   |                                     |
|--------------------|---|-------------------------------------|
| Makers Designation | : | CJC HDU 27                          |
| Class              | : | II (piping)                         |
| Design Pressure    | : | ≤ 0.7 MPa                           |
| Design Temperature | : | ≤ 120 °C                            |
| Function           | : | Lube and Hydraulic Oil Purification |
3. **Comments**
  - 3.1. Lloyd's Register must be advised of any design or material modifications. Failure to do so will render this general approval invalid.
  - 3.2. Please observe that the requirements of the European Directive "The Marine Equipment Directive" will be applicable for installations on board all EU Flag vessels.

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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- 3.3. The items referred to in this document are approved for installation on a ship which is classed by Lloyd's Register.
- 3.4. The filter dome is considered as a Class 3 pressure vessel according to Part 5 Chapter 11 1.5.3, although it is not subject to plan approval according to 1.6.1.
- 3.5. It is assumed that piping joints, valves, flanges and other fittings are suitable for the application. For details please refer to Part 5, Ch. 12, as they will be subject to inspection by the attending surveyor.
- 3.6. With reference to Part 5, Ch. 12, 4.2 concerning the material of the filter base, it has been noted that substantial positive functional experience has been recorded by the client and therefore the use of grey cast iron, GG20, has been accepted. Part 5, Ch. 12, 4.2.3 is to be considered for pipes, valves and fittings only.
- 3.7. Although the piping system is designated as Class II, Manufacturers material certificates will be accepted in lieu of LR materials certificates, providing that maximum conditions are in accordance with Part 5 Ch. 12, Table 12.1.2.
- 3.8. It has been noted that part of the piping system has open ended piping, attention is therefore drawn to Part 5, Ch. 12, 1.5.3 concerning the use of Class III piping.



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## Appendix

1. The documents listed below have been examined

| Document No.       | Rev. | Title  | Status | Date        |
|--------------------|------|--|--------|-------------|
| 4602001 (2 sheets) | P    | CJC Fine Filter Type HDU 3x27/-<br>Assembly Drawing + Parts List | SI     | 23 Mar 2015 |
| 1200110            | L    | Stagbolt for HDU 27/27 M85                                       | SI     | 23 Mar 2015 |
| 12 001 06-4        | 3    | Stagbolt for HDU 27/54 27/81, 27/108 M82                         | SI     | 23 Mar 2015 |
| 48 001120          | A    | Haette for 27/27   | SI     | 23 Mar 2015 |
| 4401005            | A    | Topdaeksel for 27/   | SI     | 23 Mar 2015 |
| 1802302            | A    | Hus f.forvarmer indstik 500mm                                    | SI     | 23 Mar 2015 |
| 4800803            | A    | Hus f.forvarmer indstik 1000mm                                   | SI     | 23 Mar 2015 |
| 2301323            | A    | Muffe RF for forvarmerrør 2"                                     | SI     | 23 Mar 2015 |
| 2604849            | B    | Pakdåse 27   | SI     | 23 Mar 2015 |
| 29 0001 21-3       | 6    | Svoeb udfoldet   | SI     | 23 Mar 2015 |
| 1600133            | B    | Filterfod f. HDU 27/-M03   | SI     | 23 Mar 2015 |
| 1600143            | B    | Filterfod f. HDU 27/-M03   | SI     | 23 Mar 2015 |
| 1500613            | A    | Endebund f. HDU 27/-   | SI     | 23 Mar 2015 |
| 29 012 26-4        | 3    | 14" RG studs   | SI     | 23 Mar 2015 |
| 23 001 16-4        | 6    | Topmøtrik for HDU-PTU 27/- og HDU 427/-                          | SI     | 23 Mar 2015 |
| 5802684            | C    | Forvarmerarrangement 500mm Hus                                   | SI     | 23 Mar 2015 |
| 1500605            | A    | Endebrik RF for Forvarmerhus, til ¾" muffe                       | SI     | 23 Mar 2015 |
| 2301325            | A    | Muffe ¾" RG RF afdrejet  | SI     | 23 Mar 2015 |
| 2801702            | A    | RF rør for varmer L=986  | SI     | 23 Mar 2015 |
| 23 005 29-3        | 1    | Mellemstykke   | SI     | 23 Mar 2015 |
| 2801604            | B    | Rør for forvarmer 500mm L=450 HDU                                | A      | 23 Mar 2015 |
| 26 026 13-4        | 5    | Pakring for HDU 27/-, øverst                                     | SI     | 23 Mar 2015 |
| 7000640            | C    | Piping Diagram HDU 27 H  | A      | 23 Mar 2015 |
| 7000638            | C    | Piping Diagram HDU 27  | A      | 23 Mar 2015 |
| 7000645            | -    | PI Legend  | SI     | 23 Mar 2015 |

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## Appendix

2. The documents listed below have been considered together with the submitted documents in the appraisal

| Document No. | Rev.       | Title   |
|--------------|------------|---|
| -            | -          | <b>HDU 27 Marine Diesel Purifier Product Sheet</b>            |
| -            | -          | <b>Design Specifications: E-mail 23/03/2015</b>               |
| -            | <b>1.1</b> | <b>CJC Filter Units – Piping Dimensions and Specification</b> |

### Appraisal Status Key

|    |   |
|----|---|
| A  | Approved - provided the arrangements are to the surveyor's satisfaction |
| SI | Retained as supporting documentation for information only               |

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