



MANUFACTURING SURVEY ARRANGEMENT

MSA No:
MSA0000B3D
Revision No:
1

Between "Manufacturer"

M. Jürgensen GmbH & Co. KG
Sörup, Germany

and

"DNV"

DNV GL SE
Hamburg – CMC North/East

Ref. Recognition Certificate: MSARC0000B3D

This Manufacturing Survey Arrangement (MSA) is applicable to
Cylinder Liner for diesel, gas and dual fuel engines - Final machined
subject to testing and inspection for conformance with the requirements of DNV Rules, as stated herein.

The MSA implies that the manufacturer is authorised to perform the testing and inspection without the attendance of DNV and to prepare the certificates which will be validated by DNV.

The MSA is valid until **2025-10-22**

The MSA will, however, be invalid if the Recognition Certificate is invalid, or if the manufacturer's Quality System Certificate No. 10232709 is invalid.

The MSA is governed by DNV's general terms and conditions. These may be provided upon request.

Issued at **Hamburg – CMC North/East** on **2021-11-09**

for **M. JÜRGENSEN GMBH & CO. KG**

Michael Sanders
Director Quality

for **DNV GL SE**

Kühne, Dennis
Manager Product Certification Team North/East
Germany



1 SCOPE OF WORK

This agreement is valid for the company M. Jürgensen GmbH & Co. KG, Sörup - further stated as "manufacturer".

For the above-mentioned product(s) to be certified for conformance with DNV Rules, the following conditions will come into force:

1.1 Reference Documents

- I. DNV Rules for Ship Pt. 2 and Pt. 4 Edition 2021-07
- II. Valid ISO 9001 Certificate No. 10232709 issued by Lloyd's Register Deutschland GmbH and consecutive certificates. If the certification society is changed DNV is to be informed.
- III. The Manufacturer's documented and accepted procedures for inspection and testing (See Annex 2)
- IV. The Manufacturer's authorized staff for conducting inspection and testing within the scope of the MSA (See Annex 1)
- V. A valid Approval of Manufacturer (AoM) for Grey cast iron and Nodular cast iron: AMMM00001S5

1.2 Approvals

For submittal of documents the customer portal <https://services.veracity.com> shall be used.

Possible corrections of specifications and / or drawings, made during the approval, are to be transferred to all relevant internal work drawings.

DNV is to be notified on revisions of approved documents and software during the production and commissioning on board of the intended installation. Additional or revised documents are to be forwarded for approval.

1.3 Production Places

This agreement is valid only for certification of final machined cylinder liners that are tested and inspected at the manufacturer's premises located at: Sörup, Germany

1.4 Testing and Inspection

1.4.1 General Requirements

All testing and inspection, as defined in the MSA, are entrusted to the manufacturer based on documented and accepted procedures (see Annex 2) and the use of qualified personnel (see Annex 1) familiar with the DNV Rules.

The requirements for testing as specified in this MSA are valid unless otherwise specified in DNV approved drawings/Type Approvals. All non-compliance's are to be agreed by DNV in writing.

If a customer announces to attend a test for the purpose of certification based on this MSA, DNV needs to be informed to have the chance to attend also.

1.4.2 Final testing of Cylinder Liner

The following tests and inspections are required before a DNV test certificate can be issued:

- Material testing (Chemical and Mechanical Properties)
- Hydrostatic Pressure Test with 1.5 x maximum working pressure
- Required Measurements
- Visual inspection

1.4.3 Delivery / Services from Sub-Supplier

Components and services from sub-suppliers are to be delivered and documented as described in this MSA.

The manufacturer is responsible to order components and services in compliance with the DNV approved specifications and acceptance criteria. Sub-contractors are to be qualified and deliveries are to be checked according to the Quality System. The relevant documentation is to be forwarded upon request of DNV.

If a sub-supplier does not meet the specifications for a delivery, intended for a DNV classed product, corrective actions are to be agreed with DNV.

1.4.3.1 Nitrogen hardening

For Nitrogen hardening carried out by supplier: "Stahlhärtereie Haupt GmbH, Toppstedt" it will be accepted that the supplier evaluation from the company is acceptable as long as the rating is on an "A" or "A-B" level. If this is given the supplier doesn't need a separate approval. The supplier carries out the hardening for a long time already and has proved a level of quality for the hardening of products under this MSA.

If the rating is below the "A-B" level (<97%) or a new supplier for hardening shall be used, DNV is to be informed for further decisions / separate approval of manufacturer.

1.5 Assessments performed by DNV

Compliance with the conditions agreed in this MSA is subject to control and review by assessing as follows:

- Periodical assessments of the MSA function are to be made at 6 months intervals, based on a mutually agreed schedule.
- Project-specific assessments or unscheduled spot checks may be made to ensure compliance of the products with Rule requirements.

For this purpose, DNV shall at all reasonable times be given access to the manufacturing plant and to the relevant manufacturing documents and records.

1.5.1 Agenda for the MSA assessments

The agenda for the assessments will be proposed by DNV in the notification of the meeting.

The agenda may typically contain:

- Organisation, responsibilities and qualifications of relevant personnel.
- The efficiency of the implementation of the MSA.
- Operational procedures and instructions related to the MSA agreement.
- Manufacturing processes, inspection and testing.
- Test records.
- Castings and forgings materials, properties and applications.
- Product marking and traceability and control of non-conforming product.

- h) Claims, question from clients and others.
- i) Review of possible problem areas raised from previous MSA assessments.
- j) Review of reports from Quality System Audits.
- k) Information to be updated.
- l) Statistical results from testing.
- m) Review of the Quality System Audit reports in connection with ISO QSC.
- n) News from DNV

Any problems found should be handled as non-conformities in the QSC implemented corrective action system. Corrective actions will be re-assessed by DNV.

2 REPORTING BY MANUFACTURER

2.1 Product and Material declaration (Works Certificate)

For each product to be certified under this agreement, the manufacturer shall prepare a works certificate. The certificate shall:

- Fulfil the requirements to a works certificate as per DNV Rules.
- Contain all relevant information as required by the DNV Rules.
- Under marking of the product: state the DNV certificate no.

A copy of the works certificate is to be retained by the manufacturer as quality records and the retention period is to be as stated in the Quality System Manual. Further the works certificate or any other kind of confirmation that the pressure test has been completed needs to be uploaded to the Veracity portal.

With this works certificate the manufacturer is declaring full compliance with this MSA agreement.

For further details – see also DNV Class Guideline 0550

2.2 Information to DNV

The manufacturer is to report any purchaser requirement, which may extend the scope defined in the DNV Rules. Any additional requirements outside of the DNV Rules are not covered by this MSA.

All customer complaints to products delivered under this MSA agreement which are relevant according to the DNV rules shall be reported to the DNV local office. A procedure for reporting of customer complaints must be maintained by the manufacturer. It is up to DNV to decide if further involvement is necessary or not at that time. However, closing of customer complaints reported to DNV and corrective actions implemented by the manufacturer will be discussed while the MSA assessments.

3 REPORTING BY DNV

3.1 Issuance of DNV Product Certificates

The manufacturer enters the order- and product data in the Veracity portal based on the document acc. para. 2.1.

The digitally signed product certificate will be finalized by the surveyor and provided to the manufacturer (or if selected: invoice recipient) in the Veracity portal and additionally via email.

Link: <https://services.veracity.com>

If the final customer requests a DNV product certificate, this can be issued even if a certificate is not required by the rules for the intended application.

3.2 Information to manufacturer

Reserved certificate numbers to be used for certification based on this MSA agreement will be communicated to the manufacturer.

3.3 MSA assessments

After each assessment a report will be prepared by DNV and distributed to the involved parties.

4 MARKING FOR IDENTIFICATION

4.1 Marking

Products which have been satisfactorily tested and inspected shall be marked as required by the DNV Rules. The product is further to be marked with the DNV certificate number and a NV-MSA stamp furnished by DNV. Only those products covered by this arrangement are permitted to be marked with this stamp.

If the maximum allowable working pressure differs from the pressure certified a permanent marking or label has to be made to the hose which states the certified M.A.W.P.

The certificate number should generally be taken from the DNV portal. New certificate number can be requested via the portal or DNV CMC Team North/East.

Stamp to be used for marking (NV MSA-Stamp)



As long as the new stamp is not available the old

VL-stamp can be used:



4.2 Handling of the NV-stamp(s)

The manufacturer's signer of the MSA agreement is kept responsible for the NV-stamp(s) provided to them as part of this agreement, and the stamp(s) shall only be used by authorised personnel acc. Annex I. Electronic marker needs to be protected against unauthorised access.

The NV-stamp(s) shall not be transferred to subsidiary companies belonging to the same group or any other third party.

A worn out or damaged NV-stamp is to be returned to DNV who will supply a new stamp (If hard stamp is provided).

The NV-stamp(s) shall not be used when the MSA agreement is invalid.

5 MONITORING AND ADMINISTRATION OF THE MSA

The DNV Service Line CMC N/E is responsible for:

- 1) Follow up of the MSA through the periodical MSA assessments.
This does not release the manufacturer from requesting the periodical assessments (every 6 month from validity date +/- 45 days).
- 2) The regular contact with the manufacturer.
- 3) Review of works certificates.
- 4) Issuing DNV certificates.
- 5) Invoicing.

6 FEES AND PAYMENT TERMS

Certification fees will be charged in accordance with DNV's standard fees for manufacturers holding a certified QSC and having implemented a MSA or in accordance with special written agreements, to be updated annually.

7 REGULATION FOR THE CERTIFICATION SERVICES

Regulations with respect to obligations, publications, suspension, withdrawal/cancellation and appeal are given in DNV's Standards for Certification No. 1.1 "General Description of the CMC-Services", Section 2.7.

8 VALIDITY

Any changes in production process, procedures or other matters that may influence the validity of the Recognition Certificate, the MSA agreement or the conditions stated therein are to be submitted to DNV for evaluation.

The MSA will be invalid if:

- a) The Recognition Certificate is invalid.
- b) The QSC is invalid.
- c) The possible non-conformities from the MSA assessments are not responded to and/or corrective actions are not implemented within the agreed time.
- d) The manufacturer does not comply with the obligations of the MSA agreement.
- e) The certification fees are not paid in due time.

Either party shall have the right to terminate this MSA subject to three months written notice.

9 LIABILITY AND INDEMNITY

The liability and indemnity are covered by the Frame Agreement (see also §6 of the MSA).

10 LAW AND JURISDICTION

The liability and indemnity are covered by the Frame Agreement (see also §6 of the MSA).

ANNEX 1 LIST OF AUTHORIZED PERSONNEL

The authorized personnel to carry out the final inspection and stamping on behalf of DNV is listed in the table below:

Name	Function
Lars Eßer	Process Planning
Dennis Krause	Quality department

ANNEX 2 MANUFACTURER PROCEDURES

List of documented and accepted procedures for inspection and testing related to the minor MSA:

Document No.	Document Title	Revision date
QS-AA-023	Abnahmen für Klassifikationsgesellschaften	Rev.06 30.09.2021