

# Litens Engineering Specification

ES\_0014

Corrosion Protection Standard for OAD Shafts

**NOT TO BE USED FOR NEW DESIGN**  
**REPLACED BY LITENS ES\_0026, TYPE A**

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**CONTENTS**

1. Engineering Specification (ES) Scope.....	2
2. Purpose.....	2
3. Corrosion Protection Requirements.....	2
3.1. Rust Preventive (RP) Oil.....	2
3.1.1. Approved RP Oils .....	2
3.1.2. RP Oil Approval .....	2
3.1.3. Process.....	2
3.2. Preferred Packaging.....	3
4. RP Oil Acceptance Criteria .....	3
5. ES Spec Document Revision Table .....	3

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**1. Engineering Specification (ES) Scope**

This Engineering Specification is supplement to, and does not replace or modify the requirements shown on the component drawing. Any normal quality material inspection requirements, dimensional check and/ or in-process controls or operations are not to be adversely affected or influenced by this specification.

**2. Purpose**

This specification is to ensure OAD shaft components arrive at Litens free from corrosion and remain corrosion free for a long-term period of 12 months. This allows for transit time to Litens customers and assembly to the alternator where the OAD is sealed with a protective cap.

**3. Corrosion Protection Requirements**

**3.1. Rust Preventive (RP) Oil**

The vendor shall apply an approved RP oil prior to shipment.

**3.1.1. Approved RP Oils**

- Castrol, Rustilo DWX 30
- [Quaker Houghton, FERRICOTE DW 404](#)  
 (Previously called Dasco Arc 404-A from Houghton International)

Suppliers may not use other RP oils.

**3.1.2. RP Oil Approval**

Any new RP oil must be approved by Litens.

Other RP oils may be considered for use but must pass the acceptance criteria mentioned in section 4. of this document. Upon successful evaluation of the product, this standard will be revised and the RP oil will be added to the Approved list above.

Only then will the suppliers be allowed to start using the new RP oil.

Water soluble oils will not be approved for use.

**3.1.3. Process**

The chosen method of applying the RP oil must ensure that the parts are fully coated, will not be dripping wet with oil (should be close to “dry to touch” condition) nor have oil pool anywhere on the parts before packaging them for shipment. This is to avoid the parts contaminating Litens products, packaging or manufacturing equipment (such as part feeders).

The application process of the RP oil must be approved by Litens prior to PPAP to ensure that it is well controlled and meets the above requirement.

Any changes in the application process must be approved by Litens.

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**3.2. Preferred Packaging**

To supplement the corrosion protection of the parts, the vendor shall ensure that the parts are packaged using Vapor Corrosion Inhibitor (VCI) bags and VCI layer dividers.

**4. RP Oil Acceptance Criteria**

For an RP oil to be approved to this ES, Vendors shall provide a minimum of 24 samples with the proposed RP oil using the production intent application process and at least 80% of the samples must pass the humidity corrosion testing under the following test conditions:

- Temperature: 48.9°C ± 1.1°C
- Humidity: 95% humidity.
- Apparatus: Enviro Flx300a Cabinet
- Duration: 120Hrs+
- Acceptance criteria: No more than three dots of rust, no one of which is larger than 1mm in diameter or shall not contain four or more dots of any size (Reference 2: ASTM D1748).

**5. ES Spec Document Revision Table**

ES Revision Control in Agile via Document Change Order. Revision does not need to match that of component. ES modifications shall be suitably noted in the below table.

Revision Level	Description	Date YYYYMMDD	Prepared by	Approved by
01	Initial Release	20180214	Mahdi Tafreshnia	Warren Williams
02	Changed status to "NOT TO BE USED FOR NEW DESIGN. REPLACED BY LITENS ES_0026, TYPE A", 'Dasco Arc 404-A' has been re-branded to 'FERRICOTE DW 404' by the new owners, Quaker Houghton (was Houghton International).	20220613	Christopher Lalonde	Ron Lapos

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