

# Supplier Quality Manual

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This document is released by the FLG Configuration Management (CM) release process. Review, approval and change information can be obtained by the CM department.

**SUMMARY**

This Supplier Quality Manual is applicable to all Fokker Landing Gear Purchase Orders with item group 162 mentioned in the Purchase Order.

As referred to in the purchase order and/or agreement, compliance with the designated clauses of this document is mandatory to meet the Supplier Quality Requirements of Fokker Landing Gear B.V hereinafter referred to as FLG.

The quality requirements do not supersede the existing terms and conditions of the purchase order and/or agreement.

The purpose of this document is to clarify the quality requirements incorporated in Fokker Landing Gear B.V. purchase orders and/or agreement. In the purchase order you will find the reference to this quality document (if applicable). This document includes an explanation of the subject quality requirements.

**REVISION**

The latest revision of this document may be obtained by contacting the FLG Procurement Department.

**QUESTIONS**

Questions regarding this document should be directed to the FLG Procurement Department.

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**REVISION STATUS**

Date	Version	Reason	Concerned: page / clause
16-June-2016	00	First edition	All
04-August-2017	01	Completely revised	All
05-December-2017	02	Added paragraph 2.8	9
02-April-2021	03	Updated paragraph 3.1	10

**PURPOSE**

The Supplier Quality Manual (SQM) document details Fokker Landing Gears’ quality requirements and expectations specific to product group 162. For this product group this procedure replaces QM002 (Supplier Quality Requirements

This document forms a part of the Fokker Landing Gear (FLG) purchase order, unless otherwise specified herein. It contains the FLG quality requirements. The requirements in the technical data requirements, FLG Purchase Order and/or Contract, shall take precedence over the requirements in SQM.

The Supplier shall:

1. Ensure all applicable QM012 requirements herein and other quality requirements as mentioned in the PO are incorporated and imposed upon Supplier and subcontractors at all tiers working on Buyer’s product; and
2. Review the document thoroughly and comply with the clauses that are applicable to the FLG Purchase order.

This SQM is divided into three major sections as described below:

**Section 1, GENERAL SECTION:**

This section identifies general quality requirements required for all deliverable products to which the Supplier always must comply when accepting a Purchase Order from FLG.

**Section 2, COMMODITY SPECIFIC SECTION:**

This section identifies quality requirements that are applicable to specific commodities / drawing requirements. Supplier need to determine by reviewing the applicable drawing requirements if these clauses apply for the Purchase order received.

**Section 3, EXEMPTION SECTION:**

Defines exemptions related to Section 1 and/or Section 2.

Quality clauses that are marked with a \* have been revised compared to the similar quality requirements of QM002.

Please review all clauses thoroughly and determine impact. A cross reference list between QM012 and QM002 can be found in section 4, paragraph [CROSS REFERENCE LIST](#).

## 1. GENERAL SECTION

Supplier shall always meet the following requirements of Section 1:

### 1.1 FOREIGN OBJECT DEBRIS / DAMAGE (FOD)

Supplier shall maintain good housekeeping and a Foreign Object Debris/Damage (FOD) prevention program, to preclude introduction of foreign objects into any deliverable item. Supplier shall employ appropriate housekeeping practices to assure timely removal of residue/debris generated during manufacturing operations or tasks. Supplier shall determine if sensitive areas that have a high probability for introduction of foreign objects should have special emphasis controls in place for the manufacturing environment.

### 1.2 EXPORT CLASSIFICATION AND CONTROL

For all PO shipments to FLG, Supplier shall indicate the following information on the Shipping documents and Invoice. Supplier shall indicate all classification and control information for each individual Purchase Order Line:

#### 1. Country of Origin:

If Supplier is the manufacturer, then indicate the country where Supplier is manufacturing the goods. If Supplier is a distributor, then indicate the country where the acquired goods are manufactured.

For country indication, the 2-digit ISO code shall be used.

#### 2. Tariff Code:

Supplier shall indicate the Tariff Code in accordance with REGULATION (EU) No 927/2012, this regulation establishes the goods nomenclature, referred to as the "Combined Nomenclature", or in accordance with the (US) Harmonized Tariff Schedule of the United States International Trade Commission.

#### 3. Export Control Classification:

The Export Control Classification indicated by Supplier shall be in accordance with the applicable Classification List:

For goods specifically enumerated on the Common Military List of the European Union (EUCML) and/or the United States Munitions List (USML), or specially designed parts or technology therefor:

- If the goods are of non-US origin, the goods must be classified using the EUCML;
- If the goods are of US origin (US Manufactured, or based on US technology), the goods must be classified using both the EUCML and the USML classification sequence.

For goods designed for commercial (civil) use:

- If the goods are of non-US origin, the list of controlled dual-use items as set out in Annex I to EU Regulation 428/2009 shall be used to establish if the goods are dual use and to acquire the ECCN (Export Control Classification Number);
- If the goods are of US origin (US Manufactured), the US CCL (Commodity Control List) shall be used to establish if the goods are dual use and to acquire the ECCN (Export Control Classification Number).

#### 4. Export License Number:

If the goods are indicated as controlled for export, Supplier shall apply for an Export License and indicate the number of the granted Export License, or the used License Exemption or License Exception.

## 5. Destination Control Statement

If the goods are of US origin and indicated as controlled for export, Supplier shall include on its invoice and shipping documents (e.g. packing slip, bill of lading, etc.) the applicable Destination Control Statement according to ITAR §123.9 or EAR §758.6.

### 1.3 FAR/DFARS PROGRAM 162 \*

Refer to document QM087 FAR / DFARS for a list of Federal Acquisition Regulation (FAR) and the Defense Federal Acquisition Regulation Supplement (DFARS) that are applicable and must be complied with. The latest version of QM087 may be obtained by contacting the FLG Procurement Department.

### 1.4 QUALITY SYSTEM \*

The Supplier, Distributor and Special Process Supplier shall establish and maintain a documented quality system certified in accordance with the following:

- **Supplier** - certified by an IAQG accredited Certification Body (CB) to AS/EN/JISQ 9100;
- **Distributor** - certified by an IAQG accredited CB to AS/EN/JISQ 9100 or AS/EN/JISQ 9120;
- **Special Process Supplier** - certified to Nadcap AC7004 or accredited CB to AS/EN/JISQ 9100.

The FLG activities must be carried out under the certification area of the accredited quality management system. No deviation from these requirements is permitted unless specifically authorized in writing by Fokker Landing Gear Quality Department.

### 1.5 QUALITY ASSURANCE PLAN \*

The Supplier shall create a Quality Assurance Plan (\*1) to show compliance between requirements of QM012 and the Suppliers own Business Management System (or Quality Management System). The Quality Assurance Plan shall be submitted to FLG within 30 days after initial Purchase Order acceptance and/or after revising of QM012. All supporting documentation shall be kept on file and made available to FLG upon request. In case of questions regarding (product) quality (MRB, deviations, waivers) the supplier can contact the FLG Quality department.

*\*1 - Also referred to as compliancy matrix.*

### 1.6 RECORD KEEPING

A documented procedure shall define the method for controlling records that are created by and/or retained by suppliers. Documented evidence such as COC's (certificates), product- and process documents, measuring- and test-reports, shall be maintained by the Supplier and/or sub-Supplier for a period of thirty (30) years, after delivery of the order to FLG and be available for verification. Before destruction of above named documents, permission in writing from the Quality department of FLG is required.

### 1.7 GOVERNMENT OR CUSTOMER RIGHT OF ACCESS

During performance of FLG purchase orders, the Supplier shall agree that his quality control, inspection and manufacturing processes are subject to review, verification and analysis by authorized government, FLG or its customer. These representatives shall, at all times, have access to any part of the Supplier's and sub Supplier's premises, where any activities related to the contract are in process.

The Supplier shall make available to these representatives the accommodation and facilities required for the performance of their tasks. They shall also be given any assistance required by them or they shall be given any information required for the verification, documentation or release of material. A copy of the purchase order and if applicable the quality agreement, will be furnished to the representative concerned, on request.

## 1.8 NONCONFORMING MATERIAL (CONCESSION) \*

Supplies or services not conforming to the applicable drawing and/or specification requirements shall not be released to FLG, without prior approval authorization. The Supplier may request such authorization by notifying the responsible FLG buyer. Follow the instructions per WI 8.3-1 Control of Nonconforming Product.

FLG will review the noted discrepancy and will provide concession instructions to the Supplier for the handling of the discrepant product. When instructions, either direct or after repair, authorize the shipment of product to FLG, the Supplier shall reference the concession authorization-ID and applicable lot/serial numbers on the Certificate of Conformity.

Final material acceptance will depend upon the actual verification of the discrepancy and product approval at FLG. The latest version of WI 8.3-1 can be found on the FLG website:

<http://www.fokkerlandinggear.com/Supplier-Management>.

## 1.9 PACKAGING REQUIREMENTS, GENERAL

The Supplier shall ensure that the supplied parts are packed using materials of a quality, size and weight that will provide adequate protection from damage, corrosion and/or contamination during handling and transport to point of delivery as listed in the purchase order.

## 1.10 SHIPPING DOCUMENTATION REQUIREMENTS \*

Supplier shall provide a packing sheet or attachments for each separate shipment with the following minimum requirements:

### 1.10.1 CERTIFICATION PURCHASE ORDER (COC)

The Supplier shall provide with each shipment one (1) original Certificate of Conformity (CoC) \*1 to confirm that the supplies or services conform to the order requirements including terms, conditions, drawings, specifications and other requirements incorporated by reference therein.

Certification shall contain the following:

- Name and address of manufacturing or processing location,
- FLG's order number, line number,
- Item part number, item revision number and item description,
- Manufacturer's lot, heat, batch, date code, and/or serial number (when applicable),
- Cure date, expiration date (when applicable),
- Quantity and unit of measurement,
- Concession authorization-ID and applicable lot/serial numbers (when applicable),
- Be signed and dated by an authorized official of the company.

Unless otherwise specified the applicable material test results, process certifications, inspection/test records and other evidence of conformance to the applicable drawing and specifications shall be presented upon FLG's request.

Supplier shall perform inspection, as necessary, to determine the acceptability of all supplies or services.

\*1 - Also referred to as certificate of conformance or certificate of compliance.

**2. COMMODITY SPECIFIC SECTION**

Depending on the type of commodity and drawing requirements Supplier might need to comply with the following requirements of section 2:

**2.1 MATERIAL AND PART TRACEABILITY \***

The Supplier and Supplier’s sub-contracted sources shall maintain manufacturing records that provide traceability to all material, manufacturing/processing and inspection operations.

Traceability and serialization shall be maintained for each part through each processing step. If more than one lot of material and/or heat is used for the manufacture of a number of parts, a separate batch number shall be assigned for each lot. The parts of each lot shall be kept segregated during all in-process steps and final operations.

If specified on the drawing or in the specification listed on the drawing, all parts shall be traced with a serial number or batch number.

**2.1.1 PART MARKING REQUIREMENTS**

When the applicable drawing requires part marking without a mentioned method, identification shall be applied by ink using rubber stamps.

**2.1.2 PART NUMBER REVISED**

If part number is revised and identified with another dash number (configuration change not being a part number change), serial number need to be continued with the serial number range of the former dash number.

**Example:**

<b>Old part Number:</b>	<b>Last Serial Number</b>
UHK12345-1	0170
<b>New (revised) Part Number</b>	<b>Serial Number</b>
UHK12345-2	0171

**2.2 ESTABLISH MANUFACTURING INSTRUCTIONS**

The Supplier shall generate detailed manufacturing instructions prior to the start of the fabrication for all parts and assemblies when Supplier is manufacturing to an engineering drawing / model. These manufacturing instructions shall contain adequate inspections methods to ensure quality control during manufacturing and must reflect all applicable specifications listed on the drawings. The manufacturing instructions must be available for on-site assessment.

**Note:** Although QM014 is not applicable to this program, it can be used as guideline to establish manufacturing instructions.

**2.3 FIRST ARTICLE INSPECTION (FAI) \***

The Supplier shall prepare, approve and release a partial (delta) or full FAI in accordance with AS9102 and FLG instruction QM018. This instruction contains both the AS9102 requirements as the specific FLG requirements. The latest version of QM018 may be obtained by contacting the FLG Procurement Department. In case of a conflict between AS9102 and this QM018, QM018 takes precedence. The requirements of AS9102 are also applicable to all lower-level detail parts which comprise the part on the PO. This includes parts manufactured, processed, assembled, tested or inspected at sub-tier suppliers.

Please refer to section 3, paragraph [FIRST ARTICLE INSPECTION \(FAI\) \\*](#) for a list of Suppliers that are exempted from this requirement.





## 2.4 LIST OF PROCESSES AND OPERATIONS \*

The Supplier shall submit with each shipment a (signed) list of used processes or operations stating; the name of the process, the applicable specification number and revision, the name of the company which performed the process and, in the event of sub-contracting, the number of the certificate furnished by the sub Supplier.

This list maybe part of, or integrated in, the Certificate of Conformity (CoC) as mentioned in clause [CERTIFICATION PURCHASE ORDER \(COC\)](#). The list must be signed with a name and signature of an authorized representative of the Supplier.

## 2.5 FUNCTIONAL TEST REPORTS

The Supplier shall furnish with each shipment, functional/acceptance test reports for all tests conducted in conformity with the drawing and/or specification and clearly traceable to the article submitted. Test reports shall reflect full and complete test parameters. These reports must contain the name and signature of an authorized representative of the Supplier. The test reports shall be included with the products of each shipment.

## 2.6 FURNISHING OF TEMPERATURE/TIME DIAGRAM \*

For each part, which has been subjected to a heat treatment- or a baking operation to avoid hydrogen brittleness, the Supplier shall keep on record at least 1 (one) copy of the temperature/time diagram. Each processed part shall be traceable to the applicable temperature/time diagram.

## 2.7 CERTIFICATION OF TITANIUM MATERIAL

The Seller shall include with each shipment of end item product manufactured from Titanium material, an independent laboratory certified test report that states that the lot of material furnished has been tested, inspected, and found to be in compliance with the applicable material specifications required on the drawing. The test report will list the specifications, including revision numbers or letters, to which the material has been tested and/or inspected and the material lot to which it applies. The test report shall contain the actual test and/or inspection values obtained for required chemical, mechanical, or physical properties.

## 2.8 REQUIREMENTS AND ACCEPTANCE FOR CABLE AND WIRE HARNESS ASSEMBLIES

Deliverable cable assemblies shall be manufactured and tested in accordance with IPC-A-620 Class III requirements except where otherwise required by engineering drawings or GA-ASI Manufacturing Process Specifications (MPS).

The Seller shall require sub-tier suppliers of cable assemblies for deliverable shipsets (if applicable) to provide evidence that cable assembly and test operations were conducted by technicians holding current IPC-A-620 Class III certifications at the time of the applicable operations. These records shall be maintained at Seller's facility and provided to Buyer upon request.

### 3. EXEMPTION SECTION

#### Exemptions to specific paragraphs of this manual.

#### 3.1 FIRST ARTICLE INSPECTION EXEMPTION \*

Buyer-furnished parts, Sole-source parts as supplied by the following Suppliers and Commercial off-the-shelf (COTS) parts, standard hardware - bolts, (lock) washers, o-seals, nuts, standard bushings, screws, and consumable items (Loctite, grease, adhesives) do not require a FAIR. Therefore, these parts are exempted from clause [FIRST ARTICLE INSPECTION \(FAI\)](#).\*

Table 1: Exemptions to FAI clause

Part Number	MQ-9 REF	Nomenclature	Quantity	Sole-Source
UHK31282-1	NO CHANGE	STRUT,MLG,TRAILING ARM,LIGHT WEIGHT, LEFT	One (1)	PCC Structural Inc
UHK31282-2	NO CHANGE	STRUT,MLG,TRAILING ARM,LIGHT WEIGHT, RIGHT	One (1)	PCC Structural Inc
SCD00876-1	NO CHANGE	Main Landing Gear (MLG) Shock	Two (2)	Taylor
SCD00971-1	NO CHANGE	Nose Landing Gear (NLG) Shock	One (1)	Taylor
SCD01062-1	NO CHANGE	Wheel Speed Transducer (WST)	Two (2)	TurboJet Products
SCD00473-1	NO CHANGE	Wheel Assy Nose	One (1)	Parker
SCD01100-1	NO CHANGE	Bolt 7/16-20, 4.125 Long	Two (2)	Automotive Racing Products
SCD00480-1	NO CHANGE	Wicking Pad	Twelve (12)	Aetna Felt
UHK51000-5	NO CHANGE	STEERING SERVO ASSY	One (1)	General Atomics Aeronautical Systems
UHK51200-6	NO CHANGE	RETRACT ACTUATOR ASSY, LANDING GEAR	One (1)	General Atomics Aeronautical Systems
SCD02555-1	NO CHANGE	Conspicuity Light	One (1)	AeroLED LLC
AN12CH40A	NO CHANGE	BOLT 3/4-16X3.063 GRIP	One (1)	Relli

**4. APPENDIX**

**4.1 CROSS REFERENCE LIST**

This cross reference list is intended to identify similar QM002 clauses for suppliers who work according QM002

QM012 clause	QM002 Clause
1.1	General Requirements
1.2	General Requirements
1.3	General Requirements
1.4	0201
1.5	4002
1.6	0504
1.7	0605
1.8	1301
1.9	1504
1.10	New
1.10.1	1601
2.1	New
2.1.1	New
2.1.2	New
2.2	0901
2.3	1605
2.4	1602
2.5	1606
2.6	1609
2.7	New
2.8	New
3.1	New
4.1	New

Table 2: Cross Reference List QM012