

Annex A SOW

Statement of Work **Engine Assembly with Container and** **Using Non-OEM Parts**

1. SCOPE

1.1. Objective

The objective of this SOW is to describe the tasks necessary to return 50 EA LSVW Non Aircraft Engine and its container to a satisfactory operating condition. NSN: 2815-21-910-7780, p/n 36880, NCAGE 35907.

1.2. Background

The R&O of the LSVW engine assembly has to be completed at a CAF 4th Line or a commercial, due to resource issues the CAF preference to use a commercial facility, wherein referred to as the Contractor..

1.3. Terminology

CAF – Canadian Armed Forces
LSVW – Light Support Vehicle Wheeled
R&O – Repair and Overhaul

2. REFERENCE DOCUMENTS

2.1. C-30-230-000/MP-001 Part 2 Engine Assembly including all Annexes'.

3. REQUIREMENTS

3.1. Scope of Work

The Contractor must replace those parts classified as mandatory and complete all necessary processes and testing required to return the LSVW Engine Assembly to a fully serviceable condition, in accordance with the tasks detailed in the SOW. Annex B LOGSOW describes the responsibilities of all parties involved in the R&O process and the documentation and records required to validate the work.

3.2 Task

3.2.1 The Contractor is responsible for all work related to the R&O services of the engine assembly including disassembly, cleaning, inspection, repairs, and procurement of mandatory

replacement parts, overhaul, reassembly, calibration, testing, packaging and preparation for shipment.

3.2.2 The Contractor is responsible for procuring all mandatory replacement parts and material in support of the R&O services.

3.2.3 The mandatory and all replacement parts **do not** have to be supplied by the OEM or their Authorized distributors/dealers but in accordance with the most recent OEM drawings and Specifications:

a) VECO Fiat Engine, 4 cylinder, in line, 115HP Maximum @ 3800RPM

3.2.4 All work related to the engine assembly **must** be performed in accordance with the specifications identified below:

3.2.4.1 NSN 285-21-910-7780 Engine Assembly IVECO The work **must** be in accordance with DND Specification C-30-230-000/MP-001, Part 2, and the most recent Original Equipment Manufacturers (OEM) performance specifications as required:

3.2.4.2 Part 2 Section 8 Compulsory Replacement Items of the Reference Document above are to be followed. Information contained in that Section can be used in identifying parts that are required to be replaced but **not necessarily supplied by the OEM.**

3.2.4.3 Where a standard or specification is specified and the contractor offers an equivalent, that equivalent specification standard **must** be provided upon request; & "All repair parts used for the repairs under that contract **must** be the same form, fit, function and quality as the original parts. If the material and or repair parts are not new production of current manufacture or is from a source other than the principal manufacturer or its accredited agent, it must be unused and in new condition. For items containing elastomeric material, e.g., hoses, rubber, adhesive compounds, etc., the shelf life remaining cannot be less than 75 percent from the date of manufacture to the procurement date."

3.2.4.4. Modifications to the Auxiliary Drive Unit Housing must be completed on all Auxiliary Drive Units that have not been completed in previous engine overhaul procedures.

3.2.4.5 The Contractor must implement the modifications to the Auxiliary Drive Unit Housing in accordance with Figure A11 and must proceed as follows:

a) The Contractor must manufacture and install a jig on housing (13) in place of cover (26) to facilitate a reamer.

b) Using the jig, the Contractor must guide a 25 mm reamer through the center of casting hole for gear (18) for the installation of QTY 2 brass bushings, type Oil Lite 20mm ID x 25mm OD x 20mm Lg.

c) A hole must be drilled 6.5mm in the center of one bushing to ensure the oil feed to shaft and gear (18).

d) Bushings must be installed flush to housing. The bushing with the drilled hole must be installed on the cover (26) side, ensuring that the hole aligns with the oil feed hole in the housing. Bushings must be press fit to the housing with a tolerance of -.003mm to -.004mm.

e) Using the jig and a reamer 20mm, the Contractor must ream the interior of the bushings to remove any burrs. The gear must be fit to bushing tolerance +.0025mm to +.004mm

3.2.6 A preservation of rebuilt LSVW engines shall be carried out IAW C-30-230-000/MP-001, Section 10 with the following addition, during dynamometer testing, the coolant system will be flushed with a 50/50 mixture antifreeze to prevent corrosion

3.2.7 A de-preservation list with all instructions to de-preserve the engine **must** be attached to each engine in a container with at least the following information:

- a) To remove the adhesive tape qty _____
- b) Removal of plastic caps the locations and qty _____
- c) Cleaning of all surface with preservative with the exceptions _____
- d) Indicating to install the "V " belts supplied with the Engine Cooling System _____
- e) Crankcase System _____

3.2.8 The Contractor **must** forward to the Technical Authority, a monthly report for all engines rebuilt during the preceding month. The report **must** include the following results:

- a) Dynamometer test as per Specification C-30-230-000/MP-001
- b) Oil pressure;
- c) Oil temperature;
- d) Coolant temperature;
- e) Observations during the test;
- f) Read adjustments that were required;
- g) An indication that preservation was done as per specification.

3.2.9 REUSABLE CONTAINERS AND ALTERNATIVE PACKAGING.

3.2.9.1 DND materiel (spares), subject to continuing repair and/or overhaul, are normally packed in reusable containers. These containers are to be inspected to insure they will hold pressure when assembled.

3.2.9.2 Where an engine has been provided without a container, the Contractor is to .modify a wooden skid such that the repaired engine is securely mounted in the upright position. The repaired engine must have all openings sealed and the engine covered with a protective material. The NSN for engine w/o container is 2815-21-910-7548 when returned to the DND depot, 25 CFSD 6363 Notre Dame Est, Montreal QC, H1N 3V9.

3.2.10. DISASSEMBLY BEYOND ECONOMIC REPAIR (BER) AND DISPOSAL.

Items that have been approved by the TA to be BER are considered to remain the property of the Government of Canada. BER parts and assemblies in this contract must be disassembled, used when parts are found to be in serviceable condition, to repair items identified in the SOW, these parts can be used to substitute any of the mandatory replacement parts as long as they are serviceable.

In the event a part, sub-assembly, or full assembly is reported as BER, the Contractor must dispose all parts or assemblies. The disposal of all related items must be done in accordance with the applicable local regulations and the relevant applicable laws. The Contractor must provide a written notice of conformation or certificate of compliance once the disposal is completed. For each item beyond

economical repair and must be destroyed must have a document DND 2589 filled out and signed and returned to DND for disposal.

3.2.11 REPAIR AND OVERHAUL MANAGER (R&OM):

- a) The Contractor **must** assign an R&OM for this R&O contract. The R&OM **must** have the responsibility and authority to manage all aspects of the work and be able to make decisions on behalf of the Contractor. The R&OM **must** be the main interface with DND.
- b) The R&OM **must** have a minimum of three (3) continuous years of experience in the last eight (8) years in managing similar R&O activities as contained in this SOW and a minimum of one (1) continuous year of supervisory experience within the last five (5) years.
- c) The Contractor **must** advise the TA and the PA of any changes in the assigned

3.2.12 DND and Contractor Quality Assurance

The Contractor repaired engine must meet the acceptance criteria as per C-30-230-000/MP-001, Part 2

The Contractor is to prepare a Quality Control Plan in accordance with ISO 9001:2000 standards and NDQAR representative shall review the plan and make any necessary suggestions to improve the output.

NDQAR shall review the application of the Quality Control Plan for compliance

