

QUALIFICATION REQUIREMENTS
FOR MANUFACTURE OF

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Part Number: 4020065

National Stock Number: 2840-00-332-6742PT

Revision: 0

Dated: 18 AUG 88

I. HARDWARE DESCRIPTION

A. Nomenclature:

Housing Assembly-No.2 and No.3 Bearing Scavenge Pump

B. Function:

The subject item forms part of the assembly which scavenges oil from the 2nd and 3rd bearing compartments and pumps it to the oil tank.

C. Material Composition:

AMS 4121 Al Alloy

D. Critical Life Characteristics:

Alignment of the housings is critical to successful operation of the main oil pump. Misalignment will lead to oil pump failure and imminent engine loss.

II. JUSTIFICATION FOR QUALIFICATION REQUIREMENTS

The following paragraphs provide the justification in accordance with Public Law 98-528 and AFLCR 800-10 for requiring a demonstration of qualification to manufacture this part.

A. Criticality of Part:

This part is used on the F-15 and F-16 aircraft primary propulsion system, F100 engine model series. Failure of the part will result in extensive engine damage and can result in the loss of the aircraft and possibly the loss of life.

B. Complexity of Part:

The complexity of this part is documented in the following paragraphs.

1. The part requires special manufacturing processes and techniques. These processes are specified on the drawing and capability to perform the processes must be demonstrated.

2. The part requires sophisticated/rigorous quality assurance controls on procurement of raw materials, material processing, manufacturing, and inspection. These controls are required due to the high probability of latent defects, and they also help assure on time delivery of high quality parts.

C. Government Risk:

The following paragraphs document the reasons why the risk to the government of buying this part from an unqualified source is compound.

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1. The probability of an unqualified source producing an unsatisfactory part is high.

2. The probability of an unqualified source failing to produce within schedule is high.

3. A high potential exists for an unqualified source to underestimate the manufacturing difficulty and miss critical delivery schedules.

4. Untimely delivery critically impacts end item overhaul/repair schedules. Failure to deliver on schedule may result in additional high cost emergency procurements.

5. An inferior part can result in a loss of engine power or inflight shutdown. This would lead to a mission abort or possibly the loss of the aircraft.

III. JUSTIFICATION FOR QUALIFICATION PRIOR TO CONTRACT AWARD

The following paragraphs document the reasons for requiring a demonstration of qualification prior to contract award.

A. The risk of default by the contractor must be minimized as the shortest combined administrative and production lead time is over 20 months.

B. The technical risk must also be minimized due to the criticality of the part (Reference criticality of part in paragraph II.A).

C. The manufacturing and processing techniques are critical to performance and reliability (Reference criticality of part in paragraph II.A).

D. The risk to the government in determining a potential vendors' capability without an actual demonstration of that capability must be minimized. The expertise required to manufacture this part is not commonly available or easily obtained and therefore must be demonstrated. (Reference complexity of part in paragraph II.B).

IV. DATA AND DOCUMENTATION REQUIREMENTS

The following paragraphs document the data that must be submitted with a request for source approval.

A. The DCAS or other government representative must provide written verification that the potential vendor has the latest revision of the following data:

1. Drawing Number: 4020065

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(Including all subassembly or detail drawings specified on this drawing number)

2. Quality Assurance Data (QAD) No.: 4020065
(Also including the QAD for each subassembly or detail part listed on above drawing)
3. All applicable specifications called out on the assembly and detail drawings. These include:
 - a. Process specifications
 - b. Inspection processes
 - c. Material specifications

B. The DCAS or other government representative must provide written verification that the potential vendor has a quality control program which meets or exceeds the requirements of MIL-I-45208A.

C. The vendor must supply a list of all manufacturing and inspection processes that will be performed by subvendors. The subvendors must be certified/qualified to perform these processes.

V. SUBSTANTIATION OF MANUFACTURING CAPABILITY

The following paragraphs document the methods to be used to substantiate a vendors' capability to manufacture this item.

A. A vendor who has manufactured the item for the prime contractor, or for other users of the same equipment, may be approved as a source for the part provided that the vendor was responsible for all material procurement, inspection, and finishing of the end item, i.e., the prime manufacturer, did not add any value to the end item. The vendor must submit evidence of the scope of work for the part indicating that he had primary responsibility for all operations necessary for the completion of the part for delivery to the customer.

B. Other vendors will be considered for approval on the basis of their ability to manufacture a similar item for the prime contractor, U.S. government, or an ally of the U.S. government. The following conditions must be met for approval by similarity:

1. Submit evidence of the successful manufacture and sale of the similar item. This evidence must document that the vendor had primary responsibility for all operations necessary to produce the part, and that the part was accepted by the customer.

2. Submit data on the similar item to show that the material is the same or an alloy of equal manufacturing properties, and provide specific similarities and differences between the subject part and the similar part. The data must also

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show that the manufacturing and inspection/test processes for the similar part demonstrate the full range of scope and difficulty required for the subject part.

3. A first article requirement may be included in any contract resulting from approval based upon similarity. The estimated cost of testing the samples is \$250. These tests may include material properties analysis, dimensional analysis, and possibly rig test. At least one sample would be destructively tested.

C. Any vendor that cannot meet the criteria in either paragraph A or B above must submit at least three samples of the subject part for analysis prior to any contract award. These samples will be used to substantiate the vendors' ability to manufacture the item.

VI. RESPONSIBLE ENGINEERING ORGANIZATION

The organization responsible for the development of these qualification requirements is the Engineering and Reliability Branch, Fighter Propulsion Systems Division of the San Antonio Air Logistics Center, Kelly AFB, TX.

SUPPLEMENTAL DATA SHEET TO AFLC FORM 761
FOR

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The following paragraphs document the actions required for completing the first article requirement identified on the AFLC Form 761 for this item.

1. Location of testing:

The first article testing will be performed at the vendors' plant or at an approved laboratory and witnessed by a government inspector or engineering representative.

2. Engineering Data Required:

a. A proposed test plan must be submitted for approval prior to commencement of testing. Request 'Acceptance Test Procedures' (DI-T-3714, see DD Form 1423) be procured and submitted to SA-ALC/MMFR for approval. The evaluation and approval of the test plan will require 45 days.

b. A report of the test results must be submitted for approval. Request 'Acceptance Test Report' (DI-T-3721, see DD Form 1423) be procured and submitted to SA-ALC/MMFR for approval. The evaluation and approval of the test report will require 60 days.

4. Test Requirements:

a. One first article shall be required for testing to verify a vendors' capability to manufacture the subject item.

b. The testing shall consist of, but not be limited to the following:

(1). Dimensional conformance to the drawing

(2). Material properties (may be destructive in nature)

(3). Finish requirements

(4). Conformance/compliance with other required processes as specified on the drawing

5. Disposition of First Articles After Testing:

a. Disapproved first article(s) shall be retained at the contractor's plant, unless specified otherwise by the contracting officer.

b. Approved first article(s) will be retained at contractor's plant for reconditioning (if necessary) with final acceptance the same as for production items. If a first article is expended in testing, then approval of the first article will constitute acceptance. Under no circumstances will the approved first article be used as a prototype or manufacturing standard.

6. Conditions for Waiver of First Article Requirement:

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a. If a bidder meets any of the following criteria, then the requirement to submit a first article is waived.

(1). Bidders who have previously furnished production quantities of the identical item to the prime contractor for delivery to the Air Force, provided that not more than 24 months have elapsed since completion of the contract.

(2). Bidders currently in production of the identical article on an Air Force contract who have received first article approval under existing contract.

(3). Bidders who have previously furnished production quantities of the identical item to the Air Force providing articles thus furnished have exhibited satisfactory performance in service, in the opinion of the Air Force, and provided that not more than 24 months have elapsed since completion of the previous contract.

b. NOTE TO BUYER: In paragraph 6.a.(3), SA-ALC/MMFR shall make the decision as to whether the item has 'exhibited satisfactory performance in service' and prepare and retain supporting documentation to fully justify this decision. The buyer must solicit dual prices (i.e., both with and without requirement for first article approval) and will furnish SA-ALC/MMFR the following information on the previously supplied item:

- (1). Procuring Office
- (2). Contract Number
- (3). Date of Contract
- (4). Part Number
- (5). NSN

7. These requirements have been developed by SA-ALC/MMFR and shall not be changed by any other office.

17.	EVENT CEI NUMBER	23.	CONTRACTOR FILE/ DOCUMENT NUMBER
18.	DDO APPROVAL/ FORM NUMBER	24.	ESTIMATED NUMBER OF PAGES
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INSTRUCTIONS FOR COMPLETING DD FORM 1423

Government requirements, and the administrative and other expenses related to reproducing and delivering such data item to the Government.

Example for Group II - In the case of MIL-D-1000 Form I drawings (drawings to military standards), the estimated price of the data item begins only after the engineering and manufacturing information has been developed and the final form original drawings have been initiated. The estimated price shall not include the cost of configuration control, but shall include any additional quality assurance and control of the drawings but not related to engineering configuration control. Not to be considered is "design effort" expended on layout drawings and other data which serve principally as a medium for developing design and are not used in manufacture, production or test of the end item.

C. Group III. Definition - Data which the contractor must develop for his internal use in performance of the primary contracted effort and does not require any substantial change to conform to Government requirements with regard to depth of content, format frequency or submittal, preparation, control and quality of data.

Estimated Price - Costs to be considered under Group III are the administrative and other expenses related to reproducing and delivering such data item to the Government.

Example for Group III - A drawing prepared to Form 2 or 3 of MIL-D-1000 (drawings to company standards) which had been used in the manufacturer's normal plant activities.

D. Group IV. Definition - Data which is developed by the contractor as part of his normal operating procedures and his effort in supplying these data to the Government is minimal.

Estimated Price - Group IV items should normally be shown on the DD Form 1423 at no cost.

Example for Group IV - A brochure or short manual used in a company's normal commercial business, that is acquired by the Government in such small quantities that cost of determining a charge would not be practical.

Item 26. Estimated Total Price.

a. For each item of data listed, the bidder or offeror shall enter an amount equal to that portion of the total price which is estimated to be attributable to the production or development for the Government of that item of data. These estimated data prices shall be developed only from those costs which will be incurred as a direct result of the requirement to supply the data, over and above those costs which would otherwise be incurred in performance of the contract if no data were required.

b. The estimated data prices shall not include any amount for rights in data. The Government's right to use the data shall be governed by the pertinent provisions of the contract.

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