



400 MAIN STREET, MAIL STOP 121-10
EAST HARTFORD, CT 06108, USA.
TELEPHONE:- 860 565 5515
FAX:- 860 565 0600

DATE: Feb.10/06

P.O. BOX 31, DERBY
TELEGRAMS - 'ROYCAR' DERBY
TELEX - 37645
TELEPHONE:- 44 (0) 1332 242424
FAX:- 44 (0) 1332 249936

V2500-A5/D5 PROPULSION SYSTEMS SERVICE BULLETIN

Printed in Great Britain

This document transmits Revision 4 to Service Bulletin EV2500-72-0421 and Revision 1 to the Supplement

Document History

Service Bulletin Revision Status	
Initial Issue	Sep.4/02
Revision 1	Oct.1/02
Revision 2	Apr.14/03
Revision 3	Jun.23/05

Supplement Revision Status	
Initial Issue	Jun.23/05

Bulletin Revision 4

Remove	Incorporate	Reason for change
All pages of the Summary	Page 1 and 2 of the Summary	To identify HPC stubshafts that do not require rework. References updated.
Pages 1 to 14 of the Service Bulletin	Pages 1 to 17 of the Service Bulletin	To identify HPC stubshafts that do not require rework. References updated.

Supplement Revision 1

Remove	Incorporate	Reason for change
All pages	Page 1	To identify HPC stubshafts that do not require rework. References updated.

V2500-ENG-72-0421

Transmittal - Page 1 of 2

CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED

If any have not been received please advise Customer Data Services, Rolls-Royce plc, Derby, England

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LIST OF EFFECTIVE PAGES

The effective pages to this Service Bulletin following incorporation of Revision 4 to the Bulletin and Revision 1 to the Supplement are as follows:

<u>Page</u>	<u>Revision Number</u>	<u>Revision Date</u>
Summary		
R 1	4	Feb.10/06
R 2	4	Feb.10/06
Bulletin		
R 1	4	Feb.10/06
R 2	4	Feb.10/06
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R 15	4	Feb.10/06
R 16	4	Feb.10/06
R 17	4	Feb.10/06
Supplement		
R 1	1	Feb.10/06

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ENGINE – HP COMPRESSOR FRONT STUBSHAFT – INTRODUCTION OF A REVISED HP COMPRESSOR
FRONT STUBSHAFT WITH HIGH ENERGY PLASMA COATING

SUMMARY

1. PLANNING

A. EFFECTIVITY

Engine	Serial No.
V2500-A5	Prior to V11400
V2500-D5	

B. CONCURRENT REQUIREMENTS

None.

C. REASON/PROBLEM

Problem

A change in the coating application process from High Energy Plasma to Standard Energy Plasma, has meant that release of particles from the HP Compressor front stubshaft tungsten carbide cobalt hard coating may occur. This may result in surface spall of the bearing race, which may lead to premature deterioration of the number 3 bearing.

The purpose of this Service Bulletin is to advise Operators of the availability of a new stubshaft part number, coated with High Energy Plasma.

Evidence

The problem has been experienced on engines in service.

Substantiation

The changes introduced by this modification have been the subject of extensive engineering analysis.

Objective

Incorporation of this modification is designed to maintain engine reliability.

D. DESCRIPTION

The changes introduced are a revised HP Compressor front stub shaft which is similar to the existing stub shaft except for the following:

The option to use the standard plasma application process for the tungsten carbide cobalt coating has been deleted.

The requirement to use fluorescent penetrant inspection of the coating after grinding has been introduced.

The classification of the part has been changed from 'sensitive' to 'sensitive, traceable'.

E. COMPLIANCE

Category Code 7

Accomplish when the supply of superseded parts has been depleted.

F. MANPOWER

In service – Not applicable.

At overhaul – Rework only – 10 hours.

G. INTERCHANGEABILITY OF PARTS

Not affected.

2. MATERIAL INFORMATION

A. PARTS PRICES

Part No.	Description	Unit Price US Dollars
6A8082	Shaft and Seal Assy – Front, HP Compressor	35,090.00
6A8083	Shaft, Balancing and Assy – Front, HP Compressor	30,149.00

ENGINE – HP COMPRESSOR FRONT STUBSHAFT – INTRODUCTION OF A REVISED HP COMPRESSOR
FRONT STUBSHAFT WITH HIGH ENERGY PLASMA COATING

1. Planning Information

A. Effectivity

(1) Airbus A319

V2522-A5, V2524-A5, V2527M-A5 Engines prior to Serial No. V11400

(2) Airbus A320

V2527-A5, V2527E-A5 Engines prior to Serial No. V11400

(3) Airbus A321

V2530-A5, V2533-A5 Engines prior to Serial No. V11400

(4) Boeing – Longbeach Division MD-90

V2525-D5, V2528-D5 Engines

B. Concurrent Requirements

None.

C. Reason

(1) Problem

A change in the coating application process from High Energy Plasma to Standard Energy Plasma, has meant that release of particles from the HP Compressor front stubshaft tungsten carbide cobalt hard coating may occur. This may result in surface spall of the bearing race, which may lead to premature deterioration of the number 3 bearing.

The purpose of this Service Bulletin is to advise Operators of the availability of a new stubshaft part number, coated with High Energy Plasma.

(2) Evidence

The problem has been experienced on engines in service.

(3) Substantiation

The changes introduced by this modification have been the subject of extensive engineering analysis.

(4) Objective

Incorporation of this modification is designed to maintain engine reliability.

(5) Effect of Bulletin on:

(a) Operation

Not affected.

(b) Maintenance

Affected (see 1.0. Other Publications Affected).

(c) Overhaul

Not affected.

(d) Repair Schemes

None.

(e) Interchangeability

Not affected.

(f) Fits and Clearances

Not affected.

D. Description

(1) The changes introduced are:

(a) A revised HP Compressor front stub shaft which is similar to the existing stub shaft except for the following:

- (i) The option to use the standard plasma application process for the tungsten carbide cobalt coating has been deleted.
- (ii) The requirement to use fluorescent penetrant inspection of the coating after grinding has been introduced.
- (iii) The classification of the part has been changed from 'sensitive' to 'sensitive, traceable'.

E. Compliance**Category 7**

Accomplish when the supply of superseded parts has been depleted.

F. Approval

The part number transactions shown in section 2. Material Information of this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA approved for the engine models listed.

G. Manpower**(1) In service**

Not applicable.

(2) At overhaul

Rework only – 10 hours.

NOTE: The parts affected by this Service Bulletin are accessible at overhaul.

H. Material Price and Availability

Modification kit not required; parts supplied as single line items.

I. Tooling Price and Availability

Special tools are not required.

J. Industry Support Information

None.

K. Weight and Balance**(1) Weight Change**

None.

(2) Moment Arm

Not affected.

(3) Datum

Engine front mount centreline (Power Plant Station (PPS) 100).

L. Electrical Load Data

The aircraft electrical load is not affected by this Service Bulletin.

M. Software Accomplishment Summary

Not applicable.

N. References

- R (1) IAE Engineering Change Numbers 02VR001, 03VR761B.R, 05VR915 and 05VR915A.
- R (2) Quality Report V2500/11/03-0011.
- (3) ATA Locator - 72-32-23.
- (4) Engine Manual, 72-00-40, Removal/Installation.

O. Other Publications Affected

- (1) Illustrated Parts Catalogue (IPC) 2IA, 2IB, 3IA, 3IB, 5IA, 5IB, 6IA, 6IB, 7IA and 7IB, Chapter/Section 72-32-23, will be revised.
- (2) Engine Manual, 72-32-23, Config-01, Cleaning-02 and Inspection/Check-02.

P. Interchangeability of Parts

Not affected.

2. Material Information

A. The kit required consists of the following parts:

None.

B. Parts to be reworked:

All Engines

72-32-23

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
01700	6A8093	1	.Shaft and Seal Assembly - Front, HP Compressor	-	6A4468	(1D)(S1)
01745	6A8094	1	..Shaft, Balancing and Assembly - Front, HP Compressor	-	6A4147	(1D)(S1)
01770	6A8095	Ref	...Shaft - Front, HP Compressor	-	6A4148	(B)(1D)(S1)

C. New production parts:

All Engines

72-32-23

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
01700	6A8082	1	.Shaft and Seal Assembly - Front, HP Compressor	-	6A4468	(A)(S1)
01745	6A8083	1	..Shaft, Balancing and Assembly - Front, HP Compressor	-	6A4147	(A)(S1)
01770	6A8084	Ref	...Shaft - Front, HP Compressor	-	6A4148	(C)(S1)

D. Instructions disposition codes:

(A) New part will be made available from August 2002.

(B) Part of 6A8094.

(C) Part of 6A8083.

- (S1) New and old parts are freely and fully interchangeable.
- (1D) Old part may be reworked and re-identified to the new part number.

3. Accomplishment Instructions

A. Prepare the HP Compressor

Remove the HP Compressor Assembly from the engine (72-00-41). Disassemble the HP Compressor Assembly and the HP Compressor Rotor (72-00-41). Remove Number 3 Bearing internal gearbox and support assembly (72-32-00), Disassemble the Number 3 Bearing and Bevel Gear (72-32-20). Disassemble the Seal Ring Carrier (72-32-23) to remove the HPC Front Stubshaft. Refer to the applicable Engine Manual (EM), Removal/Installation.

B. Rework Instructions

- (1) This is a Source Demonstrated Service Bulletin which can only be done by approved vendors.

The Source Demonstration requirements of this Service Bulletin means that any facility not authorised to accomplish this Service Bulletin either utilize the Authorised Repair Vendors listed below or contact the IAE Repair Services Group to determine if a qualification programme can be initiated at their facility.

IAE – International Aero Engines AG

c/o Rolls-Royce plc.

P0 Box 31

DERBY

DE24 8BJ

ENGLAND

For Attention: Manager – Technical Services

Authorised Repair Vendors for Service Bulletin 72-0421 are listed below:

Rolls-Royce

Aero Repair and Overhaul

ANSTY

COVENTRY

CV7 9JR

ENGLAND



Ishikawajima - Harima Heavy Industries Co., Ltd. (IHI)

229 Tonogaya Mizuho-machi,

Nishitama-gun,

TOKYO 190 - 1297

JAPAN

Attn: Customer Support Manager, Maintenance Department, Civil Aero-Engine
Division, Aero-Engine and Space Operations

Lufthansa Technik AG

Ham WP

P0 Box 63 03 00

D-22313 HAMBURG AIRPORT

GERMANY

The designation by IAE of an Authorized Repair Vendor indicates that the Repair Vendor has demonstrated the necessary capability to enable it to carry out the Listed Service Bulletin Work. However, IAE makes no warranties or representations concerning the qualifications or quality standards of the Repair Vendors to carry out the Service Bulletin work, and accepts no responsibility whatsoever for any work that may be carried out by a Repair Vendor other than when IAE is listed as the Repair Vendor. Authorized Repair Vendors do not act as agents or representatives of IAE.

(2) Standard Equipment:

Refer to approved vendor process.

(3) Consumable materials:

Refer to approved vendor process.

(4) Rework the following parts:

6A4147 – HP Compressor Front Stubshaft. Refer to Illustrated Parts Catalogue (IPC) Chapter/section 72-32-23, Fig/Item 01-745.

NOTE: Part serial numbers contained within Appendix A do not require this rework (as they have previously had the high energy coating applied) and should be re-identified by vibro-engraving the number 10 within a triangle adjacent to the existing identity. Refer to SPM TASK 70-09-00-400-001. Use vibro-engraving equipment.

CAUTION: TITANIUM COMPONENT – YOU MUST USE SILICON CARBIDE TYPE ABRASIVE WHEELS, STONES AND PAPERS TO DRESS, BLEND AND POLISH THIS COMPONENT.

CAUTION: TITANIUM COMPONENT – AVOID BUILD UP OF HEAT BY APPLYING ONLY GENTLE PRESSURE AND KEEPING THE TOOL SPEED AS LOW AS POSSIBLE.

CAUTION: TITANIUM COMPONENT – YOU MUST MAKE SURE THAT WHEN YOU DRESS MATERIAL, BLEND AND POLISH, TO MAKE SMOOTH, THAT NO SPARKS ARE PRODUCED.

CAUTION: TITANIUM COMPONENT – IF THE MATERIAL SHOWS A CHANGE IN COLOUR, TO DARKER THAN A LIGHT STRAW COLOUR, THE COMPONENT IS TO BE REJECTED.

PROCEDURE

RELATED DATA

- | | |
|---|--|
| (5) Remove the hard coating | Refer to Figure 1
Refer to approved vendor process. |
| (6) Measure the surface(s) to be repaired | Refer to approved vendor process.
Use dimensional inspection equipment. |
| (7) Do a swab etch | |
| (a) Chemically clean | Refer to SPM TASK 70-11-08-300-503.
Use chemical cleaning equipment. |
| (b) Swab etch the area(s) of repair | Refer to SPM TASK 70-11-08-300-503.
Use chemical cleaning equipment. |
| (8) Do a penetrant crack test | Refer to approved vendor process. |
| (9) Chemically clean the Front Stubshaft | Refer to SPM TASK 70-11-26-300-503.
Use chemical cleaning equipment. |
| (10) Mask area(s) not to be repaired | Refer to approved vendor process. |
| (11) Abrasive blast the surface(s) to be repaired | Refer to approved vendor process. |

- | | |
|---|---|
| (12) Metal spray the surface(s) for repair | Refer to approved vendor process. |
| (13) Grind the hard coating on the HP Compressor Front Stubshaft | Refer to Figures 1 and 2.
Refer to approved vendor process. |
| (14) Visually and dimensionally inspect | Refer to Figures 1, 2 and 3.
Use dimensional inspection equipment. |
| (15) Do a penetrant crack test | Refer to approved vendor process. |
| (16) Cancel the existing part number and re-identify the HP Compressor Front Stubshaft Assembly with the new part number adjacent to the existing part number | Refer to SPM TASK 70-09-00-400-001.
Use vibro-engraving equipment. |
| | Existing Re-number |
| | 6A4147 6A8094 |

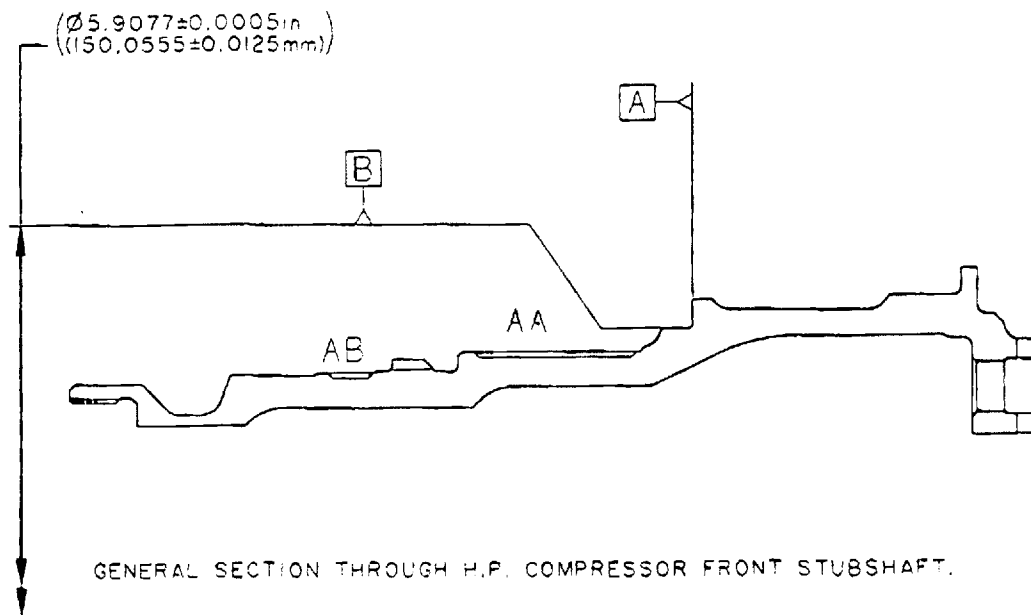
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C. Assembly Instructions

Re-Assemble the HPC Front Stubshaft and the Seal Ring Carrier (72-32-23), Number 3 Bearing and Bevel Gear (72-32-20), Install Number 3 Bearing Internal Gearbox and Support Assembly (72-32-00), Assemble the HP Compressor Assembly (72-41-00) and Install the HP Compressor (72-00-41). For all other assembly instructions refer to Engine Manual, 72-00-40, Removal/Installation.

D. Recording Instructions

A record of accomplishment is necessary.



GEOMETRIC SYMBOLS CONFORM TO ISO R1011

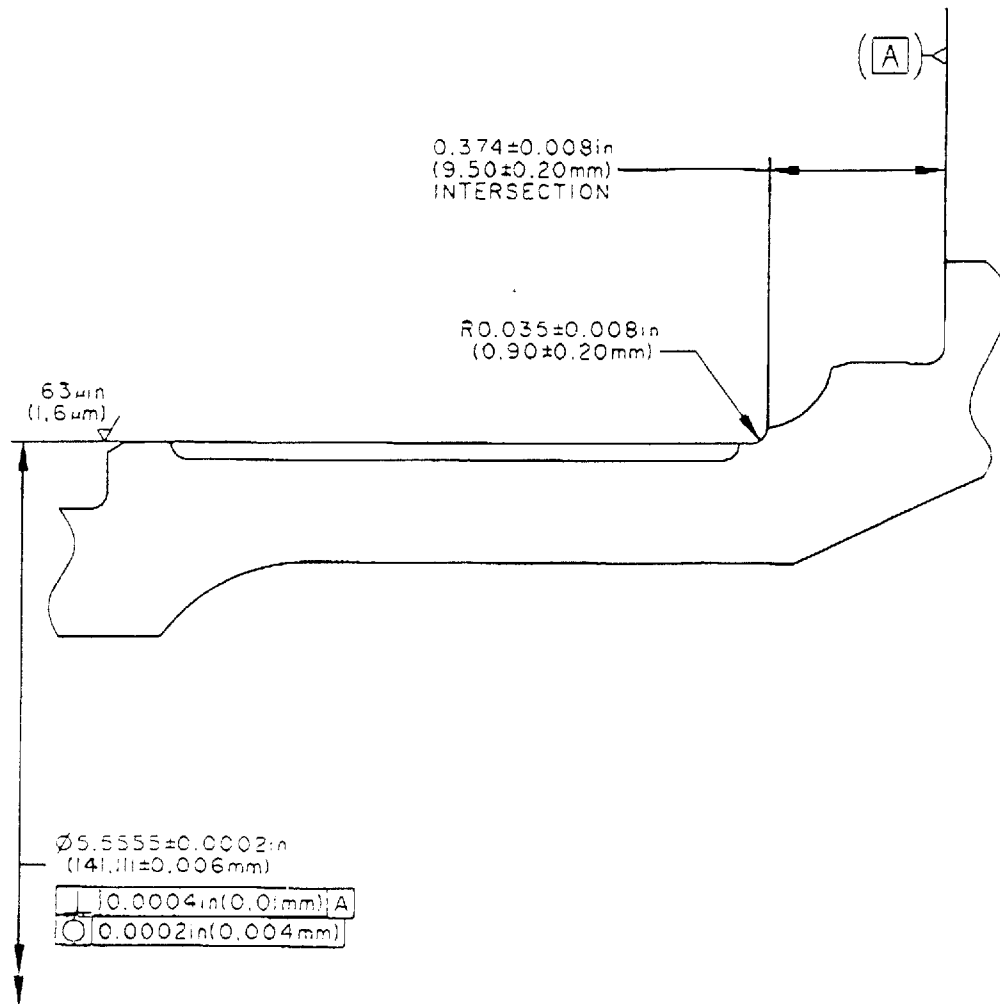
SURFACE TEXTURE IN MICROINCHES
(MICROMETRES)

MACHINE WHERE SHOWN $\sqrt{\text{ }}$.

APPLY THE FLAME DEPOSITION MATERIAL TO
AREAS SPECIFIED AA AND AB.

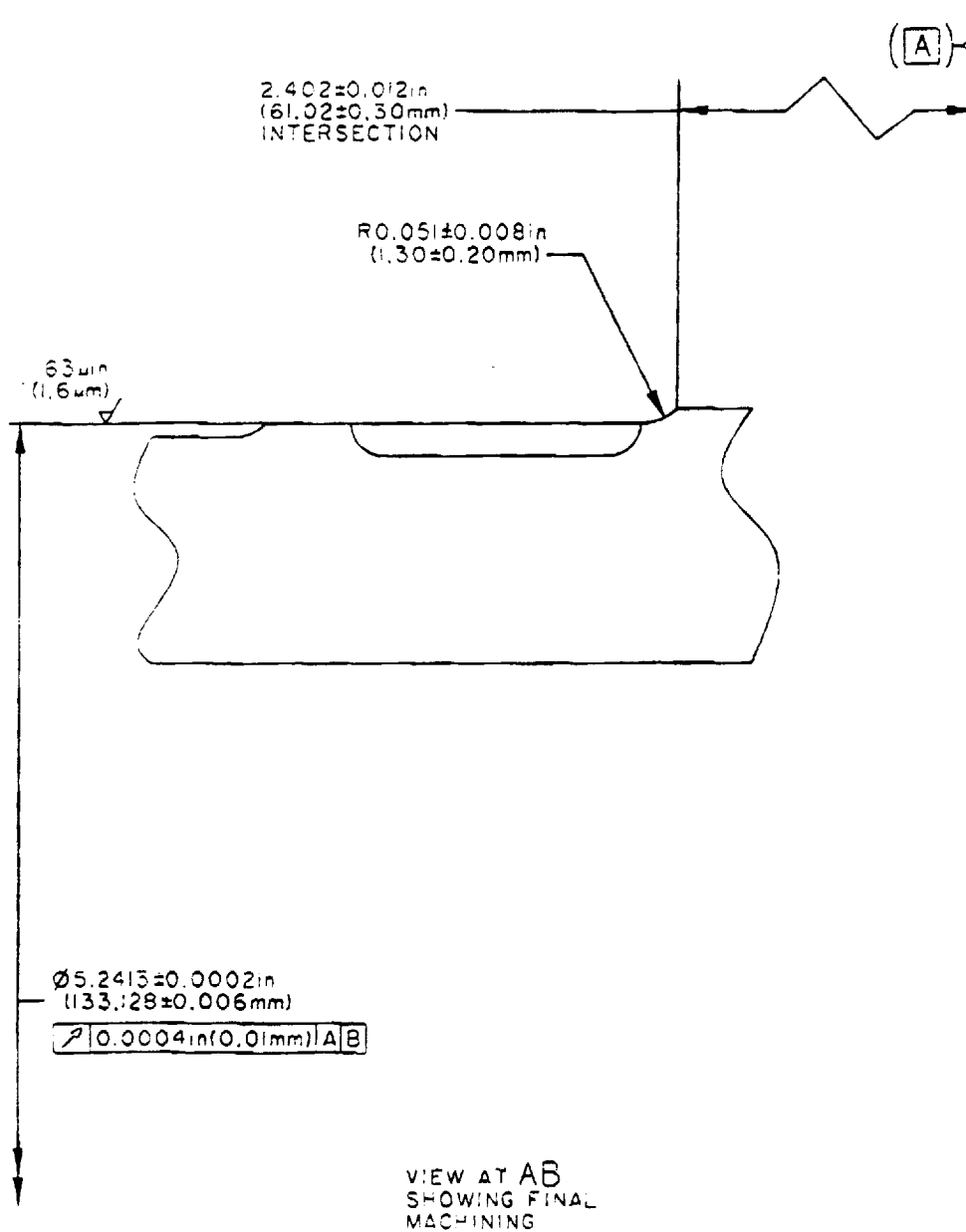
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General section through HP Compressor Front Stubshaft
Figure 1



VIEW AT AA
SHOWING FINAL
MACHINING

Rework of HP Compressor Front Stubshaft
Figure 2



ded0004530

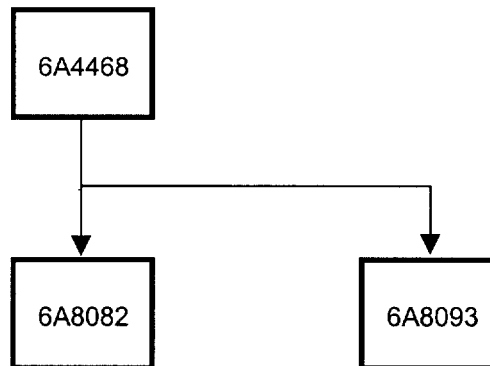
Rework of HP Compressor Front Stubshaft
Figure 3

HP Compressor Front Stub Shaft Assy

Baseline

V2500-ENG-72-0421

Engine - HP Compressor Front Stub Shaft - Introduction of a Revised HPC Front Stub Shaft with High Plasma Coating.



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Family Tree - HP Compressor Front Stubshaft Assembly

APPENDIX A

R HP Compressor Stubshafts plasma sprayed to RPS 629 (High Energy) standard at new
R production

R

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R	R7BFGQ,	R7BFR,	R7BFGS,	R7BFGT,	R7BFGU,	R7BFGV,	R7BFHF,	R7BFHG,	R7BFHH,	R7BGCY,
R	R7BGGD,	R7BGGN,	R7BGKR,	R7BGKS,	R7BGKT,	R7BGKU,	R7BGKV,	R7BGKW,	R7BGKX,	R7BGKY,
R	R7BGKZ,	R7BGLA,	R7BGLB,	R7BGLC,	R7BGLD,	R7BGLE,	R7BGLF,	R7BGLG,	R7BGLH,	R7BGLJ,
R	R7BGLK,	R7BGLL,	R7BGLM,	R7BGLN,	R7BGLP,	R7BGLQ,	R7BGLR,	R7BGLS,	R7BGLT,	R7BGLU,
R	R7BGLV,	R7BGLW,	R7BGLX,	R7BGLY,	R7BGLZ,	R7BGMA,	R7BGMB,	R7BGMC,	R7BGMD,	R7BGME,
R	R7BGMF,	R7BHFT,	R7BHFU,	R7BHfv,	R7BHFW,	R7BHFX,	R7BHfy,	R7BHfZ,	R7BHGG,	R7BHGH,
R	R7BHGJ,	R7BHGL,	R7BHGM,	R7BHGN,	R7BHGO,	R7BHGP,	R7BHGQ,	R7BHGR,	R7BHGS,	R7BHGT,
R	R7BHJN,	R7BHJR,	R7BHJS,	R7BHMF,	R7BHNN,	R7BHNP,	R7BHNQ,	R7BHNR,	R7BHNS,	R7BHNT,
R	R7BHNU,	R7BHNv,	R7BHNW,	R7BHNX,	R7BHNy,	R7BHsF,	R7BHsG,	R7BHsH,	R7BHsJ,	R7BHsK,
R	R7BHSL,	R7BHSM,	R7BHsN,	R7BHsP,	R7BHsQ,	R7BHsR,	R7BHsS,	R7BHsT,	R7BHsU,	R7BHtB,
R	R7BHtC,	R7BHtD,	R7BHtE,	R7BHxU,	R7BHxV,	R7BHxW,	R7BHxx,	R7BHxy,	R7BJAP,	R7BJAQ,
R	R7BJAR,	R7BJAS,	R7BJAT,	R7BJAU,	R7BJAV,	R7BJAW,	R7BJAX,	R7BJAY,	R7BJAZ,	R7BJBA,
R	R7BJBB,	R7BJBC,	R7BJBD,	R7BJBE,	R7BJBF,	R7BJBG,	R7BJBH,	R7BJBJ,	R7BJBK,	R7BJBL,
R	R7BJBM,	R7BJBN,	R7BJBP,	R7BJBQ,	R7BJBR,	R7BJBS,	R7BJBT,	R7BJBU,	R7BJBV,	R7BJHX,
R	R7BJHY,	R7BJHZ,	R7BJJA,	R7BJJB,	R7BJJC,	R7BJJD,	R7BJJE,	R7BJJF,	R7BJJG,	R7BJJH,
R	R7BJJJ,	R7BJJK,	R7BJJL,	R7BJJM,	R7BJJN,	R7BJJP,	R7BLTD,	R7BLTE,	R7BLTF,	R7BLTG,
R	R7BLTH,	R7BLTJ,	R7BLTK,	R7BLTL,	R7BLTM,	R7BLTN,	R7BLTP,	R7BLTQ,	R7BLTR,	R7BNHK,
R	R7BNHL,	R7BNHM,	R7BNHN,	R7BNHP,	R7BNHQ,	R7BNHR,	R7BNHS,	R7BNHT,	R7BNHU,	R7BNHV,
R	R7BNHW,	R7BNHX,	R7BNHY,	R7BNHZ,	R7BNJA,	R7BNJB,	R7BNJC,	R7BNJD,	R7BNJE,	R7BNJF,
R	R7BNJG,	R7BNJH,	R7BNJJ,	R7BNJK,	R7BNJL,	R7BNJM,	R7BNJN,	R7BPMA,	R7BPMB,	R7BPMC,
R	R7BPMD,	R7BPME,	R7BPMF,	R7BPMG,	R7BPMH,	R7BPMJ,	R7BPMK,	R7BPML,	R7BPMM,	R7BPMN,
R	R7BPMP,	R7BPMQ,	R7BPMR,	R7BPMS,	R7BPMT,	R7BPMU,	R7BPMV,	R7BPMW,	R7BPMX,	R7BPMY,
R	R7BPMZ,	R7BPNF,	R7BPNG,	R7BPNH,	R7BPNJ,	R7BPNK,	R7BPNL,	R7BPNM,	R7BPNP,	R7BQFR,
R	R7BQFS,	R7BQFT,	R7BQFU,	R7BQFV,	R7BQFW,	R7BQFX,	R7BQFY,	R7BQFZ,	R7BQGA,	R7BQGB,
R	R7BQGC,	R7BQGD,	R7BQNL,	R7BQNL,	R7BQNM,	R7BQNN,	R7BQNP,	R7BQNQ,	R7BQNR,	R7BQNS,
R	R7BQNT,	R7BQNU,	R7BQNV,	R7BRFA,	R7BRFB,	R7BRFC,	R7BRFD,	R7BRFE,	R7BRFF,	R7BRFG,
R	R7BRFH,	R7BRFJ,	R7BRFK,	R7BRFL,	R7BRFM,	R7BRFN,	R7BRFR,	R7BRFS,	R7BRFT,	R7BRPC,
R	R7BRPD,	R7BRPE,	R7BRPF,	R7BRPG,	R7BRPH,	R7BRPJ,	R7BRPK,	R7BRPL,	R7BRPM,	R7BRPN,
R	R7BRPP,	R7BRPR,	R7BRPU,	R7BRPV,	R7BSKX,	R7BSKY,	R7BSKZ,	R7BSLA,	R7BSLB,	R7BSLC,
R	R7BSLD,	R7BSLE,	R7BSLF,	R7BSLG,	R7BSLH,	R7BSLJ,	R7BSLK,	R7BSLL,	R7BSLM,	R7BSLN,
R	R7BSLP,	R7BSLQ,	R7BSLR,	R7BSLS,	R7BSLT,	R7BSLU,	R7BSLV,	R7BSLW,	R7BSLX,	R7BSLY,
R	R7BSLZ,	R7BSMA,	R7BSMB,	R7BSMC,	R7BSMD,	R7BSME,	R7BSMF,	R7BSMG,	R7BSMH,	R7BSMJ,
R	R7BSMK,	R7BSML,	R7BSMM,	R7BSMN,	R7BTTJ,	R7BTVG,	R7BUJN,	R7BUJP,	R7BUJQ,	R7BUJR,
R	R7BUJS,	R7BUJT,	R7BUJU,	R7BUJV,	R7BUJW,	R7BUJX,	R7BUJY,	R7BUJZ,	R7BUKA,	R7BUKB,
R	R7BUKC,	R7BUKD,	R7BUKE,	R7BUKF,	R7BUKG,	R7BUKH,	R7BUKJ,	R7BUKK,	R7BUKL,	R7BUKM,
R	R7BUKN,	R7BUKP,	R7BUKQ,	R7BUKR,	R7BUKS,	R7BUKT,	R7BV5Q,	R7BV5V,	RYVBH,	R7VBVK,
R	R7BVBL,	R7BVBM,	R7BVBN,	R7BVSB,	R7BVSC,	R7BVSD,	R7BVSE,	R7BVSF,	R7BVSG,	R7BVSP,
R	R7BVSQ,	R7BVSR,	R7BVSS,	R7BVST,	R7BVsu,	R7BVsv,	R7BVsw,	R7BVsy,	R7BVsz,	R7BVTA,
R	R7BVTB,	R7BVTC,	R7BVTD,	R7BVtG,	R7BVtH,	R7BXEY,	R7BXEZ,	R7BXFA,	R7BXFC,	R7BXFD,
R	R7BXFE,	R7BXFF,	R7BXFG,	R7BXFH,	R7BXFJ,	R7BXFK,	R7BXFL,	R7BXFM,	R7BXFN,	R7BXFP,
R	R7BXFQ,	R7BXFR,	R7BXFS,	R7BXFT,	R7BYFL,	R7BYTZ,	R7BYUA,	R7BYUB,	R7BYUC,	R7BYUD,
R	R7BYUE,	R7BYUF,	R7BYUG,	R7BYUH,	R7BYUJ,	R7BYUK,	R7BYUL,	R7BYUM,	R7BYUN,	R7BYUP,

R	R7BYUQ	R7BYUR	R7BYUS	R7BYUT	R7BYUU	R7BYUV	R7BYUW	R7BYUX	R7BYUY	R7BYUZ
R	R7BYVA	R7BYVB	R7BYVC	R7BYVD	R7BYVE	R7BYVF	R7BYVG	R7BYVP	R7BYVQ	R7BYVR
R	R7BZAG	R7BZAJ	R7BZAK	R7BZAL	R7BZAM	R7BZAN	R7BZAP	R7BZAQ	R7BZAR	R7BZAS
R	R7BZAT	R7BZAU	R7BZAV	R7BZAW	R7BZAX	R7BZAY	R7BZAZ	R7BZBA	R7BZBB	R7BZBC
R	R7BZBD	R7BZBE	R7BZBF	R7BZBG	R7BZBH	R7BZBJ	R7BZBK	R7BZBL	R7BZBM	R7BZBN
R	R7BZBP	R7BZBQ	R7BZBR	R7BZBS	R7BZBT	R7BZBU	R7BZBV	R7BZBW	R7BZBX	R7BZBY
R	R7BZBZ	R7BZCA	R7BZCB	R7BZCC	R7BZCD	R7BZCE	R7BZCF	R7BZCG	R7BZCH	R7CBKR
R	R7CBKS	R7CBKT	R7CBKU	R7CBKV	R7CBKW	R7CBKX	R7CBKY	R7CBKZ	R7CBLA	R7CBLB
R	R7CBLC	R7CBLD	R7CBLE	R7CBLF	R7CBLG	R7CBLH	R7CBLJ	R7CBLK	R7CBLL	R7CBLM
R	R7CBLN	R7CBLP	R7CBLQ	R7CBLR	R7CBLS	R7CBLT	R7CBLU	R7CBLV	R7CBLW	R7CBLX
R	R7CBLZ	R7CBMA	R7CBMB	R7CBMC	R7CBMD	R7CBME	R7CBMF	R7CBMG	R7CBMH	R7CBMT
R	R7CBMJ	R7CBMK	R7CBML	R7CBMM	R7CBMN	R7CBMP	R7CBMQ	R7CBMR	R7CBMS	R7CBMT
R	R7CBMU	R7CBMV	R7CBMW	R7CBMX	R7CBMY	R7CBMZ	R7CBNA	R7CBNB	R7CBNC	R7CBND
R	R7CBVS	R7CDMP	R7CDMR	R7CFOC	R7CFPE	R7CFPF	R7CFPG	R7CFPH	R7CFPJ	R7CFPK
R	R7CFPL	R7CFPM	R7CFPN	R7CFPP	R7CFPQ	R7CFPR	R7CFPS	R7CFPT	R7CFPU	R7CFPV
R	R7CFPW	R7CFPX	R7CFPY	R7CFPZ	R7CFQA	R7CFQB	R7CFQC	R7CFQD	R7CFQE	R7CFQF
R	R7CFQG	R7CFQH	R7CFQJ	R7CFQK	R7CFQL	R7CFQM	R7CFQN	R7CFQP	R7CFQQ	R7CFQR
R	R7CFQS	R7CFQT	R7CGLF	R7CGLG	R7CGLH	R7CGLJ	R7CGLK	R7CGLL	R7CGLM	R7CGLN
R	R7CGLP	R7CGLQ	R7CGLR	R7CGLS	R7CGLT	R7CGLU	R7CGLV	R7CGLW	R7CGLX	R7CGLY
R	R7CGLZ	R7CGMA	R7CGMB	R7CGMC	R7CGMD	R7CGME	R7CGMF	R7CGMG	R7CGMH	R7CGMJ
R	R7CGMK	R7CGML	R7CGMM	R7CGMN	R7CGMP	R7CGMQ	R7CGMR	R7CGMS	R7CGMT	R7CGMU
R	R7CGMV	R7CGMW	R7CGMX	R7CGNL	R7CGNN	R7CGNQ	R7CGNU	R7CGNV	R7CGNX	R7CHBC
R	R7CHBD	R7CHBE	R7CHBF	R7CHBG	R7CHBH	R7CHBJ	R7CHBK	R7CHBL	R7CHBM	R7CHBN
R	R7CHBP	R7CHBQ	R7CHBR	R7CHBS	R7CHBT	R7CHBU	R7CHBV	R7CHBW	R7CHBX	R7CHBY
R	R7CHBZ	R7CHCA	R7CHCB	R7CHCC	R7CHCD	R7CHCE	R7CHCF	R7CHCG	R7CHCH	R7CHCJ
R	R7CHCK	R7CHCL	R7CHCM	R7CHCN	R7CHCQ	R7CHCR	R7CHCS	R7CHCT	R7CHCU	R7CHCV
R	R7CHCW	R7CHCX	R7CHCY	R7CHCZ	R7CHDA	R7CHDB	R7CHDC	R7CHDD	R7CHDE	R7CHDF
R	R7CHDG	R7CHDH	R7CHDJ	R7CHDK	R7CHDL	R7CHDM	R7CHDN	R7CHDP	R7CHDQ	R7CHE
R	R7CHQ	R7CJDS	R7CJDT	R7CJDU	R7CJDV	R7CJDW	R7CJDX	R7CJDY	R7CJDZ	R7CJEA
R	R7CJEB	R7CJEC	R7CJED	R7CJEE	R7CJEF	R7CJEG	R7CJEH	R7CJEJ	R7CJEK	R7CJEL
R	R7CJEM	R7CJEN	R7CJEP	R7CJEQ	R7CJER	R7CJES	R7CJET	R7CJEU	R7CJEV	R7CJGB
R	R7CJGC	R7CJGD	R7CJGE	R7CJGF	R7CJGG	R7CJGJ	R7CJGK	R7CJTT	R7CJTU	R7CJTV
R	R7CJTW	R7CJTX	R7CJTY	R7CJTZ	R7CJUA	R7CJUB	R7CJUC	R7CJUD	R7CJUE	R7CJUF
R	R7CJUG	R7CJUH	R7CJUJ	R7CJUK	R7CJUL	R7CJUM	R7CJUN	R7CJUP	R7CJUQ	R7CJUR
R	R7CJUS	R7CJUT	R7CJUW	R7CJUJ	R7CJUW	R7CJUX	R7CJUY	R7CJUZ	R7CJVA	R7CJVB
R	R7CJVC	R7CJVD	R7CJVE	R7CJVF	R7CJVG	R7CJVH	R7CJVJ	R7CKBM	R7CKBN	R7CKBP
R	R7CKBS	R7CKSB	R7CKSC	R7CKSD	R7CKSE	R7CKSF	R7CKSG	R7CKSH	R7CKSJ	R7CKSK
R	R7CKSL	R7CKSM	R7CKSN	R7CKSP	R7CKSQ	R7CKSR	R7CKSS	R7CKST	R7CKSU	R7CKSV
R	R7CKSW	R7CKSX	R7CKSY	R7CKSZ	R7CKTA	R7CKTB	R7CKTC	R7CKTD	R7CKTE	R7CKTF
R	R7CKTG	R7CKTH	R7CKTJ	R7CKTK	R7CKTL	R7CKTM	R7CKTN	R7CKTP	R7CKTQ	R7CKTR
R	R7CLCT	R7CLCU	R7CLCV	R7CLCW	R7CLCX	R7CLCY	R7CLCZ	R7CLDA	R7CLDB	R7CLDC
R	R7CLDD	R7CLDE	R7CLDF	R7CLDG	R7CLDH	R7CLDJ	R7CLDK	R7CLDL	R7CLDM	R7CLDN
R	R7CLDP	R7CLDQ	R7CLDR	R7CLDS	R7CLQL	R7CLQT	R7CMBD	R7CMCA	R7CMCP	R7CMSS
R	R7CMST	R7CMSU	R7CMSV	R7CMSW	R7CMSX	R7CMSY	R7CMSZ	R7CMTA	R7CMTB	R7CMTC
R	R7CMTD	R7CMTE	R7CMTF	R7CMTG	R7CMTH	R7CMTJ	R7CMTK	R7CMTL	R7CMTM	R7CMTN
R	R7CMTP	R7CMTQ	R7CMTR	R7CMTS	R7CMTT	R7CMTU	R7CMTV	R7CMTW	R7CMTX	R7CMTY
R	R7CMTZ	R7CMUA	R7CMUB	R7CMUC	R7CMUD	R7CMUE	R7CMUF	R7CMUG	R7CMUH	R7CMUJ
R	R7CMUK	R7CRNC	R7CRNG	R7CRQF	R7CRTF	R7CRTG	R7CRTH	R7CRTJ	R7CRTK	R7CRTL



R R7CRTM, R7CRTN, R7CRTP, R7CRTQ, R7CRTR, R7CRVL, R7CRVM, R7CRVN, R7CRVP, R7CRVQ,
R R7CRVR, R7CRVS, R7CRVT, R7CRVU, R7CRVV, R7CRVW, R7CRVX, R7CRVY, R7CRVZ, R7CRWA,
R R7CRWB, R7CRWK, R7CRWL, R7CRWM, R7CRWN, R7CRWP, R7CRWQ, R7CRWR, R7CRWS, R7CRWT,
R R7CRWU, R7CRWV, R7CRWW, R7CRWX, R7CRWY, R7CRWZ, R7CRXA, R7CRXB, R7CRXC, R7CRXD,
R R7CRXE, R7CRXF, R7CRXG, R7CRXH, R7CSYD, R7CSYE, R7CSYF, R7CSYG, R7CSYH, R7DJNQ,
R R7DJNU, R7DJNV, R7DJNX, R7DJPA, R7DJPC, R7DJPD, R7DJQX, R7DJQY, R7DJSU, R7DJSV,
R R7DJSW, R7DJSX, R7DJSY, R7DJSZ, R7DJTA, R7DJVZ, R7DJWA, R7DJWB, R7DJWC, R7DJWD,
R R7DJWE, R7DJWF, R7DJWG, R7DJWH, R7DJWJ, R7DJWK, R7DJWL, R7DJWM, R7DJWN, R7DJWP,
R R7DJWQ, R7DJWR, R7DJWS, R7DJWT, R7DJWU, R7DJWV, R7DJWW, R7DJWX, R7DJWY, R7DJWZ,
R R7DJXA, R7DJXB, R7DJXC, R7DJXD, R7DJXE, R7DJXF, R7DJXG, R7DJXH, R7DJXJ, R7DJXK,
R R7DJXL, R7DJXM, R7DJXN, R7DJXP, R7DJXQ, R7DJXR, R7DJXX, R7DJYZ, R7DKJT, R7DKJU,
R R7DKJV, R7DKJW, R7DKJX, R7DKJY, R7DKJZ, R7DKKA, R7DKKB, R7DKKC, R7DKKD, R7DKKE,
R R7DKKF, R7DKKG, R7DKKH, R7DKKJ, R7DKKK, R7DKKL, R7DKKM, R7DKKN, R7DKKP, R7DKKQ,
R R7DKKR, R7DKKS, R7DKKT, R7DKPQ, R7DKPR, R7DKPS, R7DKPT, R7DKPV, R7DKPW, R7DKPX,
R R7DKPY, R7DKPZ, R7DKQB, R7DKQC, R7DKXK, R7DKXN, R7DKXQ, R7DKYK, R7DKYL, R7DKYM,
R R7DKYN, R7DKYP, R7DKYQ, R7DKYR, R7DKYS, R7DKYT, R7DKYU, R7DKYV, R7DKYW, R7DKZC,
R R7DMAW, R7DMAX, R7DMAY, R7DMAZ, R7DMBA, R7DMBC, R7DMBD, R7DMBE, R7DMBF, R7DMBG,
R R7DMBH, R7DMBJ, R7DMBK, R7DMBL, R7DMBM, R7DMBN, R7DMBP, R7DMBQ, R7DMBR, R7DMBS,
R R7DMBT, R7DMBU, R7DMBV, R7DMEA, R7DMEB, R7DMEC, R7DMED, R7DMEF, R7DMEG, R7DMEH,
R R7DMEJ, R7DMEK, R7DMFE, R7DMFG, R7DMFH, R7DMFJ, R7DMFL, R7DMFM, R7DMFP, R7DMFQ,
R R7DMFR, R7DMFS, R7DMFT, R7DMFU, R7DMJV, R7DMJW, R7DMJX, R7DMJY, R7DMJZ, R7DMKA,
R R7DMKB, R7DMKC, R7DMKD, R7DMKF, R7DMKG, R7DMKH, R7DMKJ, R7DMKK, R7DMKL, R7DMKN,
R R7DMKQ, R7DMUV, R7DMUX, R7DMUY, R7DMUZ, R7DMVA, R7DMVB, R7DMVC, R7DMVD, R7DMVE,
R R7DMVG, R7DMVJ, R7DMVL, R7DMVM, R7DMVN, R7DMVP, R7DMVQ, R7DNBN, R7DNBP, R7DNBQ,
R R7DNBR, R7DNBS, R7DNBV, R7HNHB, R7HNHC, R7HNHD, R7HNHE, R7HNHF, R7HNHG, R7HNHH,
R R7HNHI, R7HNHJ, R7RBHFU, R7RBHFV, R7RBHFW, R7RBHFX, R7RBHFY, R7RHNT, R7RHNU, R7RHNV,
R R7RHNW, R7RHNX, R7RHNY, R7SMTH, R7SMTI, R7SMTJ, R7SMTK, R7SMTL, R7SMTM, R7SMTN,
R R7SMTQ, R7SMTP, R7SMTQ, R7YCJUD, R7YCJVA

ENGINE – HP COMPRESSOR FRONT STUBSHAFT – INTRODUCTION OF A REVISED HP COMPRESSOR
FRONT STUBSHAFT WITH HIGH ENERGY PLASMA COATING

SUPPLEMENT – PRICES AND AVAILABILITY

The prices (if shown) are for estimating purposes only and as such are given in good faith, without commercial liability for advanced planning purposes only. Refer to IAE Spares and/or current price catalogue for current prices.

1. Modification Kit:

Not applicable.

2. Parts required:

Part No.	Description	Unit Price US Dollars
6A8082	Shaft and Seal Assy – Front, HP Compressor	35,090.00
6A8083	Shaft, Balancing and Assy – Front, HP Compressor	30,149.00