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Rolls-Royce

P U B L I C A T I O N T R A N S M I T T A L

April 30, 2020

TO: Recipients of RR300 Service Bulletins

SUBJECT: RR300-73-007, ENGINE FUEL AND CONTROL -
TECS ENGINE DRIVEN FUEL PUMP INTERNAL SPLINE INSPECTION

This is a complete revision. Replace the Revision 1 with this Revision 2.

Revision 2 changes the Planning Information section.

The following list includes the original issue date and all revisions to this bulletin:

Original issue	December 9, 2014
Revision 1	April 30, 2019
Revision 2	April 30, 2020

CUSTOMER SUPPORT
ROLLS-ROYCE

SERVICE BULLETIN

Rolls-Royce

ENGINE, FUEL AND CONTROL - TECS ENGINE DRIVEN FUEL PUMP INTERNAL SPLINE INSPECTION

1. PLANNING INFORMATION

A. Effectivity

(1) Engine

All Rolls-Royce Model RR300/A1 and RR300/B1 engines with Triumph Engine Control Systems (TECS) fuel pumps as listed below are affected by this bulletin.

(2) Spares - Affected

Model	TECS Part Number	Rolls-Royce Part Number
MFP-263	113300-04A1	23074705

B. Reason

Some fuel pumps returned have been found to exhibit unusually high wear on the inboard spline of the main drive shaft prior to overhaul.

C. Description

This Service Bulletin (SB) transmits TECS bulletin 73-2 and 73-4 and provides the requirements for a repetitive spline inspection.

D. Approval

Technical aspects are FAA approved.

E. Compliance

Compliance Code 2 - To be complied within specified flight hours and/or calendar time.

1. For pumps with greater than 1000 hours (TSN or TSO): To be complied within 50 hours of receipt of this bulletin and every 750 hours thereafter.
2. For fuel pumps with less than 1000 hours (TSN or TSO): To be complied with at 1000 hours TSN or TSO and then every 750 hours thereafter.

F. Interchangeability - Not affected

G. Material Availability - Not required

H. Tooling Price and Availability - Not applicable

I. Weight and Balance - Not affected

J. Electrical Load Data - Not affected

December 09, 2014
Revision 2
April 30, 2020

RR300-73-007

K. References

(1) Triumph Service Bulletin, 73-2, and 73-4.

(2) RR300 Operation and Maintenance Manual, CSP 21009 (OMM).

(3) RR300 Line Illustrated Parts Catalog, CSP 23004 (LIPC).

(4) RR300 Engine Illustrated Parts Catalog, CSP 23006 (EIPC).

L. Other Publications Affected - Not applicable

M. Prerequisites - None

2. ACCOMPLISHMENT INSTRUCTIONS

A. Inspection in accordance with TECS service bulletin 73-2 and 73-4.

(1) Remove fuel pump (Ref. TASK 73-21-10-000-801).

(2) Inspect fuel pump spline shaft in accordance with TECS bulletin 73-2 or 73-4.

(3) If fuel pump passes inspection, reinstall fuel pump (Ref. TASK 73-21-10-400-801).

B. Upon completion of maintenance, record compliance to Service Bulletin 73-007 in the applicable section of the Engine Logbook, engine assembly, fuel pump control service accessory record, and SB Modification Record as applicable.

3. MATERIAL INFORMATION:

A. Configuration Chart

NEW P/N	QTY/ ENG	NAME	OLD P/N	QTY/ ENG	INSTRUCTIONS/ DISPOSITION
23074705	1	Pump and Filter Assembly	23074705	1	1 or 2

INSTRUCTION/DISPOSITION NOTES

1. New Item

2. Inspected Unit

CUSTOMER SUPPORT
ROLLS-ROYCE

SERVICE BULLETIN

Triumph Engine Control Systems Models MFP-262, MFP-263, MFP-264
Main Fuel Pump
Inspection of Main Drive Shaft for Backlash

1. Planning Information

A. Effectivity:

Applicable to all Triumph Engine Control Systems (Triumph) Model main fuel pumps installed on Rolls-Royce M250 and RR300 engines as shown below:

Model	Triumph Part Number	Rolls-Royce Part Number
MFP-262	114480A1 and 114480A2	23074704 and 23070620
MFP-263	113300-03A1 and 113300-04A1	23070459 and 23074705
MFP-264-1	113310-03A1 and 113310-04A1	23070460 and 23074706
MFP-264-2	113320-03A1 and 113320-04A1	23070461 and 23074707

B. Reason:

Some pumps returned to depot have been found to exhibit unusually high wear on the inboard spline of the main drive shaft prior to overhaul.

C. Description:

This service bulletin provides instructions for a backlash check to be performed on the pump main drive shaft. Backlash measurements have been demonstrated to be an effective means of identifying drive shafts with excessive inboard spline wear.

D. Compliance:

For pumps with accumulated operating time of over 1000 hours (TSN, TSO, or since drive shaft replacement):
To be complied with within 150 hours of receipt of this bulletin and every 750 hours thereafter.

For pumps with accumulated operating time of no more than 1000 hours (TSN, TSO, or since drive shaft replacement):
To be complied with at 1000 hours TSN, TSO or since drive shaft replacement, and every 750 hours thereafter.

M250-B15G
M250-B17 Series
M250-B17F Series
M250-C18 Series
M250-C20 Series
M250-C20R Series
M250-C28 Series
M250-C30 Series
RR300 Series

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If the pump drive shaft is replaced during service, the inspection described in this bulletin need not be performed at the time of replacement. However, future inspections are to be performed at the intervals defined above.

E. Approval:

Technical aspects are FAA approved.

F. Manpower:

With the exception of pump removal and installation, approximately 0.5 man hour is required to accomplish this service bulletin.

G. Material - Price and Availability:

None required.

H. Tooling - Price and Availability:

Not applicable.

I. Weight and Balance:

None.

J. Electrical Load Data:

Not changed.

K. Software Accomplishment Summary:

Not applicable.

L. References:

CMM 73-10-13, CMM 73-10-05 and 73-10-08.

M. Other Publications Affected:

Not applicable.

SERVICE BULLETIN

2. Accomplishment Instructions:

A. Remove the pump from the engine and place on a stable surface.

B. Cut out a template (see Figure 1A for MFP-262 and MFP-263, and Figure 1B for MFP-264-1 and MFP-264-2), which includes an arc of at least 6 degrees. The figures are of actual size and may be cut out and used for this purpose. Measurement lines should extend radially outward from the center at least 5.5 inches for adequate resolution. For clarity, it is recommended that major divisions be indicated every 1 degree, with minor divisions indicated every 0.5 degrees at a radius of 5.5 inches minimum. Paste the template to a relatively stiff backing, such as an index card, cardboard, or thin piece of aluminum. At the center, cut out the appropriate circle to fit snugly around the pump mounting pilot diameter.

C. Place the template over the pump pilot diameter as shown in Figure 2.

D. Fashion a pointer using one of the following two methods:

Method 1:

Bend the end of a large paper clip to create an indicator as shown in Figure 2. Fit the center portion of the paper clip snugly inside the end of the main drive shaft as shown in the figure. The wire should be bent such that the indicating portion is close to and parallel to the template (see Figure 2).

Method 2:

(1) Cut two 8 inch long pieces of 0.032 inch diameter lockwire.

(2) Tightly braid the two lockwire pieces together to make a pointer. Leave approximately two inches of the lockwire unbraided.

CAUTION: DO NOT LOCKWIRE THE POINTER OVER THE DRIVE SHAFT SPLINE TEETH OR THE PACKING GROOVE.

(3) While supporting the drive shaft by hand, lockwire the pointer tightly to the drive shaft within the groove between the spline teeth and the packing groove as illustrated in Figure 2. Ensure that the pointer fits snugly to the drive shaft and does not slip.

CAUTION: IN ORDER TO OBTAIN ACCURATE ANGULAR MEASUREMENTS WHEN PERFORMING THE FOLLOWING STEPS, EXERCISE CARE NOT TO PUSH THE PUMP SHAFT SIDE TO SIDE. WHEN PULLING THE DRIVE SHAFT OUTBOARD, APPLY EVEN FORCE (PULL SHAFT STRAIGHT OUT). DO NOT EXERT EXCESSIVE FORCE ONCE THE AXIAL STOP IS REACHED. ALWAYS APPLY AND MAINTAIN A CONSISTENT AMOUNT OF FORCE WHEN ROTATING AND HOLDING THE SHAFT AGAINST THE CLOCKWISE AND COUNTERCLOCKWISE STOPS. IT IS RECOMMENDED THAT A SECOND PERSON ASSIST BY HOLDING THE PUMP FIRMLY WHILE THE DRIVE SHAFT IS EXTENDED AND ROTATED.

M250-B15G
M250-B17 Series
M250-B17F Series
M250-C18 Series
M250-C20 Series
M250-C20R Series
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RR300 Series

SERVICE BULLETIN

NOTE: There may be little or no axial movement of the shaft in the following step.

E. While pulling outward on the drive shaft to hold it against its axial stop, turn the shaft clockwise to a firm stop. Adjust the template to align one of the major indications with the pointer edge (see Figure 3A).

NOTE: In the following step, be careful not to touch the pointer by hand when rotating the drive shaft.

F. Rotate the shaft counterclockwise until a firm stop is reached. Record the angular travel (backlash) to the nearest 0.25 degree increment measured with the pointer and template (see Figure 3B).

NOTE: The example shown in Figure 3B indicates a backlash of 3.25 degrees.

G. If the measured backlash is less than 6.0 degrees, the pump may be returned to service. If the reading is greater than or equal to 6.0 degrees, replace the pump with one that is new, newly overhauled, or that meets the backlash requirements of this bulletin. Pumps requiring repair may be sent to a Triumph authorized maintenance center. Standard warranty conditions apply.

H. Upon completion of this service bulletin, place an entry in the corresponding engine and component log noting service bulletin number and compliance date.

I. Ensure that the engine oil seal preformed packing on the pump drive shaft is replaced with a new one prior to re-installing the pump on the engine.

J. Record compliance with service bulletin.

(1) After measuring the backlash, record compliance information on Service Bulletin Compliance Data Sheet, Appendix A. Remit to Triumph Engine Control Systems via mail, fax, or e-mail identified on the form.

SERVICE BULLETIN

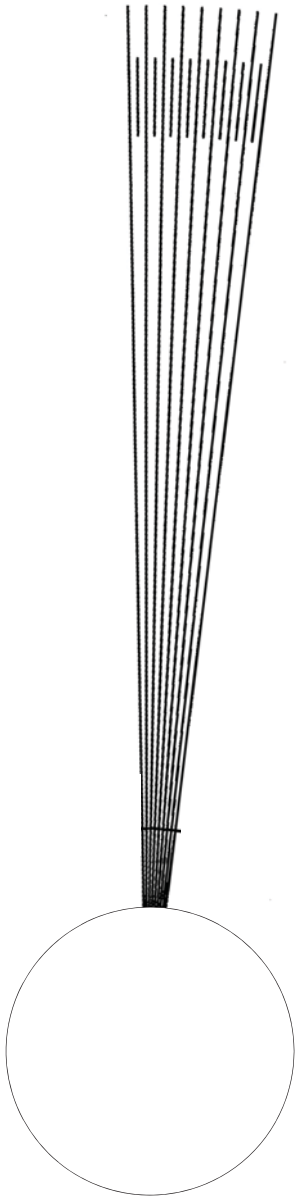


Figure 1A. Template for Models MFP-262 and MFP-263

M250-B15G
M250-B17 Series
M250-B17F Series
M250-C18 Series
M250-C20 Series
M250-C20R Series
M250-C28 Series
M250-C30 Series
RR300 Series

SERVICE BULLETIN

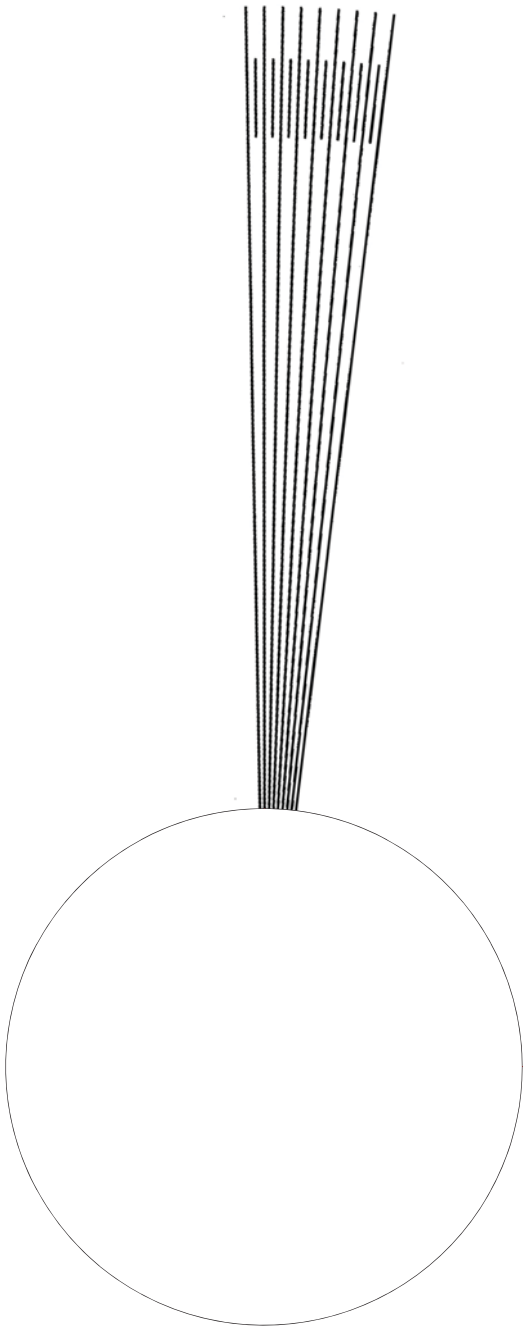
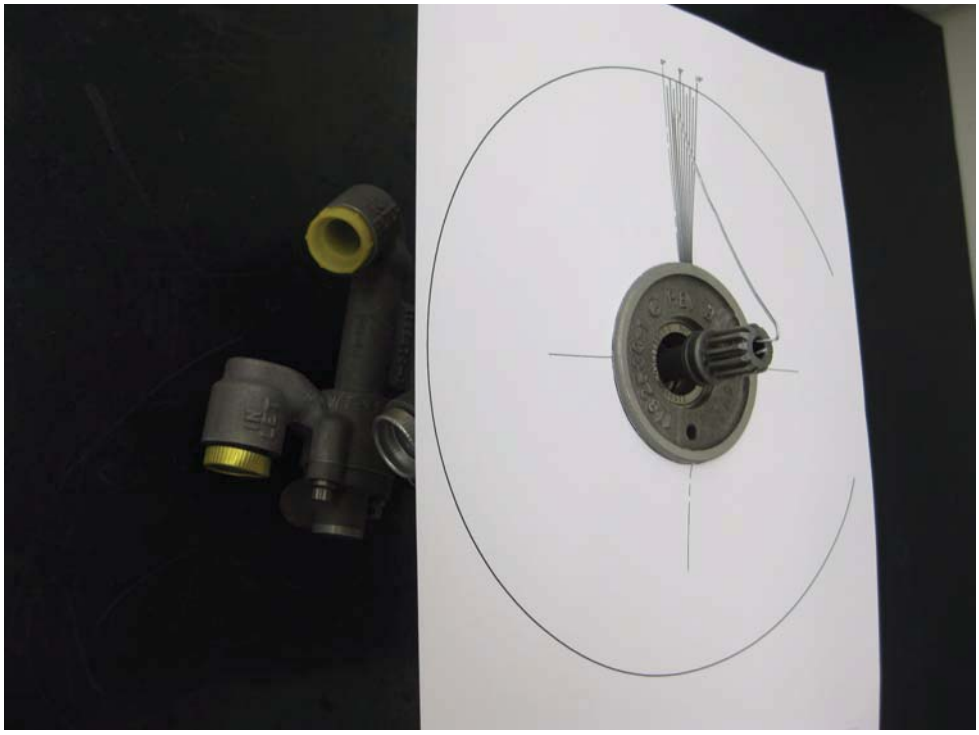
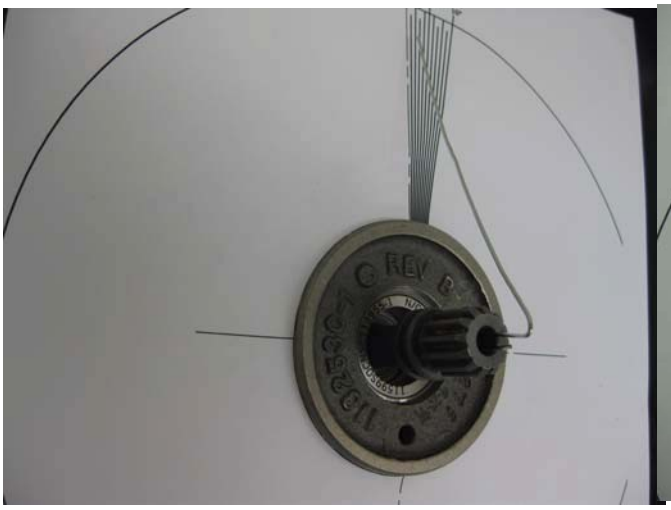


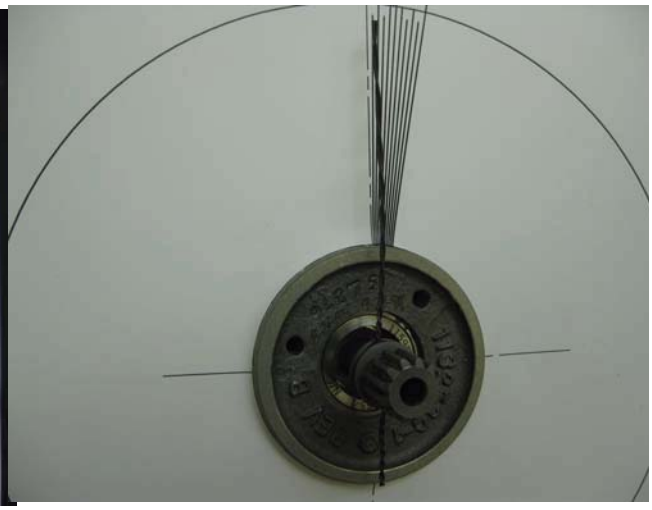
Figure 1B. Template for Models MFP-264-1 and MFP-264-2

M250-B15G
M250-B17 Series
M250-B17F Series
M250-C18 Series
M250-C20 Series
M250-C20R Series
M250-C28 Series
M250-C30 Series
RR300 Series

SERVICE BULLETIN







Method 1 Method 2

Figure 2. Setup Instructions for Backlash Check (MFP-264 shown)

M250-B15G
M250-B17 Series
M250-B17F Series
M250-C18 Series
M250-C20 Series
M250-C20R Series
M250-C28 Series
M250-C30 Series
RR300 Series

SERVICE BULLETIN

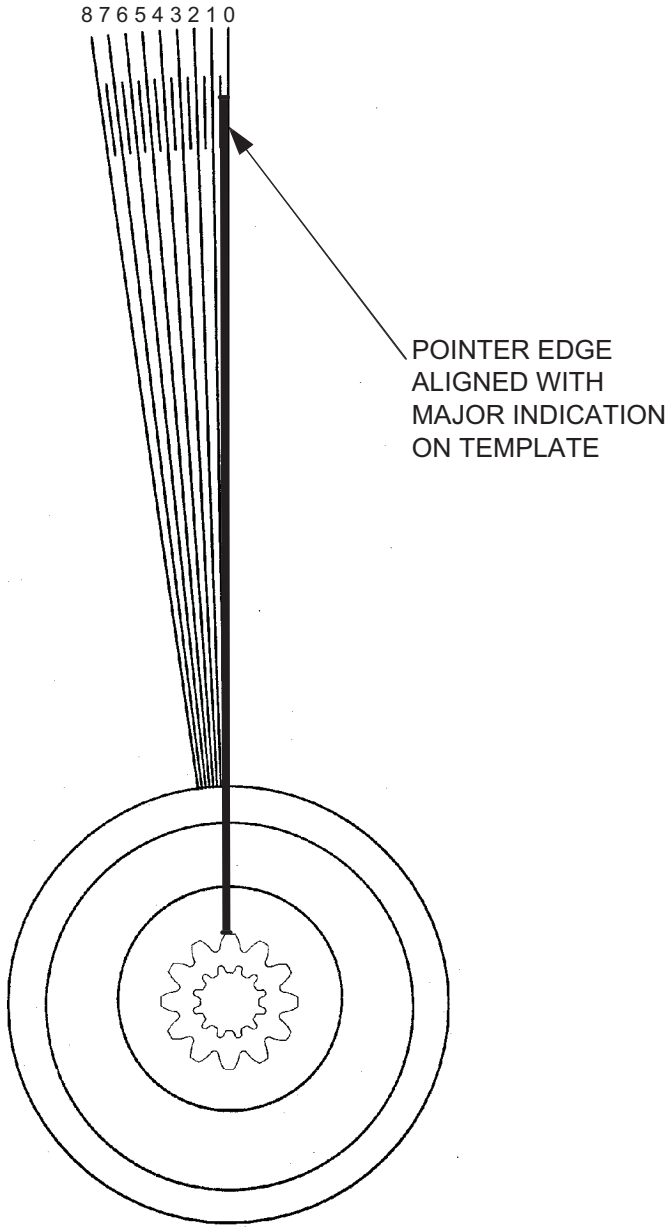


Figure 3A. Pointer Alignment

M250-B15G
M250-B17 Series
M250-B17F Series
M250-C18 Series
M250-C20 Series
M250-C20R Series
M250-C28 Series
M250-C30 Series
RR300 Series

SERVICE BULLETIN

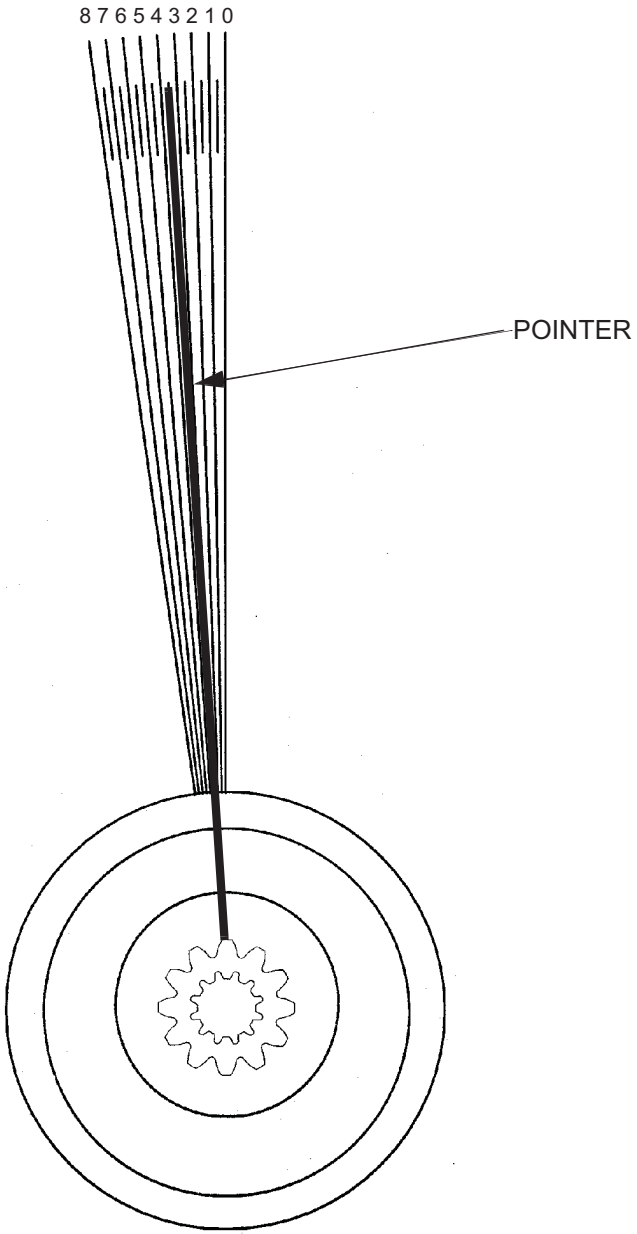


Figure 3B. Pointer Alignment

M250-B15G
M250-B17 Series
M250-B17F Series
M250-C18 Series
M250-C20 Series
M250-C20R Series
M250-C28 Series
M250-C30 Series
RR300 Series

SERVICE BULLETIN

3. Material Information:

The basis for the following is per the main fuel pump.

A. Not applicable.

SERVICE BULLETIN

APPENDIX A

Service Bulletin Compliance Data Sheet

Pump Part Number: _____

Pump Serial Number: _____

Pump Time Since New: _____

Pump Time Since Overhaul: _____

Measured Backlash: _____

Date of Compliance: _____

Facility / Company Name: _____

Address: _____

_____

Contact Name: _____

Contact Phone: _____

Aircraft Serial Number: _____

Submit this completed Data Sheet to Triumph Engine Control Systems via one of the following methods:

Mail:
Triumph Engine Control Systems
Attn: Russell Anderson
1 Charter Oak Boulevard
P.O. Box 330651
West Hartford, CT 06133-0651

Fax: (860) 231-2706
Attn: Russell Anderson

E-mail:
Scan and e-mail to: rwanderson@triumphgroup.com

M250-B15G
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