COMMERCIAL ENGINE BULLETIN

Rolls-Royce®

ENGINE, POWER AND ACCESSORY GEARBOX COVER ASSEMBLY TURBINE SUPPORT STUDS - REPLACE

1. PLANNING INFORMATION:

A. Effectivity

All Model 250-C28B, C28C, C30, C40B, C47B, and C47M power and accessory gearboxes, except for those that follow:

Model	Gearbox Serial Number
250-C28B	CAG70655 and subsequent
250-C28C	CAG28010 and subsequent
250-C30	CAG90503 and subsequent

B. Reason

In-service distortion and fretting wear on the faces of the turbine support stud bosses of the gearbox cover assembly have caused the respective turbine attachment nuts to lose their torque.

C. Description

New P/N 23001930 Gearbox Cover Assembly has five (of the six) new turbine support studs with a larger thread diameter on the portion that threads into the cover and a shouldered flange to act as a bearing surface for the mounting pads of the turbine exhaust collector. The new sixth stud has the shouldered flange but does not have the larger thread diameter.

D. Approval

Technical aspects are FAA approved.

E. Compliance

Compliance Code 6: To be complied with no later than next overhaul or whenever access to the gearbox cover assembly is achieved, whichever is earliest.

F. Interchangeability

Old P/N 6895079 and new P/N 23001930 Cover Assemblies are interchangeable. However, the old P/N 6841729-021 Studs are not interchangeable with new P/N 23001928-0 or P/N 23001929-1 Studs.

July 30, 1980
Revision 4
January 14, 2010

250-C28 Series
250-C30 Series
250-C40B
250-C47 Series

CEB 72-2024
CEB 72-3017
CEB 72-5056
CEB 72-6065

G. Material Availability

NEW P/N	NAME	QTY/ENG
23001928-0	Stud, Shouldered (0.003 IN. US.)	5
23001928-1	Stud, Shouldered	AR
23001928-2	Stud, Shouldered (0.003 IN. OS)	AR
23001928-3	Stud, Shouldered (0.006 IN. OS)	AR
23001928-4	Stud, Shouldered (0.009 IN. OS)	AR
23001928-5	Stud, Shouldered (0.012 IN. OS)	AR
23001929-1	Stud, Shouldered	1
23001929-2	Stud, Shouldered (0.003 IN. OS)	AR
23001929-3	Stud, Shouldered (0.006 IN. OS)	AR
23001929-4	Stud, Shouldered (0.009 IN. OS)	AR
23001929-5	Stud, Shouldered (0.013 IN. OS)	AR
FE185	Adhesive, Resiweld	AR
2214	Adhesive, Scotch-Weld Hi-Temp	ALT
217	Adhesive, Loctite	ALT
609	Adhesive, Loctite	ALT

H. Tooling - Not applicable

I. Weight and Balance - Not affected

J. Electrical Load Data - Not affected

K. References

(1) Advance Engineering Memorandum (AEM), CW2702, CW3192.

NOTE: The document above is referenced for the internal use of Rolls-Royce only.

L. Other Publications Affected

(1) 16W4 Illustrated Parts Catalog, Turboshaft Models 250-C28B, -C28C (IPC).

(2) 16W2 Operation and Maintenance Manual, Turboshaft Models 250-C28B, -C28C (OMM).

(3) 16W3 Overhaul Manual, Turboshaft Models 250-C28 Series (O/H).

(4) 14W4 Illustrated Parts Catalog, Turboshaft Models 250-C30, -C30P, -C30M, -C30S, -C30G, -C30G/2 (IPC).

(5) 14W4RU Illustrated Parts Catalog, Turboshaft Models 250-C30R, -C30R/1, -C30U (IPC).

(6) 14W2 Operation and Maintenance Manual, Turboshaft Models 250-C30, -C30S, -C30G, -C30G/2, -C30P, -C30M (OMM).

(7) 14W3 Overhaul Manual, Turboshaft Models 250-C30 Series (O/H).

(8) 14W2RU Operation and Maintenance Manual, Turboshaft Models 250-C30R, -C30R/1, -C30U (OMM).

(9) CSP23001 Illustrated Parts Catalog, Turboshaft Models 250-C40B, -C47B, -C47M (IPC).

(10) CSP21000 Operation and Maintenance Manual, Turboshaft Model 250-C40B (OMM).

(11) CSP21001 Operation and Maintenance Manual, Turboshaft Model 250-C47B (OMM).

(12) CSP21004 Operation and Maintenance Manual, Turboshaft Model 250-C47M (OMM).

(13) CSP22001 Overhaul Manual, Turboshaft Models, 250-C40B, -C47, -C30R/3 Series (O/H).

2. ACCOMPLISHMENT INSTRUCTIONS

A. Modify and reidentify P/N 6895079 Gearbox Cover Assembly into P/N 23001930 Cover Assembly (Ref. Figures 1, 2, and 3).

B. Make sure that the cover assembly to be modified has passed the inspection criteria and condition requirements in the appropriate Overhaul Manual.

C. Comply with procedures in the appropriate Overhaul Manual.

D. Remove the six P/N 6841729-021 Turbine Mounting Studs.

E. Machine the face of each of the stud bosses to a new height dimension of 1.788-1.792 in. (45.42-45.52 mm) (Ref. Figure 3).

F. Make sure that the flanges of the five new P/N 23001928-0 and one new P/N 23001929-1 Studs comply with the dimensional limits (Ref. Figure 4).

G. Drill and tap the upper five stud bosses, counter-drill the lower middle stud boss, and install five new P/N 23001928-0 Studs and one new P/N 23001929-1 Stud (Ref. Figures 2 & 3).

(1) Install the studs using an adhesive (Resiweld FE185, Scotchweld 2214, Loctite 217 or Loctite 609).

(a) Degrease the Stud and Gearbox Cover Assembly threads and boss.

(b) Wipe with acetone or MEK just before bonding.

(c) Apply a thin, even, continuous film of adhesive to the mating surfaces to be joined. Do not use excessive adhesive.

(d) Install P/N 23001928-0 Shouldered Stud with driving torque 105-210 lb in. (11.9-23.73 Nm). The stud flange must be seated flat against the boss.

(e) Select stud size by trial fit using the smallest size first. Use progressively larger sizes until the required stud driving torque is achieved.

(f) Stop applying driving torque as soon as stud flange contacts Surface DK (Ref. Figure 3). Flange must be in contact and flat against boss. Excessive driving could cause the flange to cone up.

(g) Wipe off excess adhesive.

H. Counter-drill the lower middle stud boss to a diameter of 0.390-0.400 in. (9.91-10.16 mm) by a depth of 0.060 ± 0.010 in. (1.52 ± 0.25 mm). Install one new P/N 23001929-1 Shouldered Stud (Ref. Figure 2).

NOTE: The existing thread at the lower middle stud boss is the proper size and depth to receive the new P/N 23009129-1 Stud.

(1) Check that the exposed face of the flanges of all six new studs are in the same plane within 0.004 in. (0.10 mm).

(2) Make sure that each stud is perpendicular to Surface A (Ref. Figure 3).

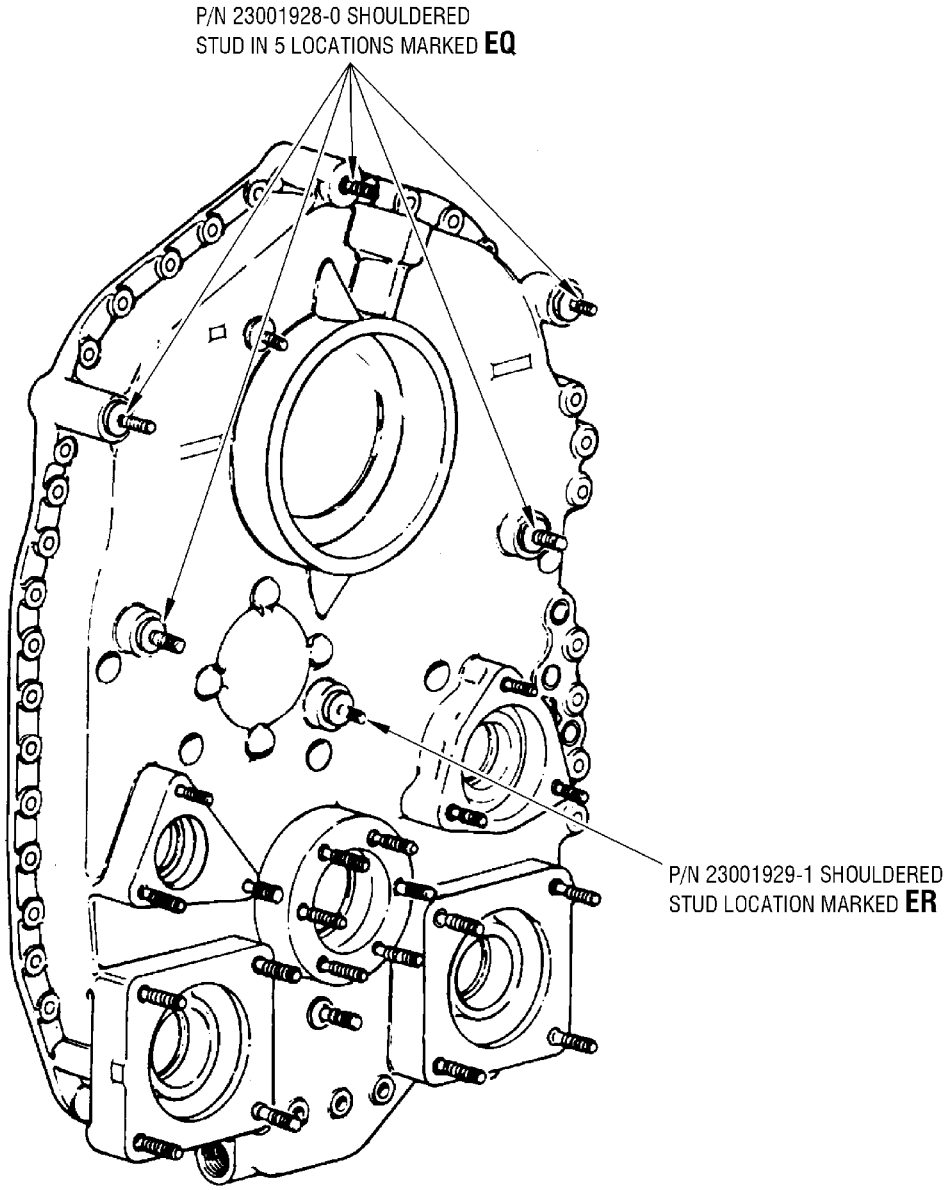
I. Cure adhesive by heating the Gearbox Cover Assembly to 250° F (121° C) for one hour.

J. Reidentify the modified Gearbox Cover Assembly as P/N 23001930 per AS478-2D1 or -2E.

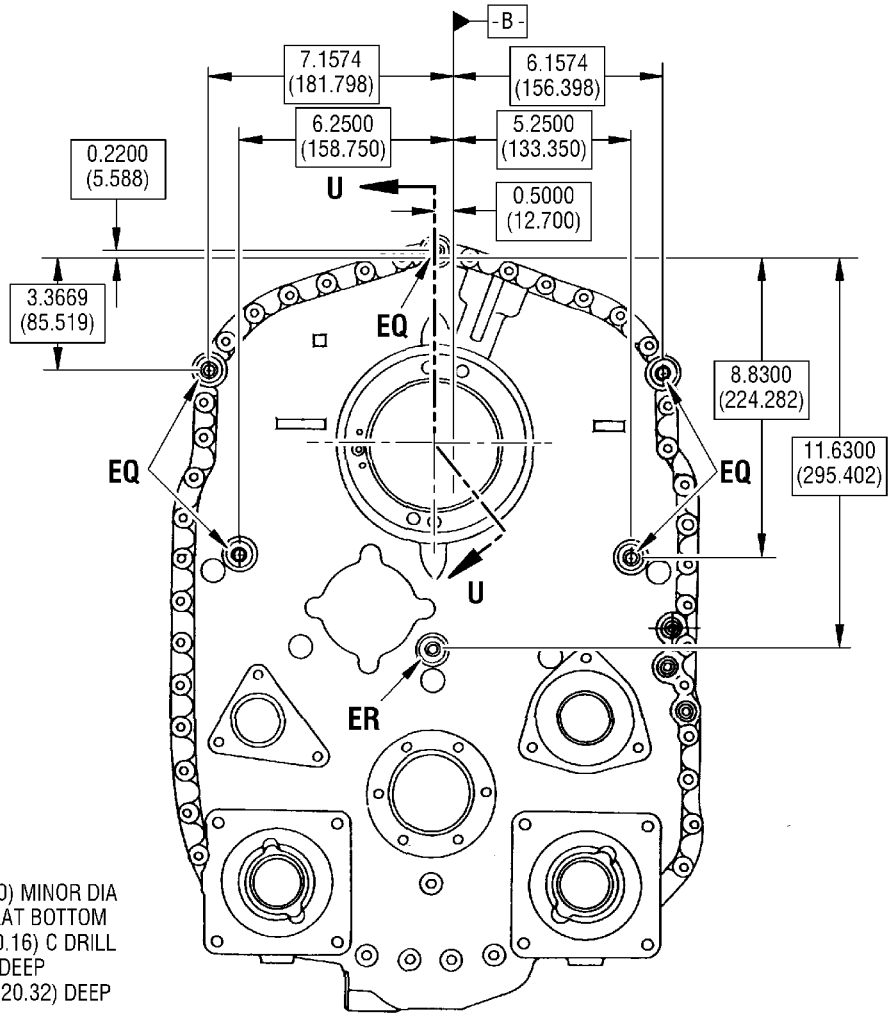
K. Record compliance in the Engine Log Book, Gearbox Assembly (yellow pages), Part III, Modification Record, as applicable with the bulletins that follow:

250-C28 Series	CEB 72-2024
250-C30 Series	CEB 72-3017
250-C40 Series	CEB 72-5056
250-C47 Series	CEB 72-6065

Rolls-Royce Property - Uncontrolled Printed Copy



Gearbox Cover Assembly
FIG. 1



0.3142-0.3251 (7.980-8.260) MINOR DIA
1.030 (26.16) MAX DEEP FLAT BOTTOM
DRILL 0.390-0.400 (9.91-10.16) C DRILL
0.060±0.010 (1.52±0.25) DEEP
0.3750-16 UNJC-3B 0.800 (20.32) DEEP
1 PLACE MARKED **ER**

⌖	DK	B	Ø 0.014 IN. (0.36)

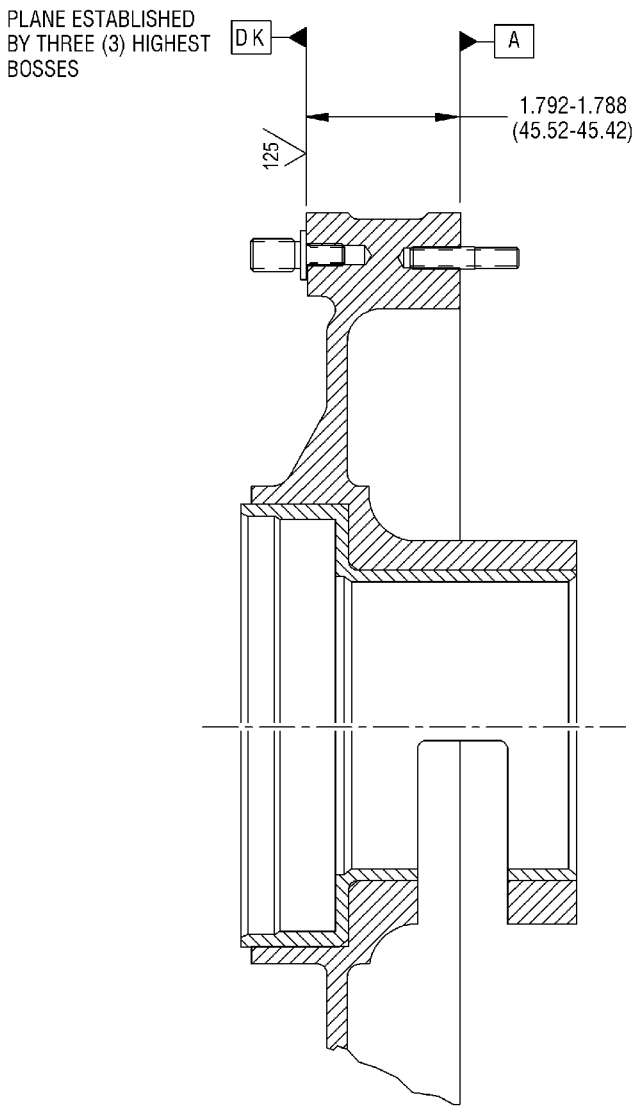
DIMENSIONS ARE IN INCHES (MILLIMETERS)

0.4251-0.4368 (10.798-11.095) MINOR DIA
1.030 (26.16) MAX DEEP FLAT BOTTOM
DRILL 0.510-0.520 (12.95-12.21) C DRILL
0.060±0.010 (1.52±0.25) DEEP
0.5000-13 UNJC-3B 0.800±0.010
(20.32±0.25) DEEP
5 PLACE MARKED **EQ**

⌖	DK	B	Ø 0.014 IN. (0.36)

AGD029AA

Gearbox Cover Assembly
FIG. 2

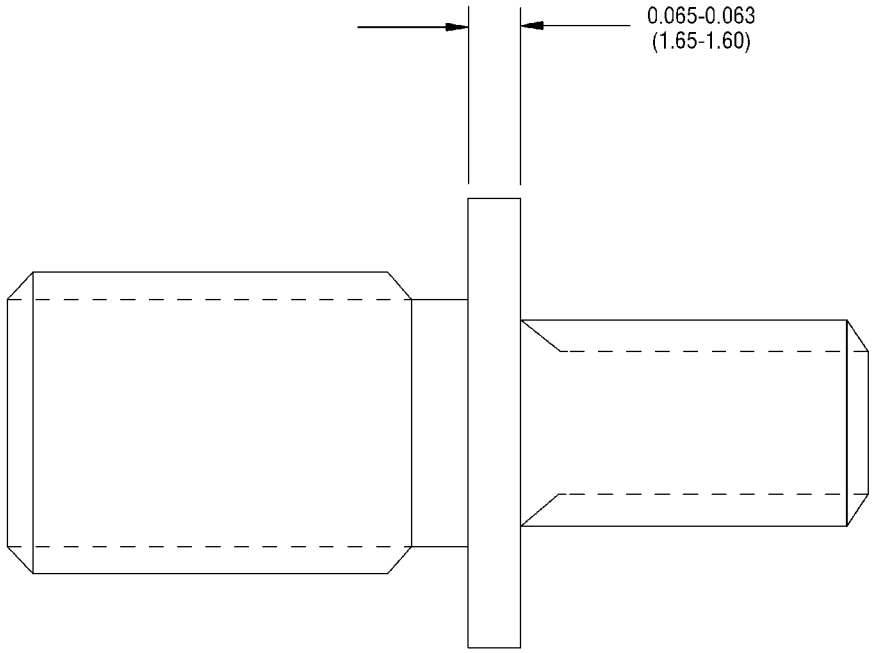


SECTION **U-U**

DIMENSIONS ARE IN INCHES (MILLIMETERS)

AGD050XA

Typical Cross Sectional View for Five (5) Studs (EQ) and One Stud (ER)
FIG. 3



DIMENSIONS ARE IN INCHES (MILLIMETERS)

AGD051XA

P/N 23001928-0 and P/N 23001929-1 Stud Flange Dimension
FIG. 4

Rolls-Royce Property - Uncontrolled Printed Copy

3. MATERIAL INFORMATION

A. Basis for quantities is for each gearbox assembly.

B. Configuration Chart

NEW P/N	QTY/ ENG	NAME	OLD P/N	QTY/ ENG	INSTRUCTIONS/ DISPOSITION
23001930	1	Cover Assembly, Gearbox	6895079	1	1
23001928-0	5	Stud, (0.003 IN. US.)	-	5	2
23001928-1	AR	Stud, Shouldered, Stepped	6841729-021	AR	2
23001928-2	AR	Stud, (0.003 IN. OS)	6841729-022	AR	2
23001928-3	AR	Stud, (0.006 IN. OS)	6841729-023	AR	2
23001928-4	AR	Stud, (0.009 IN. OS)	6841729-024	AR	2
23001928-5	AR	Stud, (0.012 IN. OS)	6841729-025	AR	2
23001929-1	1	Stud, Shouldered, Stepped	6841729-021	1	3
23001929-2	AR	Stud, (0.003 IN. OS)	6841729-022	AR	3
23001929-3	AR	Stud, (0.006 IN. OS)	6841729-023	AR	3
23001929-4	AR	Stud, (0.009 IN. OS)	6841729-024	AR	3
23001929-5	AR	Stud, (0.012 IN. OS)	6841729-025	AR	3

INSTRUCTIONS/DISPOSITION NOTES

1. Modify and reidentify.
2. Scrap removed item, upper five stud locations.
3. Scrap removed item, lower middle stud location ONLY.

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