Sikorsky Aircraft Corporation
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269D™ HELICOPTER

ALERT SERVICE BULLETIN

ASB DB-068

Basic Issue ▪ March 17/17

SUBJECT: ENGINE CONTROL SYSTEM – Adjustment of Power Controls – Revise N_2 Restrictions for Rolls-Royce® Turbine Engine Operation and Installation of Engine N_2 Avoidance Placard

Section 1. PLANNING INFORMATION

A.	Effectivity	All 269D and 269D Configuration “A” model helicopters with Serial Numbers (S/N) up to and including S/N 0073 with Rolls-Royce engine (250-C20W) installed.
B.	Purpose	To provide instructions to revise N_2 avoidance range in accordance with Rolls-Royce® Alert Commercial Engine Bulletin (CEB) A-1400, Revision 5.
C.	Background	N_2 avoidance range was changed from 75% - 88% to 71% - 88% for Rolls-Royce® 250-C20 series Turboshaft engines.
D.	Description	Helicopter is prepared for installation. CEB A-1400, Revision 5, is reviewed to determine impact on helicopter and required N_2 avoidance range. If necessary, applicable procedures specified in CEB A-1400, Revision 5 are performed. New engine N_2 avoidance placard is bonded to instrument panel. Helicopter is returned to service.
E.	Compliance	Compliance is essential. The instructions outlined herein shall be accomplished immediately, not to exceed 14 days from the issue date of this ASB.

Section 1. PLANNING INFORMATION (Continued)

F. Approval — The design change specified by this document is FAA approved in accordance with the applicable requirements of United States Federal Aviation Regulations 14 CFR Part 27 and Civil Air Regulations Part 6. FAA approval constitutes EASA and Transport Canada approval under the terms of current bilateral agreement procedures.

G. Manpower (Estimated)

Task	No. of Men	No. of Hours	Man-Hours*
Installation of engine N_2 avoidance placard (269D0302-209 or 269D0302-211)	1	0.20	0.20
Helicopter log record updates	1	0.20	0.10
Total Man-Hours			0.30
*Estimate does not include time required to prepare helicopter or return it to flight status.			

H. Tooling

Qty	Nomenclature	Part No.	Source
1	Roller	Commercially available or equivalent	(1)

(1) Available through normal supply channels.

I. Weight and Balance

Not affected.

J. Electrical Load Data

Not affected.

K. Software Load Data

Not changed.

L. References

(1) CEB A-1400, Revision 5.

(2) PFM CSP-D-1.

(3) PFM CSP-D-7.

(4) PFM CSP-D-8.

Section 1. PLANNING INFORMATION (Continued)

M. Publications Affected

(1) Temporary Revision No. 1 against PFM CSP-D-1 is released concurrently with this ASB.

(2) Temporary Revision No. 269D-101 against Handbook of Maintenance Instructions (HMI) CSP-D-2, Section 4, Paragraph 4-9 is released concurrently with this ASB.

(3) Temporary Revision No. 269I-D-10 against Illustrated Parts Catalog (IPC) CSP-D-6, Section 9, Figure 9-1 is released concurrently with this ASB.

(4) Temporary Revision No. 269I-D-11 against IPC CSP-D-6, Section 9, Figure 9-1 is released concurrently with this ASB.

(5) Temporary Revision No. 1 against PFM CSP-D-7 is released concurrently with this ASB.

(6) Temporary Revision No. 1 against PFM CSP-D-8 is released concurrently with this ASB.

(7) Temporary Revision No. 269DA-110 against HMI CSP-D-9, Section 4, Paragraph 4-9 is released concurrently with this ASB.

N. Attachment

CEB A-1400, Revision 5.

Section 2. MATERIAL INFORMATION

A. Basis for Material Data

Per helicopter.

B. Bill of Material

New Part No.	Qty	Nomenclature	Old Part No.	Instructions/ Disposition
269D0302-209 Alternate: 269D0302-211	1	PLACARD AVOID ENGINE N_2 OP		(1)(2)

Section 2. MATERIAL INFORMATION (Continued)

(1) For parts availability and lead time requirements, contact your Account Service Manager or Customer Service Representative at Sikorsky Aircraft Corporation. Submit a purchase order referencing this ASB number and the helicopter serial number(s) on which these parts will be used. This will allow Sikorsky Aircraft Corporation and the operator to track shipment and receipt of parts. Orders will be accepted by letter, telephone, facsimile (FAX) or through the Sikorsky Aircraft Corporation website: **https://customerportal.sikorsky.com**. For prompt shipment, reference address of each shipping destination. Direct your order to:

Sikorsky Aircraft Corporation
Commercial Systems and Services
Mailstop K100
124 Quarry Road
Trumbull, CT 06611 U.S.A.
Attn: Account Service Manager
FAX: (203) 416-4291, Telephone: (203) 416-4000
https://customerportal.sikorsky.com

(2) Locally fabricated part. (Refer to Figure 1 or Figure 2).

C. Consumable Material

WARNING

OBSERVE ALL CAUTIONS AND WARNINGS ON CONTAINERS WHEN USING CONSUMABLES. WHEN APPLICABLE, WEAR NECESSARY PROTECTIVE GEAR DURING HANDLING AND USE. IF A CONSUMABLE IS FLAMMABLE OR EXPLOSIVE, MAKE CERTAIN CONSUMABLE AND ITS VAPORS ARE KEPT AWAY FROM HEAT, SPARK AND FLAME. MAKE CERTAIN FIREFIGHTING EQUIPMENT IS READILY AVAILABLE PRIOR TO USE. FOR ADDITIONAL INFORMATION ON TOXICITY, FLASHPOINT AND FLAMMABILITY OF CHEMICALS, CONSULT YOUR MEDICAL DEPARTMENT OR THE MANUFACTURER OF THE CONSUMABLE.

Qty	Nomenclature	Part No.	Source
A/R	Fine Grade Abrasive Cloth	3M™ Scotch-Brite, 180-grit sandpaper, or equivalent	(1)
A/R	3M™ Scotchcal™ graphic film	3650-12 or equivalent	(1)(2)
A/R	Low-Lint Cloth	A-A-59323 or equivalent	(1)
A/R	Acetone	ASTM-D329 or equivalent	(1)

(1) Available through normal supply channels.

(2) 3M™ Scotchcal™ graphic film (3650-12 or equivalent) is only required if fabricating engine N_2 avoidance placard (269D0302-209 or 269D0302-211).

Section 3. ACCOMPLISHMENT INSTRUCTIONS

NOTE: The N_2 avoidance range in the Pilot's Flight Manual (PFM) CSP-D-1, CSP-D-7 and CSP-D-8 has been updated and will take effect immediately.

A. Prepare helicopter for maintenance:

WARNING

TO PREVENT ELECTRICAL SHOCK OF PERSONNEL OR POSSIBLE DAMAGE TO HELICOPTER COMPONENTS, MAKE SURE TO TURN OFF ALL ELECTRICAL POWER.

(1) Turn off all helicopter electrical power.

NOTE: Operating and maintenance personnel are required to review Rolls-Royce® Alert CEB A-1400, Revision 5, to determine impact on their helicopter and required N_2 avoidance range. Refer all questions concerning CEB A-1400 to Customer Support, Rolls-Royce.

B. Do all applicable procedures specified in CEB A-1400, Revision 5, published by Rolls-Royce®.

NOTE: Proceed to step D. if engine N_2 avoidance placard (269D0302-209 or 269D0302-211) has been purchased.

C. If necessary, fabricate engine N_2 avoidance placard (269D0302-209 or 269D0302-211), depending on space on instrument panel, as follows (Refer to Figures 1 or 2):

NOTE: Text height shall be 0.15 inch (typical). All text shall be gothic bold font, and color shall be white on black background.

(1) Using 3M™ Scotchcal™ graphic film (3650-12 or equivalent), fabricate engine N_2 avoidance placard (269D0302-209 or 269D0302-211) using dimensions shown in either Figure 1 or Figure 2.

NOTE: Engine N_2 avoidance placard (269D0302-209 or 269D0302-211) location on instrument panel may vary according to equipment variations.

D. Apply engine N_2 avoidance placard (269D0302-209 or 269D0302-211) to instrument panel as follows:

(1) Clean surface of instrument panel where engine N_2 avoidance placard (269D0302-209 or 269D0302-211) will be bonded, extending 0.125 – 0.375 inch beyond engine N_2 avoidance placard edges, using acetone (ASTM-D329 or equivalent) and low-lint cloth (A-A-59323 or equivalent).

(2) Lightly abrade painted surface where engine N_2 avoidance placard (269D0302-209 or 269D0302-211) will be bonded using fine grade abrasive cloth (Scotch-Brite®, 180-grit sandpaper, or equivalent). Abrade only to "break the glaze" of paint or surface coating. Do not sand through paint or primer.

NOTE: Allow acetone (ASTM-D329 or equivalent) to dry prior to bonding engine N_2 avoidance placard (269D0302-209 or 269D0302-211). Bond within one hour.

Section 3. ACCOMPLISHMENT INSTRUCTIONS (Continued)

(3) After sanding, remove any residual paint or debris using low-lint cloth (A-A-59323 or equivalent) moistened with acetone (ASTM-D329 or equivalent). Allow solvent to dry, and apply engine N_2 avoidance placard (269D0302-209 or 269D0302-211) within one hour

(4) Remove backing paper from engine N_2 avoidance placard (269D0302-209 or 269D0302-211).

NOTE: Engine N_2 avoidance placard (269D0302-209 or 269D0302-211) shall be installed on instrument panel directly below the engine/rotor tachometer.

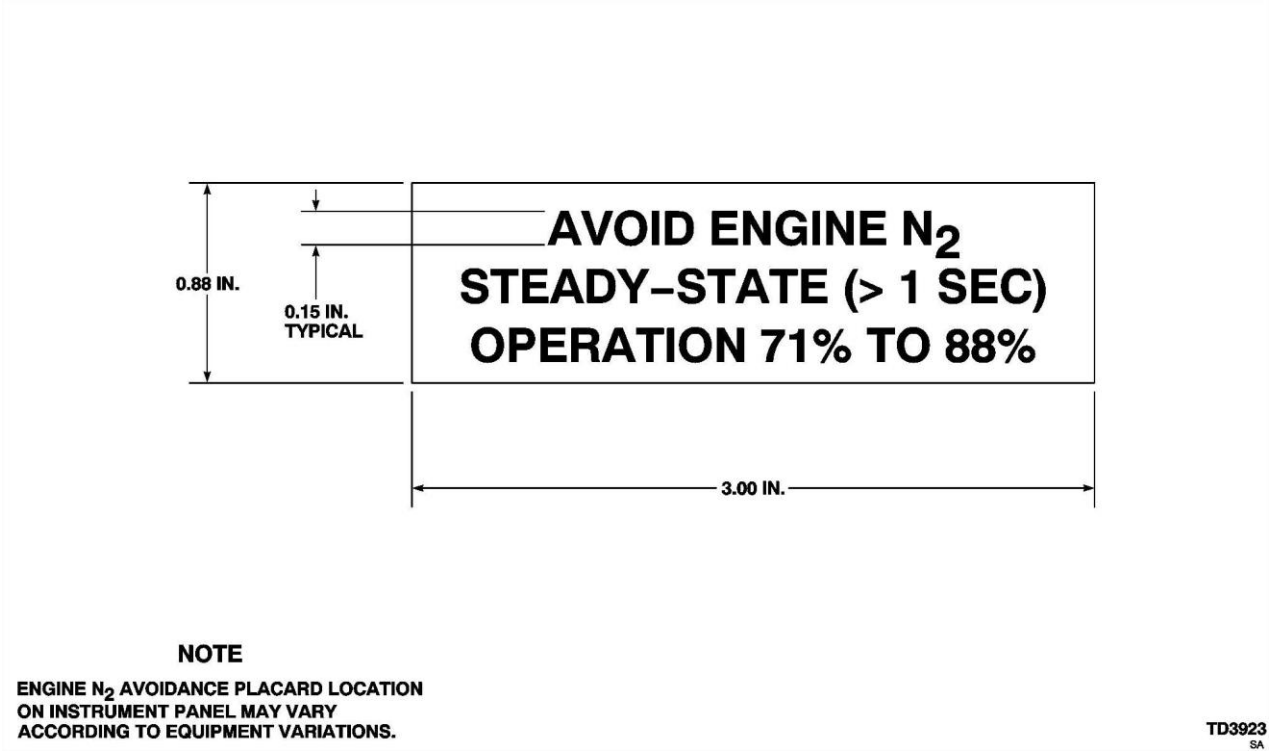
(5) Bond engine N_2 avoidance placard (269D0302-209 or 269D0302-211) directly below the engine/rotor tachometer.

(6) Using a roller (commercially available or equivalent), apply firm pressure to engine N_2 avoidance placard (269D0302-209 or 269D0302-211) to obtain intimate contact of adhesive to the bonding surface.

(7) Clean area around engine N_2 avoidance placard (269D0302-209 or 269D0302-211) and remove any debris.

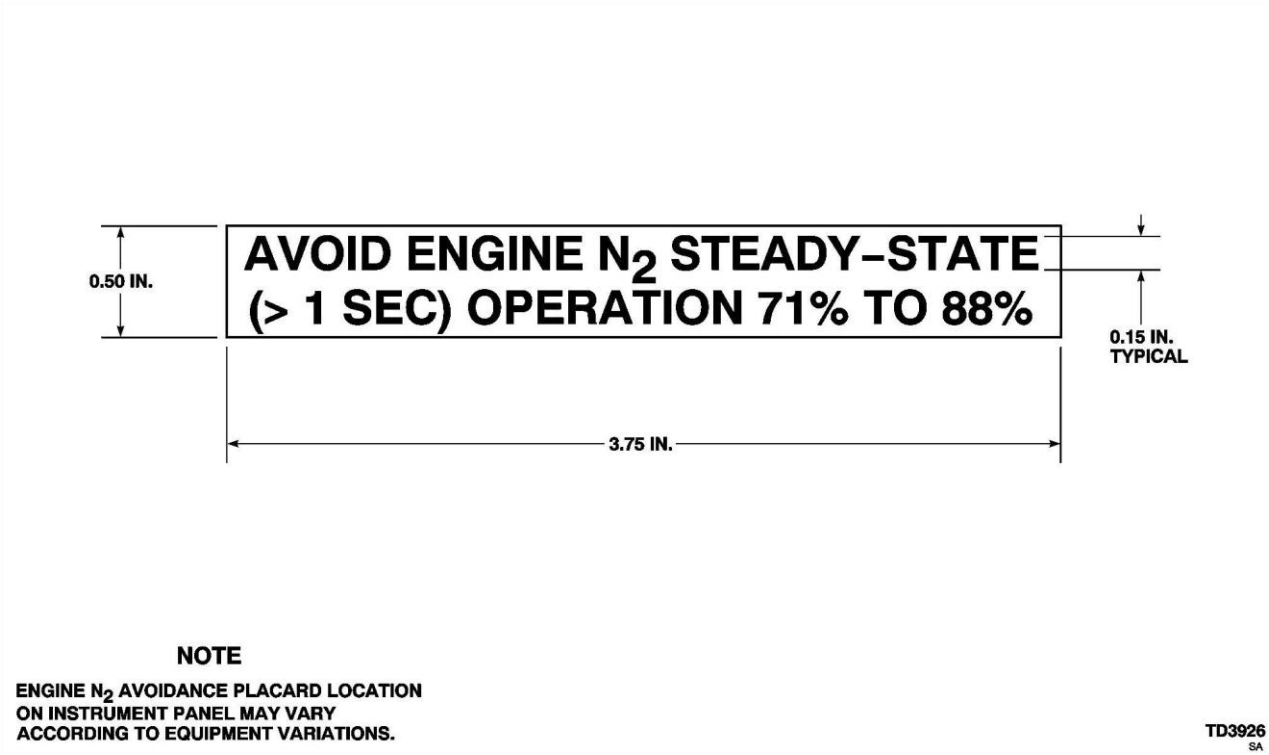
E. Return helicopter to service.

Section 3. ACCOMPLISHMENT INSTRUCTIONS (Continued)



ENGINE N_2 AVOIDANCE PLACARD (269D0302-209) - FABRICATION
FIGURE 1

Section 3. ACCOMPLISHMENT INSTRUCTIONS (Continued)



ENGINE N_2 AVOIDANCE PLACARD (269D0302-211) - FABRICATION
FIGURE 2

Section 3. ACCOMPLISHMENT INSTRUCTIONS (Continued)

F. Record of compliance:

(1) Make an appropriate helicopter logbook entry to show compliance with this ASB.

(2) Upon compliance with the ASB, complete attached ALERT SERVICE BULLETIN COMPLIANCE RECORD CARD and return it to Sikorsky Aircraft Corporation.

(Fold over and tape closed)

SIKORSKY AIRCRAFT CORPORATION

FACSIMILE NUMBER (817) 762-9715

EMAIL ADDRESS: product_safety.gr-sik@lmco.com

ATTENTION: Gr-SIK, Product_Safety
SIKORSKY AIRCRAFT CORPORATION

IMPORTANT NOTICE

Upon COMPLIANCE with the attached ASB, Sikorsky requests your cooperation in completing and returning this ENTIRE PAGE by MAIL, FAX, or scan & EMAIL.

Please fill in the requested information at the bottom of the page, so we may maintain proper records documenting the configuration of your aircraft. This information is useful when determining configuration and effectivity of issues affecting fielded aircraft.

This request is in keeping with our policy to assure that our customers receive the latest information applicable for the maintenance of your aircraft. Thank you.

ALERT SERVICE BULLETIN: No. DB-068 **Compliance Record Card**

TITLE: ENGINE CONTROL SYSTEM – Adjustment of Power Controls – Revise N_2 Restrictions for Rolls-Royce® Turbine Engine Operation and Installation of Engine N_2 Avoidance Placard

OWNER/OPERATOR: _____

SUBMITTED BY: _____ **DATE:** _____

☐ **FOLLOWING SERIAL NUMBERS ARE NOT AFFECTED BY THIS ASB**

☐ **ASB HAS BEEN COMPLIED WITH ON HELICOPTER SERIAL NUMBERS:**

_____ _____ _____ _____ _____ _____

_____ _____ _____ _____ _____ _____

(Fold Up to Arrows)

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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

July 29, 2016

TO: Recipients of M250®-C20, C20R, B17, B17F Series Commercial Engine Bulletins

SUBJECT: ENGINE, TURBINE ASSEMBLY - STEADY-STATE OPERATION AVOIDANCE RANGE LIMIT

This letter transmits Revision 5 to the subject commercial engine bulletins:

Model	Bulletin Number
250-C20 Series	CEB A-1400
250-C20R Series	CEB A-72-4095
250-B17 Series	CEB TP A-1343
250-B17F Series	CEB TP A-72-2091

This is a complete revision. Replace the Revision 4 issue with this Revision 5.

Revision 5 changes the Planning Information and Accomplishment Instructions sections.

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

Original issue	December 22, 2006
Revision 1	August 20, 2007
Revision 2	October 13, 2008
Revision 3	January 19, 2009
Revision 4	March 16, 2016
Revision 5	July 29, 2016

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ENGINE, TURBINE ASSEMBLY - STEADY-STATE OPERATION AVOIDANCE RANGE LIMIT

1. PLANNING INFORMATION

A. Effectivity

(1) Engines

All Rolls-Royce Model M250®-C20, -C20R, -B17 and -B17F Series engines are affected by this Commercial Engine Bulletin (CEB).

(2) Spares - Not affected

B. Reason

This CEB is being revised to communicate the new speed avoidance range for the 4th-stage Turbine Wheel P/N 23055944 installed in Turboshaft engines, and to incorporate the new 4th-stage Turbine Wheel P/N M250-10445. The required engine N2 speed avoidance range is dependent upon the part number of the Power Turbine Wheel in service, engine model, and the OEM application in which the engine is installed. Part numbers of the 3rd-stage and 4th-stage Turbine Wheels in service, engine models, and the OEM applications affected are as follows:

(1) Enhanced Power Turbine Fitted with P/N 23065818 3rd-stage Turbine Wheel and P/N 23055944 4th-stage Turbine Wheel or P/N M250-10445 4th-stage Turbine Wheel.

Speed Limit Tables for the enhanced P/N 23065818 3rd-stage Turbine Wheel and P/N 23055944 4th-stage Turbine Wheel have been updated to reflect the new speed avoidance range for wheels installed in Turboshaft engines, and to incorporate the new 4th-stage Turbine Wheel P/N M250-10445.

(2) Non-Enhanced Power Turbine Fitted with P/N 23065833 3rd-stage Turbine Wheel.

For normal operation, the OEM applications affected are those with a cruise power rating of 350 SHP or above: Agusta A109 (all models), Soloy B206L/R and Eurocopter BO105 (all models). In addition and for One Engine Inoperable (OEI) only, the following OEM application is affected: Eurocopter AS355 (all models). P/N 23065833 wheel is no longer manufactured and so alternative options for replacement of the wheel at next turbine overhaul are discussed in paragraph 2.C.(1)(d).

(3) Non-Enhanced Power Turbine Fitted with P/N 23001967 3rd-stage Turbine Wheel and P/N 6853279 4th-stage Turbine Wheel.

No N2 speed avoidance range is required for any OEM application. P/N 23001967 and P/N 6853279 wheels are not affected by this CEB and are mentioned only for completeness.

This CEB provides advanced notification of actions pertaining to the 3rd-stage turbine wheel and 4th-stage turbine wheel that are being incorporated in all applicable Model M250 Series II engine Operation and Maintenance Manuals.

December 22, 2006
Revision 5
July 29, 2016

250-C20 Series	CEB A-1400
250-C20R Series	CEB A-72-4095
250-B17 Series	TP CEB A-1343
250-B17F Series	TP CEB A-72-2091

C. Description

This CEB requires Operators to avoid engine N2 steady-state operation in the speed avoidance range as specified by 3rd-stage turbine wheel part number and 4th-stage turbine wheel part number in the following wording and charts. Transition through the speed range is to be accomplished as expediently as possible. In autorotation, with N2 split from NR and throttle in the Ground Idle position, unrestricted operation within the speed avoidance range is permitted. Transient operation in the speed avoidance range during recovery from autorotation is permitted.

NOTE: Transient Operation is defined as no dwell at an N2 speed of more than a 1 second duration.

D. Approval

Technical aspects are FAA approved.

E. Compliance

Compliance Code 1: To be complied with immediately.

F. Interchangeability – Not affected

G. Material Availability

PART NUMBER	QTY/ENGINE	NAME	MODEL
23065833	1	Third-stage, Turbine Wheel	C20 Series, C20R Series
23065818	1	Third-stage, Turbine Wheel	B17 Series, B17F Series, C20 Series, C20R Series, C20S
23055944	1	Fourth-stage, Turbine Wheel	B17 Series, B17F Series, C20 Series, C20R Series, C20S
M250-10445	1	Fourth-stage, Turbine Wheel	B17 Series, B17F Series, C20 Series, C20R Series, C20S

H. Tooling – Not affected

I. Weight and Balance – Not affected

J. Electrical Load Data – Not affected

K. References

(1) 10W2 Operation and Maintenance Manual, Turboshaft Models, M250-C20, -C20B, -C20F, -C20J, -C20S, -C20W (OMM).

(2) 10W3 Overhaul Manual, Turboshaft Models M250-C20, -C20B, -C20F, -C20J, -C20S, -C20W (O/H).

(3) 10W4 Illustrated Parts Catalog, Turboshaft Models M250-C20, -C20B, -C20C, -C20F, -C20J, -C20S, -C20W (IPC).

(4) 11W2 Operation and Maintenance Manual, Turboprop Models M250-B17, -B17B, -B17C, -B17D, -B17E (OMM).

(5) 11W3 Overhaul Manual, Turboprop Models M250-B17, -B17B, -B17C, -B17D, -B17E (O/H).

(6) 11W4 Illustrated Parts Catalog, Turboprop Models M250-B17, -B17B, -B17C, -B17D, -B17E (IPC).

(7) CSP21007 Operation and Maintenance Manual, Turboshaft Models M250-C20R, -C20R/1, -C20R/2, -C20R/4 (OMM).

(8) GTP5232-3 Overhaul Manual, Turboshaft Models M250-C20R, -C20R/1, -C20R/2, -C20R/4 (O/H).

(9) CSP23007 Illustrated Parts Catalog, Turboshaft Models M250-C20R, -C20R/1, -C20R/2, -C20R/4 (IPC).

(10) CSP21008 Operation and Maintenance Manual, Turboprop Models M250-B17F, -B17F/1, -B17F/2 (OMM).

(11) GTP5243-3 Overhaul Manual, Turboprop Models M250-B17F, -B17F/1, -B17F/2 (O/H).

(12) CSP23008 Illustrated Parts Catalog, Turboprop Models M250-B17F, -B17F/1, -B17F/2 (IPC).

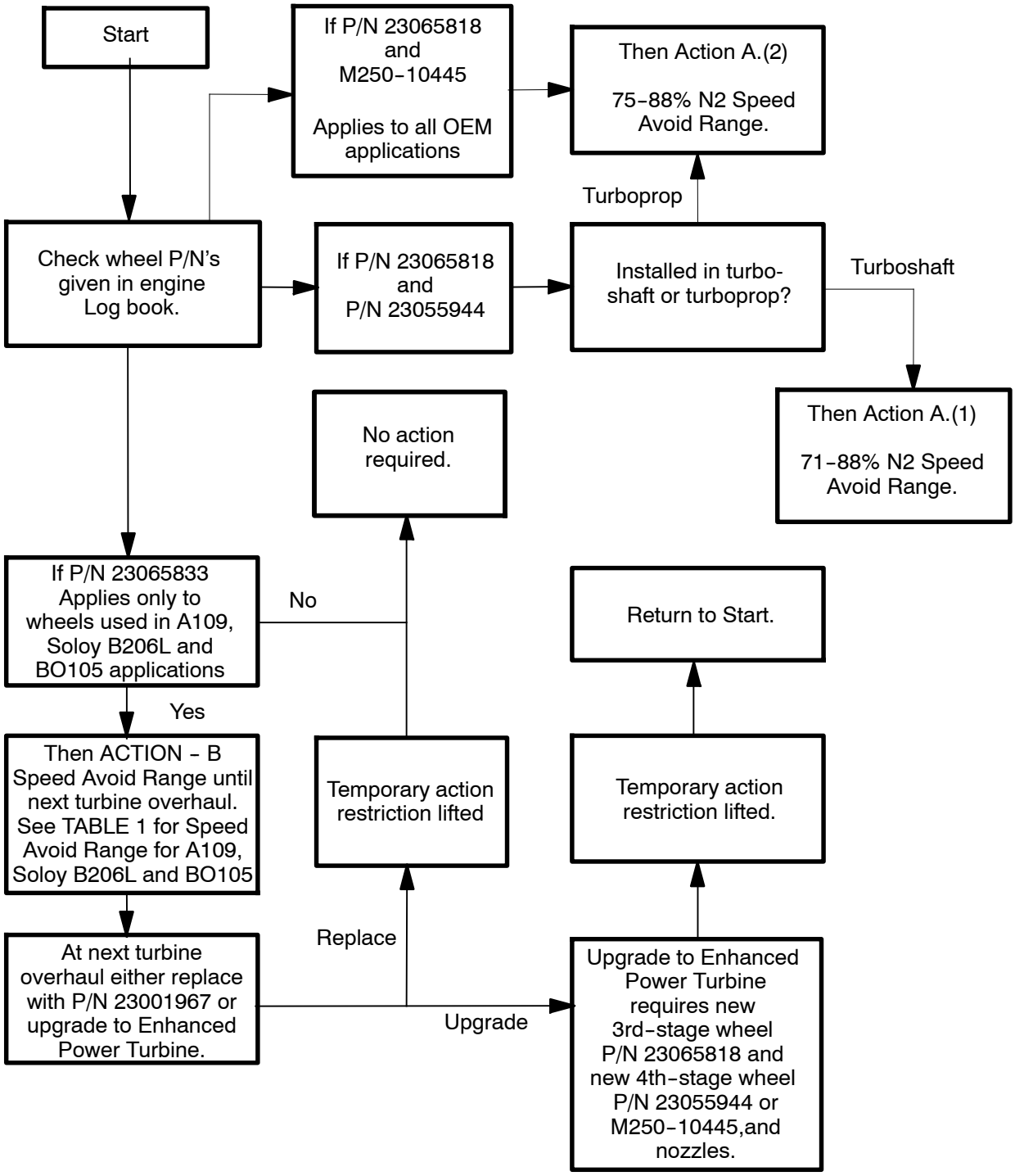
L. Prerequisites - None

2. ACCOMPLISHMENT INSTRUCTIONS

A. Identification of Wheel and Action Required.

The part number of the power turbine wheels installed in a Model M250 Series II engine is recorded in the engine logbook, Turbine Assembly, Assembly Record, Part V. The part number must be used to identify the appropriate action described in paragraph 2.B. or 2.C. The flowchart that follows is included as a simple guide to help identify the appropriate action for each wheel type.

NOTE: A temporary action only is required for the Agusta A109 (all models), Soloy B206L/R and Eurocopter BO105 (all models) with the non-enhanced 3rd-stage Turbine Wheel P/N 23065833 installed, since this wheel will be permanently removed from service at the next turbine overhaul (replacement options are discussed in paragraph 2.C.(1)(d)). All other OEM applications with the non-enhanced 3rd-stage Turbine Wheel P/N 23065833 installed do not require a temporary action.



B. Action A

(1) This action is applicable to all Rolls-Royce M250-C20 Series (except M250-C20S) and -C20R Series Turboshaft Engines used in all Turboshaft OEM applications fitted with enhanced power turbine wheels P/N 23065818 3rd-stage Turbine Wheel and P/N 23055944 4th-stage Turbine Wheel.

A mandatory 71% to 88% engine N2 steady-state speed avoidance range is required for all operational practices. Rolls-Royce must be consulted for additional guidance on the speed avoidance range for any OEM application that has a potential steady-state operating speed below 89% N2. Transient operation only is permitted in the speed avoidance range 71-88% N2. All other operation in the band is prohibited, in particular continuous operations (any dwell of more than one second) must be avoided. This action applies to all flight and ground maintenance (including track and balance) operational practices. (Ref. FIG. 1 and 2) Operation within the speed avoidance range is permitted for preflight checks specified in OEM flight manuals. In autorotation, with N2 split from NR and throttle in the Ground Idle position, unrestricted operation within the speed avoidance range is permitted. Transient operation in the speed avoidance range during recovery from autorotation is permitted.

NOTE: Transient Operation is defined as no dwell at an N2 speed of more than a one second duration.

(2) This action is applicable to all Rolls-Royce M250-B17 Series, -B17F Series and -C20S Turboprop Engines used in all Turboprop OEM applications fitted with enhanced power turbine wheels P/N 23065818 3rd-stage Turbine Wheel and P/N 23055944 4th-stage Turbine Wheel. This action is also applicable to all Rolls-Royce M250 Series II Engines used in all OEM applications fitted with enhanced power turbine wheels P/N 23065818 3rd-stage Turbine Wheel and P/N M250-10445 4th-stage Turbine Wheel.

A mandatory 75% to 88% engine N2 steady-state speed avoidance range is required for all operational practices. Rolls-Royce must be consulted for additional guidance on the speed avoidance range for any OEM application that has a potential steady-state operating speed below 89% N2. Transient operation only is permitted in the speed avoidance range 75-88% N2. All other operation in the band is prohibited, in particular continuous operations (any dwell of more than one second) must be avoided. This action applies to all flight and ground maintenance (including track and balance) operational practices. (Ref. FIG. 3, 4, and 5) Operation within the speed avoidance range is permitted for preflight checks specified in OEM flight manuals. In autorotation, with N2 split from NR and throttle in the Ground Idle position, unrestricted operation within the speed avoidance range is permitted. Transient operation in the speed avoidance range during recovery from autorotation is permitted.

NOTE: Transient Operation is defined as no dwell at an N2 speed of more than a one second duration.

C. Action B - Non-Enhanced Power Turbine Fitted with P/N 23065833 3rd-stage Turbine Wheel.

(1) For normal engine operation, this action is required only for Model 250 Series II Engines used in the following OEM applications: Agusta A109 (all models), Soloy B206L/R and Eurocopter BO105 (all models). This action is required only until the next turbine overhaul at which time the 3rd-stage Turbine Wheel must be removed from service. All other OEM applications do not require this temporary action.

Two options are available to satisfy this action (paragraph 2.C.(1)(a) or 2.C.(1)(b)). Only one option need be implemented:

(a) Conduct N2 Indication System Calibration Check.

A narrower N2 speed avoidance range is required if a calibration check on the N2 indication system can be performed to zero out any error. If this can be accomplished, then the required engine N2 speed avoidance range is 87% to 95% N2. If this cannot be accomplished, then refer to paragraph 2.C.(1)(b) for the required expanded engine N2 speed avoidance range that includes an appropriate allowance for the N2 indication system accuracy of each OEM application affected.

(b) N2 Speed Avoidance Range.

The allowable engine N2 steady-state operating speed is a function of the engine N2 speed indication system error. The required engine N2 speed avoidance range is documented in TABLE 1 for the affected OEM applications, and applies to both flight and ground maintenance (including track and balance) operational practices. Operation within the speed avoidance range is permitted for preflight checks specified in OEM flight manuals.

TABLE 1
OEM Application Specific Speed Avoid Range

OEM Aircraft	Speed Avoidance Range (% N2)
A109	85.0-97.0
Soloy B206L	84.5-97.5
BO105	86.5-95.5

NOTE: The operation restriction in the speed avoidance range applies to sustained engine N2 steady-state engine operation. It does not apply to transient operation passing through this speed range. Transient Operation is defined as no dwell at an N2 speed of more than a one second duration.

(c) N2 Gage Indication System Calibration or N2 Speed Avoidance Range Not Implemented.

If the N2 Gage Indication System or the N2 Speed Avoidance Range cannot be implemented for any reason, then the 3rd-stage Turbine Wheel P/N 23065833 must be removed from service and a replacement wheel as discussed in paragraph 2.C.(1)(d) installed.

(d) Replacement Wheel Options at Turbine Overhaul.

At the next scheduled turbine overhaul, 3rd-stage Turbine Wheel P/N 23065833 must be removed from service and scrapped. Replacement options are a direct swap with P/N 23001967 3rd-stage Turbine Wheel or to upgrade to the Enhanced Power Turbine design that uses P/N 23065818 3rd-stage Turbine Wheel. The upgrade to the Enhanced Power Turbine requires new 3rd- and 4th-stage Turbine Wheels and nozzles.

(e) Re-use of Engines Fitted with P/N 23065833 3rd-stage Turbine Wheels Prohibited.

Engines fitted with 3rd-stage Turbine Wheel P/N 23065833 that have been used in one or more of the affected OEM applications (A109 (all models), Soloy B206L/R, BO105 (all models)), must not be used in other OEM application (including non-affected OEM applications) without first removing the turbine unit from service and scrapping the 3rd-stage Turbine Wheel.

(2) For OEI operation, this action is required for Model 250 Series II engines used in the following OEM application only: Eurocopter AS355 (all models).

If an OEI condition occurs, the turbine unit of the engine operating during the event must be immediately removed from service following the event and the 3rd-stage turbine wheel scrapped. Replacement 3rd-stage turbine wheel options are discussed in paragraph 2.C.(1)(d).

3. MATERIAL INFORMATION - Not applicable

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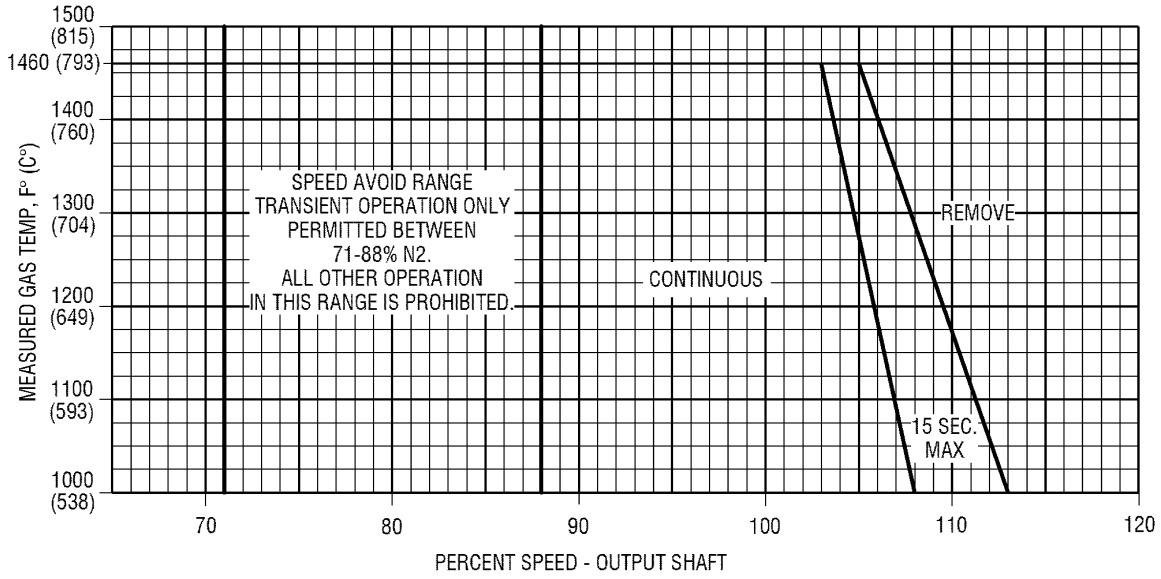
ROLLS-ROYCE



NOTE:

TRANSIENT OPERATION IS DEFINED AS NO DWELL AT AN N2 SPEED OF MORE THAN A ONE SECOND DURATION.

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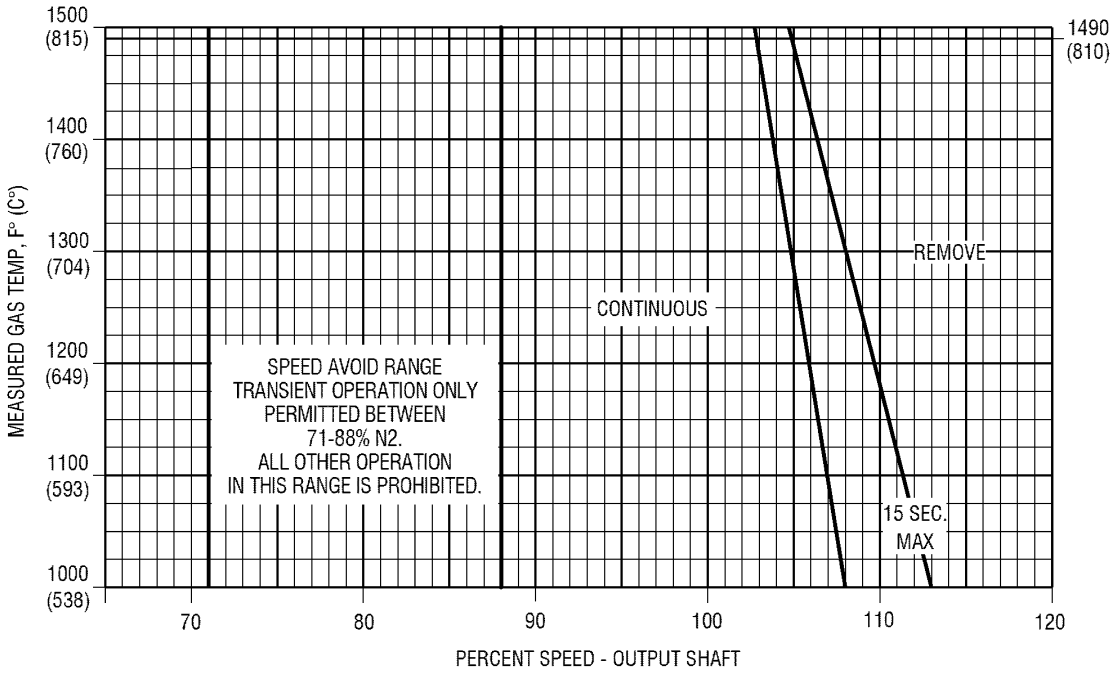
250-C20 Maximum Allowable Output Shaft Speeds (P/N 23065818 and P/N 23055944)
FIG. 1



NOTE:

TRANSIENT OPERATION IS DEFINED AS NO DWELL AT
AN N2 SPEED OF MORE THAN A ONE SECOND DURATION.

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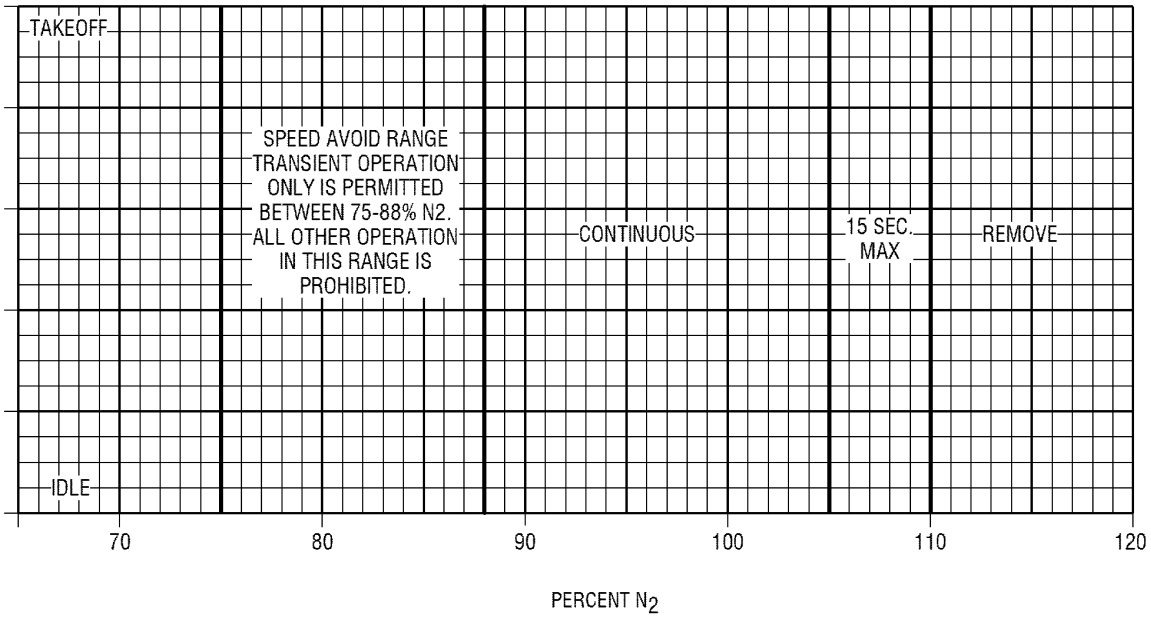
250-C20B, -C20F, -C20J, -C20W, and M250-C20R Series
Maximum Allowable Output Shaft Speeds
(P/N 23065818 and P/N 23055944)
FIG. 2



NOTE:

TRANSIENT OPERATION IS DEFINED AS NO DWELL AT
AN N2 SPEED OF MORE THAN A ONE SECOND DURATION.

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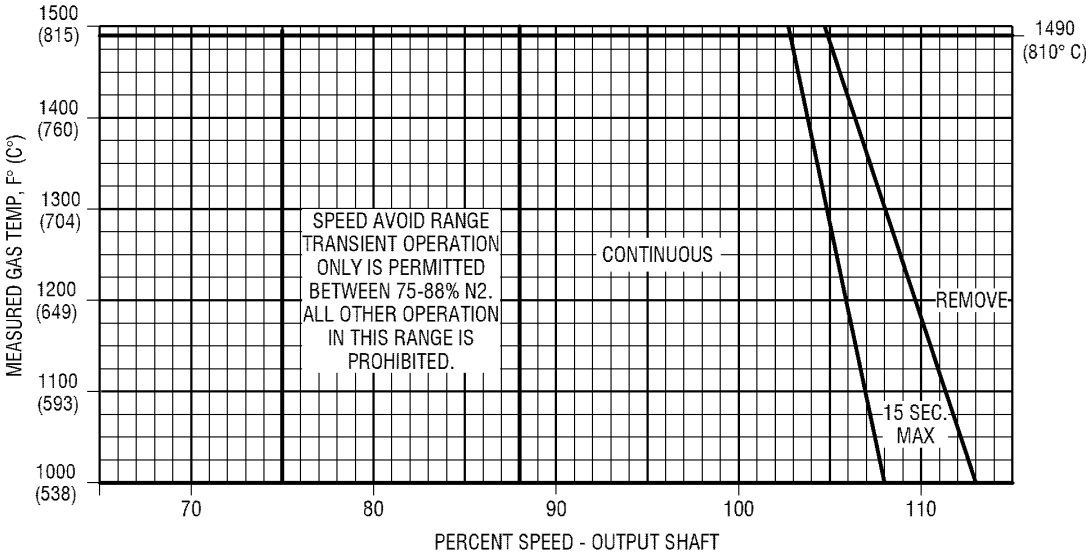
250-B17 Series, -B17F Series, -C20S Maximum Allowable Output Shaft Speeds
(P/N 23065818 and P/N 23055944 or P/N M250-10445)
FIG. 3

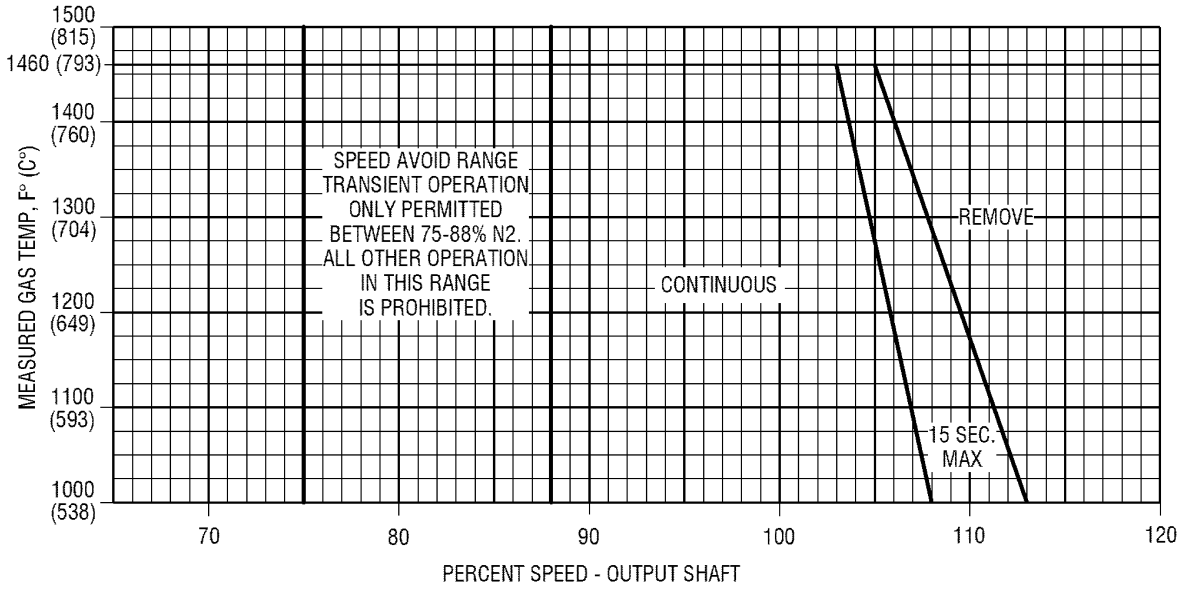


NOTE:

TRANSIENT OPERATION IS DEFINED AS NO DWELL AT AN N2 SPEED OF MORE THAN A ONE SECOND DURATION.

iii00032656

250-C20B, -C20F, -C20J, -C20W and 250-C20R Series
Maximum Allowable Output Shaft Speeds
(P/N 23065818 and P/N M250-10445)
FIG. 4



NOTE:

TRANSIENT OPERATION IS DEFINED AS NO DWELL AT AN N2 SPEED OF MORE THAN A ONE SECOND DURATION.

ii00032712

250-C20 Maximum Allowable Output Shaft Speeds
(P/N 23065818 and P/N M250-10445)
FIG. 5

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