

Butterfield Industries, Inc.

1-800-524-3404

INSTALLATION INSTRUCTIONS

P/N BI 6003

AIR/OIL SEPARATOR
KING AIR 200, B200 SERIES

KIT P/N BI 6001-1

11/20/07
REV: H

Butterfield Industries, Inc.

1-800-524-3404

IMPORTANT NOTICE

THE BUTTERFIELD INDUSTRIES AIR/OIL SEPARATOR INSTALLATION HAS BEEN APPROVED BY THE FEDERAL AVIATION ADMINISTRATION (FAA) UNDER SUPPLEMENT TYPE CERTIFICATE (STC)

THIS INSTALLATION MUST CONFORM TO THE FAA APPROVED BUTTERFIELD INDUSTRIES INSTALLATION DRAWINGS AND THE INSTRUCTIONS CONTAINED IN THIS DOCUMENT.

CONFORMITY VERIFICATION OF THE INSTALLED SYSTEM TO THE BUTTERFIELD INDUSTRIES INSTALLATION DRAWINGS AND INSTRUCTIONS IS THE RESPONSIBILITY OF THE INSTALLATION FACILITY.

DEVIATIONS TO THE FAA APPROVED BUTTERFIELD INDUSTRIES INSTALLATION DRAWINGS AND INSTRUCTIONS MUST BE APPROVED BY BOTH THE FAA AND BUTTERFIELD INDUSTRIES. THE INSTALLATION FACILITY IS RESPONSIBLE FOR BOTH COORDINATING AND OBTAINING THAT APPROVAL.

DRAWN

W. Butterfield 11/18/97

CHECKED

J. Whitcomb 11/21/97

ENGINEER

J. Whitcomb 11/21/97

STRESS**APPROVED**

W. Butterfield 11/29/97

BUTTERFIELD INDUSTRIES, INC.

INSTALLATION INSTRUCTIONS

AIR/OIL SEPARATOR

MODEL 200 SERIES AIRCRAFT

BUTTERFIELD INDUSTRIES PROPRIETARY RIGHTS ARE INCLUDED IN THE INFORMATION DISCLOSED HEREIN. NEITHER THIS DOCUMENT NOR THE INFORMATION DISCLOSED HEREIN SHALL BE REPRODUCED, USED OR DISCLOSED IN WHOLE OR PART WITHOUT THE WRITTEN PERMISSION OF BUTTERFIELD INDUSTRIES, INC.

Butterfield Industries, Inc.

1-800-524-3404

REVISIONS

LTR	DESCRIPTION	APPROVALS
A	<p>REVISED TO INSTALL RUBBER AFTER DRILLING AND CHANGING RUBBER TO SELF-ADHESIVE.</p> <p>REASON: TO ELIMINATE ACCUMULATION OF SHAVINGS UNDER RUBBER STRIP.</p> <p>PRODUCTION INFO: NO KITS DELIVERED. ALL KITS WILL HAVE NEW RUBBER</p>	<p>DRAWN: B. WHITCOMB 02/15/1998</p> <p>CHECKED: J. WHITCOMB 02/15/1998</p> <p>APPROVED: W. BUTTERFIELD 02/15/1998</p>
B	<p>REVISION TO ADD BEEHCRAFT MODEL 300 & B300 TO APPLICATION BLOCK</p> <p>REASON: TC# IS THE SAME, STRUCTURE IS THE SAME. SAME SEPARATOR CAN BE INSTALLED WITH SAME INSTRUCTIONS UNDER RUBBER STRIP.</p> <p>PRODUCTION INFO: NEW KIT NUMBER FOR NEW KIT.</p>	<p>DRAWN: B. WHITCOMB 10/22/1998</p> <p>CHECKED J. WHITCOMB 10/22/1998</p> <p>APPROVED: W. BUTTERFIELD 10/27/1998</p>
C	<p>REVISED TO CHANGE THE HOSE THAT CONDUCTS THE AIR THROUGH THE SYSTEM, AND TO CHANGE THE CLAMP THAT IS USED ON THE DRAIN LINES.</p> <p>HOSE = CHANGED FROM FLX200108057600 TP SCDEET 4-480 CLAMP = CHANGED FROM MS35842-10 TO MAS1922-0075-1</p> <p>REASON: HOSE = TO USE THE SAME TYPE OF HOSE BEEHCRAFT USES. CLAMP = CLAMP WILL TIGHTEN AT MID RANGE INSTEAD OF NEAR MINIMUM.</p> <p>PRODUCTION INFO: EXISTING INSTALLATIONS SATISFACTORY</p>	<p>DRAWN: B. WHITCOMB 04/15/1999</p> <p>CHECKED J. WHITCOMB 04/20/1999</p> <p>APPROVED: W. BUTTERFIELD 04/25/1999</p>

Butterfield Industries, Inc.

1-800-524-3404

REVISIONS

LTR	DESCRIPTION	APPROVALS
D	<p>REVISION TO CHANGE THE INSTALLATION DRAWING, DRAWING NUMBER.</p> <p>REASON: INSTALLATION DRAWING NUMBERS AND KIT NUMBERS SHOULD MATCH.</p> <p>PRODUCTION INFO: EXISTING INSTALLATIONS SATISFACTORY.</p>	<p>DRAWN: B. WHITCOMB 09/15/2001</p> <p>CHECKED: J. WHITCOMB 09/15/2001</p> <p>APPROVED: W. BUTTERFIELD 09/22/2001</p>
E	<p>REVISION TO ADD A200 SERIES OF AIRCRAFT TO LIST OF APPLICABLE AIRCRAFT FOR THIS KIT.</p> <p>REASON: ADDITIONAL KIT APPLICABILITY</p> <p>PRODUCTION INFO: EXISTING INSTALLATIONS SATISFACTORY.</p>	<p>CHECKED: J. WHITCOMB 01/25/2004</p> <p>APPROVED: W. BUTTERFIELD 01/27/2004</p>
F	<p>REVISION TO CHANGE MOUNTING HARDWARE OF THE AIR/OIL SEPARATOR.</p> <p>REASON: TO ALIGN THE INSTALLATION PROCEDURES WITH THAT OF OTHER KING AIR MODEL INSTALLATIONS.</p> <p>PRODUCTION INFO: EXISTING INSTALLATIONS SATISFACTORY.</p>	<p>DRAWN: B. WHITCOMB 10/06/04</p> <p>CHECKED: J. WHITCOMB 10/06/04</p> <p>APPROVED: W. BUTTERFIELD 10/08/04</p>

Butterfield Industries, Inc.

1-800-524-3404

REVISIONS

G

REVISION TO CHANGE SEPARATOR ASSY CONSTRUCTION MATERIAL.

REASON: TO ALIGN CONSTRUCTION MATERIALS WITH OTHER KING AIR MODEL INSTALLATIONS

PRODUCTION INFO: EXISTING INSTALLATIONS
SATISFACTORY

DRAWN:

B. WHITCOMB
01/02/06

CHECKED:

J. WHITCOMB
01/02/06

APPROVED:

W. BUTTERFIELD
01/06/06

H

REVISION TO ADD B200GT/B200CGT SERIES OF AIRCRAFT TO LIST OF APPLICABLE AIRCRAFT FOR THIS KIT

REASON: ADDITIONAL KIT APPLICABILTY

PRODUCTION INFO: EXISTING INSTALLATIONS
SATISFACTORY

APPROVED:

W. BUTTERFIELD
11/12/07

Butterfield Industries, Inc.

1-800-524-3404

TABLE OF CONTENTS

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
	SUPPLEMENT TYPE CERTIFICATE	
	TITLE PAGE	2
	REVISIONS	3
	TABLE OF CONTENTS	6
1.0	INTRODUCTION	8
2.0	REQUIRED DOCUMENTATION	8
2.1	BUTTERFIELD SUPPLIED	8
2.2	CUSTOMER SUPPLIED	8
3.0	GENERAL	9
3.1	KIT DESCRIPTION	9
3.2	KIT CONTENTS	10
3.3	TOOLS REQUIRED	10
4.0	AIRPLANE PREPARATION	11
5.0	REMOVALS	11
6.0	KIT INSTALLATION	12

Butterfield Industries, Inc.

1-800-524-3404

6.1	SEPARATOR INSTALLATION	12
6.2	HOSE INSTALLATION	13
6.3	FINAL INSTALLATION	15
6.4	INSPECTION	16
7.0	RETURN TO SERVICE	16
	KIT PACKING LIST	17
	CONTINUED AIRWORTHINESS INSTRUCTIONS	18

Butterfield Industries, Inc.

1-800-524-3404

3.0 GENERAL

THE AIR/OIL SEPARATOR SYSTEM, PART NUMBER BI-6001-1, IS ELIGIBLE FOR INSTALLATION ON BEECHCRAFT KING AIR 200 AND B200 FAMILY OF AIRCRAFT UNDER AUTHORIZATION OF THESE INSTRUCTIONS AND STC # SA00829CH.

SERIAL NUMBER OF AUTHORIZED AIRCRAFT ARE AS FOLLOWS

BB-2 AND AFTER	MODEL 200 AND B200
BL-1 AND AFTER	MODEL 200C AND B200C
BT-1 AND AFTER	MODEL 200T AND B200T
BN-1 AND AFTER	MODEL 200CT AND B200CT
BC-1 AND AFTER	MODEL A200
BD-1 AND AFTER	MODEL A200
BJ-1 AND AFTER	MODEL A200C
BP-1 AND AFTER	MODEL A200CT
BT-1 AND AFTER	MODEL A200CT
BY-1 AND AFTER	MODEL B200GT
BZ-1 AND AFTER	MODEL B200CGT

3.1 KIT DESCRIPTION

INSTALLATION OF THE BUTTERFIELD INDUSTRIES AIR/OIL SEPARATOR SYSTEM EXTRACTS OIL FROM THE BREATHER LINE AND COLLECTS RESIDUE OIL FROM ENGINE ACCESSORY SECTION GARLOCK SEALS. THIS ELIMINATES THE OIL RESIDUE THAT COLLECTS ALONG THE FLAP TRAILING EDGE AS WELL AS THE BOTTOM OF THE NACELLE.

MODIFICATION REQUIRES INSTALLATION OF THE SEPARATOR TO THE FIREWALL. IT ALSO REQUIRES THE INSTALLATION OF AN OIL RESIDUE TANK TO HOLD THE OIL COLLECTED. IT REQUIRES THE INSTALLATION OF HOSES FROM THE ENGINE TO THE SEPARATOR AND FROM THE SEPARATOR TO THE NORMAL EXIT ON THE FIREWALL. IT ALSO REQUIRES INSTALLATION OF A DRAIN HOSE TO THE RESIDUE TANK.

Butterfield Industries, Inc.

1-800-524-3404

NOTE: INSTALLATION OF THE SYSTEM REQUIRES INSTALLATION OF THE **BUTTERFIELD ‘OIL RESDUE COLLECTION SYSTEM’** STC SA4362NM. THIS PROVIDES A CONTAINER FOR THE OIL TO BE COLLECTED IN.

3.2 KIT CONTENTS

THE CONTENTS OF THE BI-6001-1 KIT ARE AS SPECIFIED IN THE LIST OF MATERIALS ON SHEET 1 OF THE DRAWING LISTED IN PARAGRAPH 2.1. ADDITIONALLY, THE KIT CONTAINS A DATA PACKAGE CONTAINING:

- 1) BI 6003 - “INSTALLATION INSTRUCTIONS “
- 2) A COPY OF THE PACKING LIST (PAGE 17)
- 3) DRAWINGS LISTED IN PARAGRAPH 2.1
- 4) ONE COPY OF THE STC

BUTTERFIELD INDUSTRIES SHOULD BE NOTIFIED IMMEDIATELY OF ANY SHORTAGES OR OTHER DISCREPANCIES.

3.3 SPECIALIZED TOOLING REQUIRED

IN ADDITION TO STANDARD AIRCRAFT TECHNICIAN’S TOOLS, THE FOLLOWING TOOLING WILL BE REQUIRED:

3.3.1 CUSTOMER SUPPLIED TOOLS

NONE

Butterfield Industries, Inc.

1-800-524-3404

3.3.2 BUTTERFIELD INDUSTRIES SUPPLIED TOOLS

NONE

4.0 AIRPLANE PREPARATION

NO SPECIAL AIRPLANE PREPARATION IS REQUIRED PRIOR TO INITIATING INSTALLATION OF THE AIR/OIL SEPARATOR KIT.

5.0 REMOVALS

THE OPERATION DEFINED HERE ARE THOSE NECESSARY TO REMOVE AND ALTER COMPONENTS FROM THE LEFT AND RIGHT HAND NACELLE. THE EVENTS ARE PRESENTED IN A RECOMMENDED SEQUENCE. HOWEVER, THAT SEQUENCE MAY BE ALTERED TO SUIT THE CUSTOMER OR THE INSTALLATION FACILITY.

REF. DRAWING BI-6001 SHEET 1

REF. BEEHCRAFT SUPER KING AIR 200 MAINTENANCE
SUBJECT 71-00-00

- 1) OPEN BOTH SIDE COWLINGS.
- 2) IF THE OIL RESIDUE COLLECTION SYSTEM HAS NOT BEEN INSTALLED, YOU MAY WISH TO REMOVE THE AFT LOWER COWLING TO GAIN ACCESS TO THE LOWER FIREWALL.
- 3) REMOVE STARTER GENERATOR COOLING DUCT FOR ACCESS.
- 4) REMOVE CLAMPS ON BREATHER LINES AT THE ENGINE AND AT THE FIREWALL EXIT FIXTURE.

Butterfield Industries, Inc.

1-800-524-3404

- 5) REMOVE BREATHER LINES AND DISCARD:
L/H P/N SCDEET4-168-5
R/H P/N SCDEET4-116-5

ON SOME INSTALLATIONS, THERE IS AN ADEL CLAMP INSTALLED TO SECURE THE ABOVE LISTED BREATHER LINE TO THE FIREWALL.

6.0 KIT INSTALLATION

6.1 SEPARATOR INSTALLATION

REF: DRAWING BI 6001 SHEET 2 & 3

- 3 INSTALLATION IS FOR LEFT HAND NACELLE
- 5 INSTALLATION IS FOR RIGHT HAND NACELLE

THE INSTALLATION OF THE SEPARATOR UNIT ITSELF IS COMMON TO BOTH SIDES AND WILL BE DESCRIBED FIRST.

THE -3 & -5 HOSE INSTALLATION WILL THEN BE OUTLINED SEPARATELY.

- 1) LOCATE THE REFERENCE POINT ON DRAWING BI-6001 SHEET-2 OR SHEET-3. IT SHOULD BE ON THE FOURTH ROW OF RIVETS DOWN. THEN COUNT FOUR RIVETS TO THE RIGHT FROM THE VERTICAL LINE ON THE LEFT SIDE OF THE FIREWALL. (ABOUT 7 INCHES) (FACING THE FIREWALL) THE POINT YOU ARE LOOKING FOR IS HALFWAY BETWEEN THAT RIVET AND THE RIVET TO THE RIGHT. MARK THAT POINT. HOLD THE SEPARATOR TO THE FIREWALL USING THE LOWER-LEFT MOUNT HOLE TO THIS SPOT. INSURE IT MATCHES APPROPRIATE DRAWINGS.

Butterfield Industries, Inc.

1-800-524-3404

NOTE: THE ACTUAL LOCATION OF THE SEPARATOR CAN VARY IN THIS AREA DUE TO LOCATION OF OTHER COMPONENTS MOUNTED ON THE FIREWALL.

- 2) HOLD BOTTOM EDGE OF MOUNT PLATE HORIZONTAL, USING EXISTING HOLE AT BOTTOM RIGHT CORNER OF MOUNT, FIND SECOND SPOT TO MARK.

NOTE: DUE TO CHANGE IN MOUNTING HARDWARE, THE TWO TOP HOLES IN THE SEPARATOR MOUNT HAVE NOT BEEN DRILLED.

- 3) WHILE HOLDING THE SEPARATOR ON THE FIRST TWO MARKS, DETERMINE WHERE TO INSTALL THE TWO STUDS ON THE NEXT LINE OF RIVETS UP. THEY SHOULD ALIGN ON EITHER SIDE OF A RIVET.

TRANSFER HOLE PATTERN TO THE MOUNT AND DRILL A .250 HOLE TO CORRESPOND WITH STUD LOCATION. USING THE DIRECTION WITH THE STUDS (CS125-1032-8CR), MOUNT THE FOUR STUDS AT THE DESIRED LOCATIONS.

ALTHOUGH IT TAKES 24 HOURS FOR THE STUD EPOXY TO CURE, IN A COUPLE OF HOURS IT WILL BE HARD ENOUGH TO MOUNT THE SEPARATOR SO THAT HOSE LENGTH CAN BE DETERMINED. BE CAREFUL NOT TO PULL TOO HARD ON THE STUDS DURING THIS TIME.

6.2 HOSE INSTALLATION

REF: DRAWING BI 6001 SHEET 2 & 3

Butterfield Industries, Inc.

1-800-524-3404

-3 (L/H) INSTALLATION

USING THE 12' HOSE P/N SCDEET 4-480, CUT A LENGTH SUITABLE TO CONNECT THE ENGINE TO THE INLET (LH) END OF THE SEPARATOR. SECURE ENDS WITH MS35842-11 CLAMPS. REINSTALL ANY OTHER DEVICES USED TO SECURE ORIGINAL HOSE.

CUT A SUITABLE LENGTH OF BREATHER HOSE TO CONNECT THE EXIT ON THE SEPARATOR (TOP) AND THE BREATHER EXIT FIXTURE ON THE FIREWALL. SECURE WITH MS35842-11 HOSE CLAMPS.

IF THE OIL RESIDUE COLLECTION SYSTEM TANK HAS NOT BEEN INSTALLED BEFORE NOW, YOU MUST DO SO TO CONTINUE.

ON THE TANK THERE WILL BE ONE 3/8" HOSE NIPPLE EMPTY. YOU WILL CUT A SUITABLE LENGTH PIECE OF 3/8" TYGON TUBING AND CONNECT THIS EMPTY NIPPLE WITH THE OIL RESIDUE EXIT ON THE SEPARATOR. SECURE BOTH ENDS OF THIS LINE WITH A B-6604 CLAMP.

-5 (R/H) INSTALLATION

CUT A LENGTH OF BREATHER LINE TO BE CONNECTED TO THE ENGINE AND THE SEPARATOR. THIS LENGTH OF HOSE WILL BE THE SAME LENGTH AS THE FIRST PIECE YOU CUT. INSTALL USING MS35842-11 CLAMPS.

Butterfield Industries, Inc.

1-800-524-3404

THE EXIT LINE WILL BE CONSIDERABLY LONGER AND WILL BE IN TWO PIECES. THIS IS BECAUSE THE FIREWALL EXIT IS HIGHER THAN THE EXIT FROM THE SEPARATOR. SEE ON DRAWING BI-6001 SHEET 3, YOU WILL HAVE TO INSTALL A 'T' IN THE LINE TO DRAIN ANY MOISTURE THAT MAY ACCUMULATE IN THE LINE. CUT ENOUGH BREATHER LINE TO MAKE THE ENTIRE LOOP FROM THE SEPARATOR TO THE EXIT ON THE FIREWALL. DETERMINE THE LOW POINT OF YOUR LOOP AND CUT THE HOSE. INSTALL LARGE 'T' IN LINE WITH 3/8" NIPPLE POINTING DOWN. SECURE ALL FOUR ENDS OF BREATHER LINE WITH MS35842-11 CLAMPS. CUT A SUITABLE LENGTH OF TYGON TUBING AND SECURE TO NIPPLE OF LARGE 'T' WITH A B-6604 CLAMP.

THE SUITABLE LENGTH OF THE PREVIOUS TUBE WILL BE DETERMINED BY WHERE YOU WANT TO INSTALL THE 3/8" 'Y' FIXTURE.

ONCE YOU HAVE DETERMINED THIS, INSTALL THE 'Y' FIXTURE ON THE END OF THE PREVIOUS TUBE AND SECURE WITH A B-6604 CLAMP. CUT A LENGTH OF TYGON TUBING TO CONNECT THE OPEN UPPER END OF THE 'Y' FIXTURE WITH THE DRAIN FITTING ON THE SEPARATOR. NOW CUT A SUITABLE LENGTH OF TYGON TUBING TO CONNECT THE 'Y' FIXTURE WITH THE OPEN 3/8" NIPPLE ON THE RESIDUE OIL TANK. SECURE BOTH ENDS WITH B-6604 CLAMPS.

6.3 FINAL INSTALLATION

CHECK TO SEE IF NEW BREATHER LINE OR TYGON TUBING NEEDS SECURING TO PREVENT CHAFFING ON OTHER LINES. WHATEVER DEVICE IS USED, INSURE THE TUBE IS NOT DEFORMED AS TO RESTRICT THE FLOW OF AIR OR FOR FLUID DRAINAGE.

Butterfield Industries, Inc.

1-800-524-3404

REINSTALL STARTER-GENERATOR COOLING DUCT ALONG WITH ANY OTHER ITEMS REMOVED TO FACILITATE INSTALLATION OF THIS KIT.

REINSTALL COWLINGS, IF REMOVED TO INSTALL THE RESIDUE TANK.

6.4 INSPECTION

THERE IS NO INSPECTION CRITERIA FOR THE SEPARATOR. IT IS NOT A COLLECTION POINT NOR IS IT SUBJECT TO ACCUMULATION OF ANY FOREIGN MATERIAL. CHECK CONTINUED AIRWORTHINESS INSTRUCTIONS ON PAGE 17 FOR SUGGESTIONS AS TO PERIODIC MAINTENANCE.

7.0 RETURN AIRPLANE TO SERVICE

- 1) COMPLETE AN APPROPRIATE ENTRY IN THE AIRPLANE LOGBOOK

EXAMPLE: INSTALLED BUTTERFIELD INDUSTRIES
AIR/OIL SEPARATOR SYSTEM PART
NUMBER 6001-1 AS PER STC SA00829CH.

- 2) COMPLETE THREE COPIES OF FAA FORM 337. INSERT ORIGINAL IN AIRPLANE FLIGHT MANUAL. MAIL ONE COPY TO LOCAL FAA-FSDO AND RETAIN ONE COPY FOR THE INSTALLER
- 3) NO WEIGHT AND BALANCE CHANGE

PACKING LIST

KIT P/N BI 6001-1

AIR/OIL SEPARATOR ASSY	BI 6101-1	2 EA.
	OR	
AIR/OIL SEPARATOR ASSY	BI 3450-19	2 EA.
TEE ASSEMBLY	BI 6102-1	1 EA.
'Y' ASSEMBLY	BI 6102-3	1 EA.
CLICKBOND MOUNTING KIT	CS125-1032-8CR	1 EA.
WASHER	AN960KD10	8 EA.
NUT	MS20500-1032	8 EA.
CLAMP	B-6604	8 EA.
CLAMP	MS35842-11	10 EA.
HOSE	SCDEET4-480	10 FT.
HOSE	TYGON F-4040	5 FT.

CONTINUED AIRWORTHINESS INSTRUCTIONS

THERE ARE NO SCHEDULED INSPECTION PERIODS FOR ANY COMPONENT OF THE BUTTERFIELD INDUSTRIES 'AIR/OIL SEPARATOR SYSTEM'.

USE THE FOLLOWING GUIDELINES FOR SUCCESSFUL CONTINUED AIRWORTHINESS:

~ANYTIME THE COWLING IS OPEN FOR INSPECTION, THE AIR/OIL SEPARATOR SHOULD BE INSPECTED FOR CONDITION AND SECURITY.

~ALL HOSE CLAMPS SHOULD BE INSPECTED FOR CONDITION, SECURITY AND EVIDENCE OF LEAKAGE.

~CLAMPS INSPECTED.

~IF THERE IS ANY SUSPECTED CONTAMINATION WITHIN THE VENT SYSTEM, THE AIR/OIL SEPARATOR MAY BE OPENED AND THE SCREEN INSPECTED AT ANY TIME.

~THE AIR/OIL SEPARATOR END CAP CAN BE REMOVED FOR INSPECTION OF THE INTERNAL SCREEN. IF ANY MATERIAL OTHER THAN OIL IS FOUND, THE CAUSE SHOULD BE INVESTIGATED.