



Customer Services

SERVICE RECEIVED LETTER

No. 564

Piper Aircraft Corporation

OCT 8 1970

Lock Haven, Pennsylvania, U.S.A.

CUSTOMER SERVICE September 28, 1970

Subject: Revised Hartzell Propellers

Models Affected: PA-23-250 (Six Place) and PA-E23-250 Aztec,
PA-30 Twin Comanche and PA-39 Twin Comanche C/R

Serial Numbers Affected: 27-2505 and up, 30-1 and up, and 39-1 and up.

Purpose: Hartzell Propeller, Inc. has issued Hartzell Service Letter No. 62, announcing the availability of a spring backup kit for the propellers installed on PA-23-250 (Six Place) and PA-E23-250 Aztec, PA-30 Twin Comanche and PA-39 Twin Comanche C/R aircraft (reference attached copy of Hartzell Service Letter No. 62 dated June 23, 1970 revised August 6, 1970).

Revised propellers (containing the spring backup kit) are presently being installed on production aircraft. Piper parts catalogs and service manuals will include new part numbers and servicing procedures respectively for the revised propellers.

Hartzell Propeller Service Manual No. 117 must be consulted for maintenance and/or overhaul of these propellers.

- Instructions:
1. Replacement propellers (containing the Hartzell spring backup kit) must not be installed on any aircraft unless the opposite propeller has been modified to include the Hartzell spring backup kit; i.e., the propellers shall not be mixed on any Piper aircraft.
 2. Should the Hartzell spring backup kit be installed on PA-23-250 (Six Place) and PA-E23-250 (Six Place) Aztec propellers, it will be necessary to replace the existing power charts with revised power charts containing information relative to the new Hartzell "S" type propellers.

For Aztec aircraft with an AiResearch Turbocharger System, order power chart Piper part number 230 051 (Rev. 700930);

For normally aspirated Aztec aircraft, order power chart Piper part number 454 591 (Rev. 700827).

(over)

Instructions: (Continued)

3. Hartzell Service Letter No. 62 has revised the air charge in the propeller cylinder when the spring backup kit is installed. Care must be exercised to insure that the proper air charge is used in these propellers and that proper charging placards are installed.

Material Required:Reference Instructions No. 2 above.Availability of Parts:

Piper Dealer.

Material Allowance:

Not applicable.

Labor Allowance:

Not applicable.

Disposition of Replaced Parts:

<u>Part Number</u>	<u>Nomenclature</u>	<u>Code</u>
230 051	Power Chart (AiResearch Turbo system)	C
454 591	Power Chart (normally aspirated)	C

Disposition of Parts in Stock:

<u>Part Number</u>	<u>Nomenclature</u>	<u>Code</u>	<u>Remarks</u>
230 051	Power Chart (AiResearch Turbo system)	C	Power Charts bearing a revision prior to 700930 must be destroyed.
454 591	Power Chart (normally aspirated)	C	Power Charts bearing a revision prior to 700827 must be destroyed.

HARTZELL PROPELLER, INC.
PIQUA, OHIO

Revised August 6, 1970
June 23, 1970

Service Letter No. 62

Subject: Spring Backup Kit for HC-E2YK-2RB, HC-E2YR-2RB, and HC-E2YL-2() Propellers Installed on Piper PA-23-250 and PA-E23-250 (Six Place) Aztec, PA-30 Twin Comanche, and PA-39 Twin Comanche C/R Aircraft.

Discussion: The subject propellers rely on an air charge in the cylinder to increase pitch and to feather. A loss of air may cause an overspeed. Operation at temperatures below -45° F. may cause leakage of air. There are also other causes for loss of air charge.

In order to safeguard against an overspeed due to loss of air charge, a spring backup kit is available. This spring kit is installed in the cavity of the extension shaft and produces about 2100 pounds of force. Flight tests have shown that, while this force is not equivalent to the 175 PSI air charge, it is sufficient to operate the propeller under normal conditions without overspeed, provided power is applied slowly and airspeed is reduced.

Recommended Action:

It is recommended that this spring kit be installed whenever convenient. When complying with this service letter, spring backup kits must be installed in both propellers. See Page 5 for listing of kits.

Instructions for Installation:

- 1) Remove both propellers from the aircraft.
- 2) Discharge the dome pressure and remove the B-2491-4 pitch change rod following the procedures outlined in Hartzell Manual 117.
- 3) Replace the B-2491-4 rod with B-2491-4S rod, included in the A-2273() kit. Rebuild the propeller hydraulic unit per Hartzell Manual 117. The blades must be put into the feathered position.

**Instructions
for
Installation:**

- 4) Install the spring kit in the extension shaft cavity, as shown in the following sketch, as follows:
 - (a) install A-2268 spacer on the B-2491-4S rod
 - (b) install the B-3281-1 and -3 springs over the spacer
 - (c) install the A-2269 retainer as shown
 - (d) compress the springs with special spring compressor, P/N BT-2826
 - (e) install A-2272 keeper in the groove formed in the B-2491-4S rod, as shown in the enlarged sketch
 - (f) remove spring compressor, allowing the springs to bear against the A-2269 retainer
- 5) Unfeather the blades with pressure applied through B-2491-4S rod, or by means of blade arms applied to both blades.
- 6) Recharge the cylinder with dry air or nitrogen to:

70 PSI @ 70° F. for the HC-E2YK-2RB	}	PA-23-250
70 PSI @ 70° F. for the HC-E2YR-2RB	}	PA-E23-250
50 PSI @ 70° F. for the HC-E2YL-2B	-	PA-30 and PA-39
- 7) Install new table of pressures inside the spinner cap in place of the old decal, and also on propeller cylinder. Decals are included in the A-2273 kit. Also install CA-003 decal on spinner near air valve.
- 8) Add the letter "S" after the hub dash number, which is located on the side of the hub, as: HC-E2Y()-2()BS. Use a steel stamp.
- 9) For the PA-30 and PA-39 aircraft, remove the spring assembly which is located inside of the engine crankshaft. The parts consist of: A-2488 sleeve, 9-2410-3l spring, A-2487 thimble, and A-2496 shim. These parts are not required after the A-2273() spring kit is installed.
- 10) Install the propeller onto the engine crankshaft in accordance with appropriate installation instructions.

Instructions for Installation:

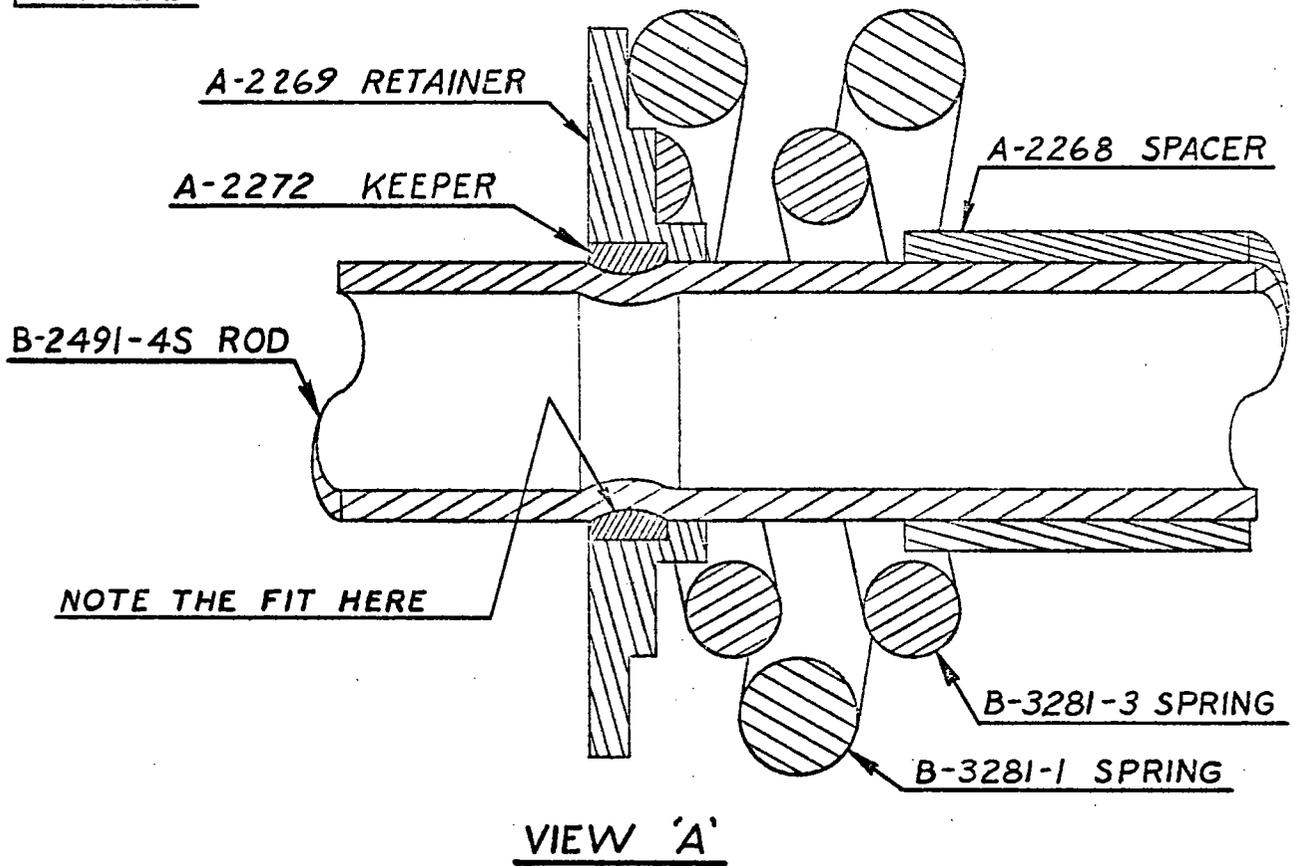
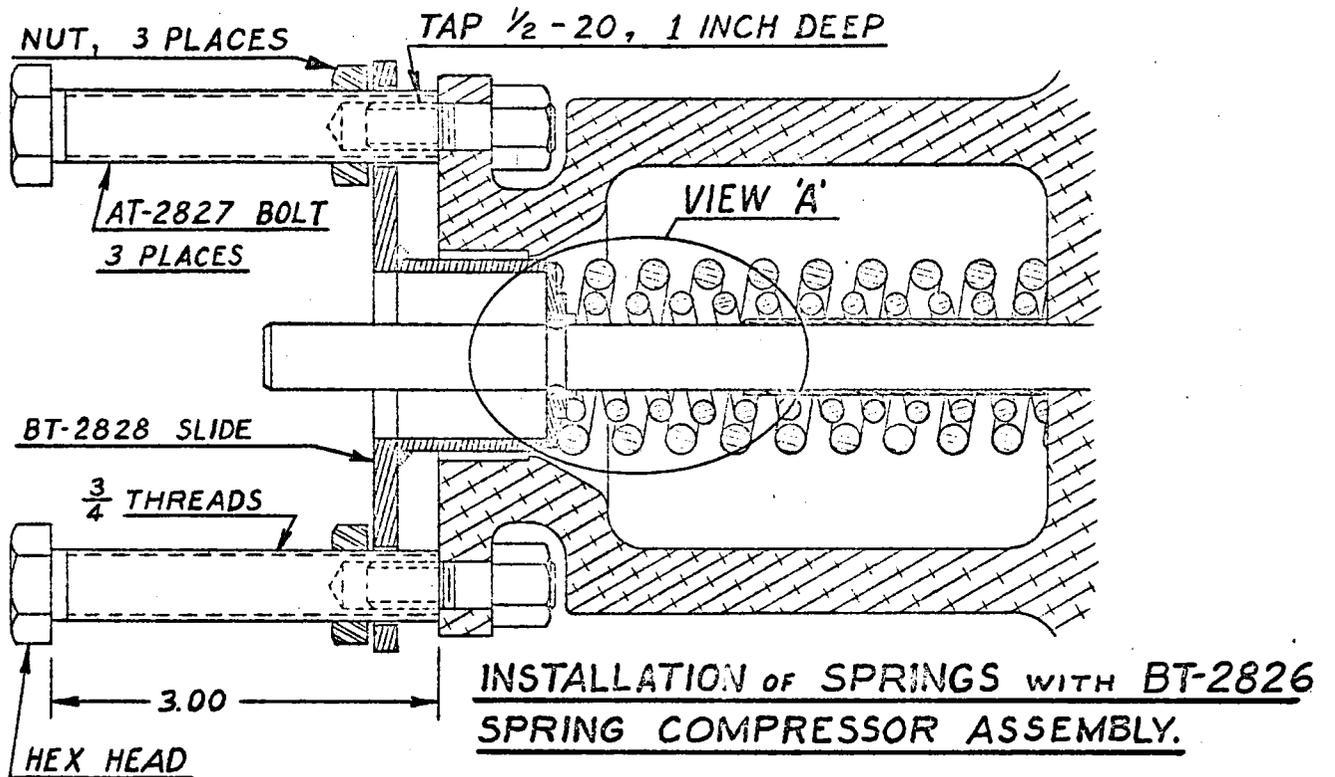
- 10) Change the propeller chamber pressure schedule, listed in Section V of the Piper Owner's Handbook. Use one of the decals for this purpose.

PA-30 & PA-39	PA-23-250 & PA-E23-250
Twin Comanche & Twin Comanche C/R	Aztec
<u>Prop Model HC-E2YL-2B()S</u>	<u>Prop Model HC-E2Y(K,R)-2RES</u>

Temp. °F.	Pres. (PSI)	Temp. °F.	Pres. (PSI)
100	53	100	74
70	50	70	70
40	47	40	66
10	44	10	62
-20	42	-20	58

- 11) CAUTION: If the propeller is to be disassembled for any reason, it should be feathered while on the aircraft with engine operating or by use of blade paddles on both blades. Blade paddles should be used to unfeather before recharging with air.
- 12) Install the following decal on nose of the cylinder. (CA-001)

CAUTION
 Feather while on aircraft
 or control blades with
 paddles, if internal stops
 are to be removed.



Price List for A-2273-() Spring Backup Kit

<u>Qty.</u>	<u>Kit Number</u>	<u>Nomenclature</u>	<u>Price</u>
	(Prop HC-E2Y(R,K)-2RBS) (PA-23-250 Aircraft)	(Prop HC-E2YL-2B(S)) (PA-30 & PA-39 C/R)	
* (1)	A-2273R	A-2273 Complete Kit	\$49.15
(1)	B-2491-4S	Rod, Pitch Change	34.00
(1)	A-2268	Spacer	3.20
(1)	A-2269	Retainer	5.10
(1)	A-2272	Keeper	2.60
(1)	B-3281-1	Spring	2.50
(1)	B-3281-3	Spring	1.75
(3)	CHP-227	Decal	.25
(3)		CHP-226 Decal	.25
(1)	CA-003	Decal	.10
(1)	CA-001	Decal	.10
** (1)	A-2273-1R	A-2273-1 Complete Kit	\$17.65
(1)	A-2268	Spacer	3.20
(1)	A-2269	Retainer	5.10
(1)	A-2272	Keeper	2.60
(1)	B-3281-1	Spring	2.50
(1)	B-3281-3	Spring	1.75
(3)	CHP-227	Decal	.25
(3)		CHP-226 Decal	.25
(1)	CA-003	Decal	.10
(1)	CA-001	Decal	.10
*** (1)	A-2273-2R	A-2273-2 Complete Kit	\$15.15
(1)	A-2268	Spacer	3.20
(1)	A-2269	Retainer	5.10
(1)	A-2272	Keeper	2.60
(1)	B-3281-1	Spring	2.50
(1)	B-3281-3	Spring	1.75
(3)	CHP-227	Decal	.25
(3)		CHP-226 Decal	.25
(1)	CA-003	Decal	.10
(1)	CA-001	Decal	.10
* (1)	A-2273 and A-2273R Kit have new B-2491-4S rod from factory.		
** (1)	A-2273-1 and A-2273-1R Kit, Hartzell will rework customer's B-2491-() rod to -4S.		
*** (1)	A-2273-2 and A-2273-2R Kit have no A-2491-() rod included.		

-ALL PRICES ARE LIST-