



Kristyn Blocher
Air Safety Investigator
AS-WPR

Date: 11/19/25

Subject: WPR25LA039, Component Examination & Flow Test

Contact: Peter Nielson, Precision Airmotive, LLC

Component: Fuel Servo

Model: RSA-IOEDI

Serial Number: 66969

Component examination and flow test were conducted at the facilities of Precision Airmotive, LLC, in Arlington, WA on 11/19/2025.

The impact air screen and fuel inlet screen observed free of obstruction. The idle valve mark left from plate on idle lever assembly was consistent with an about full throttle position. The component examination and flow test revealed no evidence of mechanical anomalies, malfunction or failure that would have precluded normal operation.

INCIDENT INVESTIGATION REPORT

Component Inspection and Flow Check - RSA Fuel Injection

PAM Work Order Number: _____

Aircraft Type: Piper PA-32-300

Engine Model Number: IO-540

Incident Location: Pomona, CA

Investigation Date: 11-19-25

Aircraft Registration #: N617ET

Incident Date: 11-17-24

PAM File Number: _____

Component Type: Servo

Model: RSA-10ED1

Parts List Number: 2524273-12

Serial Number: 66969 on yellow Avstar dots plate

Location: _____

PAC

Attendees: _____

Kristyn Bl

I) External Condition:

1) Throttle Rotation?

OK, no throttle lever

2) Mixture Control Rotation?

OK, no lever

3) Fittings/Levers:

levers missing, fittings OK

4) Throttle Body/Regulator Body:

small impact to dots plate, oily/dirty

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Aircraft Type: _____
Engine Model Number: _____
Incident Location: _____

Investigation Date: _____
Aircraft Registration #: _____
Incident Date: _____
PAM File Number: _____

5) Letters on Coillocc Seal:

"AFS"

6) Additional Observations:

II) Flow Test Results:

see flow sheet

III) Tear down Results:

1) Fuel Inlet Screen:

OK, clear

2) Manual mixture control valve/plate/lever assy:

OK

3) Idle Plug/Main Metering Orifice:

OK, outline of plate near WOT

4) Idle valve plate/lever assy:

OK

5) Fuel Section O-rings:

OK

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Engine Model Number: _____
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Incident Date: _____
PAM File Number: _____

6) Regulator Adjustments:

A) Position of outer regulator nut (# of turns out from inner nut):

1 1/2 T out

B) Constant Head Spring/Shims:

yellow spring, 3 shims

C) Position of inner regulator nut (# of turns out from bottom):

unable to determine because the stem unscrewed from fuel diaphragm when trying to remove outer nut.

D) Constant Effort Spring:

Orange

7) Regulator Components

A) Brass Plug:

OK, "G"

B) Regulator Nuts:

silver, OK

C) Air Diaphragm:

P/N @ AV2534XXX (illegible)
OK

D) Center Body Bellows/Seal:

No marks, done seal, OK

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E) Fuel Diaphragm: *P/N 1803, stem unscrewed from diaphragm*

F) Servo Seat: *OK, .053" shims*

8) Venturi

OK

A) O-rings (If Applicable)

OK

9) AMC (If Applicable)

A) Flow Test

B) Bellows

C) Needle

D) Seat/sleeve

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Aircraft Type: _____

Engine Model Number: _____

Incident Location: _____

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Aircraft Registration #: _____

Incident Date: _____

PAM File Number: _____

10) Other Observations:

RJR

TEST SPECIFICATION - AIR BOX LIMITS
PRECISION AIRMOTIVE LLC - ARLINGTON, WASHINGTON

Acc Inv 111724

30017-10
0 Revision 4-25-22

ENGINEERING SPECIFICATION: PES-4500

MODEL: RSA-10ED1

SERIAL NUMBER: 66969

OPERATOR: PA DATE: 11-19-25

INSTALLATION PARTS LIST: 2524273-12

BASIC PARTS LIST: 2524648

INTERNAL CHANGE: 39

CUSTOMER: TEXTRON LYCOMING

CUSTOMER TEST SPEC: 13048-D

AIRFLOW: STANDARD (29.92"Hg @ 59°F)

FUEL: PES-2010 or PES-2150

AIR BOX NUMBER: 4004

FUEL TEMP. 78.2 °F

BAROMETRIC PRESSURE 14.89 PSI @ 78.4 °F

TEST POINT NUMBER

1	2	3	4	5	6	7	8	9	10	11	12	13
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AIRFLOW (LBS/HR)

0	0	125	100	A/R*	300	800	800	1000	1000	1200	1700	0
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CARB LOSS ("Hg)

W/O	W/O	17.2	17.2	A/R*	14.7	11.9	W/O	9.9	9.9	9.4	W/O	W/O
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FUEL INLET PRESS

26 ± 1	26 ± 1	26 ± 1	45 ± 5	26 ± 1	26 ± 1	26 ± 1	26 ± 1	26 ± 1	26 ± 1	26 ± 1	26 ± 1	26 ± 1
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MIXTURE CONTROL

RICH	ICO	RICH	RICH	RICH	RICH	RICH	RICH	RICH	FROM	RICH	RICH	RICH
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FLOWMETER LIMITS

MINIMUM

34.5	0	9.5	+0.5
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*CLOSE THROTTLE TO 6.0 LBS/HR FUEL

75	OBS	91	OBS	110.5	156.8	± 5.0
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OBSERVED (LBS/HR)

44.0	0	10.5	11.0
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28.4	64.7	70.4	88.4	34.8	109.0	158.6	44.7
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MAXIMUM

42.7	0.5	10.5	MAX CHANGE FROM TP3
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80	97	115.4	163.2	MAX CHANGE FROM TP1
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METERING SUCTION

AVERAGE VALUE

OBSERVED ("H₂O)

METERING HEAD

AVERAGE VALUE

OBSERVED ("STODDARD)

0.5	3.6	3.6	5.5
4	3.3	3.6	5.2

7.9	15.8
7.8	16.9

3.3

4.9	2.9	4.8	5.8	9.5
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15.2	34.3
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REGULATOR SETTINGS

PREFLOW (LBS/HR) 15 MIN / 25 MAX

NULL (TURNS OUT)

✓

EFFORT SPRING COLOR INNER NUT TURNS OUT

✓

HEAD SPRING COLOR OUTER NUT TURNS OUT

✓

HEAD SPRING SHIMS (NUMBER) EXTERNAL LEAKAGE NONE PERMITTED

✓

**If inner nut is beyond 3.5 turns out then perform a back pressure test. After obtaining initial value at test point 12, turn the inlet fuel pressure down to 18 psi then apply 8 psi of back pressure on the outlet of the servo. Max change of -2 pph is allowed from initially recorded value at test point 12, new value is _____.