

INCIDENT INVESTIGATION REPORT

Component Inspection and Flow Check - RSA Fuel Injection

PAM Work Order Number: _____
Aircraft Type: Piper PA-32RT
Engine Model Number: TIO-540-S1AD
Incident Location: Nashville, TN

Investigation Date: 5-6-24
Aircraft Registration #: C-FBWH
Incident Date: 030424 _____
PAM File Number: _____

Component Type: Servo

Model: RSA-10ED1

Parts List Number: 2524693-11

Serial Number: 69748 Also on field overhaul tag: F.C. -blank

Location:

Precision Airmotive

Attendees:

Zane Brown – NTSB
Dave Harsanyi – Lycoming
Pete Nielson - PA

I) External Condition:

1) Throttle Rotation?

OK

2) Mixture Control Rotation?

OK

3) Fittings/Levers:

Inlet fitting sheared off, levers ok.

4) Throttle Body/Regulator Body:

OK, dirty.

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5) Letters on Coiloc Seal:

“D”

6) Additional Observations:

II) Flow Test Results:

See attached flow sheet.

III) Tear down Results:

1) Fuel Inlet Screen:

OK, a little dirt, mostly clear.

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

OK

3) Idle Plug/Main Metering Orifice:

Circular scratching in center.

4) Idle valve plate/lever assy:

OK

5) Fuel Section O-rings:

OK

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6) Regulator Adjustments:

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

0 turns out, tight.

B) Constant Head Spring/Shims:

1 shim, no color on spring.

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

5 turns out.

D) Constant Effort Spring:

No spring installed.

7) Regulator Components

A) Brass Plug:

OK, "G".

B) Regulator Nuts:

OK, no evidence of Loctite, but spring holder was stuck to stem.

C) Air Diaphragm:

OK, P/N 2538420, code: E404.

D) Center Body Bellows/Seal:

OK, dome type seal,

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E) Fuel Diaphragm:

OK, P/N 2541803, code: E956.

F) Servo Seat:

OK, .082" shims, did not remove.

8) Venturi

OK, did not remove.

A) O-rings (If Applicable)

9) AMC (If Applicable)

N/A

10) Other Observations:

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

11748-06

10-27-09

ENGINEERING SPECIFICATION: PES-4500

MODEL: RSA-10ED1

SERIAL NUMBER: 69748

OPERATOR: PN

DATE: 5-6-24

INSTALLATION PARTS LIST: 2524693-11

BASIC PARTS LISTS: 2524792

INTERNAL CHANGE: 19

CUSTOMER: TEXTRON LYCOMING

CUSTOMER TEST SPEC: 13348-C

AIRFLOW: STANDARD (29.92"Hg @ 59°F)

FUEL: PES-2010 or PES-2150

AIR BOX NUMBER: 4004

FUEL TEMP. _____ °F

BAROMETRIC PRESSURE _____ PSI @ _____ °F

TEST POINT NUMBER	1	2	3	4	5	6	7	8	9	10
AIRFLOW (LBS/HR)	0	110	100		300	800	1000	1000	1200	1700
CARB LOSS ("Hg)	W/O	17.2	17.2		14.7	11.9	9.9	9.9	9.4	W/O
FUEL INLET PRESS	26 ± 1	26 ± 1	26 ± 1		26 ± 1	26 ± 1	26 ± 1	26 ± 1	26 ± 1	26 ± 1
MIXTURE CONTROL	RICH	RICH	ICO		RICH	RICH	RICH	FROM 40° RICH	RICH	RICH

FLOWMETER LIMITS

MINIMUM

48.0

9.0

0

*5" CLOSE
THROTTLE
TO 7.0
LBS/HR
FUEL
FLOW
FROM
TP 2

71.0

99.0

OBS

126.0

204.0

OBSERVED (LBS/HR)

65.0	10.7	Ø
------	------	---

30.8	57.2	97.6	65.8	124.0	200.1
------	------	------	------	-------	-------

MAXIMUM

54.0

11.0

0.5

80.0

108.5

138.0

212.0

METERING SUCTION

AVERAGE VALUE

OBSERVED ("H₂O)

.5	3.6	5.5
1.6	3.2	5.6

7.9	15.8
7.9	15.8

METERING HEAD

AVERAGE VALUE

OBSERVED
("STODDARD)

4.0
2.4

+5.0	5.0	8.4	12.4
2.0	1.9	2.2	8.3

18.3	37.8
13.0	29.2

REGULATOR SETTINGS

PREFLOW (LBS/HR)
18 MIN / 28 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

☒

BRANDIX

FUEL INJECTION SERVO

F.C.

RSB-10E-D

69748

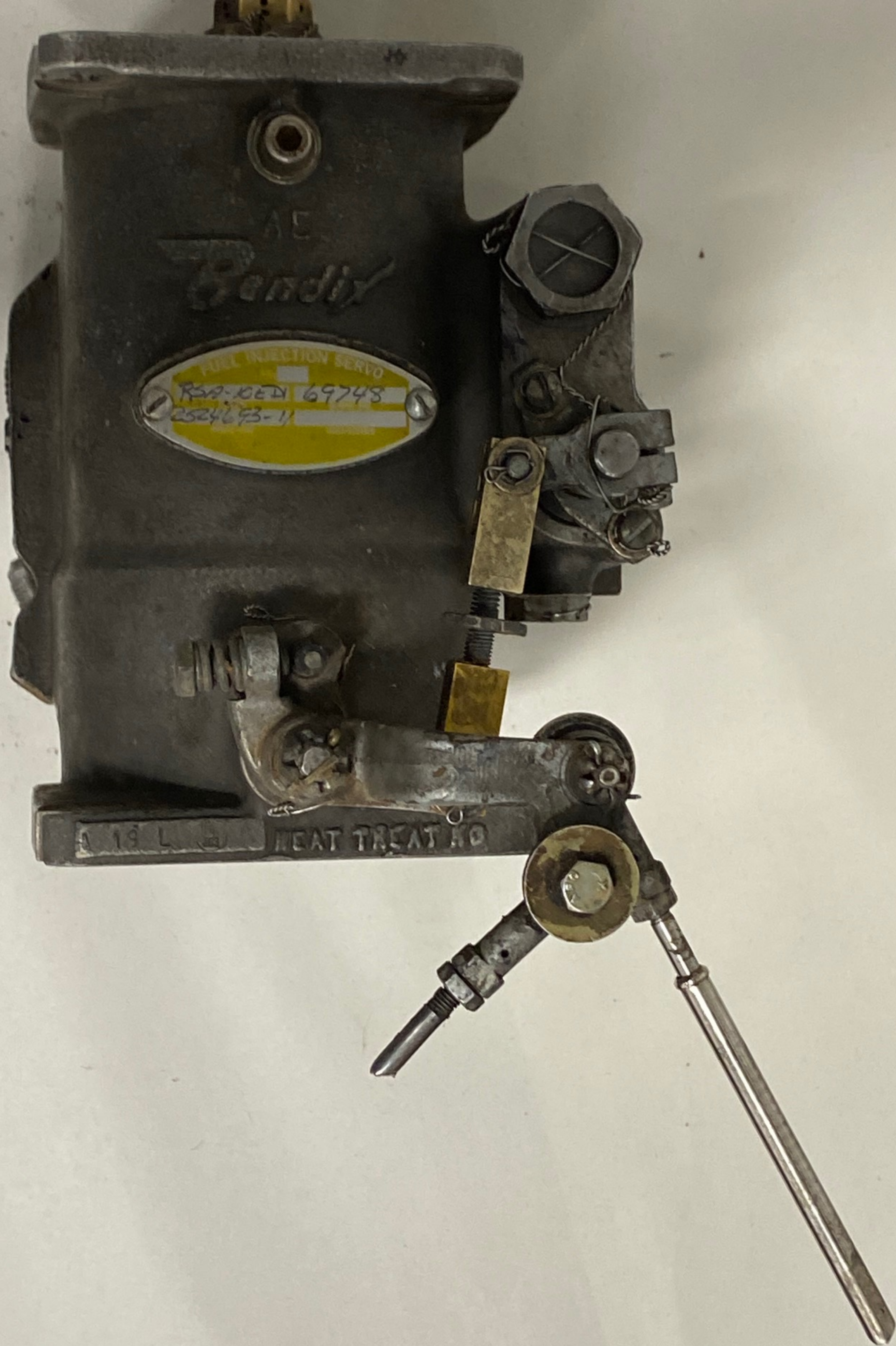
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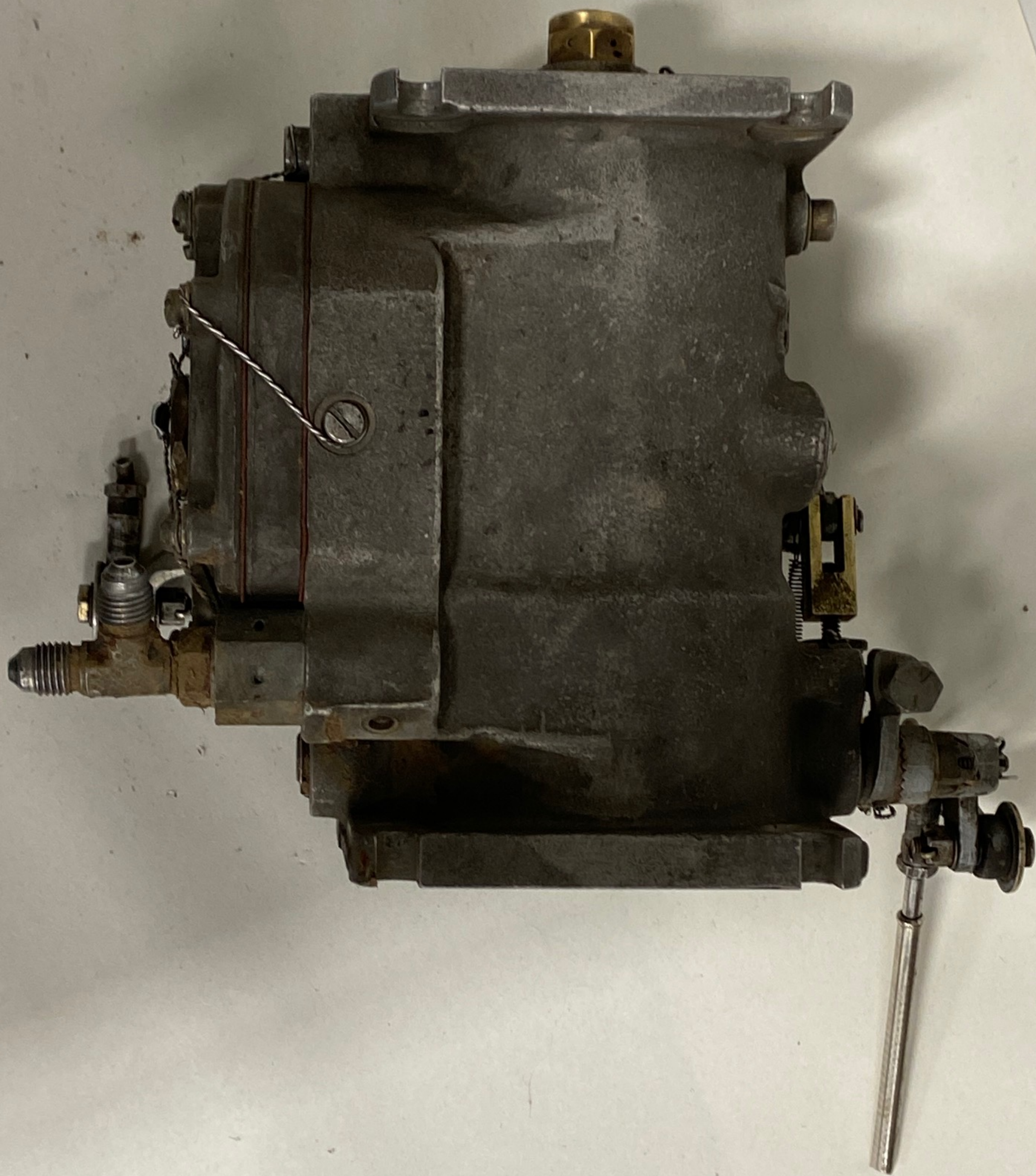
2524693-1

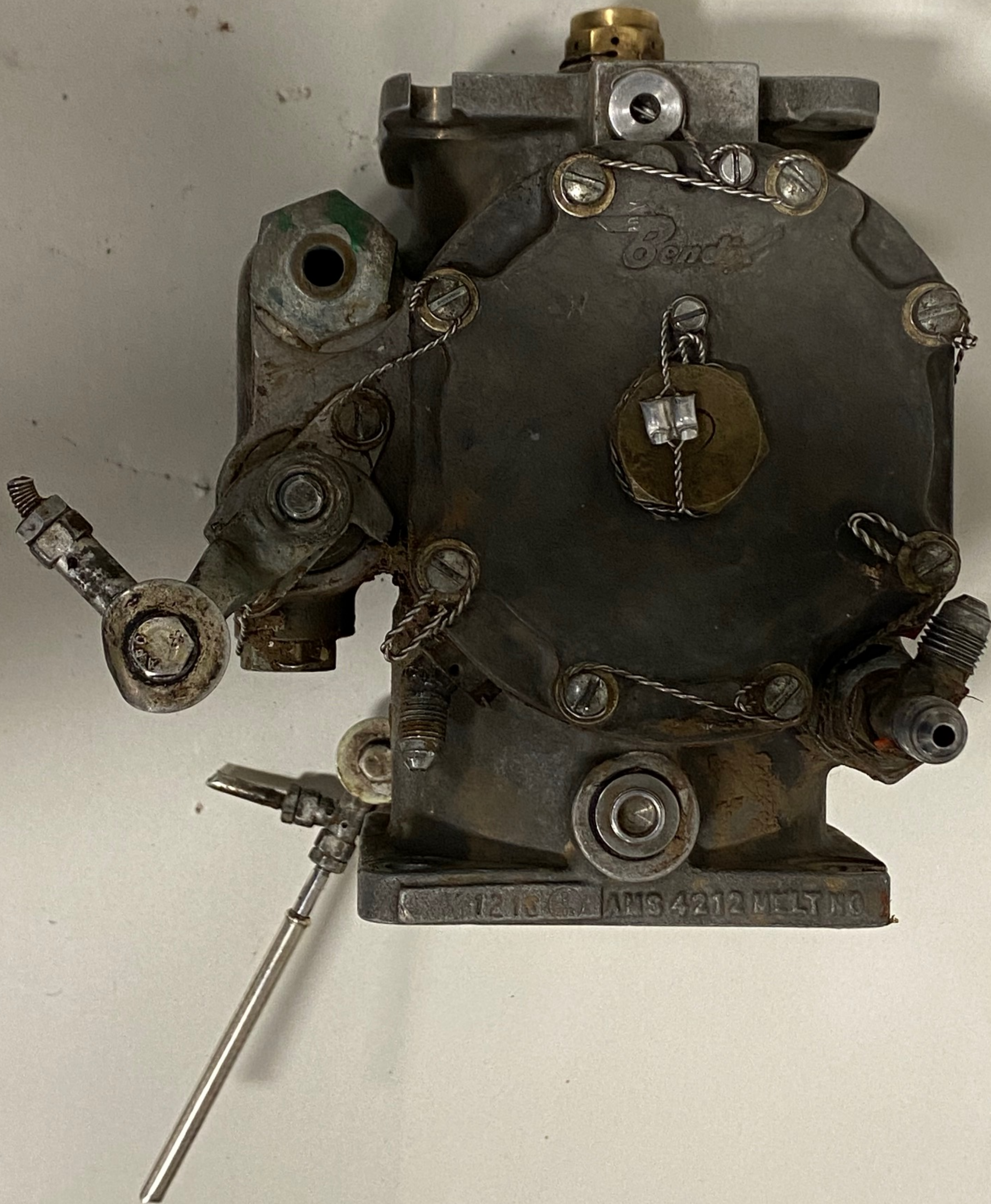
PARTS LIST

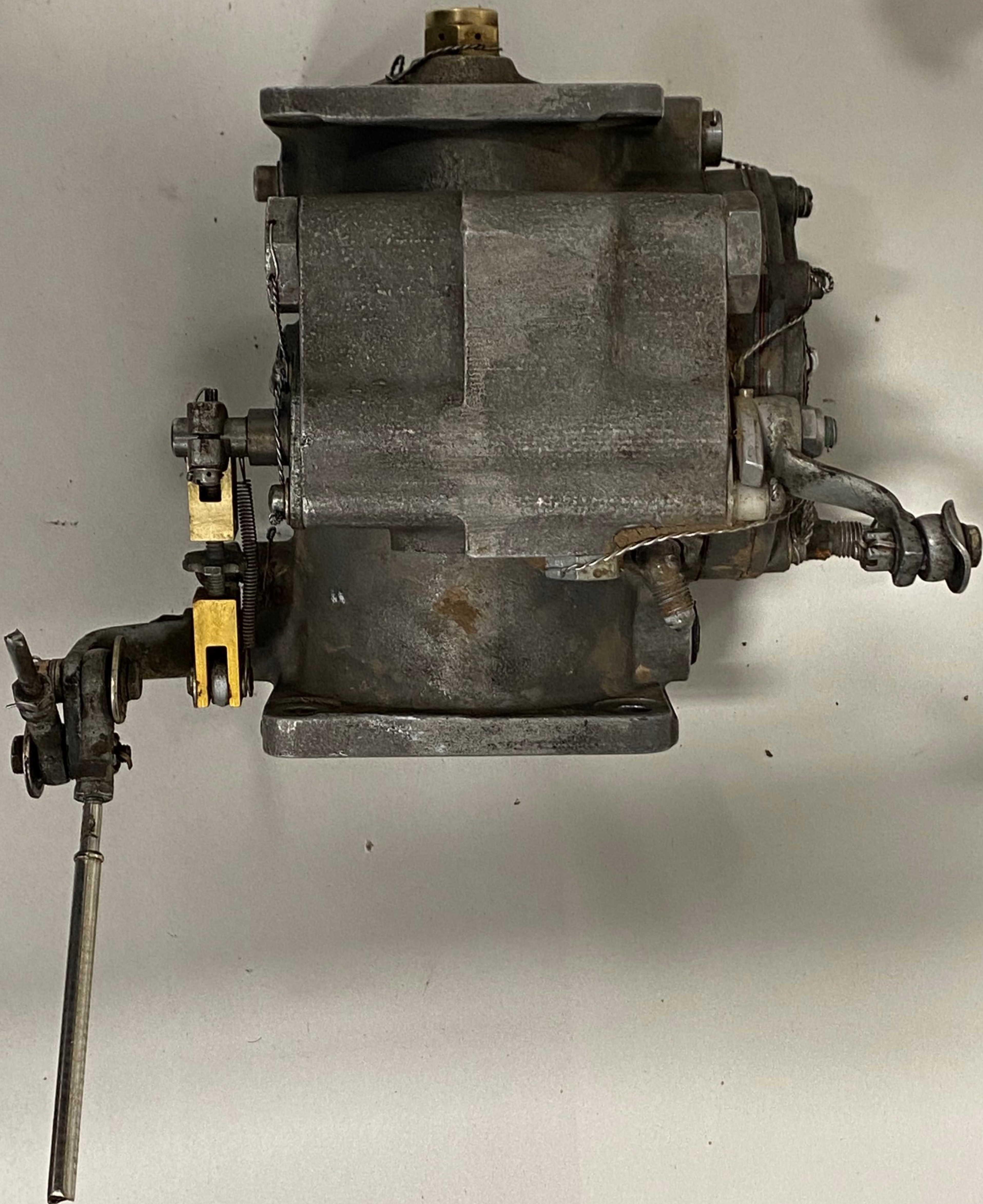
LESS ISSUES

1042391





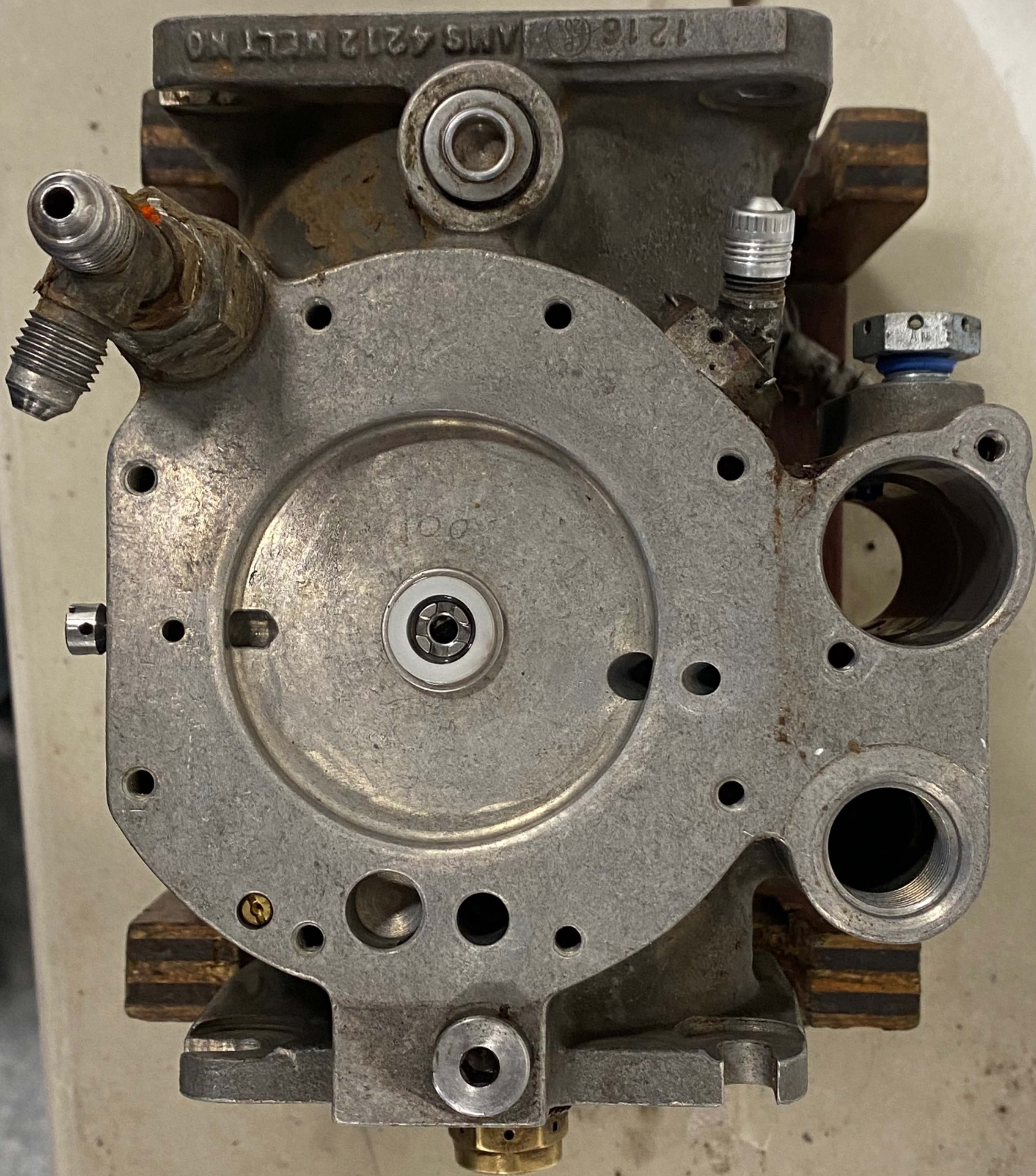


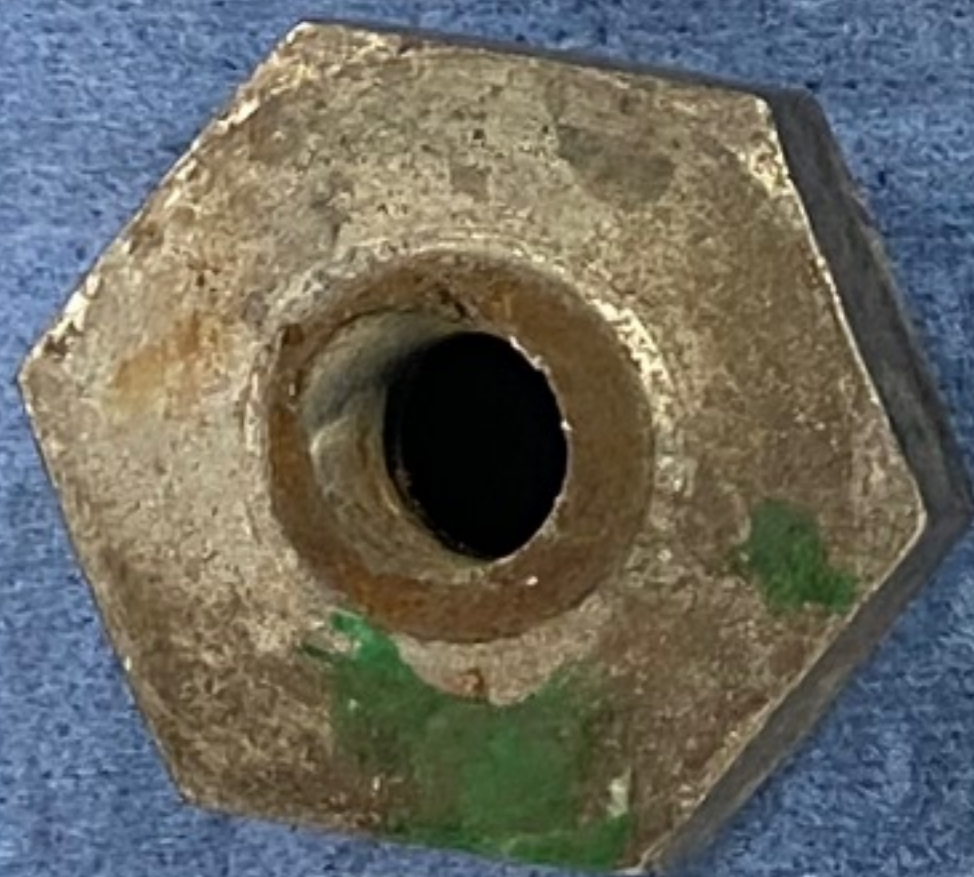














E956



ASSY2541803

