

SERVICE BULLETIN #94-01

June 7, 1994

**ELLISON FLUID SYSTEMS CONSIDERS COMPLIANCE MANDATORY.
FAILURE TO COMPLY MAY RESULT IN ENGINE FAILURE.**

**TO: ALL USERS OF ELLISON FLUID SYSTEMS, INC. THROTTLE BODY
INJECTORS**

SUBJECT: Excessive wear of throttle ball swivel fitting.

MODELS AFFECTED: All Models SERIAL NUMBERS AFFECTED: All

DISCUSSION:

Ellison Fluid Systems, Inc. has discovered two instances of excessive wear of the ball swivel fitting which connects the throttle linkage to the Throttle body Injector throttle shaft. See attached Fig. 1 for location of the swivel fitting. These two worn fittings were found on aircraft with rod type throttle linkages. Inflight throttle linkage disconnect with resulting engine failure will occur if this wear continues uncorrected.

Although this excessive wear has only been observed with rod type throttle linkages, other factors such as engine vibration may be a factor. As a result, all installations should be inspected as described below. For units installed on Homebuilt aircraft, if excess wear is found, Ellison Fluid Systems, Inc. urges the builder to determine the cause of this wear and correct it.

COMPLIANCE TIME:

For aircraft using rod throttle linkages:

For aircraft using rod throttle linkages, this inspection must be completed before 50 hours total time regardless of when the last repair service was performed. If the unit has more than 50 hours of total time or the time in service is unknown, this inspection must be completed before further flight.

Aircraft using cable type throttle linkages:

For aircraft using cable type throttle linkages, this inspection must be completed before 200 hours total time regardless of when the last repair or service was performed. If the unit has more than 200 hours of total time or the time in service is unknown, this inspection must be completed before further flight.

Aircraft with engines of less than four cylinders or aircraft with two cycle engines - all linkage types:

Because of the greater vibration of aircraft with engines of less than four cylinders or any two cycle engine, this inspection must be completed before 50 hours total time regardless of linkage type or when the last repair or service was performed. If the unit has more than 50 hours of total time or the time in service is unknown, this inspection must be completed before further flight.

CONTINUED COMPLIANCE:

Aircraft with cable actuated throttle linkages:

For aircraft with cable actuated throttle linkages, this inspection must be repeated every 200 hours or annual inspection, whichever is sooner.

Aircraft with rod actuated throttle linkages:

For aircraft with rod actuated throttle linkages, this inspection must be repeated every 50 hours or annual inspection, whichever is sooner.

Aircraft with engines of less than four cylinders or aircraft with two cycle engines - all linkage types:

For aircraft with engines of less than four cylinders or two cycle engines, regardless of linkage type; this inspection must be repeated every 50 hours or annual inspection, whichever is sooner.

NOTE: If you are not longer in possession of the Throttle Body Injector, please forward this information to the present owner/operator and notify Ellison Fluid Systems, Inc. of owner/address change. Notification should include the serial number and current owner's name and address. Direct all corrections/changes to the address appearing on the letterhead.

COMPLIANCE PROCEDURE:

This procedure must be performed in accordance with FAR's by a FAA licensed A+P mechanic or the builder of the aircraft if he or she possesses a repairman certificate for the particular aircraft.

1. See figure 1 for the location of the swivel fitting.
2. Disconnect the ball swivel fitting from the throttle shaft by removing the snap ring and sliding back the spring loaded retention collar (see figure 2 and 3).
3. Examine the slot machined in the retention collar for wear. Figure 2 illustrates the wear caused by the throttle shaft and shows the maximum permissible wear caused by the throttle shaft. Figure 3 shows maximum permissible wear in the retention collar caused by the ball. If the swivel fitting is worn beyond either of the above specified limits, it must be replaced with a new fitting before further flight. This swivel fitting is P/N 14-003 and the spring clip is P/N 33-005; both are available from Ellison Fluid Systems, Inc.
4. Figure 4 shows maximum permissible wear of the ball and throttle shaft. If either the ball or the throttle shaft is worn beyond the limits specified in figure 4, the throttle shaft of the injector must be replaced. This part is not field serviceable. For repair, please send the unit in to Ellison Fluid Systems, Inc. to the letterhead address.
5. If the wear pattern of the retention collar, ball and throttle shaft are acceptable as defined above, the unit and fitting may be returned to service.
6. Reassemble the throttle linkage. Be sure to install the spring clip to safety the retention collar closed.
7. Make logbook entries for compliance time and date.

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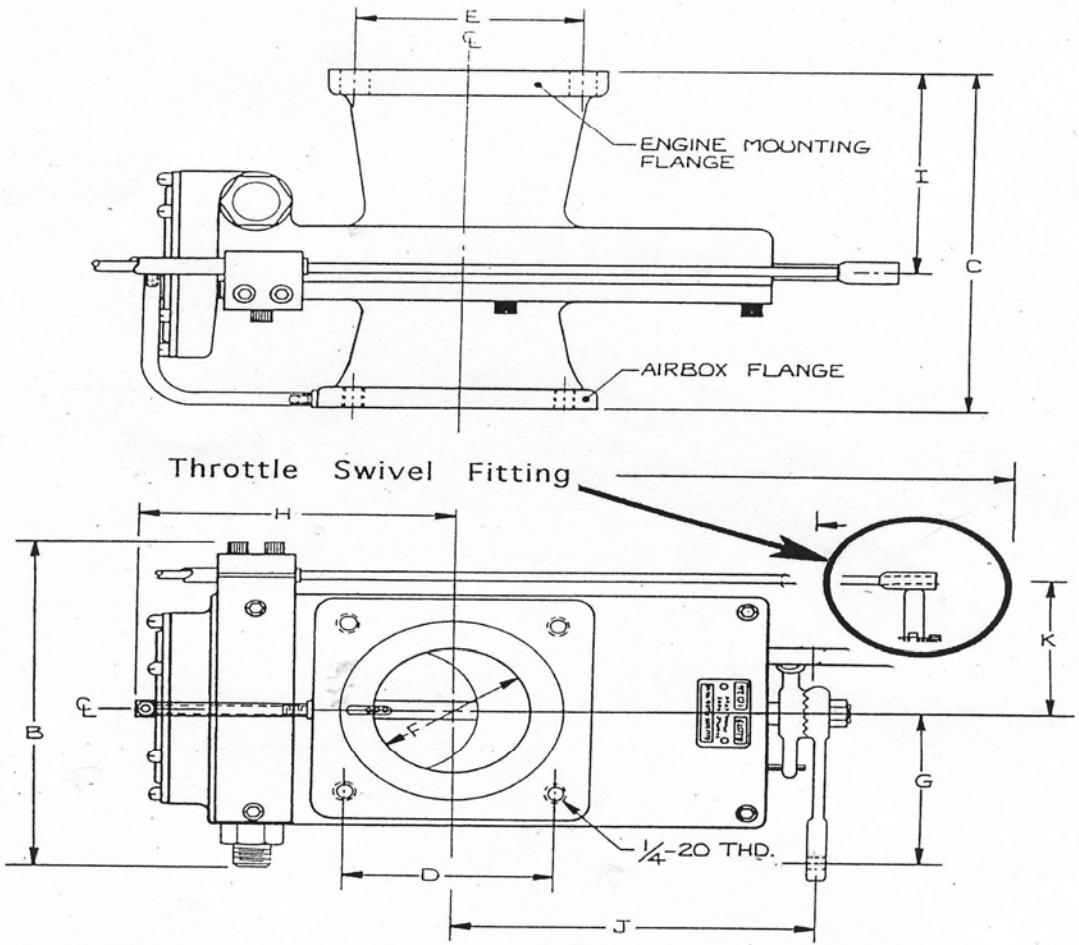


Fig. 1

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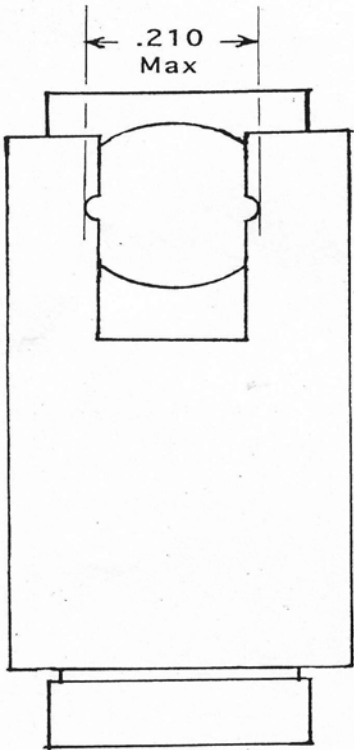


Fig. 2

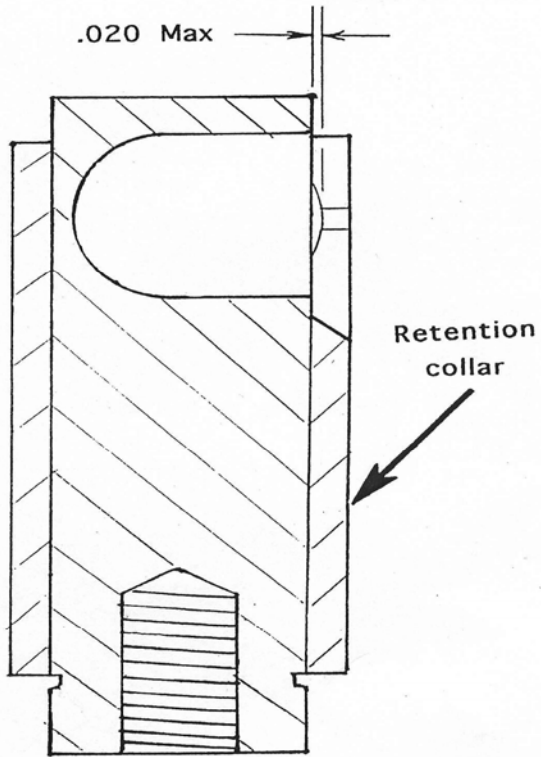


Fig. 3

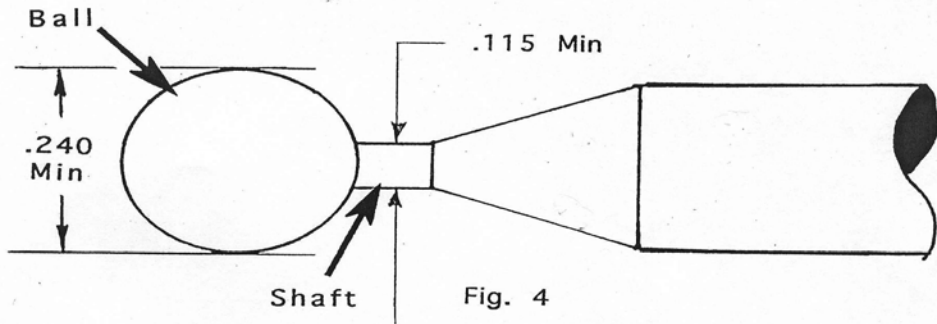


Fig. 4