

SERVICE BULLETIN

SB08-3A

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SB08-3

SUBJECT: THROTTLE AND MIXTURE CONTROL ARMS

PURPOSE: To provide instructions for installation and inspection of throttle and mixture control arms.

COMPLIANCE: At each routine engine inspection and at any time a throttle or mixture arm is removed for adjustment or replacement.

MODELS AFFECTED: ALL Constant Flow Fuel Injection Engines except FADEC equipped

GENERAL

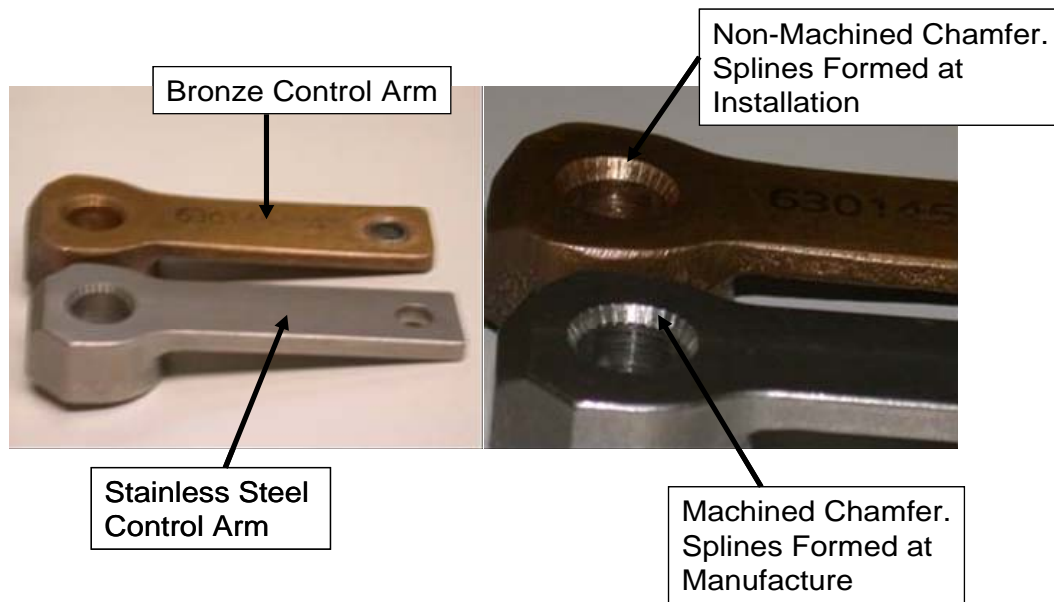
Teledyne Continental Motors has utilized two styles of throttle and mixture control arms as installed on both fuel injection system components and carburetors.

- The original throttle and mixture control arms were manufactured from a bronze material that featured a smooth, non-splined, machined chamfer on one side of the control arm. The smooth machined chamfer mated to a chamfered spline, machined into the stainless steel throttle shaft or mixture control shaft. When the throttle or mixture arm was installed and torqued to the correct value, the stainless steel shaft formed a spline in the smooth chamfer on the machined side of the bronze throttle or mixture arm. All arms manufactured of bronze material must be replaced when they are removed for any reason, see following note.
- The current throttle and mixture control arms are manufactured of stainless steel and feature a spline machined into the mating chamfer in the side of the control arm. The control arm spline mates with a chamfered spline machined onto the mating end of the throttle or mixture control shaft.
- Two splined chamfer styles are found on the component shafts in common usage. Due to machining changes and irregular wear patterns encountered over time, the splines of a control arm and mating component shaft may not match perfectly. Testing has shown that control arms correctly installed and properly torqued will mate and function correctly even if some mismatching of splines is visible.

Note: All arms manufactured of bronze material must be replaced when removed for any reason.

(SEE FIGURE 1 FOR CONTROL ARM IDENTIFICATION)


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**FIGURE 1
THROTTLE AND MIXTURE ARM IDENTIFICATION**

INSTALLATION INSTRUCTIONS:

- 1) Inspect the control arm retention nut threads on the component shaft to assure no cracked or stripped threads exist. Lubricate the threads of the component shaft lightly with clean 50 weight engine oil.
- 2) Install the throttle or mixture control arm onto the component shaft. Position the arm to allow proper interface with airframe controls (Consult the Airframe Manufacturers adjustment instructions for acceptable adjustment to allow correct “cushion” requirements)
- 3) Ensure that the splines in chamfer of the control arm are meshed with the splines on the component shaft.
- 4) Install the control arm using the specified control arm retention lock nut and torque to 100-120 inch-pounds.
- 5) Check the control arm during torque application to ensure there is no free play or movement of the control arm on the component shaft.
- 6) If free play or movement is felt after the nut is torqued to the correct value, remove the control arm and determine the cause for the movement.
- 7) Re-install the control arm per instructions 2-5 above, torque to 100-120 inch-pounds and ensure that there is no freeplay. If the arm continues to slip when torqued, replace arm.

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