



## SERVICE DIRECTIVE BULLETIN

SERVICE DIRECTIVE BULLETIN NO. 0071

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DATE: May 8, 1986

SUBJECT: Improved Procedure for Idle Mixture Adjustment

MODELS: F-28F, 280F and 280FX

COMPLIANCE: When Idle Adjustment is Required (See Text)

Compliance with this bulletin is mandatory if the helicopter being maintained exhibits any of the following symptoms: extremely hard starting, poor engine acceleration, erratic idle RPM, engine quits with throttle reduction, or the engine does not shut down when pulling the idle cut off.

A procedure for engine idle mixture adjustment has been developed to incorporate temperature and pressure altitude effect.

Equipment: Graduated beaker in cubic centimeters (cc), stop watch, fuel hose assembly 18-24 inches in length with a female -4 B-nut adaptor connection on one end.

Prior to making idle mixture adjustment, check fuel boost pump output pressure, it must be set to 27 PSI.

This procedure is conducted on the ground with the engine inoperative, but warm and after the idle RPM has been adjusted to 1500 RPM, clutch disengaged and the normal basic idle mixture adjustments have been accomplished. Proceed as follows:

1. Disconnect metered fuel outlet line from fuel servo and cap line.
2. Connect flexible hose assembly to fuel outlet on fuel servo, place opposite end in graduated beaker.
3. Place throttle at idle stop position, mixture at idle cut off, turn fuel valve on, turn fuel boost pump on.
4. Purge fuel hose assembly by pushing idle cut off to full rich until a steady stream of fuel emits from the line into a beaker. Simultaneously pull the idle mixture to idle cut off and cover the end of the hose with your thumb. Temporarily store the hose above the injector outlet level and empty the beaker.

5. To measure idle fuel flow, hold the end of the flexible line, covered with your thumb, into the beaker and simultaneously start the stop watch, push the idle mixture to full rich, and uncover the end of the hose. Time for one minute simultaneously pull idle cut-off and cover end of the hose with your thumb. Record the amount of idle fuel flow measured.
6. The required idle fuel flow for a standard day, sea level condition is 98 cc, plus 2 cc., minus “0” cc/min. Corrections for non standard temperature should be taken from Figure 1.

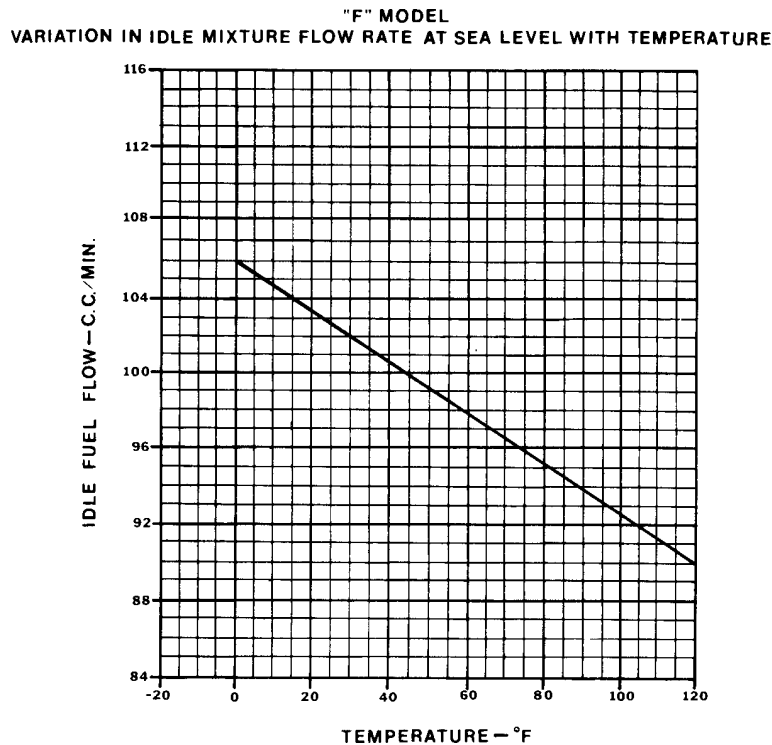


Figure 1

7. Corrections for variation in base altitude are made as follows: Reduce the idle flow rate 2.5 cc/min. for every 1000 ft. of pressure altitude above sea level; increase 2.5 cc/min. for every 1000 ft. below sea level.
8. Readjust idle mixture fuel flow as required to the corrected rates established in steps (6) & (7). Mechanical adjustments for idle mixture changes are defined in Section 13, paragraph D-(8), Page MM-13-34 of the F-28F and 280F Maintenance Manual. Note: record number of full or partial turns CW or CCW to change flow. Reconfirm proper setting by repeating step (5).
9. Remove test hose assembly from fuel servo outlet fitting, reattach hose assembly from fuel outlet to flow divider, and check for leaks with boost pump on.
10. Start engine, warm up and confirm idle RPM and proper acceleration characteristics.