

IGNITION EXCITERS - MAINTENANCE PRACTICES

1. General

- A. The ignition system consists of an ignition exciter box, two high tension leads, two spark igniters, an ignition monitor light on the annunciator panel, an ignition switch and a starter switch. Electrical energy from the exciter box, mounted on the right engine mount truss, is transmitted via two high tension leads to two igniters, at four and nine o'clock positions on the gas generator case adjacent to the fuel manifold. The ignition system is normally energized only during engine start.
- B. Ignition is controlled by two switches, located on left switch and circuit breaker panel, labeled IGNITION and STARTER. The ignition switch has two positions, ON and NORMAL. The NORMAL position arms ignition so that ignition will be obtained when the starter switch is activated. The NORMAL position is used during all ground starts and during air starts with starter assist. The ON position of switch provides continuous ignition, regardless of the position of starter switch. This position is used for air starts without starter assist and during encounters with heavy precipitation before induction system inertial separator is placed in bypass position.
- C. The starter switch has three position, OFF, START, and MOTOR. The OFF position shuts off ignition system current and is the normal position for all operations except engine start. The START position energizes engine ignition system provided ignition switch is in the NORMAL position. After the engine starts during a ground or air start, starter switch must be manually positioned to OFF.
- D. A green annunciator panel light, labeled IGNITION ON, will illuminate when ignition energy is being applied to igniters. A five amp push-to-reset type circuit breaker is provided to protect the ignition system primary wiring circuit.
- E. The ignition exciter is a sealed unit containing electronic components encased in an epoxy resin. The unit is energized during the engine starting sequence to initiate combustion in the combustion chamber and as desired during flight. The exciter transforms 28 VDC input to a high voltage output through solid state circuitry, a transformer, and diodes.

2. Tools, Equipment and Materials

- A. Refer to Ignition - General for a list of required tools, equipment and materials.

3. Ignition Exciter Removal/Installation

- A. Remove Ignition Exciter (Refer to Figure 201).

WARNING: Residual voltage in ignition exciter may be dangerously high. Ensure ignition is switched off and system has been inoperative for at least six minutes before removing any ignition components. Always disconnect coupling nuts at ignition exciter end first. Always use insulated tools to remove cable coupling.

- (1) Ensure battery switch is OFF.

- (2) Remove bus voltage supply cable connector (12) from input connector on ignition exciter (13).

CAUTION: Do not allow ignition cable braiding or ferrule to rotate when removing coupling nuts.

- (3) Remove two high-tension lead coupling nuts (11) from output connectors on ignition exciter (13) and remove leads.

- (4) Remove four nuts (10) and bolts (14) securing exciter to bracket and remove exciter.

- B. Install Ignition Exciter (Refer to Figure 201).

- (1) Secure ignition exciter (13) to bracket (4) with four bolts (14) and nuts (10). Ensure input connector is facing up.

CAUTION: Do not allow any lubricant to come in contact with central conductors of exciter connectors. Contact with conductors may result in a high resistance path, which could generate heat and oxidation.

- (2) Lightly coat threads of ignition exciter connectors with fluorocarbon spray lubricant.

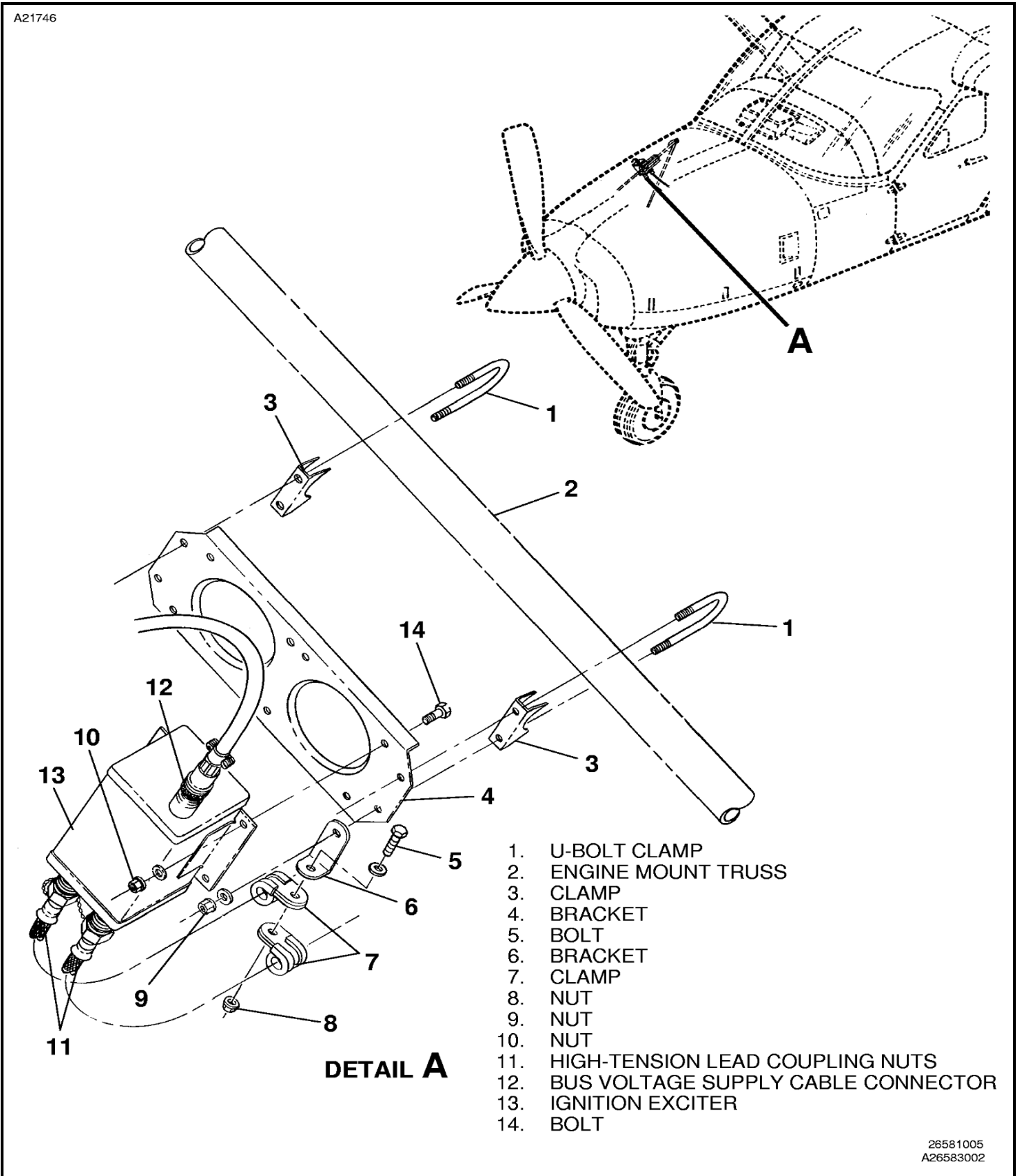
CAUTION: Do not allow ignition cable braiding ferrules to rotate when screwing on coupling nuts.

- (3) Install high-tension leads to exciter connectors and torque high-tension lead coupling nuts (11) finger tight plus 45 degrees. Safety wire nuts.

- (4) Connect bus voltage supply cable connector (12) to ignition exciter (13) and torque coupling nut finger tight plus 45 degrees. Safety wire nut.

Figure 201 : Sheet 1 : Ignition Exciter Installation

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