

service bulletin

M78-6 Supersedes M71-17 and M71-17 Supplement FAA-DER APPROVED

March 3, 1978

TO: Distributors, Dealers, Engine Overhaul Facilities, Owners and Operators of Teledyne Continental Motors' Aircraft Engines.

SUBJECT: REMOVAL AND RE-INSTALLATION OF SPECIAL ROSAN EXHAUST PORT STUDS

MODELS

AFFECTED: 6-285, 6-320, TSIO-520, GTSIO-520, Series as Applicable

Gentlemen:

Some of the models in the above mentioned engine series are equipped with cylinders which have a special Rosan ring-locked stud installed in the exhaust ports. These studs are either "size on size" or "step" type and require certain precautions be taken during removal to prevent cylinder head damage.

Removal of "Size on Size" Studs

The "size on size" captive lockring studs were designed with a small external diameter lockring to allow usage in locations where edge distance is a problem. The lockring is so small in diameter that the use of a typical Rosan "SM" or "BT" series milling tool is impractical and could cause unwanted removal of cylinder head material in the lockring area. Therefore, the following removal method is suggested:

1. Cut the stud off approximately flush with the surface of the cylinder head.
2. Center punch the remaining stud.
3. Locate the noted drill (#1) directly over the center of the stud and drill into the stud to the depth noted.
4. Center the second larger drill (#2) over the small hole and drill to the depth noted. This should cut the engagement between the stud serrations and the internal serrations of the lockring.

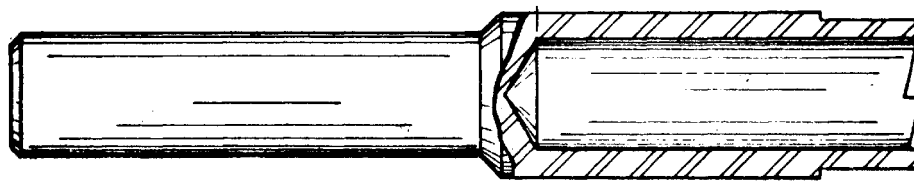
BASIC STUD NO.	<u>#1 REMOVAL DRILL</u> (INCHES)		<u>#2 REMOVAL DRILL</u> (INCHES)	
	<u>DIAMETER</u>	<u>MIN. DEPTH</u>	<u>DIAMETER</u>	<u>(+.015) DEPTH</u>
(.164 dia) SFC164	1/16 (.062)	.250	3/16 (.188)	.080
(.190 dia) SFC190	1/16 (.062)	.250	7/32 (.219)	.090
(.250 dia) SFC250	3/32 (.093)	.250	19/64 (.297)	.105
(.312 dia) SFC312	1/8 (.125)	.312	R (.339)	.120
(.375 dia) SFC375	1/8 (.125)	.375	13/32 (.406)	.120

5. The remaining locking will have a very thin wall. A sharp punch will easily break it away from the cylinder head.
6. Drive an "ezy out" into the small hole in the stud and apply removal torque.
7. Clean the hole.

Removal of "Step" Studs

The "step" type captive locking studs have a larger locking than the "size on size" type and therefore can be removed any one of two ways.

Method 1. Using the appropriate Rosan removal tool as pictured below, mill the locking away to the appropriate depth and, by any suitable means, apply removal torque to the stud. The remaining portion of the locking should lift out as the stud is being removed or can be broken away from the cylinder head using a sharp punch.



REMOVAL TOOL

FIGURE 1

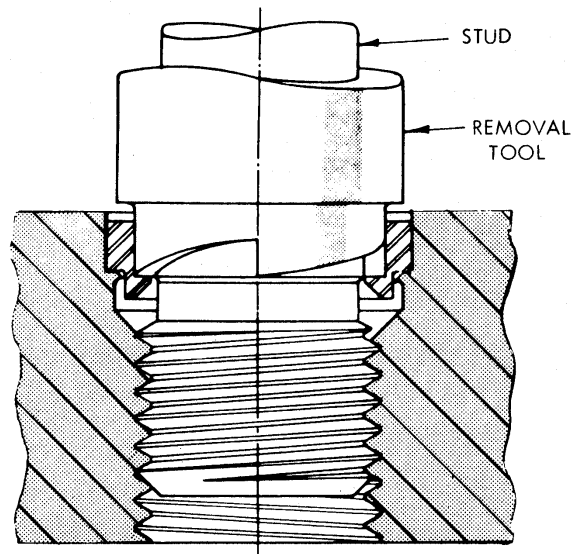


FIGURE 2

Method 2. Using the same procedure as for "size on size" stud removal, select the appropriate removal drill sizes with regard to the stud end dimension:

Example: To remove a "step" stud with a .250" dia. nut end and a .312" dia. stud end use the appropriate removal drills for a .312" dia. "size on size" stud.

1. With applicable wrench, install stud to depth shown. Note: Location of flange is important so that the lockring drive tool will not make contact with surface "A". Any impact or pressure on this surface may cause damage to threads in cylinder head resulting in a loose fit.
2. With applicable drive tool install lockring to depth shown.

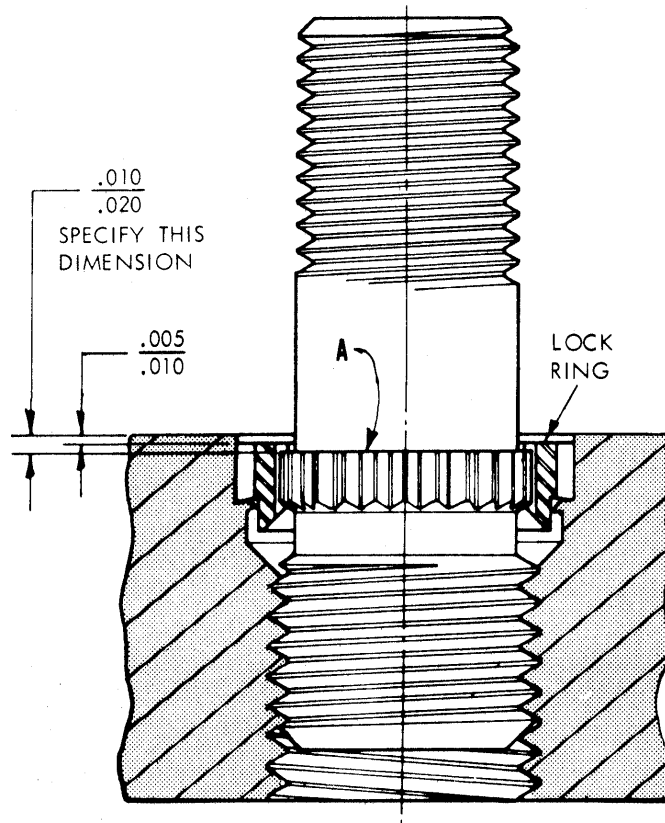


FIGURE 3

All special tools for installation and removal of Rosan Lockring Studs including tool kits and prices can be obtained from: Rosan, Inc., 2901 West Coast Highway, Newport Beach, California 92663, Phone (714/584-5533).