

SERVICE MANUAL

Landing Gear
Main Gear

5-5A CORROSION CONTROL ON LANDING GEAR SPRINGS.

a. General

- (1) The main landing gear springs are made from high strength steel that is shot peened on the lower surface to increase the fatigue life of the part.
- (2) The shot peened layer is between 0.010 and 0.020 inch thick.
- (3) If the protective layer of paint is chipped, scratched, or worn away, the steel may corrode (rust).

NOTE: Corrosion pits that extend past the shot peen layer of the gear spring will cause a significant decrease in the fatigue life of the spring.

- (4) Operation from unimproved surfaces increases the possibility of damage.

b. Corrosion removal and repair.

WARNING: Do not use chemical rust removers or paint strippers on landing gear springs. High-strength steel parts are very susceptible to hydrogen embrittlement. Acidic solutions, such as rust removers and paint strippers, can cause hydrogen embrittlement. Hydrogen embrittlement is an undetectable, time-delayed process. Since the process is time delayed, failure can occur after the part is returned to service.

- (1) Examine for signs of corrosion (red rust) if damage to the paint finish of the landing gear spring is found.
- (2) Carefully remove any rust by light sanding.
 - (a) The sanding must blend the damage into the adjacent area in an approximate 20:1 ratio.

EXAMPLE: An 0.005-inch-deep pit. The pit must be blended to a 0.10-inch radius or 0.20-inch diameter.
 - (b) Make sure the last sanding marks are along an inboard-to-outboard direction, or along the long dimension of the spring.
- (3) After the sanding is complete, measure the depth of the removed material from the damaged area.

NOTE: The maximum combined depth of removed material to the top and bottom or leading and trailing edge is not to be more than 0.063 inch at any two opposite points on the gear spring. This measurement limitation includes areas that have previously been damaged and repaired.

- (a) Make sure the depth of the damage area on the bottom of the gear spring is not more than 0.012 inch deep.
 - 1 If the damage is deeper than 0.012 inch deep and less than 0.063 inch deep, replace or shot peen the gear spring. The gear spring must be removed and sent to an approved facility to be shot peened.
 - a The shot peen specification is to be Almen intensity of 0.012 to 0.016 with 330 steel shot.
 - (b) Make sure the depth of any damage on the leading edge, trailing edge, or top of the gear spring is not more than 0.063 inch deep.
 - 1 If the damage is deeper than 0.063 inch deep, replace the gear spring.
- (4) Touch-up paint as required.

NOTE: Additional information regarding corrosion control can be found in FAA documents AC-43-4, Chapter 6, or AC43.13-1B Chapter 6.