

LANDING GEAR
GENERAL
MECHANICAL LANDING GEAR
(BB-2 thru BB-1192; BT-1 thru BT-30; BL-1 thru BL-72; BN-1 thru BN-4;
except BB-1158, BB-1167 and Airplanes with Kit No. 101-8018 Installed)
DESCRIPTION AND OPERATION

1. DESCRIPTION

Warning: When an airplane has experienced abnormal landing gear procedures of any type, as a safety precaution, place the airplane on jacks prior to performing any inspection or maintenance. Make sure that all three landing gears are down and locked prior to removing the airplane from jacks.

Caution: Jacking of an airplane for the purpose of landing gear operation, inspection, servicing or maintenance, should be accomplished within an enclosed building or hangar. In the interest of safety, should it become necessary to jack the airplane in the open, wind velocity in any direction and terrain variations, must be compensated for prior to jacking the airplane.

The tricycle type landing gear is operated by a split-field series-wound motor located on the forward side of the main center section spar. One field is used to drive the motor in one direction and the other drives the motor in the opposite direction. To prevent overtravel of the gear, a dynamic brake relay simultaneously breaks the power circuit to the motor and makes a complete circuit through the armature and the unused field winding. The motor then acts as a generator and the resulting electrical load on the armature stops the gear almost instantly. The landing gear motor is controlled by the landing gear extension switch located on the right side of the pilot's subpanel. The main gear actuator is driven by the torque shafts from the motor gearbox and the nose gear actuator is driven by a Duplex chain from a sprocket on the gearbox torque shaft. A spring-loaded friction clutch between the gearbox and the torque shaft protects the system in event of a mechanical malfunction. A 200 ampere, remote circuit breaker (located under the center floorboard on the landing gear electrical panel, forward of the front spar) protects the system on airplane serials BB-2 thru BB-185 from an electrical overload. A 150 ampere current limiter replaces the remote circuit breaker on BB-186 and subsequent model 200 series airplanes that utilize the mechanical landing gear. If Kit No. 101-3069-1 has been incorporated on these airplanes, a 60 ampere circuit breaker will be installed in place of the 150 ampere current limiter. Notched hook and plate attachments fitted to each main drag brace and the over-center action of the nose gear drag brace provide positive mechanical down-locks. A jackscrew in each actuator holds the gear in the retracted position.

To prevent accidental gear retraction when the airplane is on the ground, a safety switch on the right main strut breaks the control circuit whenever the strut is compressed.

Caution: Never rely on the safety switch to keep the gear down while taxiing or on landing or takeoff roll. Always check the position of the landing gear switch.

The landing gear incorporates air-oil type shock struts that are filled with both compressed air and hydraulic fluid. Make sure that the shock struts have the correct inflation before each flight.

Caution: Never tow or taxi the airplane with a flat strut. Even brief towing or taxiing with a deflated strut can cause severe damage.