

RETRACTABLE MAIN GEAR ANATOMY

For some, the ways in which retractable landing gear, umm, retract can be a mystery. The diagram at right, which depicts a typical—but by no means all—retractable main gear assembly, might help understand how all this stuff works.

1. HYDRAULIC ACTUATOR

The solid lines depict the hydraulic actuator in its retracted position; the dotted lines show the mechanism when fully retracted. The red arcs depict its range of movement.

2. ACTUATOR ARM

This component serves a dual purpose: It anchors the hydraulic cylinder, giving it something to push/pull against and also serves to brace the strut against side loads when in the down and locked position.

3. STRUT

Another dual-purpose component, the strut provides shock absorption and mounts the wheel/tire assembly. The brake assembly (not shown), if any, usually is mounted to the strut or gear leg. It pivots at the top (blue dot).

4. AXLE

The wheel/tire are mounted to the axle and rotate on it. The axle is fixed.

5. WHEEL/TIRE ASSEMBLY

Omitted from this drawing is the main wheel brake assembly, if any. The blue arc describes the wheel's motion when the gear is retracted and extended.

6. WHEEL WELL

Where the wheel, strut and other components are stored when the gear is retracted. It may or may not be covered by a gear door, depending on aircraft model, to minimize drag.

