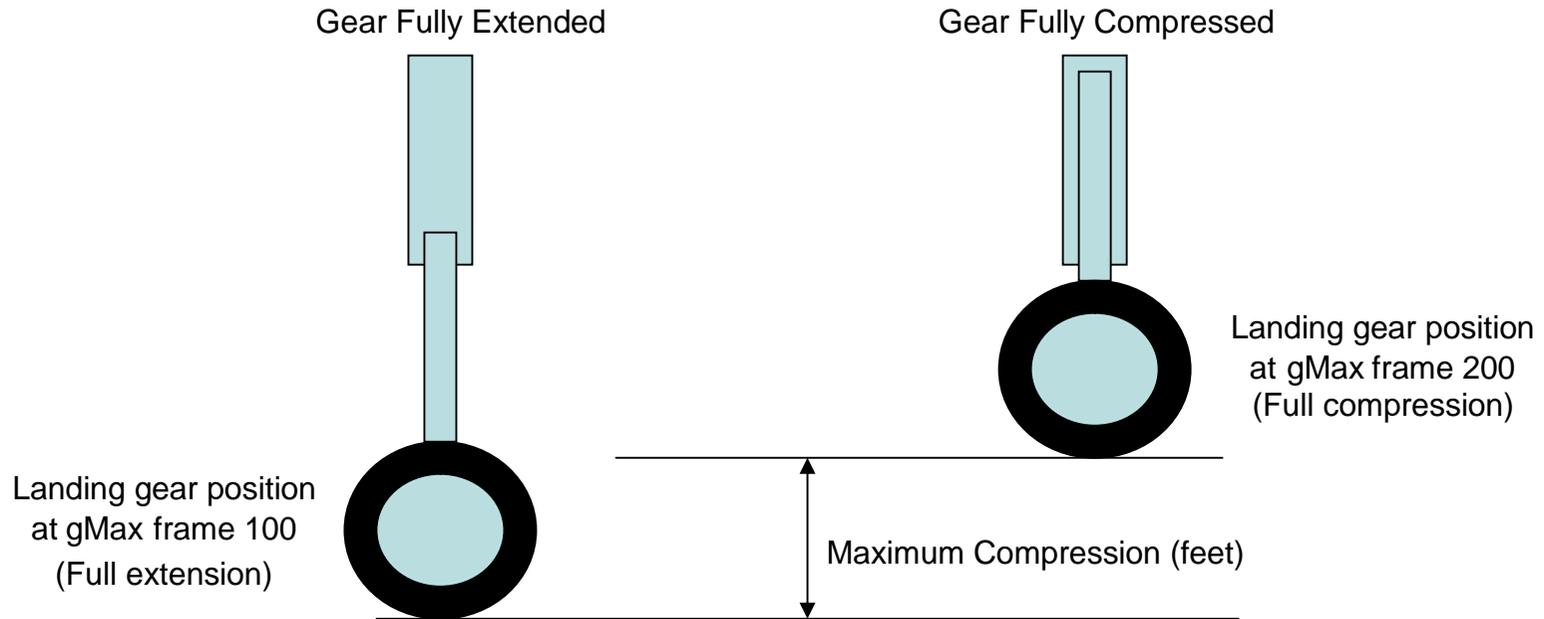


# How to Configure Landing Gear Contact Points for FS2004

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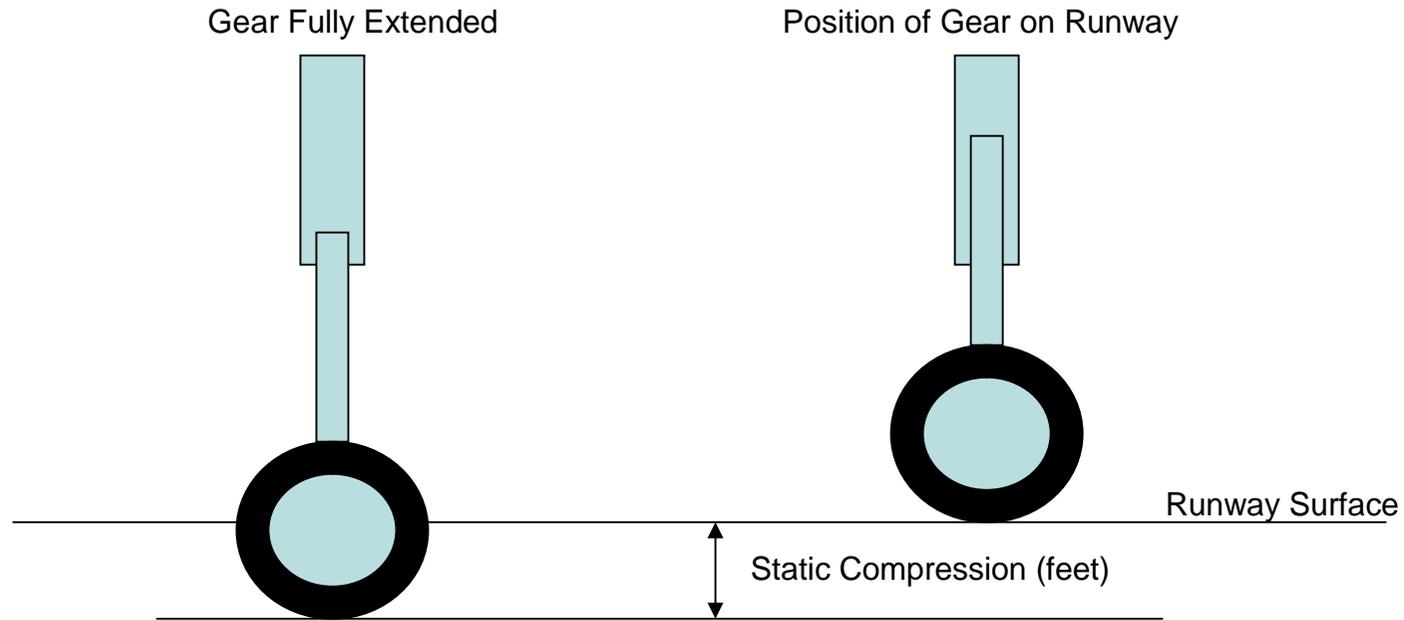
## Maximum Compression



Maximum Compression is the total distance the wheel can travel from fully extended to fully compressed. This distance is determined by the animation frames in the visual model.

The fully extended position is visible when the wheels are down in the air, but the fully compressed position will almost never be visible.

## Static Compression

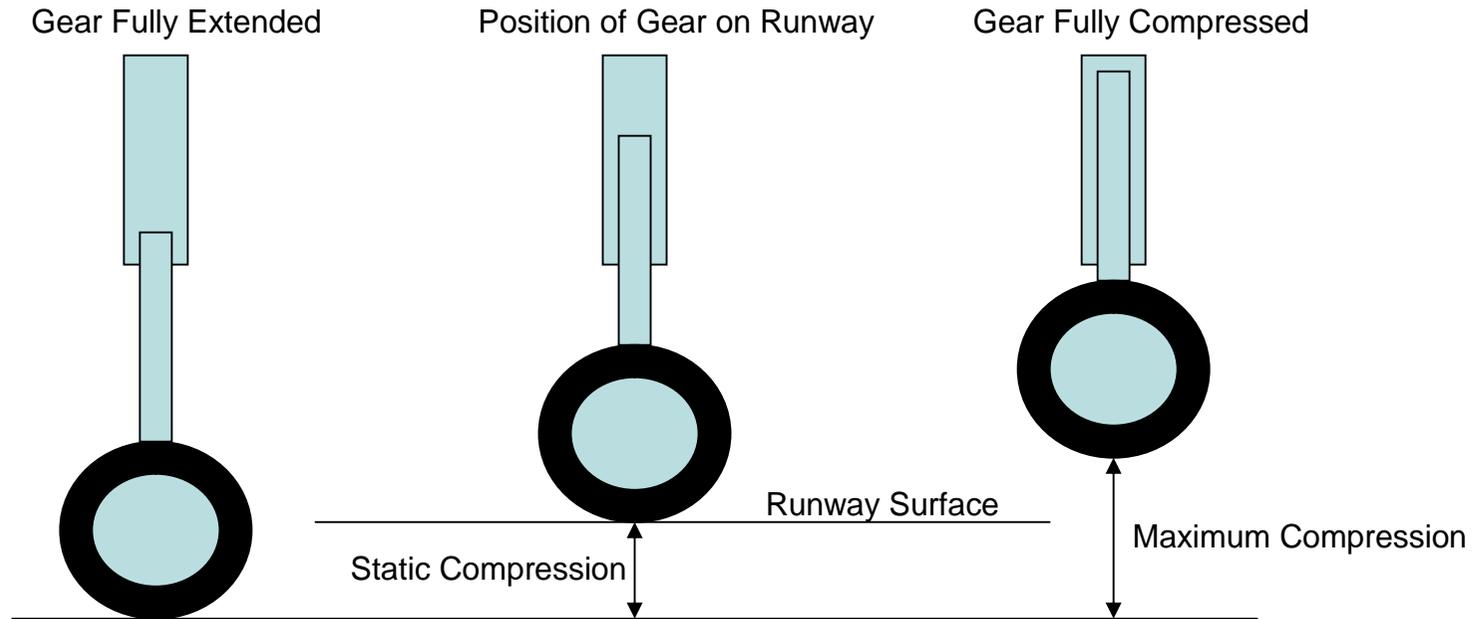


When an aircraft is loaded, it is positioned on the runway with the landing gear compressed by an amount specified by the Static Compression parameter for each contact point.

Static Compression should be set to a value less than Maximum Compression.

At run time FS calculates a spring constant for each landing gear using Static Compression and the weight supported by the gear. The lower the value of Static Compression, the stiffer the spring.

## Compression Ratio



Static Compression and Compression Ratio values are required for each landing gear contact point in the aircraft configuration file. Static Compression can be set to any value less than Maximum Compression, and the Compression Ratio can be calculated using the following formula:

$$\text{Compression Ratio} = \text{Maximum Compression} / \text{Static Compression}$$

**Note:** If **Static Compression** is changed, **Compression Ratio** must be recalculated.

If the values of Static Compression and Compression Ratio for a model are correct, Maximum Compression can be found using the following formula:

$$\text{Maximum Compression} = \text{Static Compression} * \text{Compression Ratio}$$

## Summary

- The amount of suspension travel in the animation of the visual model determines the value of Maximum Compression.
- In order to coordinate the flight model with the visual model, it is essential to know the exact value of Maximum Compression for each landing gear.
- The value of Static Compression should be less than Maximum Compression.
- The lower the value of Static Compression, the stiffer the spring is for the landing gear.
- The amount of suspension travel in the visual model has a direct affect on the stiffness of the landing gear.
- The stiffness of the landing gear has a direct affect on ground handling, takeoff, and landing performance.
- **Compression Ratio** must be calculated from Static Compression and Maximum Compression.
- Every time Static Compression is changed, **Compression Ratio** must be re-calculated.

**Failure to properly calculate Compression Ratio is the most common cause of landing gear problems!**