



## Table of Contents



- [What is Crawling?](#)
  - [Causes of Crawling:](#)
  - [How to fix it](#)
  - [Effects](#)

## What is Crawling?

Crawling is a phenomenon where a three phase induction motor runs at a speed significantly lower than its synchronous speed, typically around one-seventh of the synchronous speed. This can cause the motor to operate inefficiently and fail to deliver the expected performance.

### Causes of Crawling:

1. **Harmonic Torques:** The primary cause of crawling is the presence of harmonic frequencies in the power supply, especially the seventh harmonic. These harmonics create additional torque components that interfere with the motor's operation.
2. **Design and Construction:** Certain design features of the motor, such as the number of stator slots, can make it more susceptible to crawling by amplifying the effects of harmonic torques.

### How to fix it

- **Skewed Rotor Slots:** Tilt the rotor slots to reduce the impact of harmonics.
- **Clean Power Supply:** Use a good quality power supply with fewer harmonics.
- **Proper Design:** Ensure the motor is designed to minimize the effects of harmonics.
- **Harmonic Filters:** Use filters to clean up the electrical supply and remove unwanted harmonics.

### Effects

- Motor runs too slowly.
- Efficiency drops.
- Motor can overheat and get damaged.