Cyclopentadienyl metal hydrides can react in 3 different ways:

1. **Protonation**, governed by the Lewis basicity of the central metal. Using Lewis acids like BF₃, which can add to cyclopentadienyl metal halides.

2. **Adduct formation**, when moieties associate through hydride bridges. The formation of Cp₂MH units which then dimerize in various ways is a characteristic feature of electron-poor metallocenes, where the number of valence electrons is less than 16.

- Cyclopentadienyl metal halides can be synthesized by Wilkinson’s reaction.

- Cyclopentadienyl metal halides can react to form Cp-metal alkyls/Cp-metal aryls:

**Ring Slippages**
Cp rings can move from being pentahapto (bound 5 carbons) to being trihapto (bound through 3 carbons).