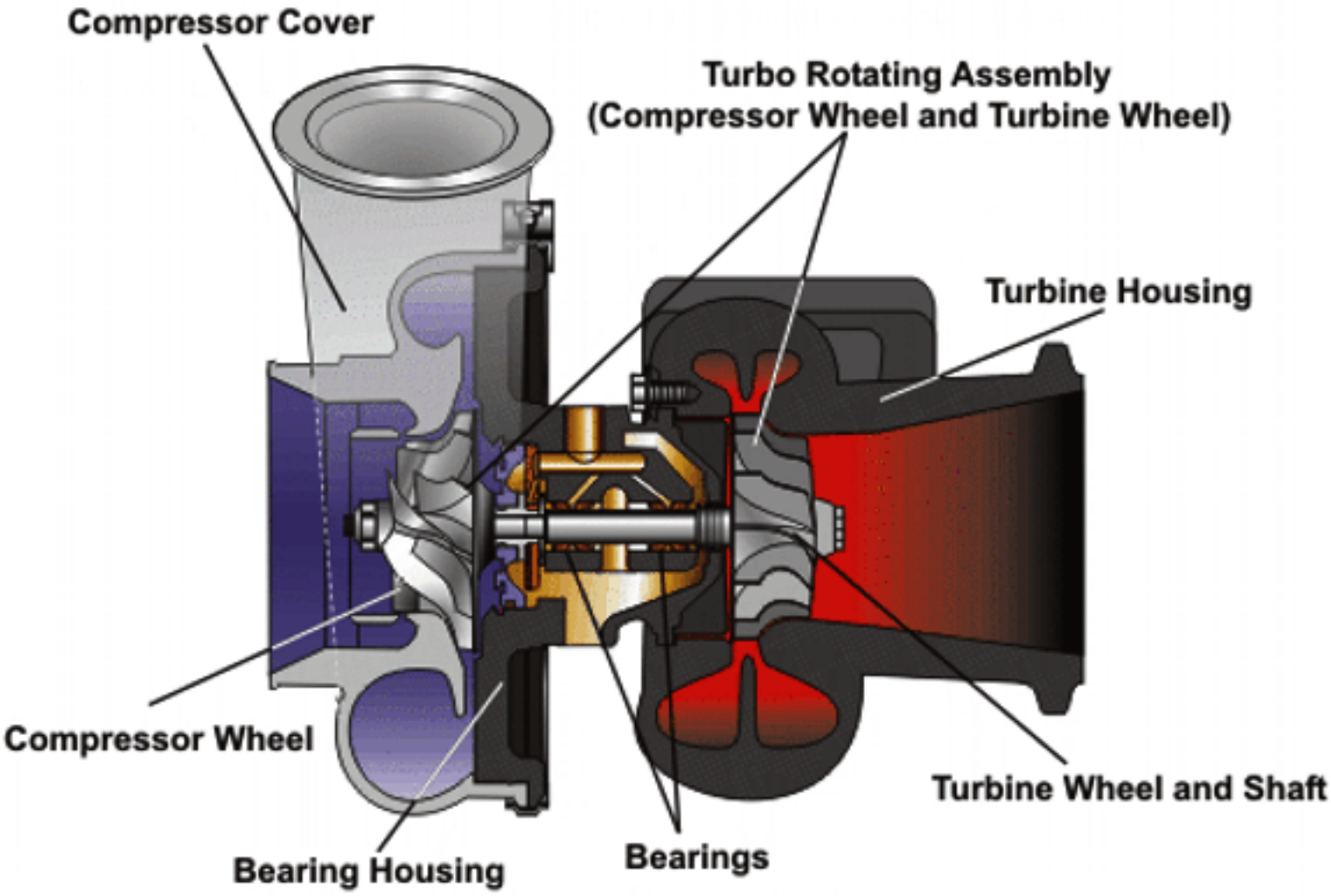
Typical Turbocharger



The turbo rotating assembly (compressor wheel/shaft/turbine wheel) turns at speeds from 10, 000 to 130, 000 rpm when the engine is running. Perfect balance is crucial for the wheels and shaft…individually and together as a rotating unit. The shaft must turn on center with little axial or radial run out. Any damaging gyration of the rotating shaft within the bearing bores, or of the bearing within the center housing, is "shaft motion". Shaft motion does not occur without some cause, such as a lubrication failure, foreign material contamination, or an imbalanced rotating assembly.

All parts of the turbocharger must stay perfectly aligned. Improper mounting of the turbocharger from piping can cause the housing and thus the rotating assembly to bind and result in turbo failure. Any contact between rotating and stationary parts will quickly cause serious damage.

The precision nature of the parts, the high operating speeds and high temperatures necessitate a constant supply of clean lubricant to the turbocharger. With the engine under load, insufficient oil for a few seconds can cause damage.