Coil assemblies (2) of electric motors (1) produce heat that can be a disadvantage when needing the electric motor (1) for high precision positioning applications. To reduce the negative impact of the heat, the coils (26a, 26b, 26c) are arranged in an internally cooled housing (21). The housing (21) has an outermost layer (25) at least on the side lacing the magnet assembly (3) of the electric motor (1), the outermost layer (25) being made of low or non-electrically conductive, non-magnetic or nearly non-magnetic material. The outermost layer (25) prevents heat radiation to the environment.