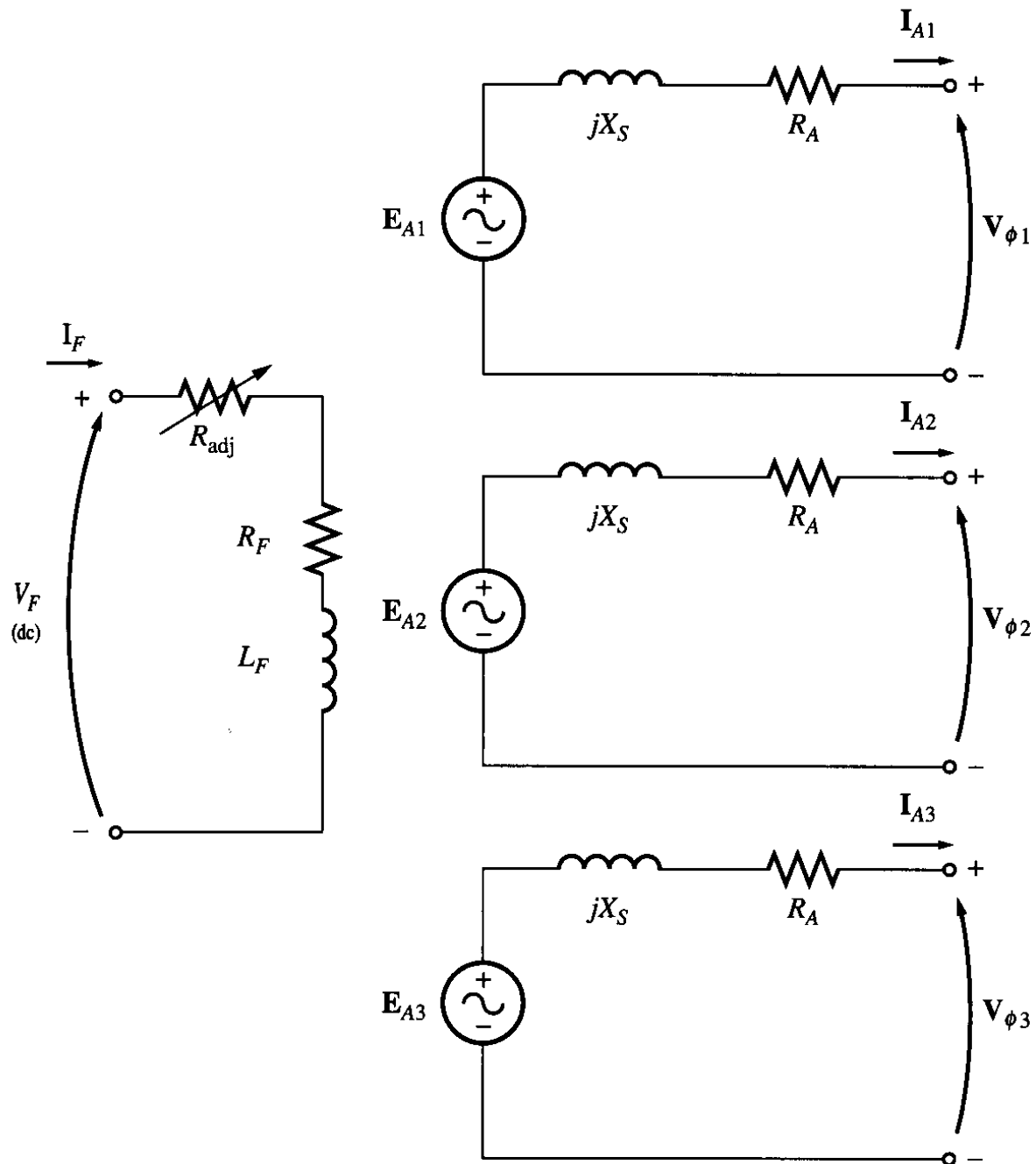
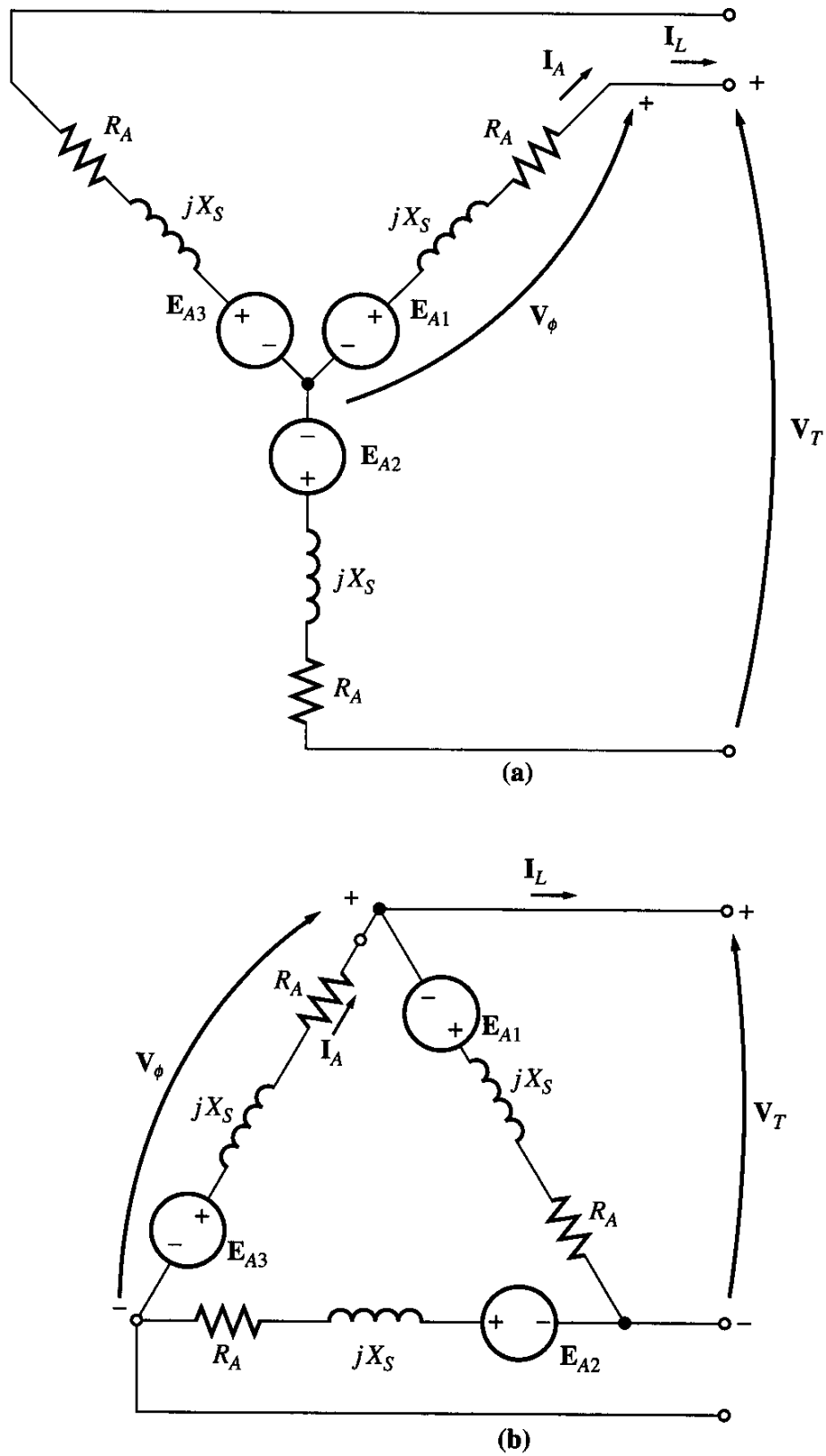


**FIGURE 4-10**

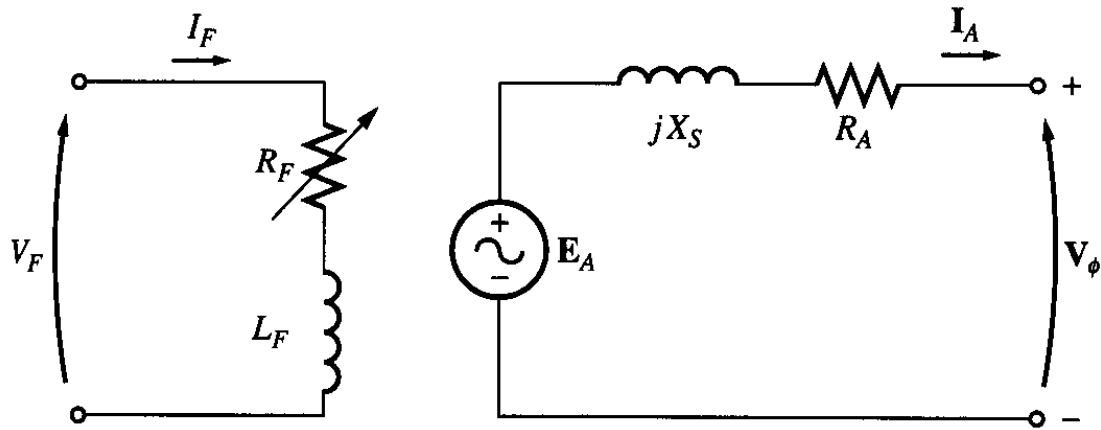
The full equivalent circuit of a three-phase synchronous generator.

From Chapman, Electric Machinery Fundamentals (5e)

**FIGURE 4-11**

The generator equivalent circuit connected in (a) Y and (b) Δ .

From Chapman, Electric Machinery Fundamentals (5e)

**FIGURE 4-12**

The per-phase equivalent circuit of a synchronous generator. The internal field circuit resistance and the external variable resistance have been combined into a single resistor R_F .