In the case of single-layer windings, three cases are considered.

1. With consequent-pole (crown) windings, the elementary number of coils is $q_1 p$, where q_1 is the number of slots per pole per phase and p is the number of pairs of poles. The number of parallel branches a is chosen so that $q_1 p/a$ is an integer.
2. End-turns lying in two planes can be realized only with symmetric parallel branches if the ratio $p/2a$ is an integer. It should be noted that a winding with an odd number p can be realized only with distorted coils, which are difficult to manufacture.
3. In the case of windings with end-turns in three planes, there are $q_1/2$ elementary coils in one coil group and the number of coil groups is $2p$ per phase. With a parallel connection, a number of elementary coils have to be placed in the parallel branches, and the resultant coil length has to be identical for total symmetry. If the ratios $2p/a$ and $q_1 p/a$ are both integers, the winding is totally symmetrical.

In the case of double-layer windings, the number of ele mentary coils is equal to the number of slots. There are fewer obstacles to creating parallel branches in this case.