$$|\langle n \rangle\rangle - |\psi_{1,\mathrm{Sys}}\rangle - |U| Z$$

$$T \rightarrow |q_{(n)}\rangle - |\psi_{1,\mathrm{Sys}}\rangle - |U| Z$$

$$\vdots \qquad \vdots \qquad \vdots$$

$$|\psi_{n,\mathrm{Sys}}\rangle - |U| Z$$

$$-|\psi_{1,\mathrm{Lab}}\rangle - |\psi_{2,\mathrm{Lab}}\rangle - |\psi_{n,\mathrm{Lab}}\rangle - |\psi_{n,\mathrm{L$$