$$H_{48} = \begin{bmatrix} -2\,h - 6\,\mu + U & 0 & \mathbf{i}\,\sqrt{3}\,t \\ 0 & -2\,h - 6\,\mu + U & \mathbf{i}\,\sqrt{\frac{3}{2}}\,t - \frac{3\,t}{\sqrt{2}} \\ -\mathbf{i}\,\sqrt{3}\,t & -\mathbf{i}\,\sqrt{\frac{3}{2}}\,t - \frac{3\,t}{\sqrt{2}} & -2\,h - 6\,\mu + U \end{bmatrix}$$