$$K_{41}^{1} = \begin{bmatrix} 0 & \frac{\mathbf{i}\left(3\,\mathbf{i}+\sqrt{3}\right)}{\sqrt{2}} & 0 \\ \frac{3+\mathbf{i}\,\sqrt{3}}{\sqrt{2}} & -\mathbf{i}\,\sqrt{3} & \frac{-\left(U+\mathbf{i}\,\sqrt{3}\,U\right)}{2\,t} \\ 0 & \frac{U-\mathbf{i}\,\sqrt{3}\,U}{2\,t} & \mathbf{i}\,\sqrt{3} \end{bmatrix}$$