$$
K^1_{137} \quad = \quad
\begin{bmatrix}
\frac{-\mathbf{i}}{\sqrt{3}} & \frac{(11-\mathbf{i}\sqrt{3})\,U}{12\,t} & 0 & \mathbf{i}\sqrt{2}-\frac{1}{\sqrt{6}} & 0 & \frac{-3\,\mathbf{i}+\sqrt{3}}{6\sqrt{2}} & 0 & \frac{-3\,\mathbf{i}+\sqrt{3}}{2\sqrt{2}} & 0 & 0 & \frac{-\mathbf{i}}{\sqrt{2}}+\frac{1}{\sqrt{6}} & -\sqrt{\frac{2}{3}} & \frac{1}{\sqrt{2}}+\frac{\mathbf{i}}{\sqrt{6}} & \frac{\frac{\mathbf{i}}{3}\sqrt{2}\,(\mathbf{i}+\sqrt{3})\,U}{t} & \frac{-\mathbf{i}}{2}+\frac{1}{\sqrt{3}} & \frac{(3\,\mathbf{i}+\sqrt{3})\,U}{12\,t} \\
\frac{\frac{-\mathbf{i}}{12}\,(-11\,\mathbf{i}+\sqrt{3})\,U}{t} & \frac{-\mathbf{i}}{\sqrt{3}} & 0 & 0 & \frac{\mathbf{i}}{\sqrt{2}} & 0 & 0 & 0 & \sqrt{\frac{2}{3}}+\frac{\mathbf{i}}{\sqrt{2}} & \frac{3\,\mathbf{i}+\sqrt{3}}{2} & \frac{-((9\,\mathbf{i}+5\sqrt{3})\,U)}{6\sqrt{2}\,t} & \frac{(-3\,\mathbf{i}+5\sqrt{3})\,U}{6\sqrt{2}\,t} & \frac{\sqrt{2}\,U-\mathbf{i}\sqrt{6}\,U}{6\,t} & -\left(\frac{1}{\sqrt{2}}\right)-\frac{\mathbf{i}}{\sqrt{6}} & \frac{(-3\,\mathbf{i}+\sqrt{3})\,U}{4\,t} & \frac{6\,\mathbf{i}+\sqrt{3}}{6} \\
0 & 0 & -\mathbf{i}\sqrt{3} & \frac{U-\mathbf{i}\sqrt{3}\,U}{2\,t} & 0 & 0 & \frac{3-\mathbf{i}\sqrt{3}}{\sqrt{2}} & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\mathbf{i}\sqrt{2}+\frac{1}{\sqrt{6}} & 0 & \frac{-(U+\mathbf{i}\sqrt{3}\,U)}{2\,t} & 0 & 0 & \frac{\mathbf{i}}{2}\,(\mathbf{i}+\sqrt{3}) & 0 & \frac{\mathbf{i}}{2}\,(\mathbf{i}+\sqrt{3}) & 0 & 0 & 0 & 0 & \mathbf{i}-\frac{1}{\sqrt{3}} & 0 & -\left(\frac{1}{\sqrt{2}}\right) & 0 \\
0 & \frac{\mathbf{i}}{\sqrt{2}} & 0 & 0 & 0 & \frac{\frac{\mathbf{i}}{2}\,(\mathbf{i}+\sqrt{3})\,U}{t} & 0 & \frac{U}{t} & 1 & 0 & 0 & 0 & 0 & \mathbf{i}+\sqrt{3} & 0 & -\left(\frac{1}{\sqrt{2}}\right) \\
\frac{-(3\,\mathbf{i}+\sqrt{3})}{6\sqrt{2}} & 0 & 0 & \frac{1+\mathbf{i}\sqrt{3}}{2} & \frac{U+\mathbf{i}\sqrt{3}\,U}{2\,t} & 0 & \frac{\sqrt{2}\,U}{t} & 1 & \frac{\frac{\mathbf{i}}{2}\,(\mathbf{i}+\sqrt{3})\,U}{t} & \frac{\sqrt{2}\,U}{t} & 1 & 1 & -\mathbf{i}-\frac{1}{\sqrt{3}} & 0 & \frac{\frac{-\mathbf{i}}{2}\,(-\mathbf{i}+\sqrt{3})}{\sqrt{2}} & 0 \\
0 & 0 & \frac{-3-\mathbf{i}\sqrt{3}}{\sqrt{2}} & 0 & 0 & -\left(\frac{\sqrt{2}\,U}{t}\right) & 0 & \frac{\sqrt{2}\,U}{t} & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\frac{-(3\,\mathbf{i}+\sqrt{3})}{2\sqrt{2}} & 0 & 0 & \frac{1+\mathbf{i}\sqrt{3}}{2} & -\left(\frac{U}{t}\right) & -1 & -\left(\frac{\sqrt{2}\,U}{t}\right) & 0 & \frac{U-\mathbf{i}\sqrt{3}\,U}{2\,t} & \frac{\mathbf{i}\,(\mathbf{i}+\sqrt{3})\,U}{\sqrt{2}\,t} & \frac{-\mathbf{i}}{2}\,(-\mathbf{i}+\sqrt{3}) & \frac{-\mathbf{i}}{2}\,(-\mathbf{i}+\sqrt{3}) & 0 & 0 & \frac{\sqrt{2}+\mathbf{i}\sqrt{6}}{4} & 0 \\
0 & -\sqrt{\frac{2}{3}}+\frac{\mathbf{i}}{\sqrt{2}} & 0 & 0 & -1 & \frac{U+\mathbf{i}\sqrt{3}\,U}{2\,t} & 0 & \frac{-(U+\mathbf{i}\sqrt{3}\,U)}{2\,t} & 0 & \frac{1-\mathbf{i}\sqrt{3}}{\sqrt{2}} & 0 & 0 & 0 & -\mathbf{i}+\frac{1}{\sqrt{3}} & 0 & \frac{1}{\sqrt{2}} \\
0 & \frac{3\,\mathbf{i}-\sqrt{3}}{2} & 0 & 0 & 0 & -\left(\frac{\sqrt{2}\,U}{t}\right) & 0 & \frac{(1+\mathbf{i}\sqrt{3})\,U}{\sqrt{2}\,t} & \frac{-1-\mathbf{i}\sqrt{3}}{\sqrt{2}} & 0 & 0 & 0 & 0 & 0 & 0 & \frac{1-\mathbf{i}\sqrt{3}}{2} \\
\frac{-(3\,\mathbf{i}+\sqrt{3})}{3\sqrt{2}} & \frac{(-9\,\mathbf{i}+5\sqrt{3})\,U}{6\sqrt{2}\,t} & 0 & 0 & 0 & -1 & 0 & \frac{1-\mathbf{i}\sqrt{3}}{2} & 0 & 0 & 0 & 0 & \mathbf{i}+\frac{1}{\sqrt{3}} & \frac{(3\,\mathbf{i}+\sqrt{3})\,U}{3\,t} & -\sqrt{2} & \frac{\sqrt{2}\,U+\mathbf{i}\sqrt{6}\,U}{4\,t} \\
\sqrt{\frac{2}{3}} & \frac{-((3\,\mathbf{i}+5\sqrt{3})\,U)}{6\sqrt{2}\,t} & 0 & 0 & 0 & -1 & 0 & \frac{1-\mathbf{i}\sqrt{3}}{2} & 0 & 0 & 0 & 0 & \frac{-2}{\sqrt{3}} & \frac{2\,U}{\sqrt{3}\,t} & \frac{1+\mathbf{i}\sqrt{3}}{\sqrt{2}} & \frac{(3-\mathbf{i}\sqrt{3})\,U}{2\sqrt{2}\,t} \\
-\left(\frac{1}{\sqrt{2}}\right)+\frac{\mathbf{i}}{\sqrt{6}} & \frac{\frac{-\mathbf{i}}{3}\,(-\mathbf{i}+\sqrt{3})\,U}{\sqrt{2}\,t} & 0 & \mathbf{i}+\frac{1}{\sqrt{3}} & 0 & -\mathbf{i}+\frac{1}{\sqrt{3}} & 0 & 0 & 0 & 0 & \mathbf{i}-\frac{1}{\sqrt{3}} & \frac{2}{\sqrt{3}} & \frac{-\mathbf{i}}{\sqrt{3}} & \frac{(2+\mathbf{i}\sqrt{3})\,U}{3\,t} & \frac{\mathbf{i}}{\sqrt{2}}+\frac{1}{\sqrt{6}} & \frac{(3\,\mathbf{i}+\sqrt{3})\,U}{3\sqrt{2}\,t} \\
\frac{\sqrt{2}\,(1+\mathbf{i}\sqrt{3})\,U}{3\,t} & \frac{1}{\sqrt{2}}-\frac{\mathbf{i}}{\sqrt{6}} & 0 & 0 & \mathbf{i}-\sqrt{3} & 0 & 0 & 0 & -\mathbf{i}-\frac{1}{\sqrt{3}} & 0 & \frac{-((-3\,\mathbf{i}+\sqrt{3})\,U)}{3\,t} & \frac{-2\,U}{\sqrt{3}\,t} & \frac{\frac{\mathbf{i}}{3}\,(2\,\mathbf{i}+\sqrt{3})\,U}{t} & \frac{-\mathbf{i}}{\sqrt{3}} & 0 & \frac{\mathbf{i}}{\sqrt{2}}+\frac{1}{\sqrt{6}} \\
\frac{-\mathbf{i}}{2}-\frac{1}{\sqrt{3}} & \frac{-((3\,\mathbf{i}+\sqrt{3})\,U)}{4\,t} & 0 & \frac{1}{\sqrt{2}} & 0 & \frac{\sqrt{2}-\mathbf{i}\sqrt{6}}{4} & 0 & \frac{\frac{\mathbf{i}}{2}\,(\mathbf{i}+\sqrt{3})}{\sqrt{2}} & 0 & 0 & \sqrt{2} & \frac{\mathbf{i}\,(\mathbf{i}+\sqrt{3})}{\sqrt{2}} & \frac{\mathbf{i}}{\sqrt{2}}-\frac{1}{\sqrt{6}} & 0 & \frac{-\mathbf{i}}{2}\sqrt{3} & \frac{(3-\mathbf{i}\sqrt{3})\,U}{4\,t} \\
\frac{-((-3\,\mathbf{i}+\sqrt{3})\,U)}{12\,t} & \mathbf{i}-\frac{1}{2\sqrt{3}} & 0 & 0 & \frac{1}{\sqrt{2}} & 0 & 0 & 0 & -\left(\frac{1}{\sqrt{2}}\right) & \frac{-\mathbf{i}}{2}\,(-\mathbf{i}+\sqrt{3}) & \frac{\frac{\mathbf{i}}{2}\,(\mathbf{i}+\sqrt{3})\,U}{\sqrt{2}\,t} & \frac{\frac{-\mathbf{i}}{2}\,(-3\,\mathbf{i}+\sqrt{3})\,U}{\sqrt{2}\,t} & \frac{-((-3\,\mathbf{i}+\sqrt{3})\,U)}{3\sqrt{2}\,t} & \frac{\mathbf{i}}{\sqrt{2}}-\frac{1}{\sqrt{6}} & \frac{\frac{-\mathbf{i}}{4}\,(-3\,\mathbf{i}+\sqrt{3})\,U}{t} & \frac{\mathbf{i}}{2}\sqrt{3}
\end{bmatrix}
$$