$$K_{37}^{2} = \begin{bmatrix}
\frac{-59\,U}{12\,t} & \frac{16\,\mathbf{i}\,(\mathbf{i}+\sqrt{3})\,t^2+(-13-\mathbf{i}\,\sqrt{3})\,U^2}{24\,t^2} & \sqrt{\frac{2}{3}}+\mathbf{i}\,\sqrt{2} & \frac{(3\,\mathbf{i}+2\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} & 0 & \frac{(-3\,\mathbf{i}+\sqrt{3})\,U}{4\,\sqrt{2}\,t} & 0 & \frac{-((-3\,\mathbf{i}+\sqrt{3})\,U)}{12\,\sqrt{2}\,t} & \frac{-(\sqrt{2}\,(3\,\mathbf{i}+\sqrt{3}))}{3} & 0 & \frac{-((-3\,\mathbf{i}+\sqrt{3})\,U)}{6\,\sqrt{2}\,t} & \frac{(-6\,\mathbf{i}+5\,\sqrt{3})\,U}{3\,\sqrt{2}\,t} & \frac{(-1-9\,\mathbf{i}\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} & \frac{(8-8\,\mathbf{i}\,\sqrt{3})\,t^2+(-1-\mathbf{i}\,\sqrt{3})\,U^2}{6\,\sqrt{2}\,t^2} & \frac{-((18\,\mathbf{i}+7\,\sqrt{3})\,U)}{12\,t} & \frac{-(16\,(-3\,\mathbf{i}+\sqrt{3})\,t^2+3\,(3\,\mathbf{i}+\sqrt{3})\,U^2)}{24\,t^2} \\
\frac{-16\,\mathbf{i}\,(-\mathbf{i}+\sqrt{3})\,t^2+\mathbf{i}\,(13\,\mathbf{i}+\sqrt{3})\,U^2}{24\,t^2} & \frac{-41\,U}{12\,t} & \frac{(3\,\mathbf{i}+4\,\sqrt{3})\,U}{3\,\sqrt{2}\,t} & 0 & \frac{(-3\,\mathbf{i}+2\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} & -\left(\frac{-3\,\mathbf{i}+\sqrt{3}}{\sqrt{2}}\right) & 0 & \frac{3\,\mathbf{i}+\sqrt{3}}{\sqrt{2}} & \frac{(3\,\mathbf{i}+4\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} & \frac{-((3\,\mathbf{i}+\sqrt{3})\,U)}{12\,t} & \frac{(9\,\mathbf{i}+5\,\sqrt{3})\,U^2}{12\,\sqrt{2}\,t^2} & \frac{(3\,\mathbf{i}-5\,\sqrt{3})\,U^2}{12\,\sqrt{2}\,t^2} & \frac{(-2-2\,\mathbf{i}\,\sqrt{3})\,t^2+(1-\mathbf{i}\,\sqrt{3})\,U^2}{3\,\sqrt{2}\,t^2} & \frac{(-1+9\,\mathbf{i}\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} & \frac{8\,(3\,\mathbf{i}+\sqrt{3})\,t^2+(-3\,\mathbf{i}+\sqrt{3})\,U^2}{24\,t^2} & \frac{15\,\mathbf{i}-2\,\sqrt{3})\,U}{12\,t} \\
\sqrt{\frac{2}{3}}-\mathbf{i}\,\sqrt{2} & \frac{(-3\,\mathbf{i}+4\,\sqrt{3})\,U}{3\,\sqrt{2}\,t} & \frac{-3\,U}{2\,t} & \frac{(3+\mathbf{i}\,\sqrt{3})\,U^2}{4\,t^2} & 0 & -2 & \frac{\sqrt{2}\,U+\mathbf{i}\,\sqrt{6}\,U}{4\,t} & 1-\mathbf{i}\,\sqrt{3} & \frac{U}{t} & 0 & 0 & 0 & 2\,\mathbf{i}-\frac{2}{\sqrt{3}} & \frac{-((-3\,\mathbf{i}+\sqrt{3})\,U)}{3\,t} & 0 & \frac{U}{\sqrt{2}\,t} \\
\frac{(-3\,\mathbf{i}+2\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} & 0 & \frac{(3-\mathbf{i}\,\sqrt{3})\,U^2}{4\,t^2} & \frac{-3\,U}{t} & -2-2\,\mathbf{i}\,\sqrt{3} & \frac{(3+\mathbf{i}\,\sqrt{3})\,U}{4\,t} & 0 & \frac{(3+\mathbf{i}\,\sqrt{3})\,U}{4\,t} & 0 & 0 & \frac{U+\mathbf{i}\,\sqrt{3}\,U}{2\,t} & \frac{U+\mathbf{i}\,\sqrt{3}\,U}{2\,t} & \frac{(3\,\mathbf{i}+\sqrt{3})\,U}{6\,t} & 0 & \frac{-\frac{3\,\mathbf{i}}{2}\,\sqrt{\frac{3}{2}}\,U}{t} & 0 \\
0 & \frac{(3\,\mathbf{i}+2\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} & 0 & -2+2\,\mathbf{i}\,\sqrt{3} & \frac{-4\,U}{t} & \frac{(1-\mathbf{i}\,\sqrt{3})\,U^2}{4\,t^2} & \frac{(3-\mathbf{i}\,\sqrt{3})\,U}{\sqrt{2}\,t} & \frac{U^2}{2\,t^2} & \frac{\frac{-3\,\mathbf{i}}{2}\,\sqrt{3}\,U}{t} & 0 & 0 & 0 & 0 & \frac{(-3\,\mathbf{i}+\sqrt{3})\,U}{6\,t} & 0 & \frac{U}{2\,\sqrt{2}\,t} \\
\frac{(3\,\mathbf{i}+\sqrt{3})\,U}{4\,\sqrt{2}\,t} & -\left(\frac{3\,\mathbf{i}+\sqrt{3}}{\sqrt{2}}\right) & -2 & \frac{(3-\mathbf{i}\,\sqrt{3})\,U}{4\,t} & \frac{(1+\mathbf{i}\,\sqrt{3})\,U^2}{4\,t^2} & \frac{-5\,U}{t} & -\left(\frac{U^2}{\sqrt{2}\,t^2}\right) & \frac{\frac{-\mathbf{i}}{2}\,(-4\,\mathbf{i}+\sqrt{3})\,U}{t} & \frac{-8\,t^2+(1-\mathbf{i}\,\sqrt{3})\,U^2}{4\,t^2} & \frac{U^2}{\sqrt{2}\,t^2} & \frac{U}{2\,t} & \frac{U}{2\,t} & 0 & 0 & \frac{3\,(1+\mathbf{i}\,\sqrt{3})\,U}{4\,\sqrt{2}\,t} & \frac{1+\mathbf{i}\,\sqrt{3}}{\sqrt{2}} \\
0 & 0 & \frac{\sqrt{2}\,U-\mathbf{i}\,\sqrt{6}\,U}{4\,t} & 0 & \frac{(3+\mathbf{i}\,\sqrt{3})\,U}{\sqrt{2}\,t} & -\left(\frac{U^2}{\sqrt{2}\,t^2}\right) & \frac{-4\,U}{t} & -\left(\frac{U^2}{\sqrt{2}\,t^2}\right) & 0 & 0 & -2\,\sqrt{2} & -\sqrt{2}-\mathbf{i}\,\sqrt{6} & 0 & 0 & 0 & 0 \\
\frac{-((3\,\mathbf{i}+\sqrt{3})\,U)}{12\,\sqrt{2}\,t} & \frac{-3\,\mathbf{i}+\sqrt{3}}{\sqrt{2}} & 1+\mathbf{i}\,\sqrt{3} & \frac{(3-\mathbf{i}\,\sqrt{3})\,U}{4\,t} & \frac{U^2}{2\,t^2} & \frac{\frac{1}{2}\,(4\,\mathbf{i}+\sqrt{3})\,U}{t} & -\left(\frac{U^2}{\sqrt{2}\,t^2}\right) & \frac{-5\,U}{t} & \frac{(4+4\,\mathbf{i}\,\sqrt{3})\,t^2+(1-\mathbf{i}\,\sqrt{3})\,U^2}{4\,t^2} & \frac{(1-\mathbf{i}\,\sqrt{3})\,U^2}{2\,\sqrt{2}\,t^2} & \frac{U+\mathbf{i}\,\sqrt{3}\,U}{4\,t} & \frac{U+\mathbf{i}\,\sqrt{3}\,U}{4\,t} & \frac{-((3\,\mathbf{i}+\sqrt{3})\,U)}{6\,t} & 0 & \frac{3\,(1+\mathbf{i}\,\sqrt{3})\,U}{4\,\sqrt{2}\,t} & \frac{\mathbf{i}\,(\mathbf{i}+\sqrt{3})}{\sqrt{2}} \\
\frac{-(\sqrt{2}\,(-3\,\mathbf{i}+\sqrt{3}))}{3} & \frac{(-3\,\mathbf{i}+4\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} & \frac{U}{t} & 0 & \frac{\frac{3\,\mathbf{i}}{2}\,\sqrt{3}\,U}{t} & \frac{-8\,t^2+(1+\mathbf{i}\,\sqrt{3})\,U^2}{4\,t^2} & 0 & \frac{(4-4\,\mathbf{i}\,\sqrt{3})\,t^2+(1+\mathbf{i}\,\sqrt{3})\,U^2}{4\,t^2} & \frac{-5\,U}{t} & \frac{\frac{-3}{2}\,\mathbf{i}\,(-3\,\mathbf{i}+\sqrt{3})\,U}{\sqrt{2}\,t} & 0 & 0 & -2\,\mathbf{i}+\frac{2}{\sqrt{3}} & \frac{-((-3\,\mathbf{i}+\sqrt{3})\,U)}{6\,t} & 0 & \frac{U}{2\,\sqrt{2}\,t} \\
0 & \frac{-((-3\,\mathbf{i}+\sqrt{3})\,U)}{12\,t} & 0 & 0 & 0 & \frac{U^2}{\sqrt{2}\,t^2} & 0 & \frac{(1+\mathbf{i}\,\sqrt{3})\,U^2}{2\,\sqrt{2}\,t^2} & \frac{\frac{3}{2}\,\mathbf{i}\,(3\,\mathbf{i}+\sqrt{3})\,U}{\sqrt{2}\,t} & \frac{-6\,U}{t} & \sqrt{2}-\mathbf{i}\,\sqrt{6} & -2\,\sqrt{2} & 0 & \frac{-((-3\,\mathbf{i}+\sqrt{3})\,U)}{3\,\sqrt{2}\,t} & 0 & \frac{3\,(U-\mathbf{i}\,\sqrt{3}\,U)}{4\,t} \\
\frac{-((3\,\mathbf{i}+\sqrt{3})\,U)}{6\,\sqrt{2}\,t} & \frac{(-9\,\mathbf{i}+5\,\sqrt{3})\,U^2}{12\,\sqrt{2}\,t^2} & 0 & \frac{U-\mathbf{i}\,\sqrt{3}\,U}{2\,t} & 0 & \frac{U}{2\,t} & -2\,\sqrt{2} & \frac{U-\mathbf{i}\,\sqrt{3}\,U}{4\,t} & 0 & \sqrt{2}+\mathbf{i}\,\sqrt{6} & \frac{-4\,U}{t} & \frac{U}{t} & \frac{-((3\,\mathbf{i}+4\,\sqrt{3})\,U)}{3\,t} & \frac{U^2}{\sqrt{3}\,t^2} & \frac{(-2-\mathbf{i}\,\sqrt{3})\,U}{\sqrt{2}\,t} & \frac{(1+\mathbf{i}\,\sqrt{3})\,U^2}{4\,\sqrt{2}\,t^2} \\
\frac{(6\,\mathbf{i}+5\,\sqrt{3})\,U}{3\,\sqrt{2}\,t} & \frac{-((3\,\mathbf{i}+5\,\sqrt{3})\,U^2)}{12\,\sqrt{2}\,t^2} & 0 & \frac{U-\mathbf{i}\,\sqrt{3}\,U}{2\,t} & 0 & \frac{U}{2\,t} & \mathbf{i}\,\sqrt{2}\,(\mathbf{i}+\sqrt{3}) & \frac{U-\mathbf{i}\,\sqrt{3}\,U}{4\,t} & 0 & -2\,\sqrt{2} & \frac{U}{t} & \frac{-4\,U}{t} & \frac{-((3\,\mathbf{i}+\sqrt{3})\,U)}{6\,t} & \frac{(-3\,\mathbf{i}+\sqrt{3})\,U^2}{6\,t^2} & \frac{\mathbf{i}}{2}\,(-5\,\mathbf{i}+\sqrt{3})\,U & \frac{(3-\mathbf{i}\,\sqrt{3})\,U^2}{4\,\sqrt{2}\,t^2} \\
\frac{(-1+9\,\mathbf{i}\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} & \frac{2\,\mathbf{i}\,(\mathbf{i}+\sqrt{3})\,t^2+(1+\mathbf{i}\,\sqrt{3})\,U^2}{3\,\sqrt{2}\,t^2} & \frac{-2\,(3\,\mathbf{i}+\sqrt{3})}{3} & \frac{(-3\,\mathbf{i}+\sqrt{3})\,U}{6\,t} & 0 & 0 & 0 & \frac{-((-3\,\mathbf{i}+\sqrt{3})\,U)}{6\,t} & 2\,\mathbf{i}+\frac{2}{\sqrt{3}} & 0 & \frac{3\,(3\,\mathbf{i}-4\,\sqrt{3})\,U}{3\,t} & \frac{-((-3\,\mathbf{i}+\sqrt{3})\,U)}{6\,t} & \frac{-29\,U}{6\,t} & \frac{(8-8\,\mathbf{i}\,\sqrt{3})\,t^2+(-7-\mathbf{i}\,\sqrt{3})\,U^2}{12\,t^2} & \frac{(-9\,\mathbf{i}+7\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} & \frac{-(\sqrt{2}\,(-3\,\mathbf{i}+\sqrt{3}))}{3} \\
\frac{(8+8\,\mathbf{i}\,\sqrt{3})\,t^2+\mathbf{i}\,(\mathbf{i}+\sqrt{3})\,U^2}{6\,\sqrt{2}\,t^2} & \frac{(-1-9\,\mathbf{i}\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} & \frac{3}{-((3\,\mathbf{i}+\sqrt{3})\,U)} & 0 & \frac{(3\,\mathbf{i}+\sqrt{3})\,U}{6\,t} & 0 & 0 & 0 & \frac{-((3\,\mathbf{i}+\sqrt{3})\,U)}{6\,t} & \frac{-((3\,\mathbf{i}+\sqrt{3})\,U)}{3\,\sqrt{2}\,t} & \frac{U^2}{\sqrt{3}\,t^2} & \frac{(3\,\mathbf{i}+\sqrt{3})\,U^2}{6\,t^2} & \frac{-29\,U}{6\,t} & \frac{(8+8\,\mathbf{i}\,\sqrt{3})\,t^2+\mathbf{i}\,(7\,\mathbf{i}+\sqrt{3})\,U^2}{12\,t^2} & \frac{8\,(3\,\mathbf{i}+\sqrt{3})\,t^2+(-3\,\mathbf{i}+\sqrt{3})\,U^2}{6\,\sqrt{2}\,t^2} & \frac{(3\,\mathbf{i}+5\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} \\
\frac{(18\,\mathbf{i}-7\,\sqrt{3})\,U}{12\,t} & \frac{8\,(-3\,\mathbf{i}+\sqrt{3})\,t^2+(3\,\mathbf{i}+\sqrt{3})\,U^2}{24\,t^2} & 0 & \frac{\frac{3\,\mathbf{i}}{2}\,\sqrt{\frac{3}{2}}\,U}{t} & 0 & \frac{3\,(1-\mathbf{i}\,\sqrt{3})\,U}{4\,\sqrt{2}\,t} & 0 & \frac{3\,(1-\mathbf{i}\,\sqrt{3})\,U}{4\,\sqrt{2}\,t} & 0 & 0 & \frac{\mathbf{i}\,(2\,\mathbf{i}+\sqrt{3})\,U}{\sqrt{2}\,t} & \frac{\mathbf{i}}{2}\,(5\,\mathbf{i}+\sqrt{3})\,U & \frac{(9\,\mathbf{i}+7\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} & \frac{-27\,U}{4\,t} & \frac{8\,(-3\,\mathbf{i}+\sqrt{3})\,t^2+(3\,\mathbf{i}+\sqrt{3})\,U^2}{6\,\sqrt{2}\,t^2} & \frac{(8-8\,\mathbf{i}\,\sqrt{3})\,t^2+(-5-\mathbf{i}\,\sqrt{3})\,U^2}{8\,t^2} \\
\frac{-(16\,(3\,\mathbf{i}+\sqrt{3})\,t^2+3\,(-3\,\mathbf{i}+\sqrt{3})\,U^2)}{24\,t^2} & \frac{-((15\,\mathbf{i}+2\,\sqrt{3})\,U)}{12\,t} & \frac{U}{\sqrt{2}\,t} & 0 & \frac{U}{2\,\sqrt{2}\,t} & \frac{1-\mathbf{i}\,\sqrt{3}}{\sqrt{2}} & 0 & \frac{-1-\mathbf{i}\,\sqrt{3}}{\sqrt{2}} & \frac{U}{2\,\sqrt{2}\,t} & \frac{3\,(U+\mathbf{i}\,\sqrt{3}\,U)}{4\,t} & \frac{(1-\mathbf{i}\,\sqrt{3})\,U^2}{4\,\sqrt{2}\,t^2} & \frac{(3+\mathbf{i}\,\sqrt{3})\,U^2}{4\,\sqrt{2}\,t^2} & \frac{-(\sqrt{2}\,(3\,\mathbf{i}+\sqrt{3}))}{3} & \frac{(-3\,\mathbf{i}+5\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} & \frac{(8+8\,\mathbf{i}\,\sqrt{3})\,t^2+\mathbf{i}\,(5\,\mathbf{i}+\sqrt{3})\,U^2}{8\,t^2} & \frac{-23\,U}{4\,t}
\end{bmatrix}$$