$$H_{86} = \begin{bmatrix} -6\,\mu + U & \frac{-t}{2} & 0 & 0 & 0 & \frac{-3\,\mathbf{i}\,t}{\sqrt{2}} & 0 & -\left(\sqrt{\frac{3}{2}}\,t\right) & \frac{\sqrt{\frac{3}{2}}\,t}{2} - \frac{\frac{3}{2}\,\mathbf{i}\,t}{\sqrt{2}} & 0 & \frac{-\left(\sqrt{3}\,t\right)}{2} & 0 \\ \frac{-t}{2} & -6\,\mu + U & 0 & 0 & \frac{\sqrt{\frac{3}{2}}\,t}{2} + \frac{\frac{3}{2}\,\mathbf{i}\,t}{\sqrt{2}} & 0 & \frac{3\,\sqrt{\frac{3}{2}}\,t}{2} - \frac{\frac{3}{2}\,\mathbf{i}\,t}{\sqrt{2}} & 0 & 0 & 0 & 0 & \frac{3}{2}\,\mathbf{i}\,t \\ 0 & 0 & -6\,\mu + 3\,U & 0 & -\left(\sqrt{2}\,t\right) & 0 & \mathbf{i}\,\sqrt{6}\,t & 0 & 0 & \sqrt{2}\,t & 0 & 0 \\ 0 & 0 & 0 & -6\,\mu + 2\,U & 0 & \mathbf{i}\,\sqrt{6}\,t & 0 & 0 & 0 & 0 & 2\,t & 0 \\ 0 & \frac{\sqrt{\frac{3}{2}}\,t}{2} - \frac{\frac{3}{2}\,\mathbf{i}\,t}{\sqrt{2}} & -\left(\sqrt{2}\,t\right) & 0 & -6\,\mu + 2\,U & \frac{3\,t}{2} + \frac{\mathbf{i}}{2}\,\sqrt{3}\,t & 0 & 0 & 0 & 0 & \frac{-\mathbf{i}}{2}\,\sqrt{\frac{3}{2}}\,t + \frac{t}{2\,\sqrt{2}} & 0 \\ \frac{3\,\mathbf{i}\,t}{\sqrt{2}} & 0 & 0 & -\mathbf{i}\,\sqrt{6}\,t & \frac{3\,t}{2} - \frac{\mathbf{i}}{2}\,\sqrt{3}\,t & -6\,\mu + 2\,U & 0 & 0 & 0 & 0 & 0 & -\left(\frac{t}{\sqrt{2}}\right) \\ 0 & \frac{3\,\sqrt{\frac{3}{2}}\,t}{2} + \frac{\frac{3}{2}\,\mathbf{i}\,t}{\sqrt{2}} & -\mathbf{i}\,\sqrt{6}\,t & 0 & 0 & 0 & -6\,\mu + 2\,U & \frac{-t}{2} + \frac{\mathbf{i}}{2}\,\sqrt{3}\,t & \frac{t}{2} + \frac{\mathbf{i}}{2}\,\sqrt{3}\,t & 0 & \frac{\mathbf{i}}{2}\,\sqrt{\frac{3}{2}}\,t + \frac{3\,t}{2\,\sqrt{2}} & 0 \\ -\left(\sqrt{\frac{3}{2}}\,t\right) & 0 & 0 & 0 & 0 & 0 & \frac{-t}{2} - \frac{\mathbf{i}}{2}\,\sqrt{3}\,t & -6\,\mu + 2\,U & 0 & \frac{-t}{2} + \frac{\mathbf{i}}{2}\,\sqrt{3}\,t & 0 & \frac{t}{\sqrt{2}} \\ \frac{\sqrt{\frac{3}{2}}\,t}{2} + \frac{\frac{3}{2}\,\mathbf{i}\,t}{\sqrt{2}} & 0 & 0 & 0 & 0 & 0 & \frac{t}{2} - \frac{\mathbf{i}}{2}\,\sqrt{3}\,t & 0 & -6\,\mu + 2\,U & \frac{-t}{2} - \frac{\mathbf{i}}{2}\,\sqrt{3}\,t & 0 & \frac{\mathbf{i}}{2}\,\sqrt{\frac{3}{2}}\,t + \frac{t}{2\,\sqrt{2}} \\ 0 & 0 & \sqrt{2}\,t & 0 & 0 & 0 & 0 & \frac{-t}{2} - \frac{\mathbf{i}}{2}\,\sqrt{3}\,t & \frac{-t}{2} + \frac{\mathbf{i}}{2}\,\sqrt{3}\,t & -6\,\mu + 2\,U & 0 & 0 \\ \frac{-\left(\sqrt{3}\,t\right)}{2} & 0 & 0 & 2\,t & \frac{\mathbf{i}}{2}\,\sqrt{\frac{3}{2}}\,t + \frac{t}{2\,\sqrt{2}} & 0 & \frac{-\mathbf{i}}{2}\,\sqrt{\frac{3}{2}}\,t + \frac{3\,t}{2\,\sqrt{2}} & 0 & 0 & 0 & -6\,\mu + U & \frac{-\mathbf{i}}{2}\,\sqrt{3}\,t \\ 0 & \frac{-3\,\mathbf{i}}{2}\,t & 0 & 0 & 0 & -\left(\frac{t}{\sqrt{2}}\right) & 0 & \frac{t}{\sqrt{2}} & \frac{-\mathbf{i}}{2}\,\sqrt{\frac{3}{2}}\,t + \frac{t}{2\,\sqrt{2}} & 0 & \frac{\mathbf{i}}{2}\,\sqrt{3}\,t & -6\,\mu + U \end{bmatrix}$$