$$H_{132} = \begin{bmatrix} 2\,h-6\,\mu+U & -t & \sqrt{2}\,t & 0 & 0 & 0 & 0 & 0 \\ -t & 2\,h-6\,\mu+U & 0 & -t & 0 & 0 & 2\,t & t \\ \sqrt{2}\,t & 0 & 2\,h-6\,\mu+2\,U & 0 & 0 & 0 & \sqrt{2}\,t & \sqrt{2}\,t \\ 0 & -t & 0 & 2\,h-6\,\mu+2\,U & -2\,t & -\left(\sqrt{2}\,t\right) & 0 & 0 \\ 0 & 0 & 0 & -2\,t & 2\,h-6\,\mu+2\,U & 0 & 0 & 2\,t \\ 0 & 0 & 0 & -\left(\sqrt{2}\,t\right) & 0 & 2\,h-6\,\mu+2\,U & \sqrt{2}\,t & 0 \\ 0 & 2\,t & \sqrt{2}\,t & 0 & 0 & \sqrt{2}\,t & 2\,h-6\,\mu+U & 0 \\ 0 & t & \sqrt{2}\,t & 0 & 2\,t & 0 & 0 & 2\,h-6\,\mu+U \end{bmatrix}$$