We extend to complex potentials a method developed to solve the inverse problem from bound states in the case of a local real potential. A first example is presented, which is based on a complex version of the Kratzer potential. In this case, the Schr¨odinger equation admits analytical solutions, providing us with a test of the method. The application to the π^-–28Si and K—208Pb hadronic atoms shows the possibilities and limitations of our approach