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This paper is concerned with testing for infinite variation jumps in addition to a continuous local martingale component driven by Brownian motion using high-frequency data. We developed a lack of fit type test based on the empirical distribution of the ``devolatized" increments. Under the null hypothesis that the jump component is of finite variation, the empirical process associated with the ``devolatized" increments converges to a Gaussian process in the Skorohod topology. Under the alternative hypothesis that the jumps are of infinite variation, the empirical process explodes instead. Theoretical results and simulation show good performance on the size and power of the test. A real financial data set is analyzed.