Abstract. This article treats the Picard group of the moduli (stack) of r-spin curves and its compactification. Generalized spin curves, or r-spin curves are a natural generalization of 2-spin curves (algebraic curves with a theta-characteristic), and have been of interest lately because they are the subject of a remarkable conjecture of E. Witten, and because of the similarities between the intersection theory of these moduli spaces and that of the moduli of stable maps.

We generalize results of Cornalba, describing and giving relations between many of the elements of the Picard group of the stacks. These relations are important in the proof of the genus-zero case of Witten's conjecture given in [14]. We use these relations to show that when 2 or 3 divides r, the Picard group has non-zero torsion. And finally, we work out some specific examples.