Textile industries are very much depending on automation to improve their product quality and uniformity. Automation in industries has focused attention of researchers in the field of robotics. Autonomous mobile platform has played key role in the automation of various plants, say, Automobiles, Textiles, Food processing industries, etc. In modern spinning mills the cost of transporting material has become the largest component of direct labor costs. The detailed analysis of the mobile platform in concern with the textile industries requirement will be performed such as ‘path optimization’, ‘mechanism for automatic transfer of a caster can’, etc.. This Indigenous development of mobile robots will also reduce the cost of imports of such robots and helps to generate jobs in these production plants.