TAL MANUFACTURING SOLUTIONS

TATA INNOVISTA

Five Axes Articulated Robot Manipulator

By TAL Manufacturing Solutions | Category: Implemented Innovations

With the growth and lure of the service / retail industry, attracting skilled labour is a challenge for industries. Further, competitiveness in cost and quality poses a higher demand on skills required. With scarcity of skilled labour and ever-increasing wages, there is a compelling need for adopting automation in the industry. In comparison with cost of ownership of other existing robots, India's first articulated robot TAL BRABO provides value proposition to MSMEs. With easy to operate & maintain "Robotic System", MSMEs can achieve higher productivity and returns on investment. BRABO can cater to jobs, which are dull, dirty and dangerous across industries.

The Context

Foreign players dominate robotic segments in India and primarily cater to more complex Robots in higher ranges, generally >20 kg payload.

High robot installation cost and highly expensive spares. This makes automation unaffordable for the MSME industry - which faces challenges like minimum labor wages, unavailability of skilled labor and high absenteeism.

India harbours a huge demand for automation. In view of the potentially large opportunity that lies in robotics, and with the inherent skillsets, TAL invented and developed India's first articulated robot to create a ROBOLUTION IN THE COUNTRY!

The Innovation

For payload of more than 20 kg, there are many established competitors with proven technology, making market penetration difficult for a new entrant, especially in a market like Asia which is predominantly labour-driven. As per International Labor Organization (ILO), an operator can handle maximum of 10 kg weight, while an industrial robot up to 10 kg payload can replace 1 or 2 operators per shift. Presently, there is no cost effective robotic solution and established competitor in that range. In view of large potential, TAL indigenously designed and developed its own robots and four patents have been filed for protection against design infringement. TAL BRABO is a 5 axes industrial articulated robot in 2 variants of 10 kg model and 2 kg model. The robots have gone through intense validation and testing in the R&D lab to establish robot reliability with MTBF and crash test done through simulations. The feedback collected through industry and academia interactions pointed to a few shortcomings and improvements in design. The robot design modifications were done accordingly, and the product was displayed under 'Make in India' in March 2016. The first robot was deployed at customer site in August 2016.

Overcoming Challenges

Challenge #1

Creating a market and product awareness, and reaching wider customer spectrum. TAL appointed a sales team in all four regions.

Challenge #2

Identifying and training the right integrator was crucial too. A dedicated in-house R&D center with specialised experts was established for designing and developing future products and integrated systems. Many new applications like de-burring, fettling, palletisation and packaging, welding, de-flashing, etc were developed in-house by young engineers.

Impact of the Innovation

orders in the first year

200+