

VERBOTICS WELD:
EFFECTIVE UTILISATION
OF ROBOTIC WELDING IN
HIGH AND LOW VOLUMES



LOCATION: New Zealand
YEAR: 2019
APPLIC: Road Transport and Construction
SOLUTION: Verbotics Weld

Tidd Ross Todd Ltd (TRT) is a leading design and manufacturing company producing components for the road transport and construction industry.

Founded in 1967, TRT prides itself on overcoming complex engineering challenges to “make things possible for our customers.”

CLIENT ISSUES

TRT investigated the adoption of robotic welding technology to fabricate their assemblies. Two factors were considered in their study: First, they wanted to reduce the risk for their welders who manufactured large, heavy parts that required rotating. Second, they aimed to make quality and efficiency gains.

The main issues were the expertise and time required to program the robot. Their target was to program it in-house and utilise all parts on the robot—not just those in high volume. Many of the larger parts are one-offs, as TRT customises solutions for their customers. According to TRT's Robotic Welding Engineer Sam, the trailers they make for their clients are unique, with different size and weight requirements.




SOLUTION

TRT partnered with Verbotics in 2019 to adopt Verbotics Weld into their ABB robot welding system to address the issue.

Their cell, which consisted of a long reach robot on a 12m linear track, a single axis rotator capable of holding parts up to 13m long and three welding tables to produce smaller pieces, accommodated the various components for manufacture.

Verbotics generates all the robot welding programs for this system. The weld identification feature allowed welds to be created in their models without modification, and the automatic path planning quickly solved all the motions for their complex assemblies. Automatic collision avoidance and the generation of weld seam finding actions meant programs were ready to run straight from Verbotics.




4H PROGRAMMING = 36H ROBOT WELDING



EFFECTIVE FOR ROBOTIC WELDING OF ONE-OFF PARTS



2 NEW PROGRAMS PER WEEK



100-350M OF WELDING PER 12H SHIFT



READY-TO-RUN

RESULTS

Verbotics Weld allowed TRT to get the most out of their robot system with their low-volume, high-mix manufacturing schedule.

On average, the company would program around two new parts per week, and four hours in Verbotics Weld yielded a program that ran for three shifts - 36 hours.

This represented nearly a 10 to 1 ratio of robot running time to programming time. For TRT, 12 hours of robot welding resulted in 100 to 350m of welding, depending on the part's complexity, with an arc time between 40-75%.

With Verbotics programs ready to run, TRT utilised the automatic sensing feature to ensure that welds were placed in the correct location without additional touch-ups or online program edits.

“ We have the confidence in the programs and motions produced by Verbotics Weld to run unassisted.

Sam | TRTs Robotic Welding Engineer

The next challenge for Verbotics and TRT is to have the robot run overnight unassisted. We are working together to have the robot recover from errors automatically and continue if a fault is detected.

