SEGMENT: AUTOMOBILE INDUSTRY
APPLICATION: TWO-WHEELER MUFFLER WELDING SYSTEM
ORGANIZATION: YASKAWA INDIA PVT.LTD.

APPLICATION LAYOUT:

DESCRIPTION:

Yaskawa is supplying a total robotic solutions for all welding applications in Automobile Industries. The system is for welding the muffler assembly in single robotic cell with six stages of welding process.

OBJECTIVE: A total Robotic Automated solution for muffler welding to improve quality, avoid human error and manual hard work.

SYSTEM OVERVIEW:

The project consist of 1 single robotic cells with 4 positioners and 6 fixtures in total for 1 variant. the project enabled customer to use different model's in provided cell with change over fixtures. we have integrated system with YRC-1000 controller, X-350 power source and Mitsubishi plc.
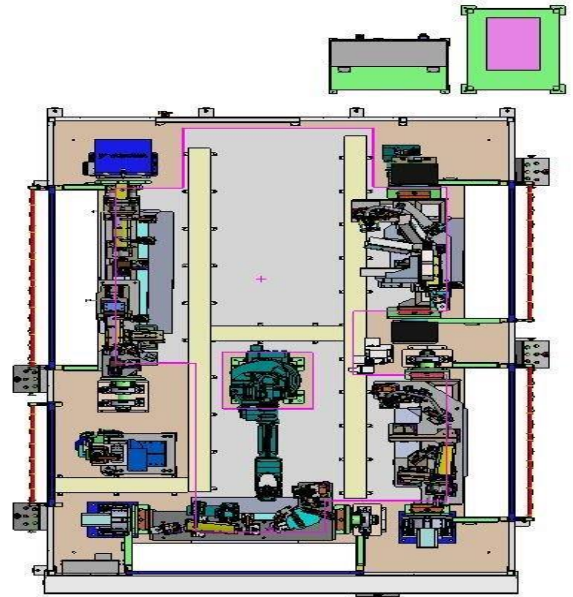
SCOPE OF SUPPLY:

- Robot : AR 2010

- Controller : YRC 1000

- PLC Communication: CC LINK

- Fixtures : Pneumatic fixtures with

   auto clamp de-clamp and position feedback

- No. of variants : 6

- No. of Robots :1

- Safety Fence & Safety Door

- PLC panel & Operational Panel

SYSTEM ARCHITECTURE
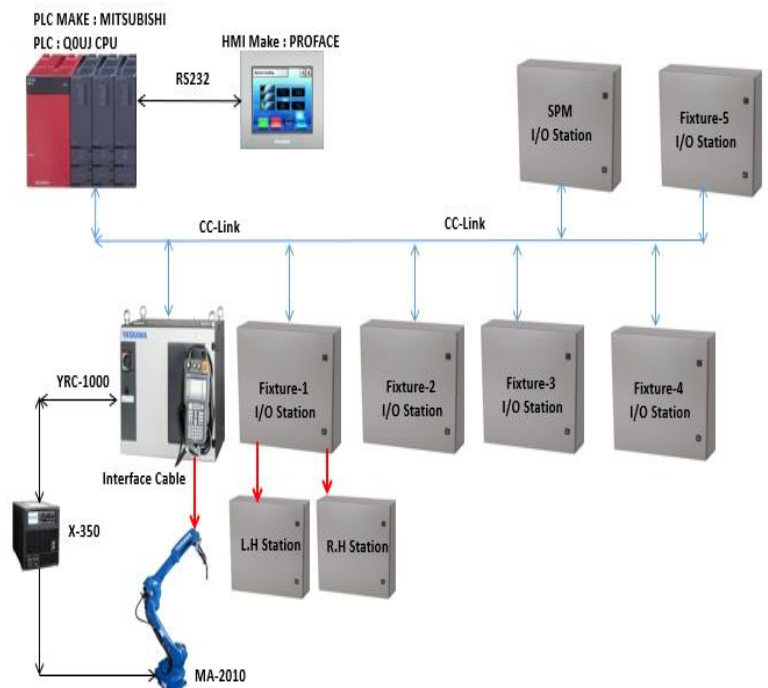
OBJECTIVE OF ROBOTICS & AUTOMATION:

- To increase production volume

- To achieve uniform quality in and preventing rejection

- To maintain single output line for different variants

- To reduce manual work.

PROCESS DESCRIPTION:

- Tig welded body loaded into station wise fixtures for as per defined sequence of customer.

- The welding is divided into different stations as per process definition and the welded sub assemblies getting transfer to the next stations to maintain designed productivity and cycle time.

- At the final station robot welding the child parts on the muffler assembly. Now the total muffler assembly is completed and ready of Painting.

- If any error occurs or any quality issue in robot will receive an alarm signal and the system will go to hold.

MODELS VARIANTS:
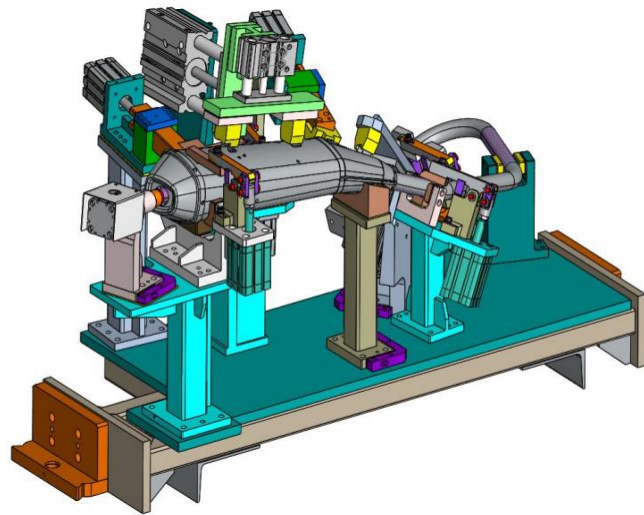
Muffler models : 06 variants with change over fixtures.

Cycle time : 5.7 minutes for 1 full muffler welding

SUCCESS POINTS:

- Provided all variant of muffler models implement in one cell design.

KEY ISSUE :

- Cycle time prove out

FIXTURE IMAGE