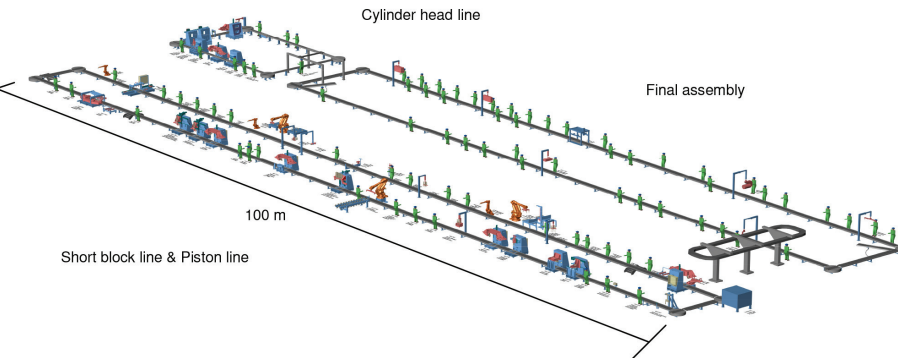
ROBOTICS

Diesel Engine Assembly Line



Facts	
Industry	Automotive OEM
Product	Diesel Engines
Installation Date	December 2003
Description	Diesel Engine assembly line is based on ABB standard modular concept. This line consists of four conveyor systems, one for hort block assembly, one for piston sub assembly, one for cylinder head sub assembly and one for final assembly. The assembly lines are a mix between manual, semi automatic and automatic stations, between some of the assembly stations is a buffer station placed. Currently assembles 4-9 liters (4-6 cylinder) engines with weekly production reaching 1000 units with two shift operation.
Equipment	21 Automatic stations 87 Manual stations 16 Semi-auto stations 6 robots ABB turnover device ABB nut runner stations ABB leakage test station for cylinder head
Customer Benefits	High quality assembly processes to assure product quality and production Automatic assembly of heavy parts with robot Cost effective solution High flexibility, currently assembles 4 types in the line 4-9 liters Glueing application by robot Easy and low cost startup of new variants

Facts	
Technical Data	Capacity: 50,000/year (2-shift production) Cycle time: 90 seconds
Unique Elements:	Automatic assembly of cam shaft bearings Automatic control of axial clearance and rotation torque 3 automatic leakage test stations Laser key up check
Customer Provided Equipment	None
Project/Steps to Implementation	Concept design Concept approval Engineering (Detail design) Project management Manufacturing Installation Training Production support on site 6 month.
Project Responsibility:	Powertrain
Video/Photos/Reference:	Can be supplied by ABB

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Project_1020399, Rev.A October 2019