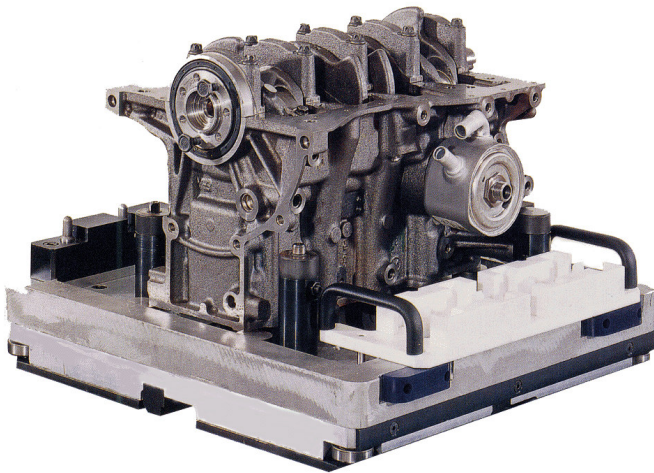
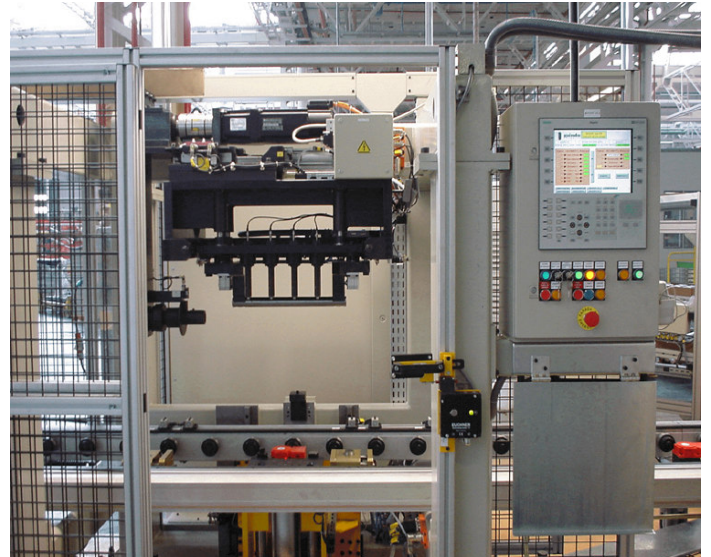


ENGINE ASSEMBLY LINE



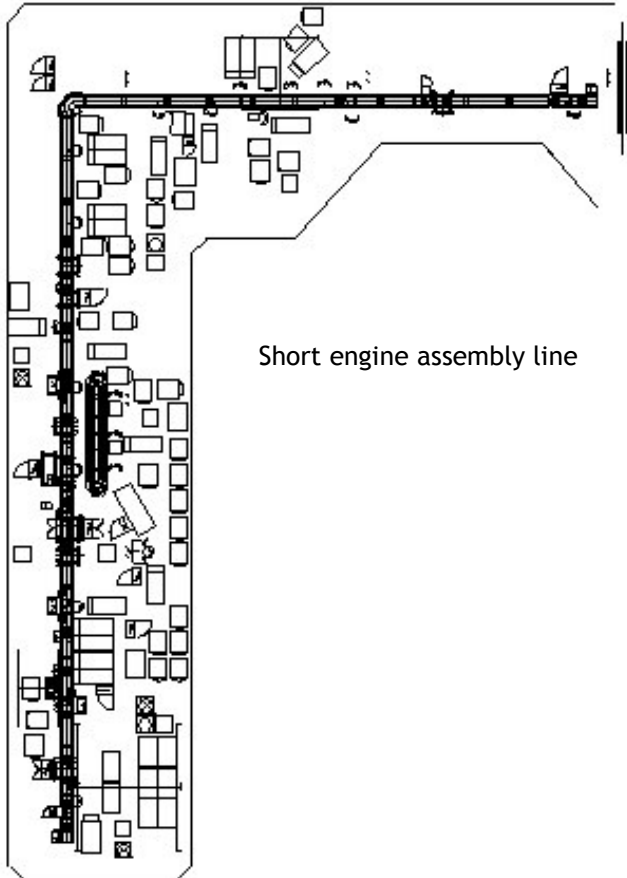
Short Engine



Crankshaft height measurement

OPERATION SEQUENCE		AUTOMATION LEVEL
1	Coolant nozzle insertion/assembly	Semiautomatic
2	Loosen Frame cover	Automatic
3	Read Crankshaft and Cylinder block codes (artificial vision)	Automatic
4	Measure Pin height	Automatic
5	Assembly of grudgeon pin in conrod	Semiautomatic
6	Assembly of conrod with grudgeon pin in cylinder block	Automatic
7	Tightening of Conrod Caps	Automatic
8	Application of Silicone	Semiautomatic
9	Cylinder Block marking	Automatic

ENGINE ASSEMBLY LINE



TECHNICAL SPECIFICATIONS

Weight/Part dimension: 40 Kgs.

Diversity: 5

Line Dimension: 70x40 m

Production data

Cycle Time: 30 seg

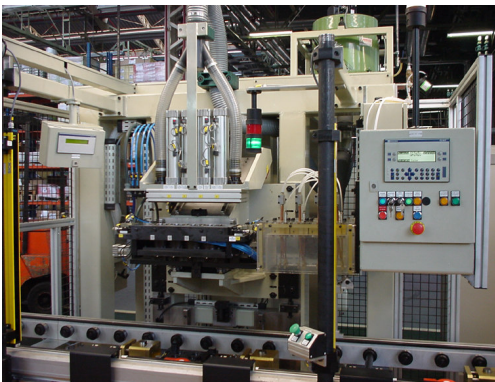
Number of shifts: 3

Precess Control

- Electro Mechanical Presses for the insertion of components
- Electric screwdriver with torque and angle control
 - Crankshaft height measurement
- Components variety Poka Yoke
- Bar code label writing and reading

STANDARD EQUIPEMENT

- JANOME's Electro Mechanical Press.
- YAMAHA Robots.



Piston insertion in engine block



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