



## Automatic assembly machine joining with induction heating

- Automatic assembly machine for joining interference fits by means of induction heating for components of electrical motor-driven automobile pumps.
  
- Assembly principle:
  1. Manual equipment of tools with the individual components
  2. Automatic centring by means of the floating bearing of the workpiece adapter
  3. Temperature-controlled induction heating of the housing
  4. The ball bearing shaft and stator can be inserted into the expanded housing
  5. Force displacement monitoring of the joining process
  6. Automatic separation of OK and NOK parts
  7. Discharge via conveyor belts with cooling zone
  
- Optional:
  - coded tool change sets
  - individual component supply via robot system



## Technical Data

<b>Workpiece</b>	Automobile water pump driven by electrical motor (ball bearing shaft, stator, pump housing)
<b>Workpiece dimensions</b>	
Joining diameter	ø 20–ø 90 mm
Outer housing diameter	ø 100 mm
Material housing	Cast aluminium
Number of individual components	3
<b>Assembly operation</b>	Induction heating Joining (press-fitting)
<b>Assembly times</b>	
Induction process	approx. 1 min
Joining	approx. 5 sec
Cooling down	approx. 20 min
<b>Tools</b>	
Induction system	Medium frequency generator, coaxial transformer, ring inductor Pyrometer temperature sensor Process cooling with cold water compressor
Joining module	Joining module with force control
Handling	Motor axles Conveyor belts with servo control
<b>Measurement data processing</b>	
Hardware	IPC
Operating system	Windows
Measuring data software	premeSTAR®
Visualisation	Monitor (touch monitor)
Storage, archiving	csv file, in database on system PC
Export	individual QA systems, (SQL database)
<b>Machine control</b>	SIMATIC S7 PLC
Visualisation	Touch panel

