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DEPRAG Automatic Station for the Assembly of Motor- and Shaft Parts

Required Process:

Automatic Station to serrate gear-shafts and to press-insert motor adapters.

Total Cycle Time: **10 seconds**

Solution:

One **DEPRAG** conveyor-integrated automatic Assembly Station, consisting of:

- One **8-position rotary index table** with a slip-ring to allow for pneumatic and electric through-connection
- Six **Operational Stations**
- One **TP2 Plus-Controller with Display Panel** for operational control
- One **conveyor integrated handling system** for the load- and unload operation
- Two **DEPRAG Part Feeders** (0511-P), each with a corresponding camera system for part verification (recognize the left-hand or right-hand threading of the motor adapter)
- Two **DEPRAG Belt-Driven Hoppers** - with fill volume of 10-liters each
- One **Indicator Light Column** to display the machine status

Cycle Description:

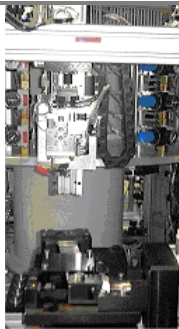
A fully automatic conveyor system loads the shaft into the handling system and subsequently places it onto the rotary index table (Station 1).

On Stations 2 and 3, the shaft is serrated four-times each, both on the bottom and on the top of the shaft. One each motor-adapter is presented at Stations 4 and 5, and pressed to the serrated areas of the shaft, also to the top and to the bottom of the shaft. Two Digiforce measuring instruments, using force-distance measurement verification, supervise the press-process. Thereafter, the part is placed back onto the conveyor. The conveyor data-exchange is handled by a Siemens RFID read/write system MOBY I.

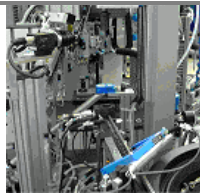
An Indicator-light column shows the machine status.



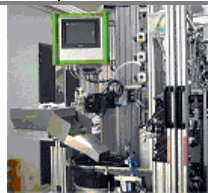
Station 1 – with
Conveyor



Stations 2 & 3
Serration Feature
for the Motor
Adapter



Stations 4 & 5
A Camera System
verifies whether the
motor adapter has a
right-hand or left-
hand threading



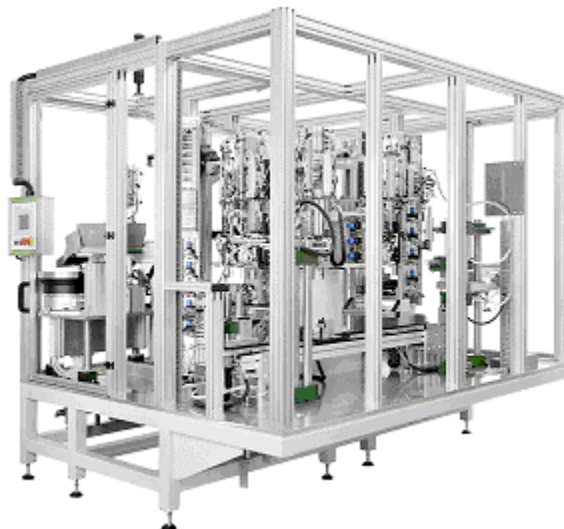
Station 6 – Digiforce
Measuring
Instruments: The
force- and
distance measuring
results are displayed
on the screen.



Force-
Measurement



Distance-Measurement



Total Machine View