TELESIS
TECHNOLOGIES, INC.

Industrial Identification/
Traceability Equipment

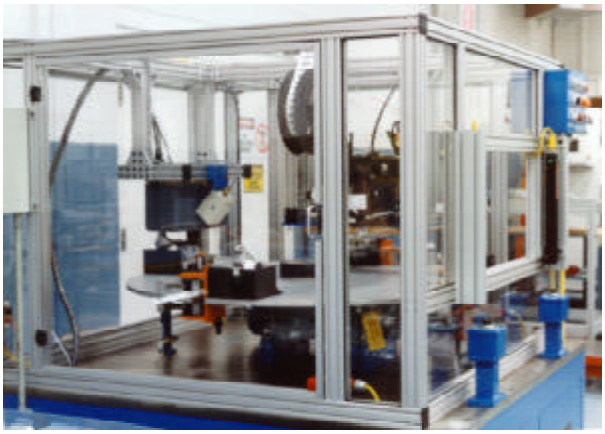
Automated System Uses TMS3225 Slide Marker and Label Applicator to Identify Aluminum Pump Housings

A hydraulic pump manufacturer needed an automated marking system that would apply preprinted barcode labels, read the labels and imprint the bar-coded data onto cast aluminum pump housings. They also required several layers of worker safeguards to make the system safe to operate. Telesis designed the unique system described below to accomplish the task.

Telesis Custom Applications Engineering Team selected the **TMS3225-13 Slide Marker** with a 9-pin cartridge to do the job. The design called for a 60" square base topped by a Plexiglas® walled enclosure. A 48" indexing table inside the enclosure has four clamping fixtures at 90° intervals around the perimeter. (Please refer to the diagram).

Station 1, the load/unload station, is located at the 6 o'clock position. It is open for easy access, however a light curtain prevents the system from operating when the light path is interrupted, particularly by an operator's hands. At **Station 2**, the purchased label applicator is located at the 3 o'clock position. It is accessed by opening a door. Interlock switches on all doors also prevent the system from operating when the doors are open. **Station 3**, at the 12 o'clock position, has the TMS3225 marking head and a fixed-position barcode scanner. The 9 o'clock position, Station 4, was left vacant for the addition of a future operation. Stations 3 and 4 are also accessed by doors with interlock switches.

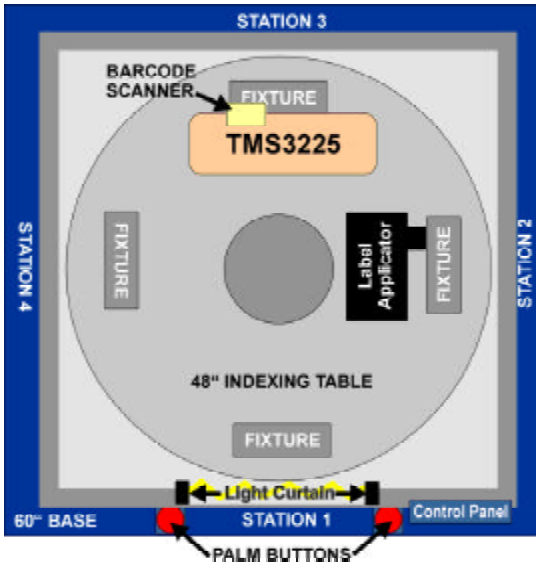
The TMS3225 single board controller, TransTerm6 remote terminal and programmable logic controller are housed below the system inside the base. A quick disconnect and pneumatic dump valve provide additional safety features.



A fixed position barcode scanner reads data for the TMS3225 Slide Marker. Parts index on a 48" rotary table with four clamping part fixtures.

A control panel with indicators and mode selector switch is located above and to the right of the unload/load station.

Photo sensors below the table at each station detect parts properly loaded in the fixtures. Parts must be detected for each station to complete its function.



Aerial View Diagram of Labeling/Marking System Layout.

Two palm buttons at the unload/load station must be pressed simultaneously for the system to operate.

The system operates in either Automatic or Manual Mode. Whenever required, the operator may enter data to be marked on a housing with the TT6 remote terminal.

Custom software allows the supervisor to program a maximum number of characters from the barcode scan to be imprinted on the part.

Sequence of Operation

The following sequence briefly describes how the system operates in Automatic Mode.

1. Upon startup (all fixtures empty) and in Automatic Mode, the operator loads a pump housing into the fixture at Station 1.
2. The photo sensor below the fixture detects the properly loaded part.
3. The operator presses both palm buttons to cycle the system.
4. The clamp assembly closes onto the housing.
5. The table rotates 90°. A second photo sensor detects the part at Station 2.
6. The Label Applicator places a preprinted barcode label on the pump housing.
7. At Station 1, the clamp mechanism opens allowing the operator to load a new pump housing.
8. The operator loads the new pump housing into the fixtures.
9. The operator again presses the two palm buttons to cycle the system.
10. Steps 4 through 7 repeat.
11. The photo sensor at Station 3 detects a part present.
12. The fixed-position barcode scanner reads the barcode label. If the read is successful, the barcode label data is printed on the pump housing by the TMS3225 slide marker in the 7 x 9 font.

    If the scanner fails to read the label, the fault indicator on the control panel lights. The operator must then acknowledge the fault and reset the system. When the unmarked part returns to Station 1, the operator segregates the part to be recycled through the system.
13. The operator places the third unmarked part in the fixture.
14. The operator once again presses the two palm buttons to cycle the system.
15. Steps 10 through 12 repeat.
16. The process continues. When marked parts return to Station 1, the operator removes and replaces them with unmarked parts until the supply of unmarked parts is depleted.

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