Autocatalytic
Processes

GALILEO

MATERIALS & MANUFACTURE
SOFTWARE & SYSTEMS

Stapleton Technologies provides a complete set of processing tools for the application of the advanced Tribological and Corrosion Protection Metallic Coating. These units are assembled into a system for the management of the entire technology.

The individual units are arranged into a system that is controlled from a Controller Server using a SQL database to manage the processes and articles being processed. The individual tool elements are placed into a floor unit that supports an overhead hoist. RFID rack tracking is incorporated to capture the production and quality data insuring that the process is producing to the deposit specification.
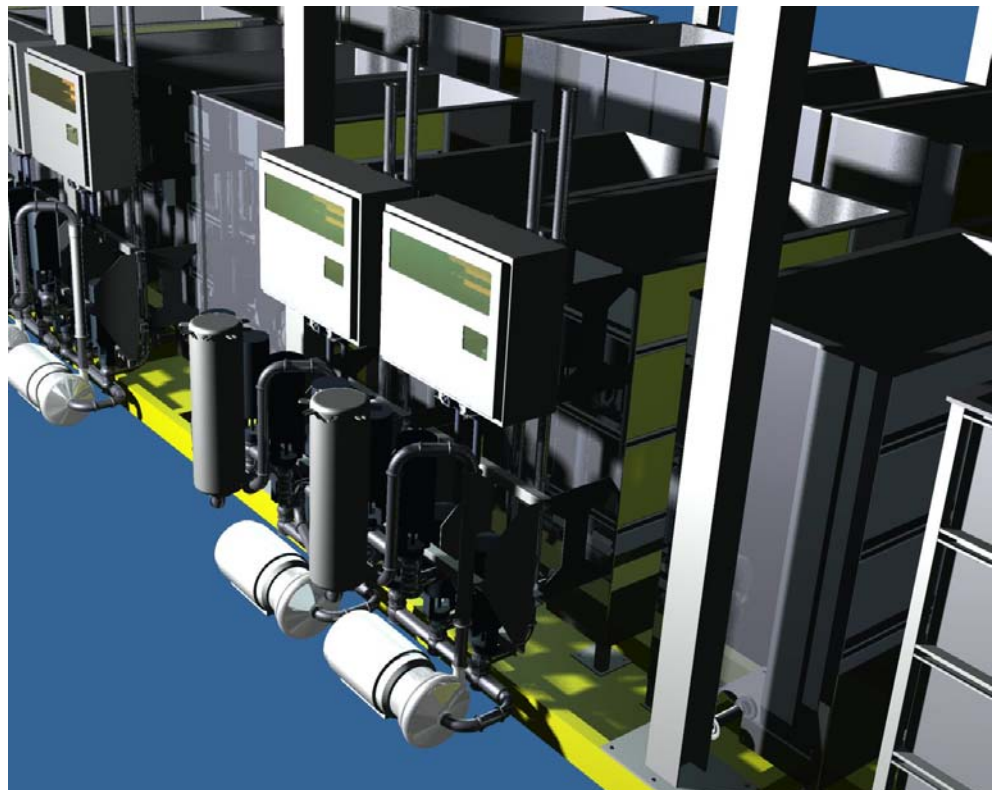
PROCESS EQUIPMENT

ENFINITY

AUTONIC

TRIBOL, SMART COATINGS

STI

ISO 9001

Features
- ♦ Low Heat Density Hot Water Heating,
- ♦ 20 minute heating from ambient,
- ♦ Stainless Steel Construction
- ♦ Automatic Passivation with Nitric Acid
- ♦ Sub micro Filtration 0.45um
- ♦ Drip Proof Valves
- ♦ Automatic Solution Transfer to holding,
- ♦ Process Monitoring and Control
- ♦ Automatic Replenishment
- ♦ Tool Diagnostics

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Fig 1, Processing line with 4 Autocatalytic Stations

Autocatalytic Process Station Features

The autocatalytic processing station has several important and unique features. This includes:

Features

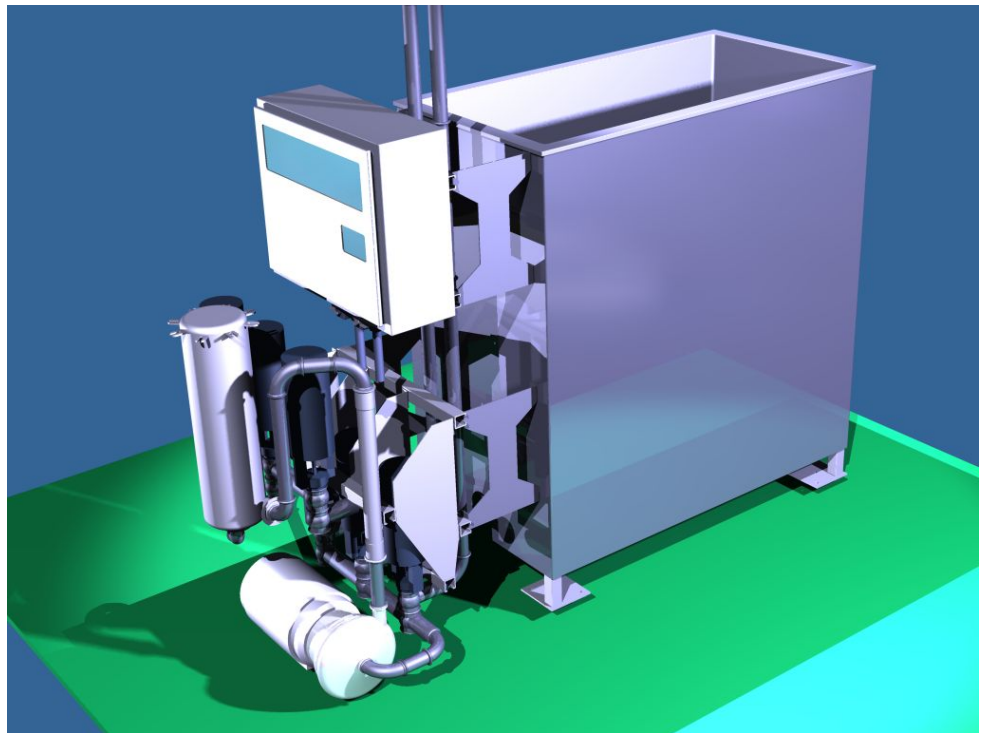|			
A	Automatic Passivation	G	Automatic Level Control
B:	Electronic Passivation	H	Pump & Heating Diagnostics
C	High Filtration, (40 MTO)	I	Automatic Nitric Rinse
D	Drip Proof Valves for transfer	J	Automatic Filter Drain
E	Automatic Replenishment	K	Automatic Filter Vent
F	Network Controlled	L	Double Mechanical Pump Seal

Fig. 2, 800L Autocatalytic System

These tools are sized for the specific work load of the application.   Systems ranging from 40L to 5000L and can be order to any size operation.

The software used to manage the system is called GALILEO. The program runs on a control server and communicates with a data server located in the same enclosure placed neat the processing area. These two units provide the instructions to the operators on how to deliver the specific tribological or corrosion resistant coating through a network of PC Workstations.

GALILEO

Galileo software provides a complete MRP solution for managing the workflow of parts through a set of processes. The software provides for multiple coatings on multiple surfaces on a part with specification control at each step. Inspection records are generated for each lot of parts processed and available for analysis.

The principle behind Galileo is the establishment of a detailed set of instructions for the operator to follow for producing more advanced coatings; and the monitoring of the results in terms of process management and operator proficiency. The net result is the ability to asses quality and maintain the equipment remotely, automating the support function and reducing the overall cost of delivering at 6 sigma.

STATION TYPES

TOOL UNITS	Part Number	Description
SOAK CLEAN	STI-100-V-L-W	heated, filtered, SS316, level,
ELECTROCLEAN	STI-120-V-L-W	heated, filtered, SS316, level, rectifier
ACID ACTIVATOR	STI-140-V-L-W	filtered, poly, level
ZINCATE	STI-160-V-L-W	filtered, poly, level
ELECTROLYTIC	STI-180-V-L-W	heated, filtered, SS316, level, rectifier
AUTOCATALYTIC	STI-200-V-L-W	heated, filtered, SS316, level, rectifier
HYBRID	STI-300-V-L-W	heated, filtered, SS316, level, rectifier
MEDIA CABINET	STI-500-V-L-W	Poly, leak, pump station, level
WET ANALYZER	STI-710-V-L-W	Titrator, selective ion, pH, leak
ENFINITY UNIT	STI-240-V-L-W	Orthophosphite Removal System

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