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History of Teledyne Integrated Designs

- Integrated Designs Inc. was founded in 1985, acquired by Roper Industries in 1993, and was owned by Roper as a limited partnership (L.P.)

- In February 2000 Roper Industries acquired CYBOR Corporation and consolidated the assets with Integrated Designs L.P.
  - CYBOR had been a world class supplier of precision dispense units since 1988

- Teledyne Technologies acquired Integrated Designs L.P. in 2019 and is now part of their Digital Imaging group.

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Teledyne - Strength in Numbers

- Teledyne Technologies business model breeds strength
  - Backing of ~$6B Corporation, with the responsiveness and creativity of a smaller company (ability to focus on niche markets and key customers)
  - Allow companies to operate independently to facilitate innovation and build resources where it makes financial sense
  - Consolidate activities within similar product groups or market segments for economies of scale
  - Build support network that utilizes:
    - Distributors
    - Corporate infrastructure

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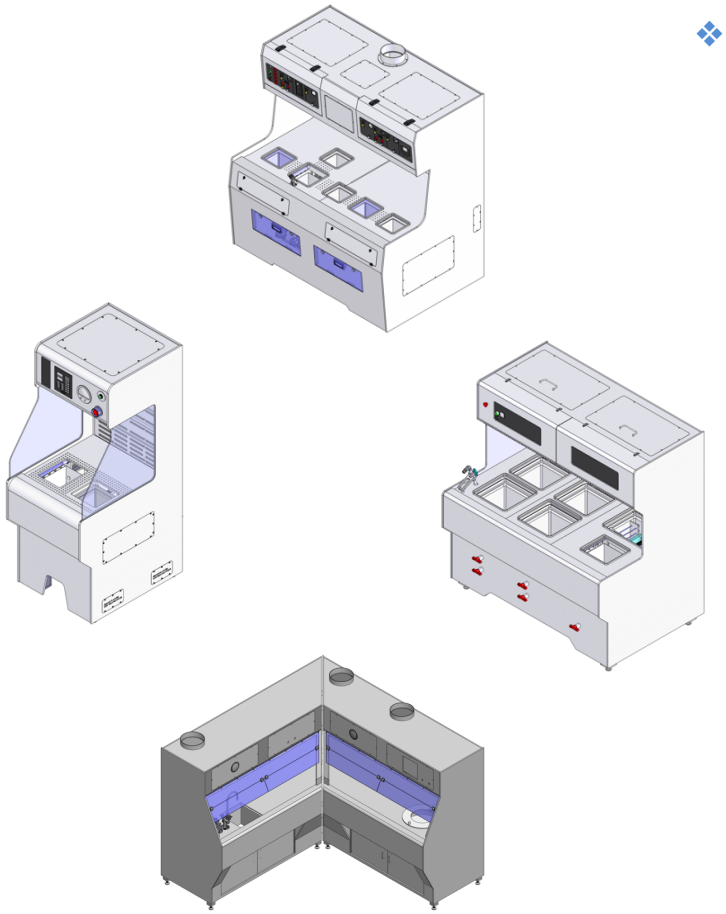
IDI-CMS

CHEMICAL MANAGEMENT SOLUTIONS

Manual Wet Station

IDI Wet Process Technology



Manual Process Systems

- CYBOR – "*Wet Process Systems*"
  - Designed to fit your space requirements
  - Full flow modeling ensuring complete fume capture
  - Face Velocity or Lip Exhaust configurations available
  - Integrated process and rinse tanks, wash sinks or single wafer spin processors
  - Single or dual cassette processing 3-6 inch wafers
  - Single cassette processing with 8 inch wafers
  - Manual controllers or IDI Touch screen PLC based software compatible
  - Numerous options for monitoring and/or control
  - Power plugs, Compressed air sources, DI water or nitrogen spray guns can be custom integrated as needed

Controllers Available

Push Button Controllers

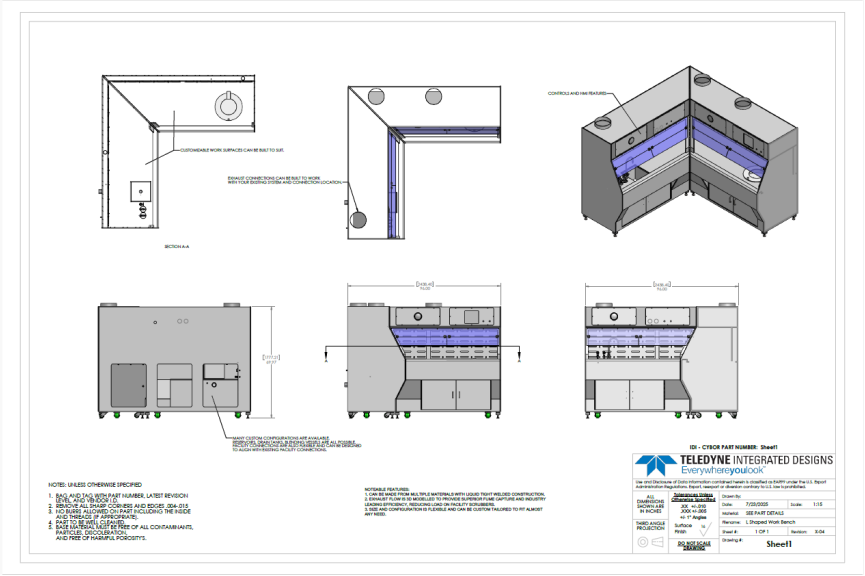
- JPC – Push Button Control
  - Lower cost system, easy to operate
  - Integrated pneumatics and heater control saves space
  - Programable PID and process times

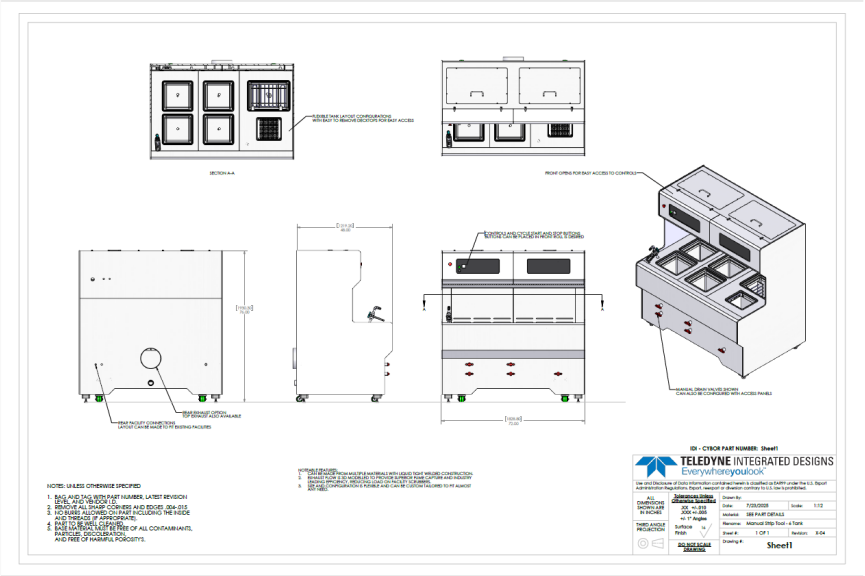
PC and PLC Controllers

- IDI – Control System
  - Addition of 15-inch touch screen
  - Installation of IDI software improves flexibility for Recipe as well as Tank Operation parameters
  - PC uses PLC for Input/Output device

Robot Enhancements

- Customized solutions
  - Every cleanroom requires maximum utilization of space.
  - ID strives to place the maximum capabilities in the smallest footprint to fit our needs
  - Exhaust, drains, facilities supplies can be located as needed on back, end or front of the station
  - Chemical fill and drain cart solutions available





IDI-CMS

CHEMICAL MANAGEMENT SOLUTIONS

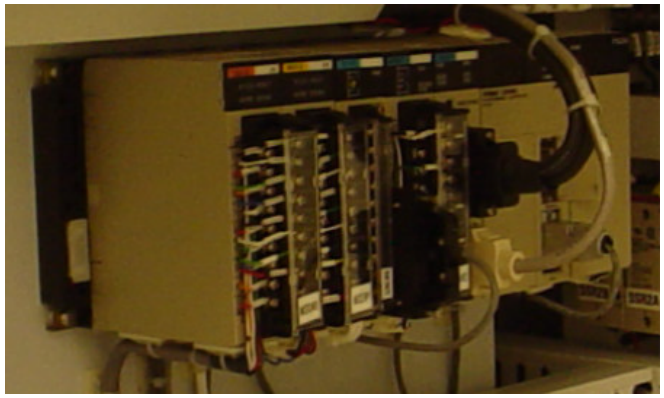
Software

HMI Control and Upgradable Features

- IDI standard product designs include the following:
  - **PLC**
    - Color touch screen with embedded PLC by Unitronics
    - SD card – load, backup and clone
  - **Components upgrades**
    - Teflon pumps from White Knight
    - Levitronix
  - **PLC**
    - I/O Configured as needed
    - Analog inputs and outputs
    - 0-5, 0-10, 4-20 in and out available
    - Dry contact relays for communication of system status and alarms
    - IDI software enables bulk chemical delivery and in-tank blending

I/O Control Improvements

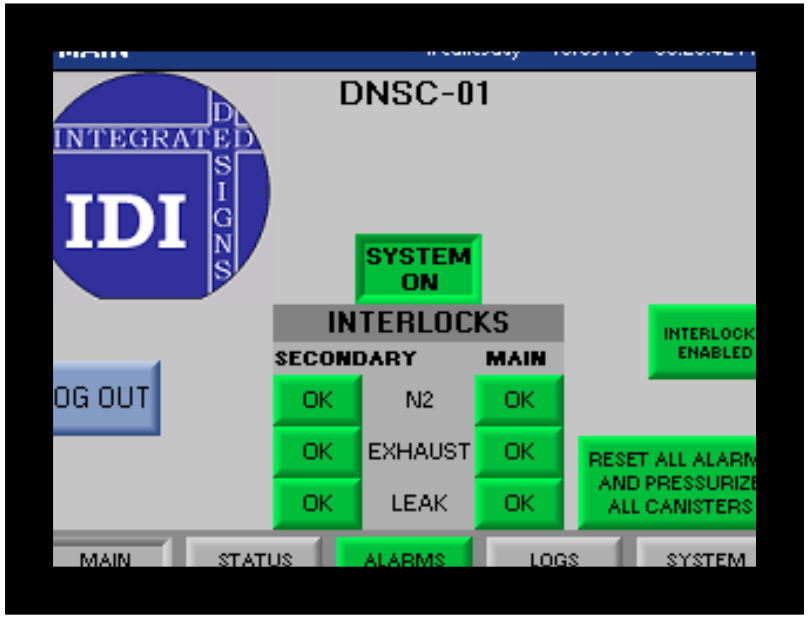
- Process Control Flexibility
  - Addition of new PC host utilized with PLC and motion controllers provides highly flexible recipe and tank control capabilities
  - PC control interface provides easier troubleshooting with advanced software control capabilities
  - New I/O System and software make process enhancements for concentration control and chemical savings possible. Lowering your COO



Data Monitoring and Logging

IDI Software

- Main Screen
  - All screens are designed with the operator in mind. Easy to navigate, makes troubleshooting faster and the tools more reliable.
  - Safety interlocks on the main page let the user know what is going on with the system before the doors are opened.



Software System Overview

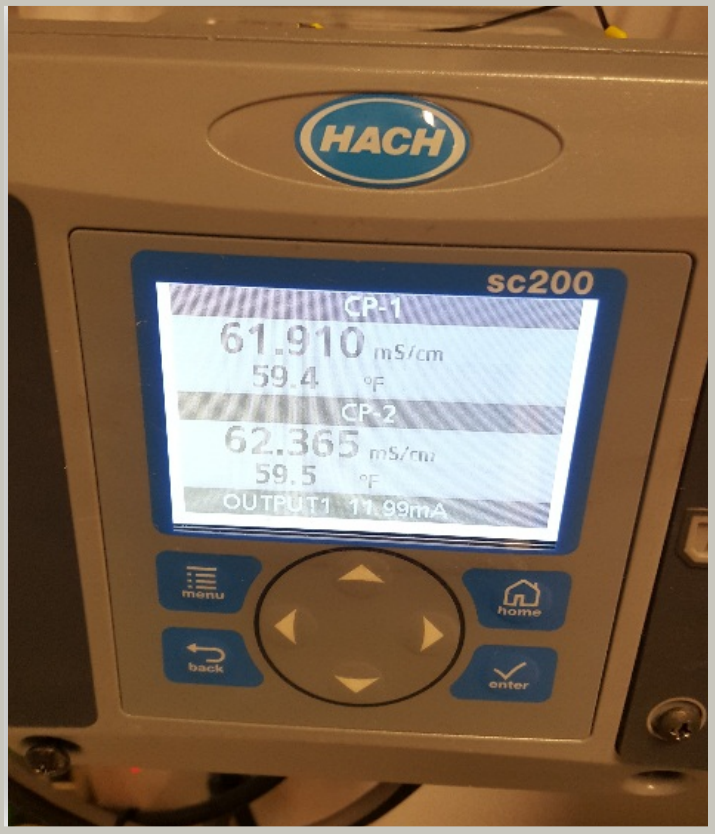
- Status screens provide an animated view of chemical flow and indicate which valves are open
  - Different status screens can be selected by the user.
    - Data is pulled from the selected system and provides status in real time
  - Status screens are versatile:
    - If connected via an Ethernet cable screens from multiple units may be accessed from a single location.
    - Allows the user to access the various system features by segregating specific functions on each screen

Multiple Access Levels

- Systems can have up to 3 different levels of access
  - Level 1: No log in required. Allows user to silence alarms and reset empty sources after they have been fixed.
  - Level 2: Maintenance: Allows most operational outputs to be forced on. Flush screens and timers can be accessed.
  - Level 3: Process: Allows setting changes on items that could affect the process.
- Login timers are provided so that a screen left attended will only stay active for the (user) programmed time.

Accuracy

- IDI can accommodate many different Metrology Sensors depending on the Accuracy required and best method to use per application.
  - Electrodeless Conductivity Sensors
    - Sensitivity: 0.01%
    - Response Time: 10 ms
  - Refractometer Sensors (K-Patent)
    - Sensitivity: 0.0002%
    - Response Time: 1 S
  - Titration (Mettler – Toledo)
    - Exact
    - Response Time: up to 5 min



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In Tank Chemical Blending

- Accuracy and cost savings
  - Designed to provide blend ratios from 1% to 99% concentrations through PLC controls
  - Designed with both a chemical storage tank and precession dispense options allow for mixing of new blends base don operator settings
  - Blending by recirculation through the process tank and integrated filtration.
  - All components, such as tanks and enclosures are constructed of polypropylene or FM4910 approved materials per the end user requirement
  - Many In-Line chemical monitoring metrology options
  - Air operated Dual Diaphragm Pumps or magnetically coupled centrifugal distribution pumps.

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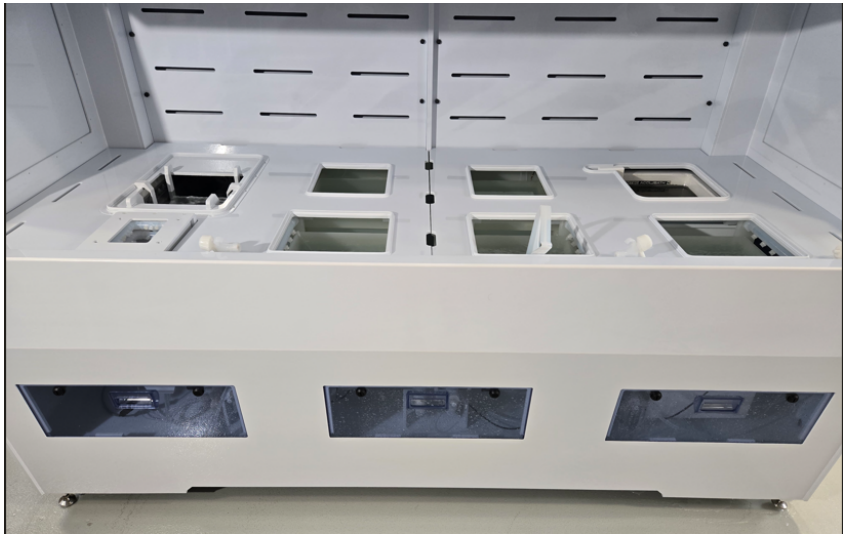
Summary

- IDI Product Enhancements will:
  - Give your wet station new life
  - Improve your process control
  - Enable new features, software support and upgrades
  - Remove proprietary and obsolete components
  - Enhance troubleshooting capabilities
  - Improve reliability and overall up time.



Process Area

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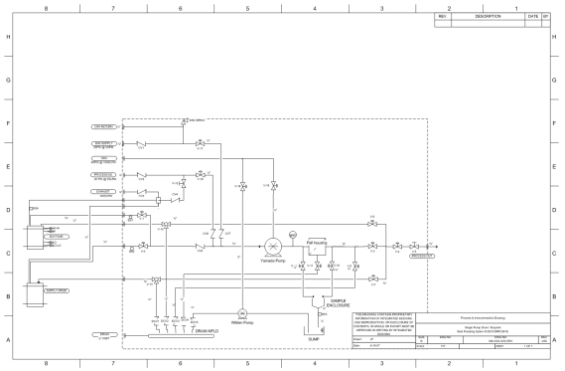
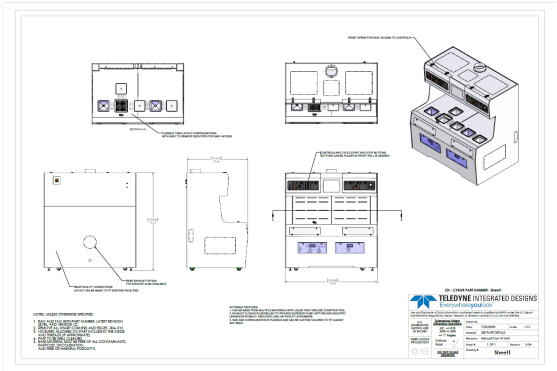
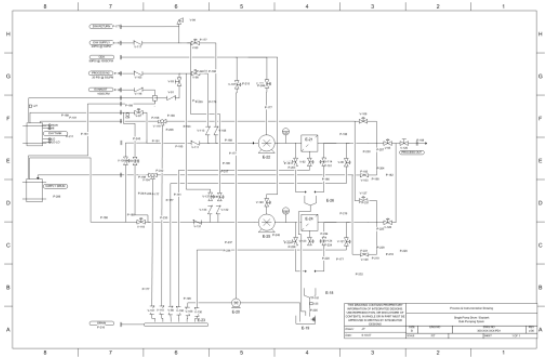
Factory Capabilities

Complete Engineering & Manufacturing







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World Wide Sales and Service Support