Business Area

**Semiconductor/LCD Field**
- **Chemical Equipment**
  - Chemical Supply Sys.
  - Chemical Dilution/Mixing Sys.
  - Chemical Recycle Sys.
  - Slurry Delivery Sys.
- **Gas Equipment**
  - Gas Delivery & Reactor Sys.
  - Toxic Gas Supply Sys.
  - Bulk Gas Supply Sys.

**Environmental/Energy Field**
- **Biogas Purification Equipment**
  - PSA (Pressure Swing Adsorption) Upgrading
  - Membrane Separation Upgrading
- **Renewable Energy Equipment**
  - Fuel Cell Power Generation Equipment
  - Solar Power Generation Equipment

**BIO/Medical Field**
- **Self-cleaning Equipment**
  - CIP (Cleaning In Place) Skid
  - SIP (Stem In Place) Skid

**Utility Field**
- **Utility Hook-up**
  - PCW, CDA, DI Water Line
  - Chemical & Toxic Gas Line
  - Dual pipeline, Duct, Vacuum Line
Central Chemical Supply System (CCSS) is an automatic central supply system that supplying high purity chemical and gas that used in manufacturing process such as semiconductor, BIO, etc. which in accordance with client’s quality requirements. We are committed to provide the best integrated service to client through strict quality control step by step from design to manufacturing, installation until system operation.
Chemical Delivery System (CDS)

Transfer & Supply System
- Standard Type of CDS.
- Chemical is transferred from 200L Drum to Supply Tank charge unit, Chemical in Supply Tank is supplied by Fab Supply unit.
- In basic, Supply Tank is divided into 2 units, with maximum capacity of 0.2m³.
- All equipment operation are controlled by PLC.
- Size : 2500x1700x2200

Supply System
- For chemical which require ‘High-rise’.
- CDS room is divided into upper part and lower part with the installation is mainly on the upper part.
- Can be operated with Supply Unit even without Charge.
- The operation flow is as follow : ACQC -> Transfer/Transfer & Supply -> Supply System
- Size : 1900x1600x2200

Transfer System
- This system enable the transfer of chemical in ACQC Storage to Supply Equipment or Trans & Supply Equipment Tank.
- The most applied chemical will be mixed/processed by ACQC
- The production is not based on the design, instead the system is produced based on the pump for transfer in ACQC System.
- Size : 1900x1600x2200
Chemical Monitoring System (CMS)

Real Time Chemical Monitoring System

1. Overview Monitoring
2. Unit Detail Monitoring (P&ID)
3. FAB Monitoring (POU & Leak)
4. Alarm, Event, Charge, Supply Maintenance
5. Chemical Usage
6. Unit Maintenance Data

CMS Server

Monitoring
- Unit Operation
- P&ID Monitoring
- Leak Monitoring
- POU Monitoring
- Alarm, Event
- Real Time Trend

DataBase

Data Recording Manager
For quick and safe monitoring, Recording S/W and data recording of different parts for MMI S/W systems are used to prevent standard Intouch Alarm DB overload and script overwrite.

OPC Server

Master PC
Gas Supply System is a system stably supplying high purity gas that used in manufacturing process such as semiconductor, FPD, Solar, etc. which in accordance with client’s quality requirements. We are committed to provide the best integrated service to client through strict quality control step by step from design, manufacturing, inspection until installation.
Gas Piping Concept

1. Non-flammable Gas

2. Poisonous, Flammable Gas

3. Poisonous, Flammable Gas with heater
Gas Cabinet

Gas Cabinet Overview
- Automatic door closure
- Modular U-Channel Supports
- Lockable access panel and wire reinforced safety glass viewing
- Non-protruding paddle type latch
- Neoprene gaskets
- Standard inlet air louver or optional diffuser plate
- Flat-top design
- Fire sprinkler head
- Cylinder restraints
- Rugged exterior construction
- Low profile, one-inch reinforced threshold

VMB (Valve Manifold Box)
The VMB is directly controlled via the process tool using a pneumatic signal. Our qualified engineering staff can aid in determining the appropriate signals. The Valve Manifold Box can incorporate both pressure and flow sensors to alert process tools or fab wide monitoring system on the status of the VMB.
- For high purity (HP) applications
- Orbital welding for stainless steel
- Fusion welding for Teflon®
- Sample ports
- In line pressure sensors
- In line flow sensors
- Leak detection
- Optional flow thru design for recirculation
- Floor mount
### Gas Cabinet Safety

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Function</th>
<th>Type of Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Auto Damper (A/D)</td>
<td>Fire spread prevention during fire outbreak, and internal reactive duct prevention</td>
<td>SiH4, GeH4 etc.</td>
</tr>
<tr>
<td>2</td>
<td>Sprinkler</td>
<td>First-aid firefighting when fire outbreak</td>
<td>Flammable Gas</td>
</tr>
<tr>
<td>3</td>
<td>EVSS</td>
<td>To increase the evaporation performance of low pressure liquefied gas for stable usage Maintain the pressure and prevent dew condensation</td>
<td>Low pressure gas (DCS, CIF3, C4F6 etc.)</td>
</tr>
<tr>
<td>4</td>
<td>Weight Scale (W/S)</td>
<td>To check the usage of liquefied gas, and weight control of usage vs supply pressure trend</td>
<td>Liquefied gas (Cl2, CIF3, DCS etc.)</td>
</tr>
<tr>
<td>5</td>
<td>Leak Detector</td>
<td>To detect Toxic Gas (Corrosive, Flammable) leakage</td>
<td>Toxic Gas supply system</td>
</tr>
<tr>
<td>6</td>
<td>U,VIR</td>
<td>To detect the fire outbreak inside supply system (flame wavelength detection)</td>
<td>SiH4, GeH4 etc.</td>
</tr>
<tr>
<td>7</td>
<td>High Temp Sensor</td>
<td>To detect the increase of temperature inside supply system (fire outbreak etc.)</td>
<td>Flammable Gas</td>
</tr>
<tr>
<td>8</td>
<td>Auto Guard (A/G)</td>
<td>To prevent Cylinder CGA Connector Miss Operation</td>
<td>SiH4, GeH4, BF3 etc.</td>
</tr>
<tr>
<td>9</td>
<td>Back Fire Protector</td>
<td>To prevent backfire by BTL when fire outbreak inside the supply piping</td>
<td>C2H2 etc.</td>
</tr>
<tr>
<td>10</td>
<td>Valve Shutter (A/S)</td>
<td>To prevent damage spread by automatic Cylinder Main Valve during un-normal situation</td>
<td>DCS, CIF3, SiH4 etc.</td>
</tr>
</tbody>
</table>
# AC 2000 II’s Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Gas Supply Method</th>
<th>Specialty Gas</th>
<th>Control System</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC 2000 II - CC2</td>
<td>Gas Supply by Auto Change-over</td>
<td>Corrosive Gas (Refer to Model)</td>
<td>PLC CSIGH(OMRON) Touch Screen: GP477R (Digital Proface) Auto Recover System</td>
<td>AC 208~240V, 3A, 50/60Hz, Single Phase (Heater – Max. 28A)</td>
</tr>
<tr>
<td>AC 2000 II - CF2</td>
<td></td>
<td>Flammable Gas (Refer to Model)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC 2000 II - RI2</td>
<td></td>
<td>Inert Gas (Refer to Model)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC 2000 II - BI2</td>
<td></td>
<td>Inert gas (Refer to Model)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Environment

| Environment | Temperature : 5 ~ 35℃  
|             | Humidity : 0 ~ 80%(Non-Condensing)  
|             | Altitude : <2,000m  
|             | Clean Class : 100~10,000  

<table>
<thead>
<tr>
<th>Utility</th>
<th>Gas Supply Method</th>
<th>Gas Supply by Auto Change-over</th>
</tr>
</thead>
</table>
| P-N2    | Pressure : 75 ~ 95 psig  
|         | Purity : >5N(99.999%), Purifier Recommended Flow Rate : 45~60 slpm |
| G-N2    | Pressure : 75 ~ 100 psig  
|         | Flow Rate : >4N(99.99%) Flow Rate : 50~60 slpm |
| Exhaust Duct | PLC CSIGH(OMRON)  
|             | Touch Screen: GP477R (Digital Proface) Auto Recover System |

<table>
<thead>
<tr>
<th>Noise</th>
<th>&lt;70 dB</th>
</tr>
</thead>
</table>
# AC 2000 II’s Specifications

<table>
<thead>
<tr>
<th>Parts</th>
<th>Material</th>
<th>Roughness</th>
<th>Maker</th>
</tr>
</thead>
</table>
| Regulator| SUS316L DM EP Or EP       | $R_{\text{MAX}} < 0.7 \, \mu\text{m}$  
              $R_a : 5 \, \text{um}$ | TESCOM AP-TECH |
| Valve    | SUS316L DM EP Or EP       | $R_{\text{MAX}} < 0.7 \, \mu\text{m}$  
              $R_a : 5 \, \text{um}$ | FUJIKIN, BEKAN  
              NUPRO, PARKER |
| Filter   | SUS316L DM EP Or EP       | $R_{\text{MAX}} < 0.7 \, \mu\text{m}$  
              $R_a : 5 \, \text{um}$ | MOTT PALL, MILLIPORE |
| Filter   | SUS316L DM EP Or EP OPTION (Corrosive: Hastelloy C-22) | $R_{\text{MAX}} < 0.7 \, \mu\text{m}$  
              $R_a : 5 \, \text{um}$ | MOTT PALL, MILLIPORE |
| Tube     | SUS316L DM EP Or EP       | $R_{\text{MAX}} < 0.5 \, \mu\text{m}$  
              $R_a : 5 \, \text{um}$ | SUMIKIN, KUZE VALEX, PRIMET |
| Transducer| SUS316L DM EP Or EP OPTION (Corrosive: Hastelloy C-22) | $R_{\text{MAX}} < 0.7 \, \mu\text{m}$  
              $R_a : 5 \, \text{um}$ | SEFA, AMETEK D.I |
| Fitting  | SUS316L DM EP Or EP       | $R_{\text{MAX}} < 0.7 \, \mu\text{m}$  
              $R_a : 5 \, \text{um}$ | FUJIKIN, TAETKWANG,  
              BANKAN, PRIMET, CAJON |
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