

ACETYLENE CYLINDER FILLING PLANTS

Economical Acetylene Production Technology for max. Carbide to gas yield, Safer & Automatic Operation.



LOWER YOUR FACILITY'S OPERATING COSTS-take Acetylene directly from Calcium Carbide

Eliminate the Expense of Purchasing, Receiving and Monitoring your acetylene gas cylinders supply's. Hi-Tech Engineered Solutions Designs, builds & commissions turn-key based acetylene cylinder Filling plants worldwide. with a moderate capital investment in On-Site Acetylene Plant can result up-to an 85% reduction in Acetylene Gas costs, eliminating the unnecessary cost of transportation, Storage and Heavy Cylinder rentals. The systems offered are fully automatic 7" touch screen control, Easy to maintain and produces an High Quality Acetylene suitable for Fabrication & Speciality Gas Applications. Hi-Tech's Acetylene Cylinder Filling Systems are Intrinsically Safe, Efficient and having higher carbide yields.

Our Generators are built to provide thousands of hours of continuous, reliable operation. All Acetylene Systems pay for themselves within months.

Join the growing number of customers that have ended their expensive reliance on delivered Gas.



Cylinder Filling Acetylene Plant

THE EXPERIENCE

Hi-Tech Engineered Solutions, one of the World's Leader in Installing, manufacturing turn key based acetylene gas cylinder plants, also offers Custom Engineered Acetylene gas Plants for process chemicals Industry that are designed to Specific Requirements of Installation with Capacities ranging from 20 kg per hour to 200 Kg per hour.

Hi-Tech's high-efficiency, rugged Medium pressure generator design offers extremely low energy consumption with higher carbide to acetylene Gas Yields (up-to 11% extra than traditional Plants), system efficiency of 96%, easy operation, and long-term Plant life of 20 years or more under standard tests.

Hi-Tech Engineered Solutions has designed and supplied more than 100 Acetylene Cylinder filling plants including the largest units. Plants are currently in use all over the world in remote, harsh, and demanding environments throughout globe. Besides metal fabrication, the major Acetylene Gas applications are production of variety of polyethylene plastics, Glass industry Aerospace industry, nano-materials production and heat treating en and Oxygen.

Recently, Hi-Tech has developed dry type Acetylene gas plants, that has gained more importance where water supply is limited.

THE SCOPE OF SUPPLY

- Acetylene Generator
- Cooler Condenser
- Low Pressure Drier
- Acetylene Purifier
- Ammonia Scrubber
- Acetylene Compressor
- Filling Hopper
- Air Operated Hoist
- Air Compressor
- Purifier Scrubber
- High Pressure Drier
- High Pressure Filter
- Flame Arrester
- Back pressure Relief Valve
- Pneumatic Acetone Pump
- Scale for Weighing Cylinders
- Check valves
- Flame Arrester
- Weatherproof PLC Panel with Touchscreen
- Drain Back Manifold
- Interconnecting air, gas and water lines set
- 2 sets of Charging Manifolds with Flame Arresters with Stem Check Valves and Main Isolation Valves





- Nomenclature**
- 1 Acetylene Generator
 - 2 Cooler Condenser
 - 3 Low Pressure Drier
 - 4 Acetylene Purifier
 - 5 Ammonia Scrubber
 - 6 Acetylene Compressor
 - 7 H.P. Driers & Filters
 - 8 Cylinder Filling Ramp

Typical Process Flow Diagram for Acetylene Cylinder Filling

PLANT UNIQUE FEATURES

- ✓ Completely Pre-Piped & Skid Mounted.
- ✓ Containerized Shipments right from factory.
- ✓ Critical process parameters monitored and recorded every 500 milliseconds.
- ✓ Automatic shutdown for in case of high Temperature, High Pressure, High Water Level etc.
- ✓ Designed in accordance with local standards.
- ✓ Automatic and unattended operation.
- ✓ On-site start-up Training and assistance by Hi-Tech's Engineered Solutions technicians anywhere in the World.

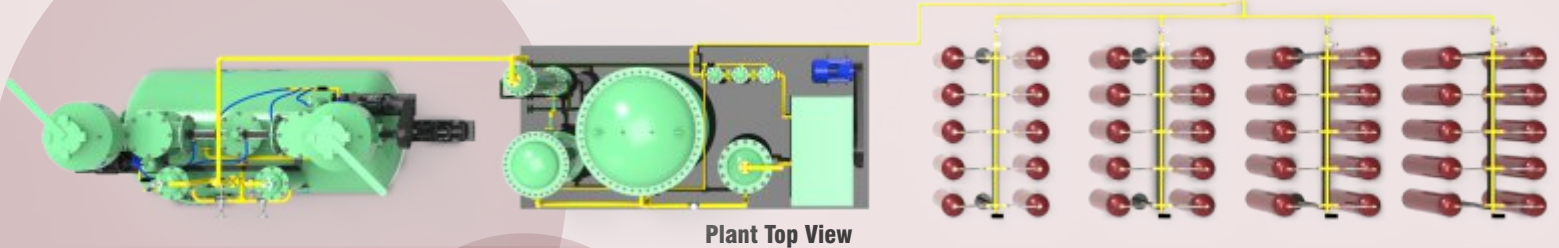
THE PROCESS- for Acetylene Cylinder Filling

The reaction of Calcium Carbide / Chloride with Water produces Acetylene, Calcium Hydroxide, as the reaction is instantaneous Acetylene is immediately produced, Acetylene is pre-cooled with help of cooler condenser, excess moisture is removed with help of Low Pressure Drier, Dry Acetylene thus produced is passed through Purifier (filled with specially selected regenerative type mass) for further gas purification. The Ammonia scrubber is provided for removal of ammonia gas, Acetylene is finally compressed to working pressure with help of a Acetylene compressor, filtered and Dried with Acetylene filter & driers and finally filled to Acetylene Cylinders.

THE ADVANTAGES

Hi-Tech's Acetylene Plants Can be operated and maintained without extensive technical knowledge or training. our easy to follow manuals, drawings, videos and on-site training will enable your staff to properly calibrate and maintain the whole system. Routine maintenance is limited to normal compressor up-keep and periodic cleaning and replacement of filter elements only.

- 1 **Modern**- Plant is designed with standard Safety Practice from NFPA, CSB, FDA etc.
- 2 **Economical**- Higher Acetylene Gas Yields with small plant foot-print and lower initial costs.
- 3 **Compact**- The Plant does't required any bulky gas holder system & consumes very less space.
- 4 **Efficient**- Compact design with PLC Operation controls all plant parameters.
- 5 **Easy Installation**- The Plant arrives on pre-piped skids for minimum on-site assembly & installation.
- 6 **Safe**- The Plant operation and critical points like Level, Temperature & Pressure is controlled by an intelligent industrial grade PLC, Hence provides an un-equalled protection to acetylene filling plants.



Plant Top View

A Full Line of Standard Capacity Acetylene Generators Available

Our Generators Provides from 20 to 200 kg per hour of Acetylene. Use the following Table to determine which model is most suitable to your application.

Model	HTA-20	HTA-50	HTA-100	HTA-150	HTA-200
Specifications					
Capacity	20 Kg/Hr	50 Kg/Hr	100 Kg/Hr	150 Kg/Hr	200 Kg/Hr
Operating Pressure	0.5 Bars G	0.5 Bars G	0.5 Bars G	0.5 Bars G	0.5 Bars G
Purity*	99.6% V/V	99.6% V/V	99.6% V/V	99.6% V/V	99.6% V/V
Startup Time	5 Minutes	5 Minutes	5 Minutes	5 Minutes	5 Minutes
Carbide Size	17-15	15-25 mm	15-25 mm	15-25mm	25-50 mm
Cylinders Filled per Batch**	24	58	116	174	232
Connected Power	10 KW	15 KW	35 KW	50 KW	65 KW

*using USA/UK grade Calcium carbide having Max 15% Dust Concentration; ** A batch is of 8 Hours and Cylinders having 7 kg acetylene capacity. Note- Custom built models also available, Specifications are subject to change without prior notice.

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YOUR LOCAL CONTACT

