Chem Process has been designing Steam Jet Thermocompressors since decades and each unit is designed specifically to suit a customer's process and mechanical requirements to ensure maximum operating efficiency.

**Liquid Jet Ejectors**

Liquid jet ejectors are specially designed to operate using water, solvent or any other clear liquid and generate vacuum corresponding to the upper pressure of the liquid used in the ejector. They are suitable for applications like dehydration and evaporation. Liquid jet ejectors are maintenance free, easy to operate and fail safe for low level installations. External heat exchanger can be provided to maintain liquid temperature in accordance with vacuum requirement. For higher vacuum, liquid jet ejector can be utilized along with vacuum pumps in combination system.

**Steam Jet-Liquid Jet Ejector Combination Systems**

These are small units of low capacity and low level installations. They are suitable for batch plant applications requiring coarse vacuum systems. Normally used for batch plant applications requiring coarse vacuum systems.

**Steam Jet-Vacuum Pump Combination Systems**

- Designed to handle small quantities of non-condensable gases and large quantities of condensable vapours on intermittent or batch processes.
- Low level and low energy consumption with efficient scrubbing at startup stage, offers the advantage over other systems in producing vacuum in intermittent or batch processes, better desorbing to the atmosphere, making it an ideal selection for contaminated and/or corrosive applications.

- These are available in multi-element forms as central vacuum sources on multi-purpose process applications. steam jet ejectors are suitably used for back pressure at 75% of vapour in medium duty process sources. The systems are available in various liquid materials, specified for usually used for batch plant applications requiring coarse vacuum systems.

**Steam Jet Vacuum Pump Combination Systems**

These are small units of low capacity and low level installations. They are suitable for batch plant applications requiring coarse vacuum systems. Normally used for batch plant applications requiring coarse vacuum systems.

**Steam Jet-Liquid Ring Vacuum Pump Combination Systems**

- Designed to handle small quantities of non-condensable gases and large quantities of condensable vapours on intermittent or batch processes.
- Low level and low energy consumption with efficient scrubbing at startup stage, offers the advantage over other systems in producing vacuum in intermittent or batch processes, better desorbing to the atmosphere, making it an ideal selection for contaminated and/or corrosive applications.

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EJECTORS, VACUUM SYSTEMS, PACKAGES & HYBRIDS

Ejector Principle
having no moving parts, work on the ejector-venturi principle of

design personnel to solve the most challenging process requirements.

Ejectors, syphons and ejectors, Chem Process retains experienced
compressors, scrubber systems, desuperheaters, thermocompressors,
the design of steam jet vacuum systems, steam jet heaters, exhausters,
crystallization, drying, desalination and heat transfer equipment for the

Chem Process, designs and manufactures vacuum, evaporation,
customized engineering solutions

Types of Ejector Systems:

Single Stage Steam Ejectors
Steam & Air Discharge

Multi Stage Steam Jet Ejector Systems

Supersonic

Subsonic

Diffuser

Nozzle

Steam Pressure

Operating

Discharge

Steam & Air Discharge

Disposal of contaminated water is of growing concern in
preconcentration. Effluent with high water content must undergo
conditioning before final disposal. A combination of vacuum
application. Chem Process often actually size a unit for individual
requirements, as new designs provide far greater capacities than
are the most expensive.

Steam jet Thermocompressors

A Steam jet thermocompressor is an energy saving device that
complements pressure steam, or vacuum steam, in high/medium

Barometric Condensers

are generally used when low cost water is available
in sufficient quantity. These are of simple design, and
require auxiliary apparatus only. They are divided
into those which are used in the continuous or
condenser prevents discharge to the drain and permits

Surface Condensers

for a given set of operating conditions, a table of individual
vapor pressure versus pounds per square inch absolute and the
amount of motor steam is calculated. The man and pressure
of the motor steam determines the size of the surface

Ejector Advantages

Chem Process ejectors are precision-machined and performance-
flows up to 40,000,000 m³/hr at 100 microns.

Chem Process has built multi-stage ejectors to handle volumetric
vapour ratios, cooling water temperatures and utility costs.

Depending on the auxiliary equipment used, two and three stage systems can be either condensing or non-
condensing types. Four, five and six stage systems are usually condensing types, but available in non-condensing.

Types of Ejector Systems:

Single stage steam ejectors
Multiple stage steam jet ejector systems
Single stage steam jet condensing ejectors
Combustion steam ejector and liquid ring vacuum pump systems

- Can handle corrosive and slugging liquids, solid and abrasive
- Can handle high volumes of suction fluid at low absolute pressures.
- Can handle corrosive and organic vapour, other gases and their mixtures.
- Can be operated with different motive fluids, viz. steam, air,
organic vapour, other gases and liquid mixtures.
- Expensive pipe construction.
- Can be used in installations or units with variable speed design.
- Can handle high volumes of suction fluid at absolute pressures.
- Can be manufactured in suitable materials for extremely corrosive
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The graph shows the relative suction pressure capabilities of Chem
Process steam jet ejectors from single-stage through six stages. In
some cases, combination units, where this occurs, a combination of total costs and steam consumption should be made before making a
decision as to the types required for specific requirements. Chem
Process engineers should be consulted for their recommendations,
which can be based on their expertise and extensive experience of various