Petroleum Secondary Processing Technology

Lecture (1) / Vacuum Systems

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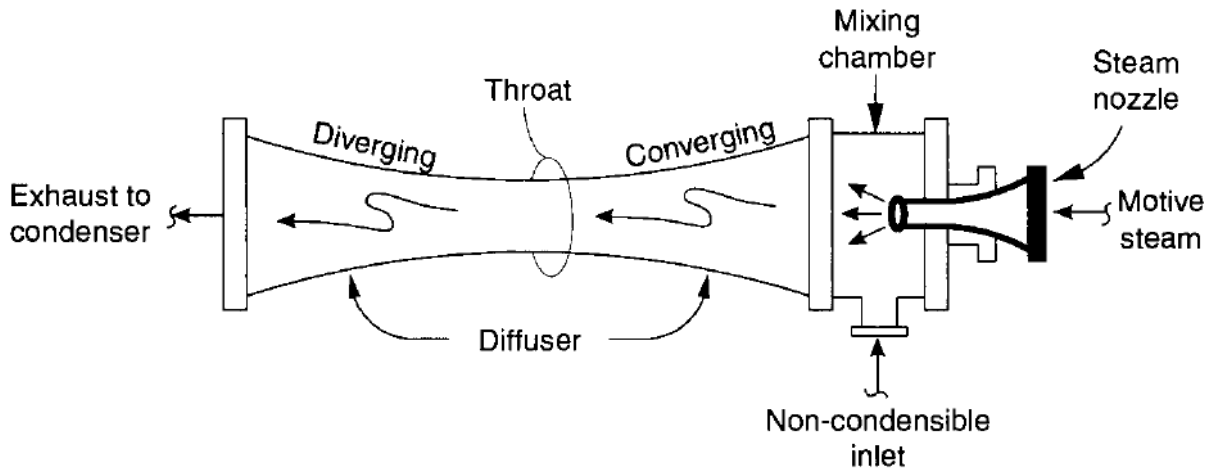
Vacuum Systems

- Introduction

Vacuum systems are important in all segments of the chemical process industry. The major types of vacuum devices are

1. ejectors,



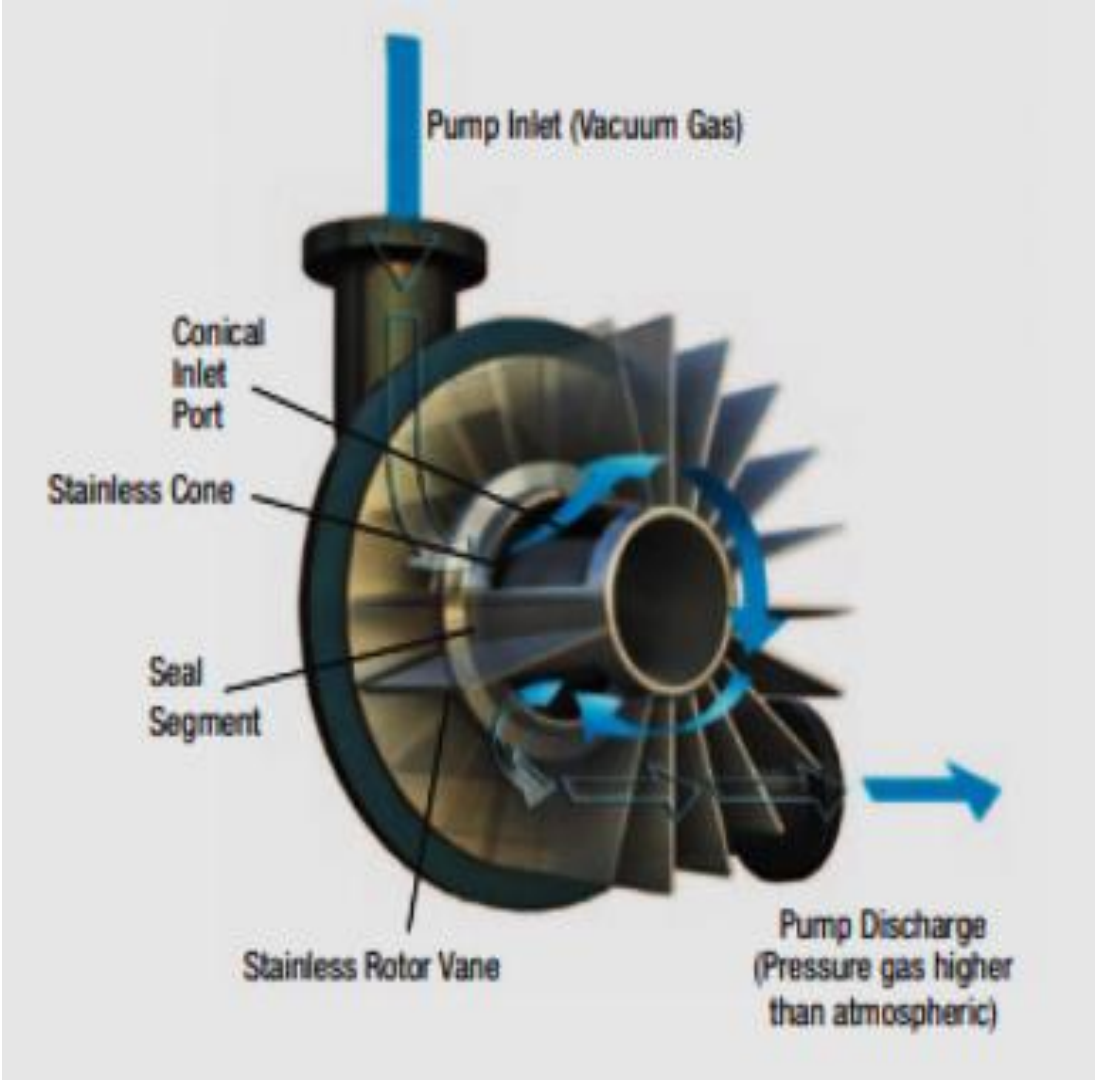
1. Steam ejector operation
2. Steam ejector

Vacuum Systems

2. liquid-ring pumps,

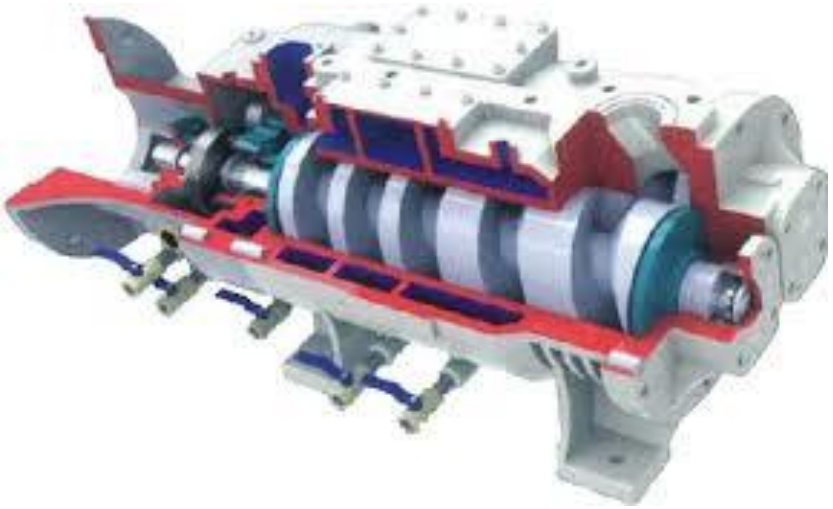
See link

Liquid ring vacuum pump



Vacuum Systems

3. and dry pumps.



Dry Vacuum Pump

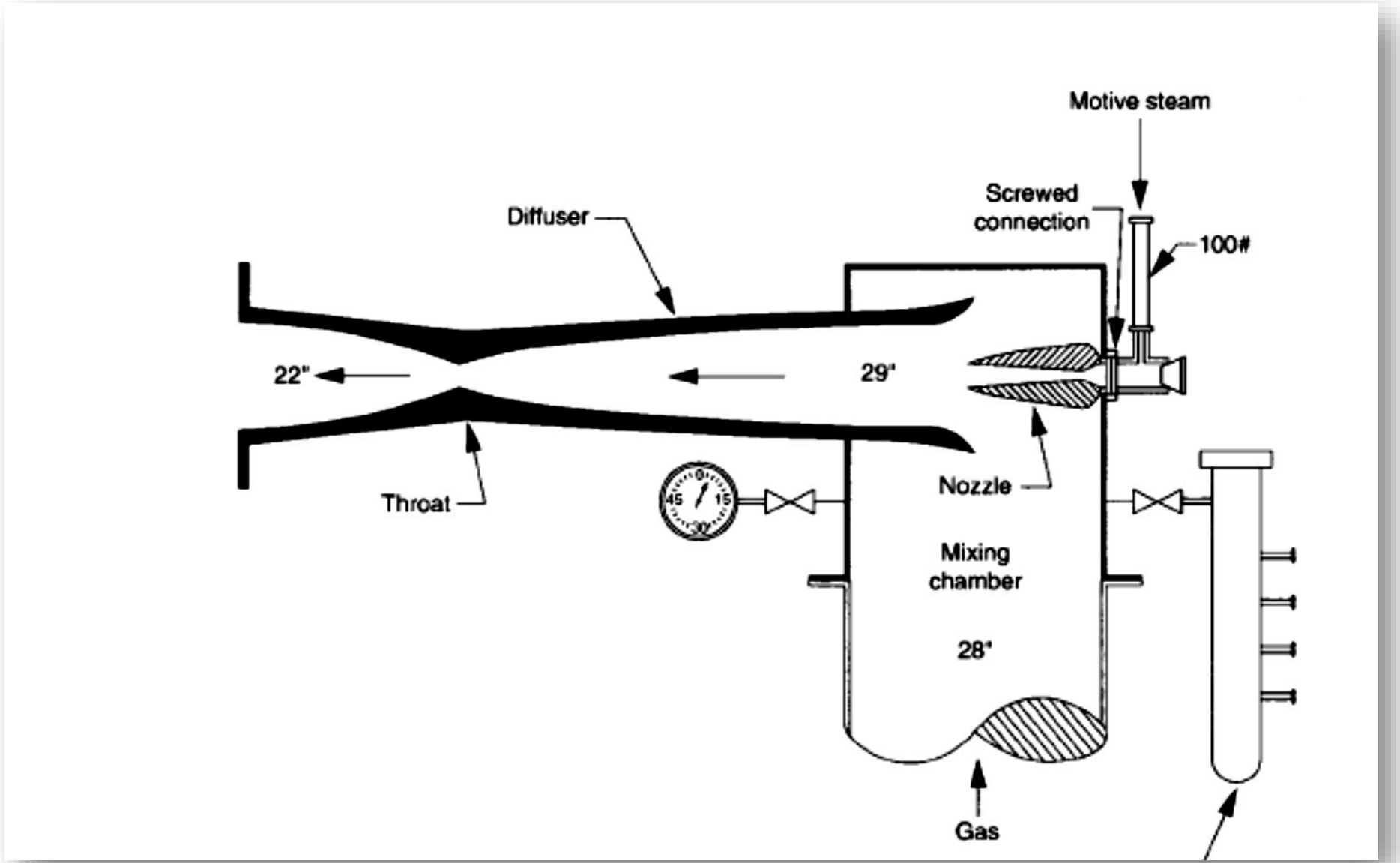
Multiple devices are often combined to achieve vacuum goals.

Vacuum Systems

Chemical engineers have three primary challenges when designing vacuum systems:

1. specification and selection of the vacuum source,
2. piping and installation details, and
3. instrumentation and controls.

Many standard practices apply to the systems, but each application should be evaluated on its merits to avoid potential problems with performance, reliability, safety, and emissions.


Motive steam
Screwed connection
100#
Diffuser
22"
29"
Throat
Nozzle
Mixing chamber
28"
Gas

End of Lecture 1