

Liquid Jet Compressors for Flare Gas & LP Gas Compression

In the current tough economic climate Liquid Jet Compressor technology (LJCs) can be an attractive low-cost solution to recover flare gas with distinct advantages over traditional compression technologies. LJCs do not have the common disadvantages shared by rotating Compressors including high operating costs, specialized maintenance requirements and costly spare parts.

On many existing installations readily available 'free' energy and excess plant capacity can also be utilized using LJC technology to minimize CAPEX and OPEX. For these cases, in particular, the drivers to use LJC technology are compelling.

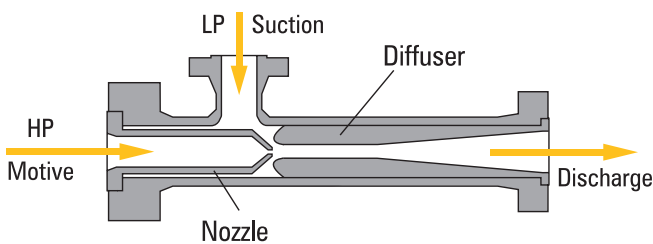


Fig. 1

Figure 1 shows the basic operating principle of an LJC which is based on Bernoulli's principle and states that as the speed of a flowing fluid is increased, its pressure decreases. Conversely, as the velocity of a flowing fluid decreases, its pressure must increase.

Main Advantages of LJC Technology

- Low cost and maintenance
- Simple construction and installation
- No moving parts in the compression zone
- Up to 150:1 compression ratio possible in one stage
- Ability to handle solids and liquid slugs
- Ideal for sour gas duties
- Ability to handle wide range of process conditions
- Custom designed to handle required flare gas flows
- 0 to 100% flare gas turndown
- Small plot space
- Can operate using 'free' motive energy
- Can utilize existing Separator capacity

Configuration

There are two configurations used for typical LJC Systems:- Once-through or Recirculation. Once-through systems are common for upstream applications, where existing sources of 'free' motive energy are often available, and Recirculation systems for downstream applications. Figure 2. shows a Recirculation LJC system with the recommended method for controlling performance.

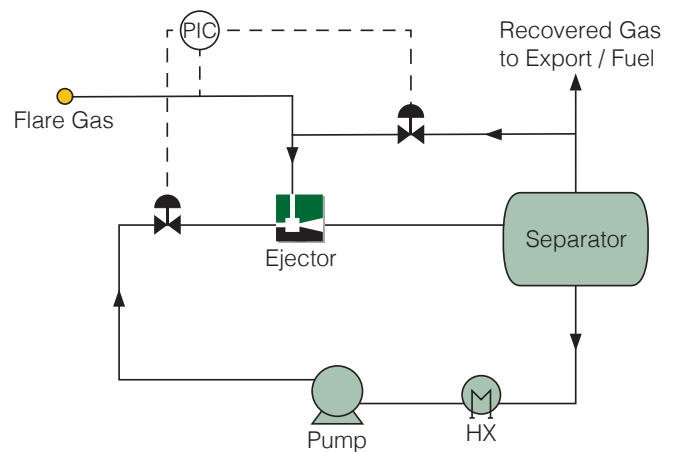


Fig. 2

For sour gas applications amine solutions can be used as the motive liquid along with simple Packed Tower Columns installed within the Separator gas outlet to remove H₂S.

