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Basic Methods of Gas Drying

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ABSTRACT: The article describes the technological processes of different methods of drying gas from moisture; review of adsorbents and absorbent renewal; The advantages and disadvantages of these methods are emphasized.

KEYWORDS: gas elimination, absorption, adsorption, renewal, reagents, gas discharge scheme.

Introduction

Natural gas is commonly used as a low-cost, high-calorie fuel (54 cubic kj is emitted when 1 cubic meter is burned). It is one of the most efficient fuels for both domestic and industrial use. Pipelines are the most prevalent means of distributing gas to customers.

However, before servicing the main pipelines, the gas must be prepared to meet a number of requirements. The most difficult of these is the temperature of the dew point across water and hydrocarbons. The following basic solutions are available to meet these requirements:

Main part

1. Low temperature separation (NTS)

   This technology provides:

- separation of the main gas and removal of liquid fungi from the inlet gas heater;
- gas inlet flow cooling in the cooled gas / gas heat exchanger;
- gas cooling by flow gas cooling, where a throttle (Joule-Thomson effect), wound tube, turbodetander can be used;
- subsequent separation of refrigerated gas from low temperature gas separator;
- heating the prepared gas in the heat exchanger before servicing the main.

2. Low temperature condensation (LTC)

   The technology provides:

- separation of the main gas and removal of liquid fungi from the inlet gas heater;
- air cooling devices (AVO), cooling the gas inlet flow in the heat exchanger due to an external cooling source, which can be different cooling machines;
- subsequent separation of the cooled gas in a low-temperature gas heater.

3. Preparation of adsorption gas

   The technology provides:

- separation of the main gas and removal of liquid fungi from the inlet gas heater;
- adsorption column that absorbs moisture in the solid adsorbent gas;
- An outlet filter separator in which sedimentation (capture) of adsorption dust is carried out.

The choice of gas drainage method is important in designing the development of the field. The selection includes determination of process equipment, reagent-absorbers and total gas drying costs.

There are currently two main methods of gas drying: absorption (drainage with liquid absorbents) and absorption (drainage with solid absorbents). The essence of the adsorption gas absorbs the solid absorbing pairs of molecules

Water. The drying process is carried out in periodic apparatus with a solid layer of adsorbent.

Adsorbents are mainly used:

- Silica gels;
- Aluminosilicate;
- Activated alumina;
- Bauxite;
- Zeolites.

The most common adsorbent is silica gel.

To reduce the resistance to gas movement, adsorbents should be produced in the form of granules. The refresh temperature of adsorbents is usually 160-180 C.

The process of gas adsorption is much simpler than absorption. In the first stage, the gas passes through a separator that separates mechanical impurities and droplets of moisture. The gas then enters the apparatus with the adsorbent (flow diagram such devices must have at least two), where the adsorbent absorbs moisture from the gas. In addition, the already dried gas will continue in the technological direction or in the gas pipeline involves the use of dormant moisture absorbers. Diethylene glycol (DAG) and triethylene glycol (Teg) are frequently used as absorbents, so we consider glycol as an absorbent.

The principle of gas drainage with a vacuum cleaner is that the gas passes through the separator and absorber in series. In the separator, mechanical compounds and dripping liquid are separated from the gas. In addition, the gas enters the bottom of the absorber and moves upwards, where it comes in contact with the countercurrent of glycol, which is caused by the moisture of the absorbing gas. The dried gas then moves according to the technological scheme and the saturated absorber enters the regeneration.

The regeneration process is very complex, so we only select the basic steps and upgrade devices. After absorption, the saturated glycol enters the aerator where absorption and separation of gas residues occur. The glycol then passes through a heat exchanger, where it is heated due to heat exchange with the reconstituted glycol. In addition, the heated glycol passes through the regeneration column (desorber) and the evaporator in series. In the desorber, mass and heat exchange takes place with a stream of steam, which corresponds to the top of the column.

Conclusion

The gas assimilation method is now widely used because it is difficult to automate adsorption, so it is more expensive. In addition, liquid absorbers are distinguished by good water solubility, low cost, good anti-corrosion, ease of renewal.

References

1. Milstein, L. M. oil and gas separation technique [text]: reference / L. M. mil - Stein, S. I. Boyko, E. P. Zaporozhets. Jump to: navigation, search— 240 p
2. Technological regulation UKPG - 8 Bear me-Watchdog— - G. Nadym, 2019 for more accurate construction of products and suppliers tape.
3. Alexandrov, I. A. correction and absorption apparatus [text]: textbook for university students / I. A. Alexandrov.— Moscow: Chemistry, 1978.— 277 p.
4. Gritsenko, A. I. Gas collection and fishing in the northern fields of Russia [text] / A. I. Gritsenko [et al.] - Moscow - Nedra, 1999.— 473 with.
5. Collection and preparation of gas and gas condensate fields [electronic resource] / N. L. Shek-Shukov // DocPlayer. ru. - 2013.- Access procedure: http://docplayer.ru/38031452-Sbor-i-podgotovka-produkcii - gazovyh-i-gazokondensatnyh-mestorozhdeniy.html

