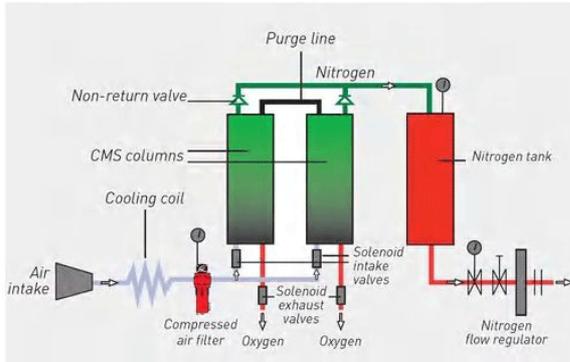


PSA NITROGEN



MARUTI CORPORATION having a modern facilities with over 50000 square feet of manufacturing space near Vadodara (Gujarat, India).

Vadodara is one of the biggest industrial and chemical complexes hub in India making us ideal for easy availability of specialized skilled engineers, man power, spares & instruments availability also.



The Nitrogen generation plant based on the PSA-process consist of two adsorption towers filled with carbon molecular sieve. Compressed and purified air is passing the adsorption towers. Mainly Oxygen is adsorbed by the carbon molecular sieve and Nitrogen enriched gas is leaving the tower. During adsorption in one tower the second tower is totally regenerated just by depressurization to ambient pressure. The Oxygen enriched off gas with 30-35 vol.-% Oxygen content is vented to the outside atmosphere. After about one minute adsorption in one adsorption tower the process controller is switching over to the second tower and the first one is regenerated Atmospheric air contains essentially 78% nitrogen and 21% oxygen.

Ordinary dry compressed air is filtered and passed through a technically advanced bundle of hollow membrane fibers where nitrogen is separated from the feed air by selective permeation. Water vapor and oxygen rapidly permeate safely to the atmosphere, while the nitrogen gas is discharged under pressure into the distribution system. Pressure, flow rate and membrane size/quantity are the main variables that

affect nitrogen production. Nitrogen purity (oxygen content) is controlled by throttling the outlet from the membrane bundle(s). At a given pressure and membrane size, increasing the nitrogen flow allows more oxygen to remain in the gas stream, lowering nitrogen purity. Conversely, decreasing nitrogen flow increases purity. For a particular purity, higher air pressure to the membrane gives a higher nitrogen flow rate. Purity ranges of less than 90% to 99.999% are possible. By combining multiple membrane bundles, an infinite number of flow/purity ranges are available to satisfy practically any application that requires nitrogen gas.

PSA Nitrogen N₂ Gas Generator Plant is an Inertisation Gas Atmosphere Generator ... enabling a permanent source of onsite NITROGEN / inert gas, with minimum energy consumption. PSA Nitrogen N₂ Gas Generator Equipment is an Inert Gas Atmosphere Generator & incorporates two sets of columns filled with Carbon Molecular Sieves CMS. Under Pressure these columns retain all Active Molecules compounds present in air like (Oxygen, Carbon Dioxide and Water) with the exception of the inert gases like Nitrogen & Argon.. The N₂ Gas can be produced onsite for direct use or can be stored in Nitrogen storage tanks Bottles or cylinders for intermittent use. This process is referred as PSA (Pressure Swing Adsorption).

Standard Features include:

* The capacities of the nitrogen PSA generators range from small plants with product requirements of only several Nm³/h, up to large-scale plants with several thousand Nm³/h nitrogen product flows.

* Depending on customer needs, the PSA plant can be designed for nitrogen product purity in the range of a few percent oxygen content or with oxygen content in the ppmv level.

* The nitrogen product is normally delivered between 4 bar(g) to 9 bar(g) (60 psig to 130 psig). In case a higher product pressure is required a downstream nitrogen compressor will be applied.

* fully standardized nitrogen PSA generators with different plant sizes and hence providing an optimal solution within its product range and purity in terms of low investment and short delivery time.

Capacities range from approx. 50 to 500 Nm³/h, nitrogen product purity can vary from approx. 97 to 99.9 vol.-%.

