

The Changing Face of Pumping Technology

Everest Blower Systems

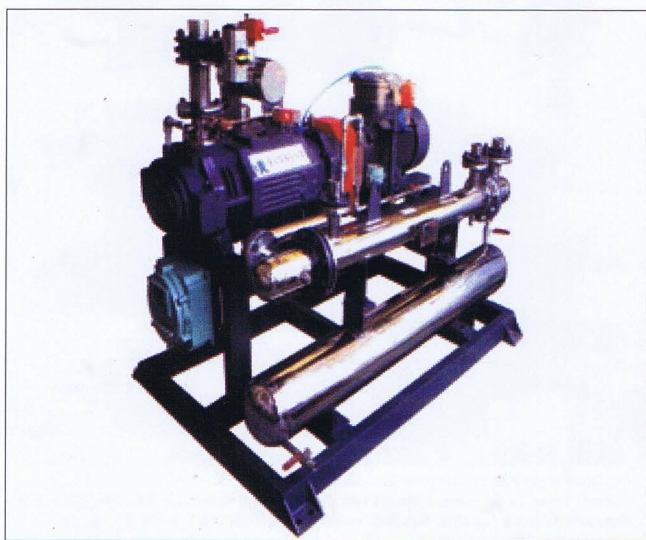
For decades vacuum pumps have been used for various applications in the chemical, petrochemical and pharma processes, such as in product drying, freeze drying, solvent recovery, evaporators, dehydrators, crystallizers and for other general vacuum applications such as conveying, regeneration of molecular sieves, vacuum filtration, etc. The boom in the global market in refined chemicals, medicines and other products led to the increase in the use of the vacuum equipment across the process industry. The major concern in chemical and pharma processes is to offer vacuum systems, which are capable of handling corrosive and toxic vapors and gases.

[With changing times, pumping technology has also evolved and advanced. Dry vacuum technology is a result of such advancement. Along with the ease in operation, these new pumps offer lower maintenance and higher safety]

per cent of the process industry uses vacuum pumps and allied systems. This has helped the industry reduce waste to a large extent and has increased production and profitability. The following conventional vacuum pumps are used in the process industry:

- Liquid ring pumps/Water ring pumps
- Oil sealed pumps - rotary & reciprocating
- Steam jet ejectors
- Water jet ejectors

For decades, in applications demanding maximum pressure below one mbar, oil-sealed rotary vane pumps were the most popular solution. All of the above (wet technology) utilize liquid media that can be oil, water, or steam to generate vacuum inside the given volume or the process. During evacuation, there is a carryover of the process solvent/vapor, which contaminates the pumping media. Treating this contaminated medium is a major concern. Additionally, the process involves huge investment as norms of disposal set by the Pollution Control Board have to be met. Furthermore, over a period of time continuous contamination of the liquid media inside the pump leads to corrosion and eventually damages pumps' internal parts. This results in lower overall efficiency of the pump, thereby affecting the process performance. Consequently, users face frequent pump breakdowns and hence spend more on maintenance work.

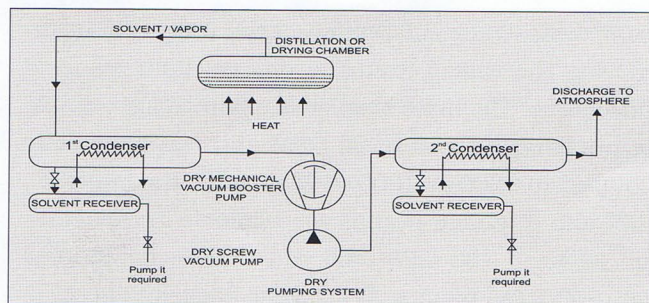


New Generation Pumping System From Everest Blowers

Earlier there were limited methods in the field of manufacturing; these could help in reducing the waste contents. However, with the changing face of the world and the technological advancements, industries learnt and shifted towards the advanced technology of vacuum pumps. Nowadays, almost 75

Dry Vacuum Pumps

In the late 90's, clean process requirements initiated the development of the dry vacuum pumps; the trend to replace lubricated pumps with dry pumps is now spreading over many other market segments.



Typical Solvent Recovery System Using DRY Pumping System

For the pharmaceutical industry, it has been quite easy to understand the benefits of dry pumps, in terms of cost of ownership, process contamination, and up-time and effective solvent recovery with practically zero discharge to atmosphere. Dry vacuum systems are the changing face of technology in the world of process industries and turns out to be efficient, reliable and eco-friendly for pharmaceutical, chemical and petrochemical industries. The technology offers many advantages over traditional liquid media pumps and finds its application in various process related industries such as distillation, drying, evaporation, crystallization, deodorization, filtration and general purpose vacuum.

Advantages

Benefits of dry screw vacuum pump

- Better vacuum level
- Distillation temperature is reduced
- Nil steam consumption, thereby reduction of load on boiler, plant and allied equipment
- Load on cooling tower reduced drastically
- Load on effluent treatment plant is reduced
- Reduced energy consumption by 30 - 35 per cent
- Zero starts up time with option of quick start and stop
- No vacuum fluctuation during feeding and circulation in the process
- No loss of solvent i.e. 100 per cent solvent recovery enabled
- Maintenance cost minimized as the dry pump offers robust solutions

The major advantage of the dry screw vacuum pumps is that these do not require any fluid (oil/water/steam) for vacuum generation. This eliminates the contamination and provides better recovery of the vapors thus reducing effluent generation. Dry pumps use fewer utilities and hence cut the operational costs as compared to other traditional vacuum

pumps. The vacuum levels are highly precise and the volumetric displacements are consistent giving full efficiency in the process.

Maintenance

The maintenance of these dry systems is quite easy as compared to the traditional pumps. The absence of fluid for vacuum generation eliminates the need of frequent checking for contamination. These pumps use oil only for lubrication of gears, which need to be checked over the prescribed period of time depending upon the properties of lube oil used. Moreover, as there are no rubbing parts inside the pump, there is not much to be taken care of in the inside and hence the pump provides for trouble free working over years. The absence of a rubbing part does not only reduce maintenance but also eradicates the possibility of any breakdown. For e.g., Everest Blowers provides pump internals with PFA coating of 60p, which enables the pump to handle corrosive and harsh gases passing through as a carryover to the process. Thus, in case of any condensation taking place inside the pump, there will not be any problem of cavitations, leading to longer life of the pump and trouble free operation even in mildly corrosive applications.

FORGED STEEL VALVES



FORGED STEEL

Gate Valves
Globe Valves
Check Valves & Ball Valves
In M.O.C OF A105 / F304 / F316 / F22
Rating of 800#, 1500#, 2500#



150# / 300#, Gate / Globe
Check Valves Of C.S / CF8 / CF8M
Size : 15 MM To 300 MM

Extended Bonnet For
Cryogenic Application



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