

Two stage better than one?

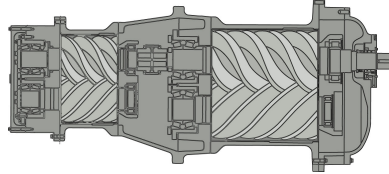
With talk of high efficiency motors and inverter drives for air compressors being all the rage, many people are unaware of the advantages of using a two stage rotary screw compressor to provide power savings far greater than EFF1 or VSD could ever hope to achieve:

Sullair are one of the largest manufacturers of rotary screw compressors in the USA and their two stage rotary screw air compressors have the advantage of being 10-15% more energy efficient than the most efficient single stage compressors available on the market.

On a typical 7 Bar application, atmospheric air is compressed at a ratio of 2.8:1 in each of the two stages (rather than 8:1 on a single stage screw). This not only allows energy efficient air compression to take place but also allows Sullair to operate their compressors with air end speeds as low as 1500 RPM rather than 3000 to 8000 RPM associated with single stage screws. Slower running speeds equal longer life. (Typical air end life on a Sullair air end is anticipated to be 100,000 hours) So confident are Sullair in their product that they will back up this statement with a 10 year warranty on the air end, irrespective of hours run.*

With electricity costs accounting for over 80% of whole life costs of an air compressor, energy efficiency is the key area to be addressed. More often than not Sullair two stage compressors

will give less than a two year payback period on capital costs. For example: A factory air requirement of 2000 CFM being fed by three single stage rotary screw compressors will cost, on average a staggering £157,015.00 per annum in energy. (based on 8000 running hours and 4.5p per kW/h).



By replacing just one of these single stage units with a nominal 1000 CFM Sullair TS unit will save £23,566.00 per annum over current methods.

These significant energy savings can further be improved upon via the use of Sullair's Variable Capacity System (VCS).

The VCS has many advantages over inverter driven, or VSD compressors, for example:

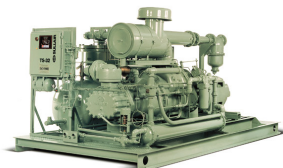
The air end is not being constantly slowed down/speeded up via the inverter. All air ends are designed to run at an optimum speed. If this speed is increased/decreased, problems such as oil shear in the air end or heat build

up in the main drive motor can occur. By using a spiral valve to effectively shorten the air end, Sullair ensure optimum tip speeds are always maintained.

Secondly, due to inverter losses, should the compressor have to run fully loaded for any reason, the compressor will generally use more energy than a unit operating without an inverter. Typically a VSD unit working at 100% load will demand 115% of main motor power, whereas Sullair's VCS system does not suffer from these losses and 100% load means 100% power required.

Finally Sullair's VCS system is a simple mechanical device. If it stops working the compressor will continue to work normally and produce compressed air, unlike the inverter driven system which can often stop the compressor from producing air should a fault occur and demands a specialist electrical engineer to rectify any faults.

**subject to terms and condition*



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