SULZER

HST™ turbocompressors

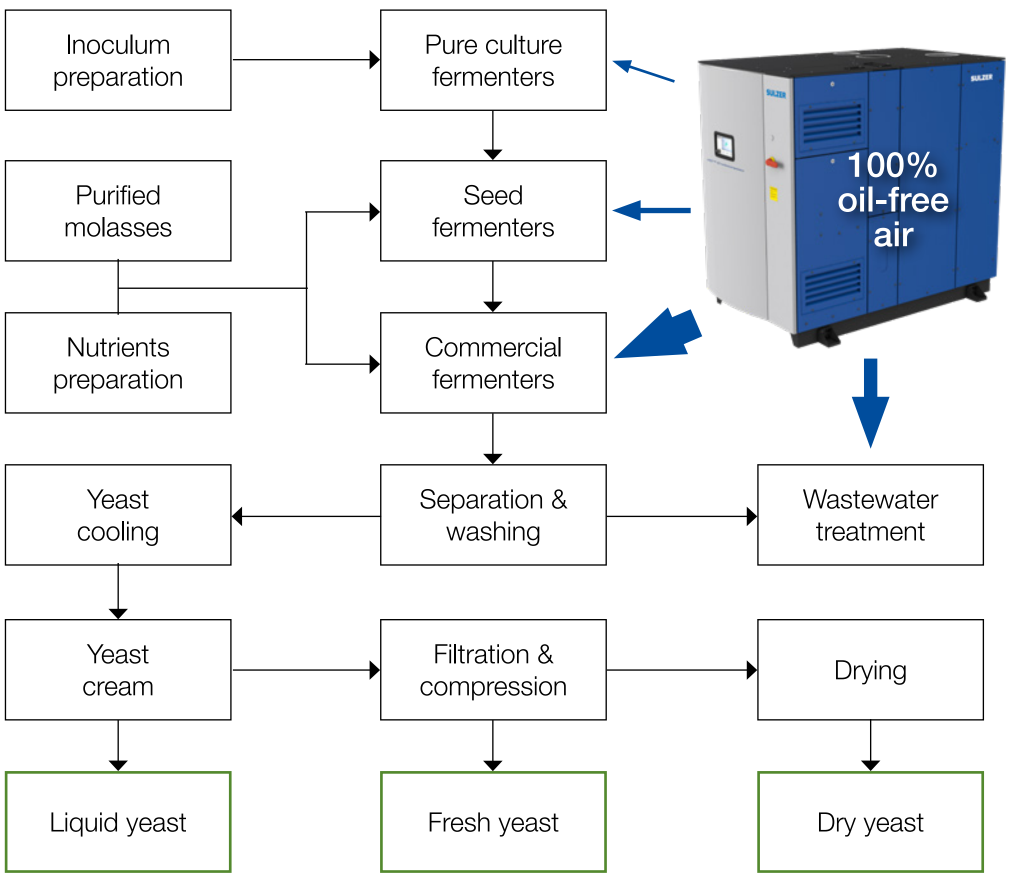
Ensuring 100% contaminant-free air for optimal yeast production

Yeast we can

Yeasts are microorganisms used to make bread, beer, wine, biofuels, and many other bioproducts. The production of yeast occurs in fermenters where yeast cells reproduce quickly. Fermentation is aerobic, and large quantities of perfectly clean air are required. Because the air flows and pressures vary constantly during the successive batches, it is absolutely necessary to choose safe, highly efficient, and flexible air compressors. Whatever the size, number, or configuration of your fermenters, we can propose the best combination of high-speed HST turbocompressors. Dealing with major yeast producers worldwide, Sulzer is your natural choice when it comes to top-quality equipment.

All air needs fulfilled

HST compressors are essential at key steps in the production process for the aeration of various sizes and numbers of pre-culture, seed, and commercial fermenters. Additionally, HST compressors are the ideal solution for the effective biological treatment of wastewater in aerobic reactor tanks.



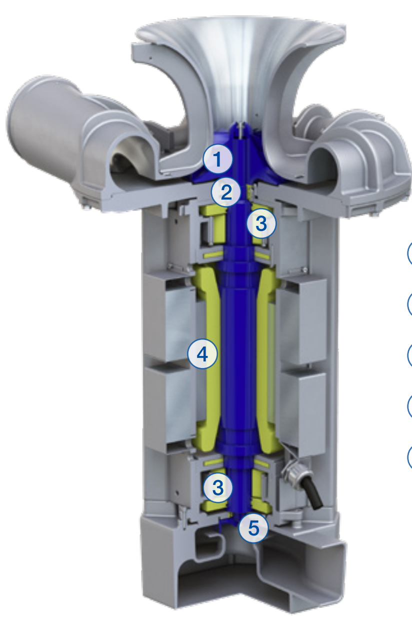
Baker’s yeast production – simplified flowchart

Clean air more than cleaned air

In yeast production, the air interacts heavily with the final product. Since yeast is a living organism, the quality of compressed air must be perfect in sanitary terms. It is imperative that the air is free from contaminants such as oil, moisture, or other particles.

Most traditional air compressors rely on oil to operate. These types of compressors come with a high risk of oil contamination, regardless of how well-maintained they are. Even with effective filtration devices downstream of the compressors, a potential for pollution accidents remains.

The HST turbocompressors do not require oil or any lubricant. Thanks to contactless, wear-free active magnetic bearing (AMB) technology, the parts of the machine do not touch. Truly oil-free and contaminant-free clean air is delivered, and costly oil filtration systems are eliminated. With HSTs you can be 100% sure that the yeast processing is performed to the highest standard of hygiene.

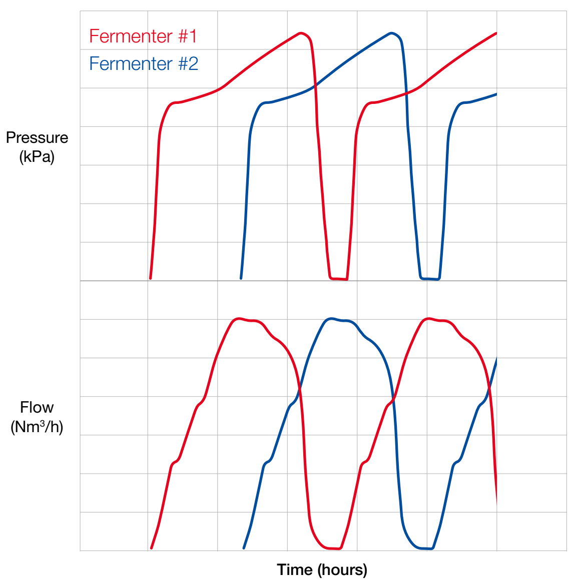


1. Impeller
2. Labyrinth seal
3. Magnetic bearing
4. Permanent-magnet motor
5. Cooling fan

AMB technology – one moving part, no contact, no wear, no oil

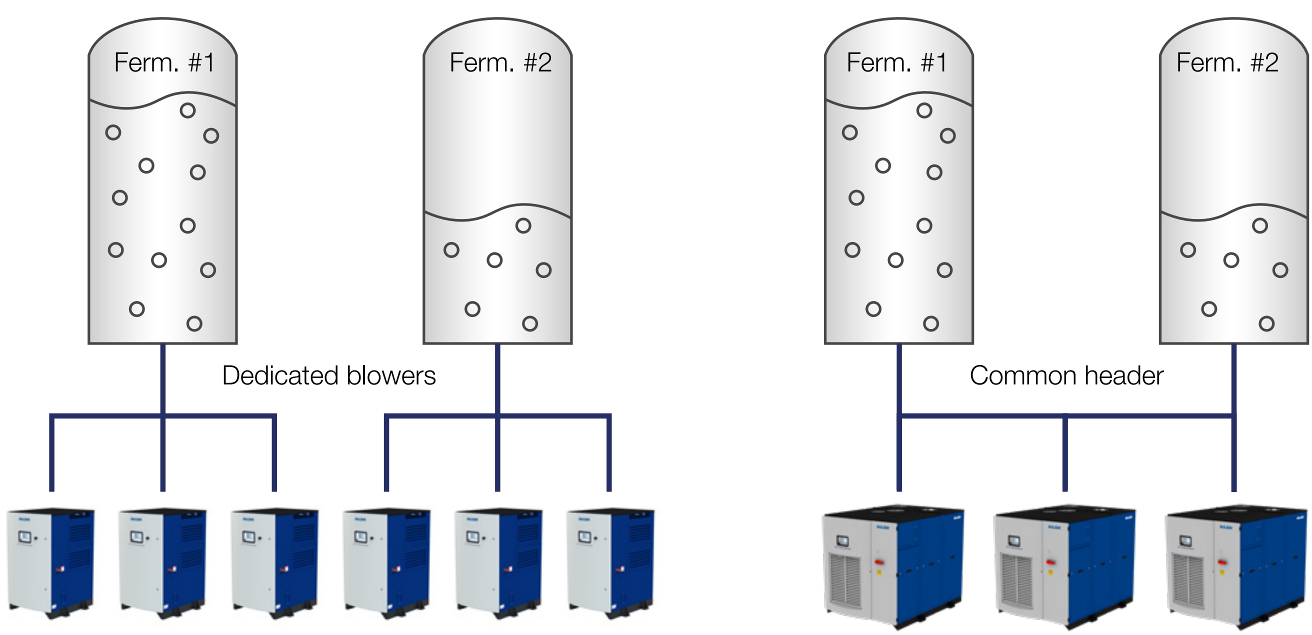
High efficiency and flexibility

Yeast growth occurs in successive fermenters where the liquid level and air flow vary constantly. This requires air compressors that are highly efficient within a wide flow/pressure range. The HST turbocompressors combine remarkable flexibility with unrivaled wire-to-air efficiencies, guaranteeing minimum life cycle costs. High efficiency also means that the compressed air feeding the fermenters will have a lower temperature than air generated by less efficient blowers. This will ultimately reduce the cooling costs, resulting in water and energy savings.



The fermentation tanks are typically fed by dedicated blowers (lower OPEX, higher flexibility, etc.) or through a common header (lower CAPEX, simpler installation, etc.). Whatever your configuration, our experts will select the ideal set of compressors with the lowest energy consumption through the complete fed-batch cycles.

We can also offer you the most adequate control systems allowing the optimum number of HSTs running in parallel at the highest efficiencies. Easy-to-operate HSTs enable strict control of aeration for best yeast yield and product quality.



Full range, full trust

With thousands of units in operation all over the world, the compact, low-noise, easy-to-install HST turbocompressors have become synonymous with high efficiency and excellent reliability. The first machines, put into service more than 25 years ago, are still running and have delivered billions of cubic meters of 100% clean air. Today, our complete range of HSTs allows multiple combinations to exactly match your air requirements. We can also offer you various HST options and accessories (F7 grade inlet filters, flexible joints, outlet diffusers, etc.) and numerous communication systems (connection to upper-level automation, remote monitoring, etc.). For your yeast production plant, you can trust in our high-speed turbocompressors and our highly qualified aeration experts.

Discover more about the HST at sulzer.com/**hst-turbocompressor**

	HST 10-2800	HST 10-3600	HST 10-4400	HST 2500-2	HST 20-4500	HST 20-6000
Airflow range, Nm^3/h	1'100-3'500	1'300 - 4'400	1'300 - 5'400	600 - 2'200	1'800 - 5'800	2'300 - 7'000
Pressure rise range, kPa	30 - 90	30 - 90	30-75	30 - 125	30 - 100	30 - 90
Maximum input power, kW	50 - 100	60 - 120	80 - 120	69 - 100	100 - 150	125 - 190
Maximum noise level, dB	75 / 80	75 / 80	75 / 80	74	62	62
	HST 6000-2	HST 30-36-1	HST 30-46-1	HST 30-58-8	HST 30-38-2	HST 40
Airflow range, Nm^3/h	1'800 - 6'800	2'500 - 9'800	3'000 - 12'400	3'800 - 15'000	3'000 - 10'000	4'400 - 16'100
Pressure rise range, kPa	80 - 125	30 - 90	30 - 90	30 - 75	60 - 130	30 - 85
Maximum input power, kW	240	190 - 300	190 - 350	190 - 350	250 - 350	300 - 400
Maximum noise level, dB	92	73	75	75	75	70

HST. What else?

In addition to the HST turbocompressors Sulzer also delivers the right pumping, degassing and mixing solutions for the whole yeast production process, from molasses handling to fermenter cooling loops, vinasse evaporation or various auxiliary applications.

AHLSTAR A process / degassing pumps

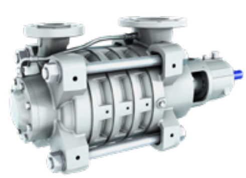
SNS process pump

CPE ANSI process pump

SES and SKS EN733 pumps

CAHR axial flow pump

MBN multistage ring section pump



SIL vertical inline pump

PC transfer pump

Scaba and SALOMIX top-mounted agitators

SALOMIX SSF side-mounted agitator

XFP submersible heavy duty pump

RW and XRW submersible mixers

OKI submersible aerator mixer

Venturi Jet submersible aerator

XTA and XTAK submersible aerators

DDS disc diffuser system

sulzer.com

The Sulzer Flow division keeps your processes flowing. Wherever fluids are treated, pumped, or mixed, we deliver highly innovative and reliable solutions for the most demanding applications.

The Flow division specializes in pumping solutions specifically engineered for the processes of our customers. We provide pumps, agitators, compressors, grinders, screens and filters developed through intensive research and development in fluid dynamics and advanced materials. We are a market leader in pumping solutions for water, oil and gas, power, chemicals and most industrial segments.