HYBRID CHEMIE

Pulsed air mixer

Mixing
Homogenizing
Stirring
Dissolving

using pulse-controlled compressed air

Smooth easy mixing

The supply of pulsed air via the injection lance generates a propelling force for rotation of the L-shaped lance. This provides a horizontal and vertical movement throughout the mixture and permits optimal smooth agitation with low shear forces.

Not the L-shaped lance mixes but the big bubbles.

The size and shape as well as the velocity of the rising air bubbles generated by the injection lance are contingent on the specific mixture to be treated. Large and multiple bubbles produce optimum action.

The mixer is suitable for use in vessels with a wide range of geometries; this includes tall or shallow shapes, or containers with a flat or conical bottom.

Fit for applications in tanks with volumetric capacities from 150 l to 5m^3. Containers with 1000 l (IBC) capacity are preferable.

Treatment of a broad range of liquids or slurries is possible.

mixing of a wide scope of liquids and suspensions, even slurries, covering a broad spectrum of densities and viscosities.

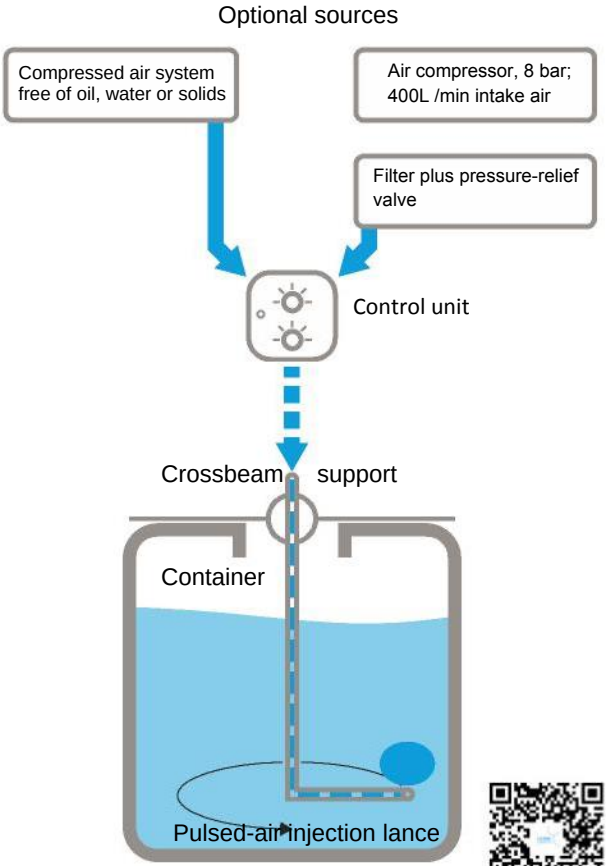
The pulsed air mixer operates at a cor compressed air volume to release air bubbles of a controlled size and frequency.

The size and number of air bubbles released per unit of time (frequency) is adjustable. Ideal values for individual applications are best determined empirically.

Our injection lance can be supplied in suitable materials of your choice for specific applications in the chemical and pharmaceutical or food industry.

Apart from air, any compressed gas (e.g. carbon dioxide, nitrogen) can be used as long as it is compatible with the mixture to be treated.

System design



Operation and Safety

Compressed air must be handled to comply with the applicable safety regulations.

Before start-up of the pulsed-air mixer, check that the main valve of the compressed air supply system is closed.

Connections between pressure reducer, control unit and injection lance must be installed properly.

After inserting the injection lance into the container, it must be locked in place; open the compressed air system main valve and adjust air pressure to 8 bar max.

Turn on the main switch at the control unit.

The control valves of the control unit are adjusted to minimum settings by clockwise rotation.

For optimized mixing performance, the frequency and the size of the pulsed air bubbles can be adjusted with the control valves.

Once the desired performance level is reached, secure the control valves settings with the locking screws provided.

To shut down the pulsed air mixer, switch off the control unit main switch.

Shut off the main valve for the compressed air supply and wait until the mixer stops.

Unlock the injection lance and remove it from the tank. Disconnect the air supply to the injection lance only after the unit has been removed from the tank.

Use suitable cleaning rags for wiping off any mixture residues from the injection lance.

Observe the applicable operating and safety instructions for the mixture to be treated.

Finally rinse the injection lance with a suitable cleaning medium.

Frequently Asked Questions - FAQ

Our existing compressed air supply system operates at 20 bar

Fit a pressure reducer to adjust the operating pressure to 8 bar.

Our existing compressed air system is not free of oil, water or solids

Install a suitable filter upstream of the control unit.

Excessive comp. air pressure fluctuations

Ensure a constant minimum supply rate of 400 l/min.

How can I check that the air injection lance is resistant against the medium to be mixed?

Contact HYBRID CHEMIE for a list of suitable materials and their resistance against the various mixtures and ingredients.

The air injection lance will not rotate, despite adequate comp. air supply.

Check if the L-shaped injection lance may be jammed against the container? Ensure a minimum space of 5 cm between lance and container walls and the bottom.

Connectors will not release easily

Ensure that the system is pressureless before disconnecting.

Is the pulsed air mixer suitable for continuous operation?

The injection lance swivel part is subject to wear and it has an expected lifetime of appr. 600 h, depending on the load and the type of mixture.

How can I control the size of the air bubbles and the frequency of the pulsed air?

By adjusting the two „Impulse“ and „Volume“ dials on the control unit.

What to do if the mixture starts foaming?

The bubble size is too small. Adjust the volume dial on the control unit to increase the bubble size.

Mixture is splashing over the container

The liquid volume in the container exceeds the specified permissible level

- Adjust the bubble size
- Insert a splash guard into the container cover

My product hast o be mixed very offen an for a long time.

For this there ist he ball-bearing rotary coupling fort he lance connection.[1]

Benefits at a glance

- Easy installation and dismantling
- Convenient handling
- Easy to clean
- Efficient and effective operation
- No ‘dead zones’ in tanks
- No splashing or foaming
- Effective mixing at any liquid level
- Requires no additional internal components to be fitted in tanks
- A reasonably priced, flexible solution
- The injection lance even fits through small apertures in containers and can also be used in tanks with complex geometries
- The injection lance rotation is automatic
- Approved for explosion-proof [EX] zones [1]
- Gentle mixing of shear-sensitive mixtures
- The material for producing the injection lance can be customized to meet specific mixture characteristics

1 = optional version

CONTACT

Office	+49 6150 9709014
e-mail	www.hybridchemie.deh
Web	kontakt@hybridchemie.de
Commercial registry	HRB 95404
Registration Office	Local Court of Darmstadt
Managing Director	Cornelia Scordialo

Hybrid Chemie GmbH
Rheinstr. 36
64390 Erzhausen
Germany