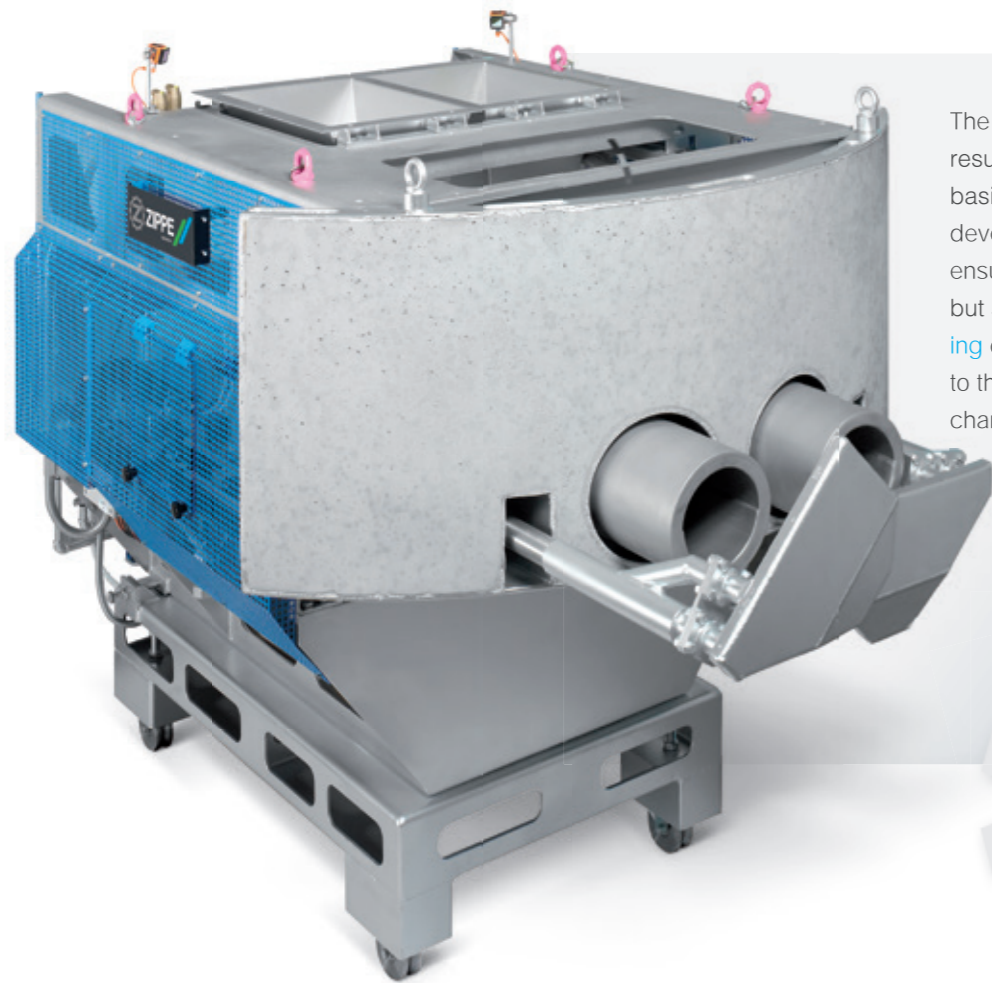




# VIBROTUBE® – REASONS, THAT MAKE THE DIFFERENCE

ZIPPE batch chargers are characterized by **high reliability and efficiency**. They ensure an **exact, continuous and dust-free material flow** into the melting furnace. We are always in close contact with our customers and constantly refine our batch chargers according to the requirements and wishes of the glass industry.

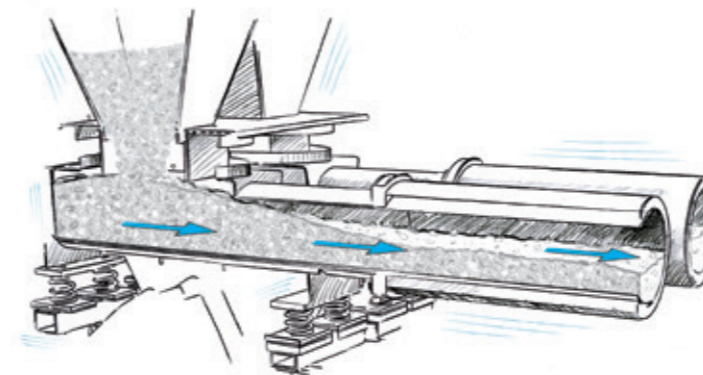
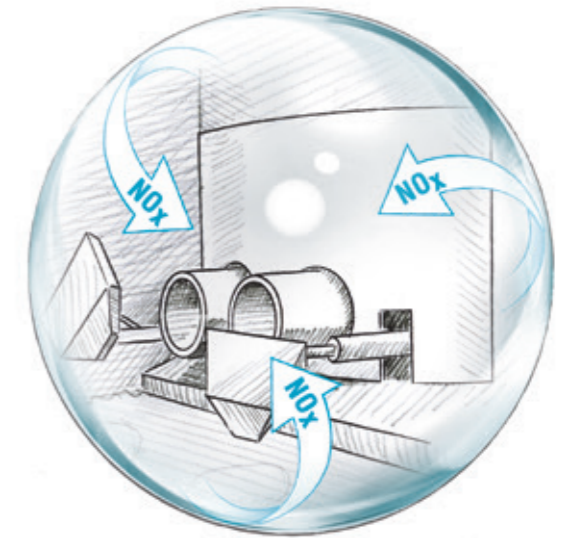


The VIBROTUBE® batch charger is the result of this close cooperation. On the basis of all these impulses and wishes we developed a batch charger that not only ensures **a completely closed doghouse**, but also shows **considerably lower wearing** compared to alternative systems. Due to the closed doghouse and the optimized charging pattern valuable melting energy is saved.



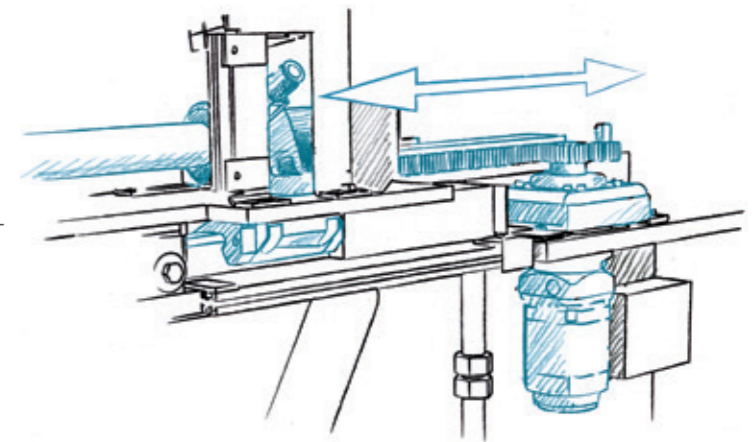
## 01 SEALED DOGHOUSE

The heat protection shield is executable in a round and straight design and seals the doghouse completely. Therefore, the heat protection shield **adapts perfectly to the furnace conditions**. The two pushers in front of the vibrating tubes as well as their movements are executed in a way that there is **no opening in the outlet area**. Thus, in fact a **dust free encapsulation** of the doghouse is effected. As an uncontrolled inflow of air is eliminated, a significant **reduction of NOx emission** is the result.



## 02 VIBRATING TUBES

The batch is transported to the melting furnace through vibrating tubes. Compared with alternative solutions, e.g. screw chargers, this conveying technology has a big advantage: The material is transported through vibrations nearly without contact, which **reduces wearing significantly**. The results are longer lifetimes and significantly lower operating costs. Furthermore, the front part of the vibrating tubes being situated in the melting furnace is water-cooled in order to **avoid any batch caking**.



## 03 LINEAR DRIVE

The two pushers divide the batch conveyed into the melting furnace into small portions. This leads to **optimal batch melting** due to the larger heat contact surface of the batch. The pushers are driven by a servo gear motor which is infinitely variable. Thereby, stroke length and lifting speed can be **individually adjusted to the desired requirements**.

