Vacu^2 [væk.ju tu:]

Vacu^2 Multi-Stage Vacuum Process.

The Revolution in Die Casting!

PFEIFFER VACUUM

Vacu² multi-stage vacuum process

Vacu² – Two stages ahead!

Together with die casting specialists, Pfeiffer Vacuum has made a crucial advance in die casting technology.

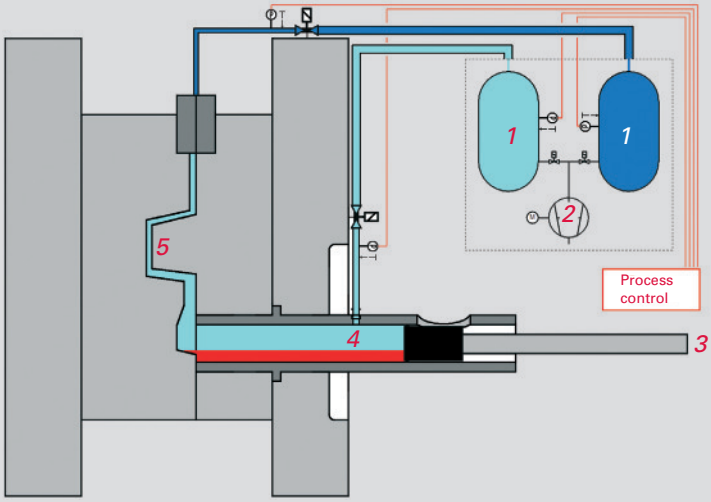
The purpose of vacuum in a die casting system is to evacuate a given volume of air from the mold cavity and the shot sleeve within the shortest possible period of time. This avoids air inclusions in the castings.

Conventional systems extract the air only directly from the mold through one or more narrow vent valves.

In our new **Vacu² multi-stage vacuum process,** the shot sleeve and mold cavity are evacuated in two stages. During the first stage, the air is extracted directly from the shot sleeve via a wide cross-section line. This enables the desired pressure to be quickly achieved in the shot sleeve and mold. In the second evacuation stage, the air is extracted directly from the mold, as in the case of conventional processes.

Since the desired pressure has already been achieved in the first stage, the second stage serves to maintain the pressure by pumping down air that leaks into the mold.

Schematic diagram multi-stage vacuum process



1 Buffer recipients
2 Vacuum pumps
3 Casting piston
4 Shot sleeve
5 Mold cavity

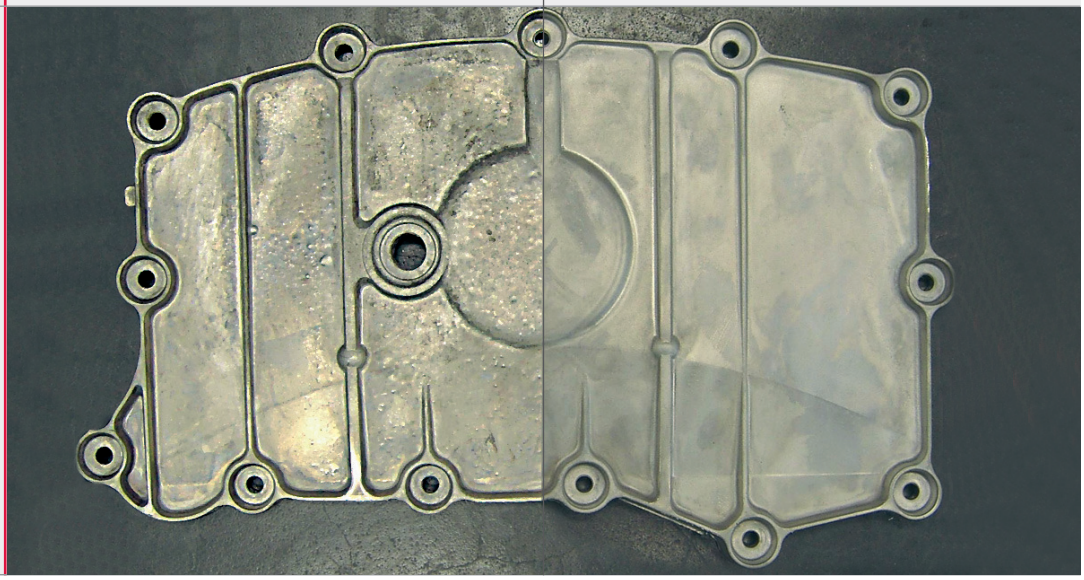
The control system processes pressure measurements that are taken in four different locations at different points in time during the casting process into process-relevant data. This affords precise information about the current status of the system. Should any limits, some of them can be defined by the user, be exceeded or not reached, the system responds with warning signals. This avoids unnecessary rejects.

Vacu² reduces costs in your die casting process!

Your advantages at a glance

- Better vacuum translates into optimum quality
- Reliable process monitoring reduces the rejection rate
- Faster process optimization and better designed molds as low as vent valves reduce your costs

Comparison of vacuum processes

	Conventional vacuum process	**Vacu² from Pfeiffer Vacuum**
Desired pressure	Pressure (< 50 mbar) in the mold cavity cannot be achieved during the short period available	Pressure in the mold cavity is reliably achieved and maintained → Avoiding air inclusions
Process control	Ineffective process control: Impossible to determine the pressure in the mold cavity	Effective process control: Precise determination of the pressure in the mold cavity → Reproducible processes
Vent valves	Employment of complicated, failure-prone, expensive vent valves to extract air from the mold cavity for as long as possible	Employment of simple and cost-effective vent valves at the mold, as the desired pressure has already been achieved in the first evacuation stage → Trouble-free operation with low maintenance costs
Reproducibility	Poor reproducibility: The major influence of leakage and conductivity changes in valves and vacuum lines leads to instability of the die casting process	High reproducibility: The influence of leakage and conductivity changes is minimized → Avoiding rejects
Visual comparison following glow test at 500° C		

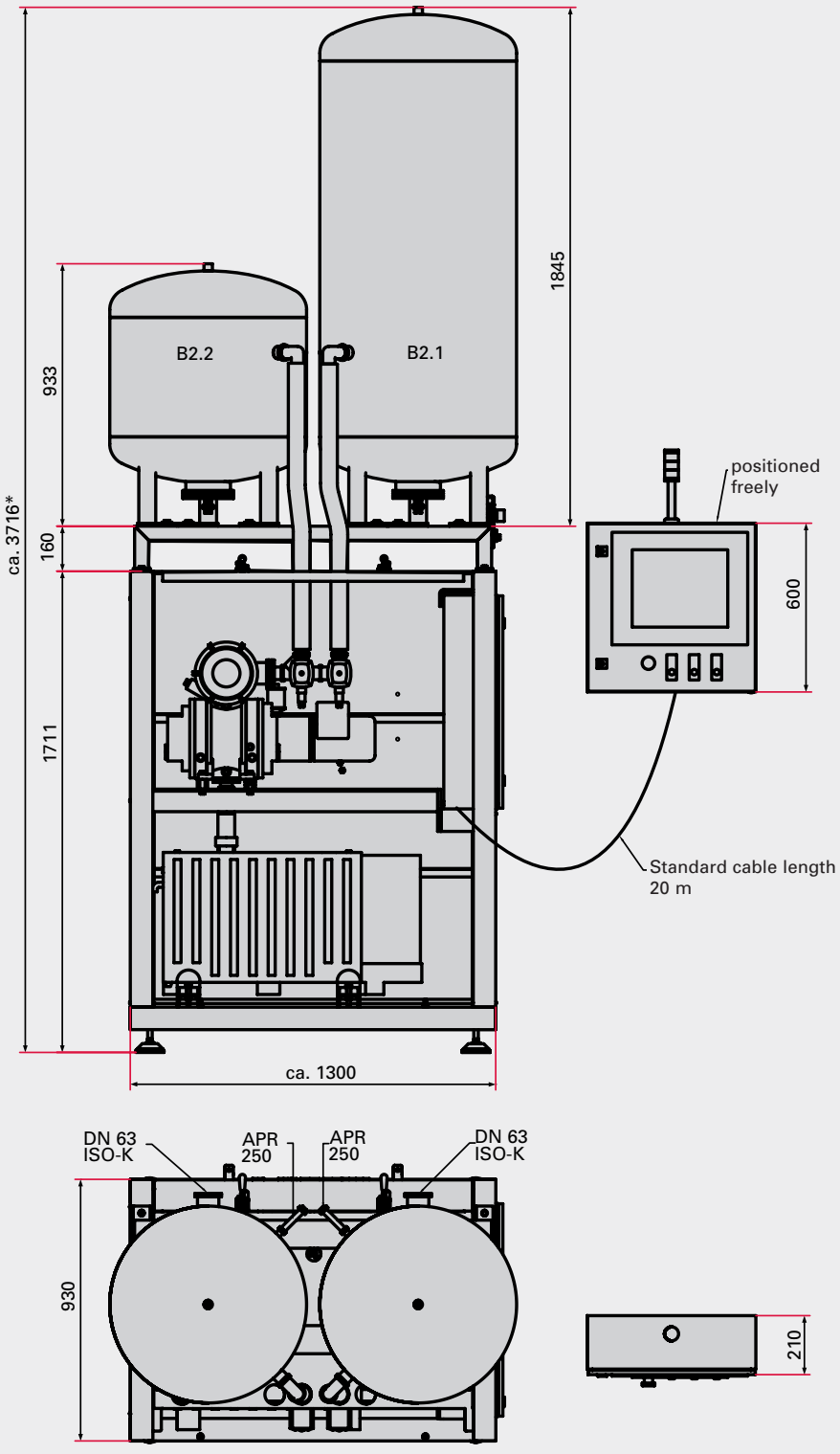
Technical Data

	Vacu²
Pumping speed	200 m³/h
Achievable ultimate pressure in buffer recipient	5 mbar
Footprint	
Dimensions (W x D x H)	1,300 x 930 x 3,716[1)] mm
Weight	1,000 kg
Electrical connection data	
Rating	7.2 kVA
Frequency	50 Hz/60 Hz
Voltage	3 x 400 V/3 x 208 V
Control voltage	24 VDC
Pneumatic connection data	
Pressure	6–8 bar
Service unit connection	G 1/4" Mini
Compressed air connection	Hose, inside dia. 10 mm
Extraction/venting connection data	
Vacuum exhaust P1, P6	DN 50
Venting connection	G 1/2"
Ambient temperature	12–35 °C
Relative humidity	≤ 60 %
Air pressure	86–106 kPa
Noise emission	
Operational noise level	< 85 db(A)

[1)] Variable, depending upon recipient

*Optional base for operating unit on request

Dimensions



Dimensions in mm
*Variable, depending upon version

www.pfeiffer-vacuum.net

Leading innovations.
Too fast to be copied.

Pfeiffer Vacuum – A name that stands for reliable high-tech products and innovative solutions that support our customers in their applications and pave the way to their success.

Our vacuum technology developments always keep us a step ahead!

Sales, service and consulting

- Worldwide on-site service
- Comprehensive in-factory and on-site training programs
- Modular service concept ranging from spare parts to maintenance contracts

PFEIFFER VACUUM

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