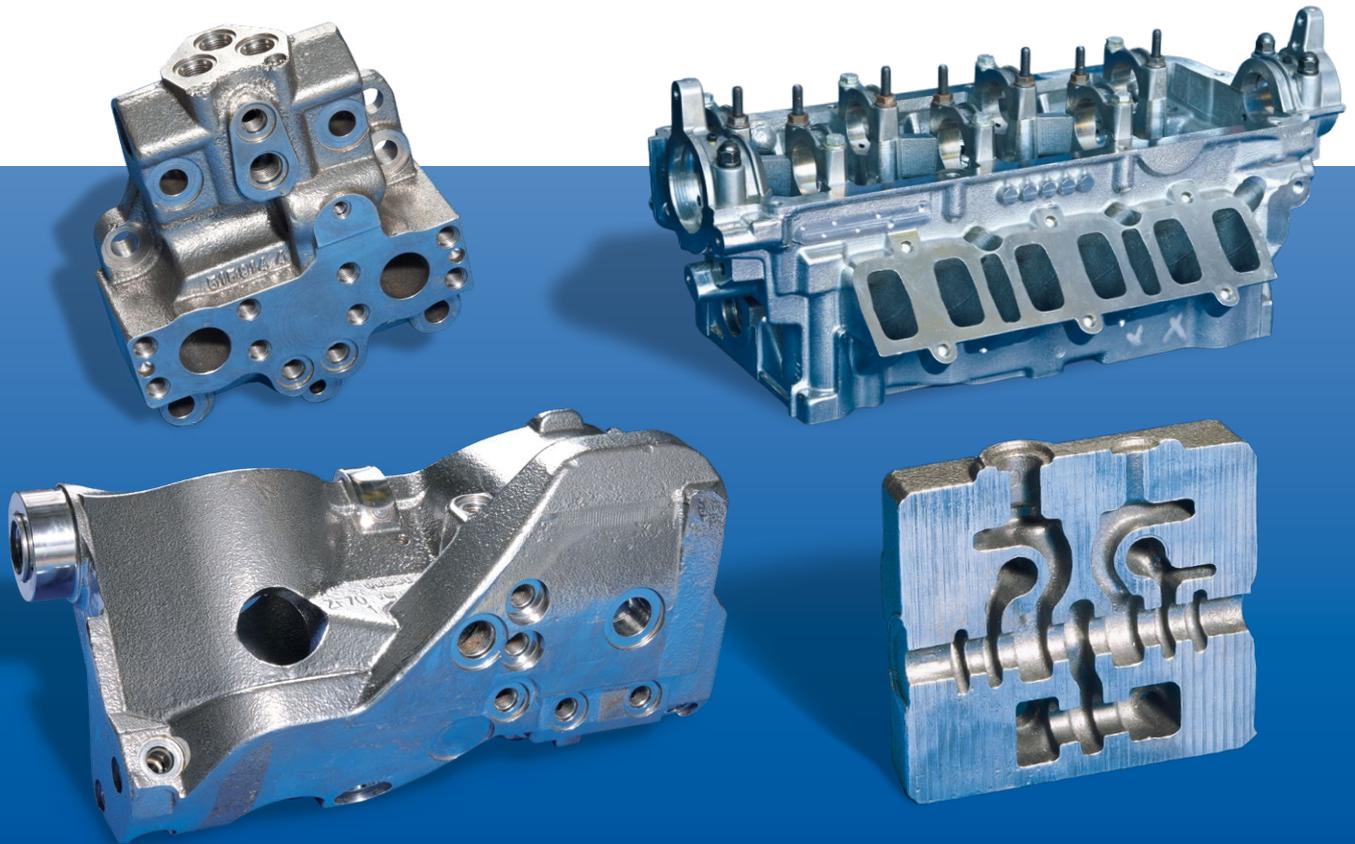


Deburring and cleaning with the PINFLOW system



PINFLOW
The Deburring System by TDK[®]

The deburring system for your requirements: thorough • quick • economical

The deburring of workpieces is becoming increasingly important. In recent years, the performance of chip-producing processes has increased significantly. At the same time, however, deburring has commonly been done using the same methods as have been used for decades, despite the fact that the deburring working process places particularly high demands on quality and process reliability in order to be able to manufacture cost-effectively and with high quality standards in the modern highly organised manufacturing structures and for ever more complex workpieces. Here, the PINFLOW procedure offers an innovative alternative to other procedures.



The PINFLOW principle

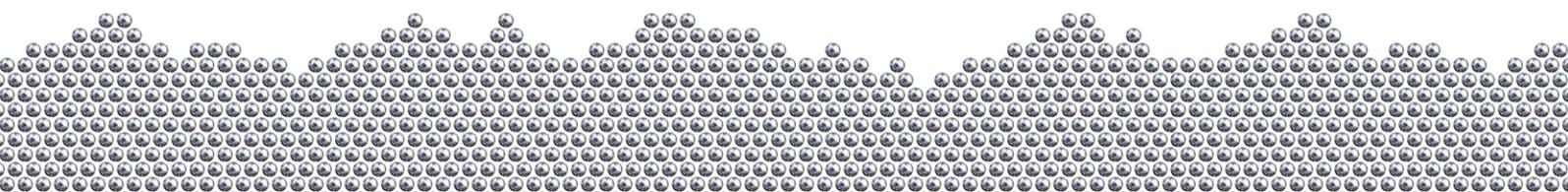
The workpieces which need to be deburred are placed in a piece-specific device which is found on the work surface in the machine's processing area. The work surface, together with the device and the workpieces, is vibrated horizontally using vibrators. The device, acting as a container, is filled with the deburring medium. The vibration creates relative motion between the workpieces and the deburring medium. The deburring medium usually consists of small steel balls which, during the machining process, work not only externally but also penetrate into the piece and thus produce a deburring effect even on difficult-to-access surfaces.



The areas of application

The PINFLOW system can be used everywhere where, for example, simple and complex workpieces need to be internally and externally deburred, where moulding sand residue needs to be removed or where the surface needs to be smoothed:

- Deburring complex components such as hydraulic blocks, pump housings, cylinder heads, etc.
- Removing the cast skin from cast iron workpieces
- Removing moulding sand and core sand residues
- Smoothing and polishing
- Compressing surfaces
- Rounding off sharp edges
- Removing sooty carbon residues
- Machining steel, grey cast iron, aluminium, brass, bronze





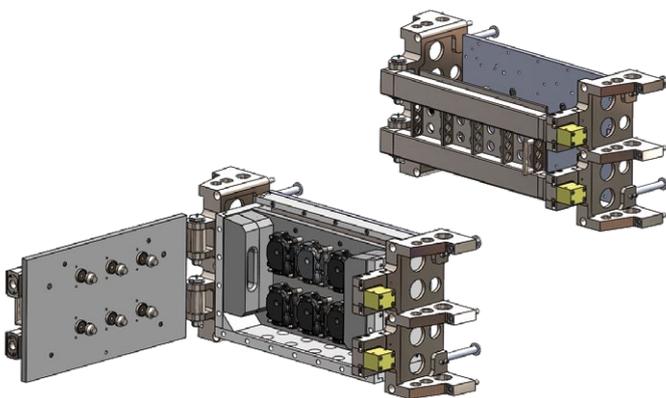
The system technology

The vibrations caused by the machining operation are damped by special vibration dampers which the entire machine stands on. This ensures that no vibrations are transferred to processing machines placed near the PINFLOW machine and negatively influence their processes. The processing area with vertically arranged work surface and the vibration table is completely sealed so that neither the deburring medium nor cleaning emulsion can escape.

The removal of the deburring medium occurs through steady, continual movement. While the deburring medium is being removed to the reservoir, the cooling medium is isolated and processed separately. A variety of procedures are available for the treatment of the cleaning emulsion. The appropriate choice can be determined specifically according to our customers' requirements. The system is controlled via a Siemens PLC Type S7. Intelligently designed menu navigation ensures comfortable and reliable control of the machine.

Flexibility is self-evident

Workpiece-specific processing parameters can be saved in connection with the corresponding workpiece numbers using the software specially developed for the PINFLOW system. The clamping device can very quickly be modified thanks to its modular construction. A high level of flexibility is thus guaranteed thanks to very short modification times.



The deburring medium

The deburring medium consists of small steel balls with a consistent diameter. The full kinetic energy of the balls is thus transferred to the workpiece to be processed. The wearing of the medium is barely measurable, with the result that a single filling of the system gives a very long service life. A large number of different diameters are available in order to achieve optimal customisation for the particular workpiece geometries.



Siemens S7 controls



Setup time: 3 min.



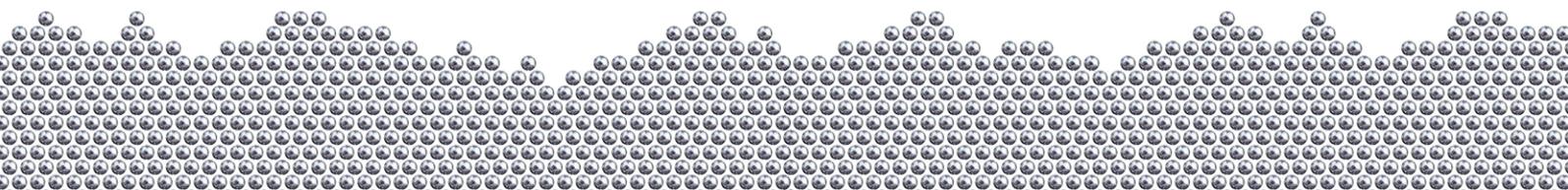
Processing time: 3 min.



Max. load: 700 kg



Max. component weight: 80 kg





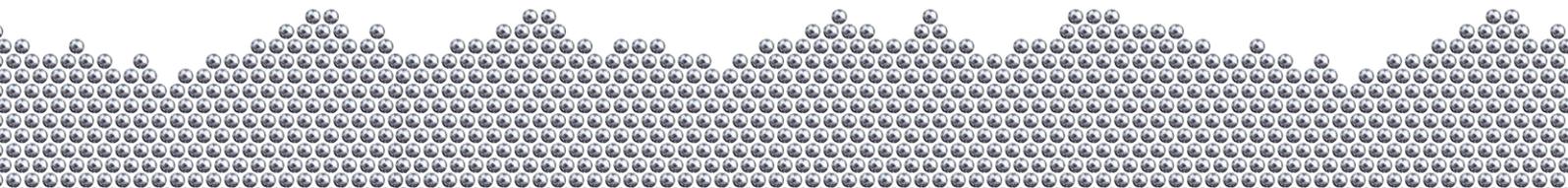
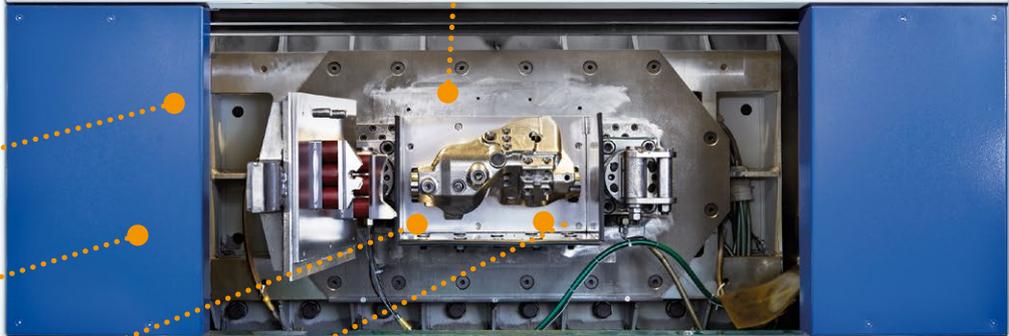
Calculated cycle time: 6 min.



Up to 15 parts at the same time



PULSAR 1200





Technical details at a glance

Total weight (in kg)	11,000
Max. total weight of clamped pieces (in kg)	700
Clamping area (W x H x L in mm)	950 x 450 x 375
Dimensions (W x H x L in mm)	2,500 x 3,600 x 2,200
Processing area (for clamping area, W x H x L in mm)	1,400 x 740 x 790
Noise emissions (db (A))	78
Max. component weight (kg)	80

Advantages of the system

The PINFLOW system is extremely well-suited for integration into existing manufacturing structures. Manufacturing islands in particular can be ideally supplemented with the PINFLOW system as a local deburring system. Connection to cutting machines such as machining centres or lathes is

very simple, irrespective of whether feeding occurs by hand or via an automatic feeding system. The PINFLOW system can be used in precision mechanical production plants as well as in foundries.



Reliable processing of cast iron, spheroidal graphite cast iron and aluminium workpieces



Leaves neither structural changes nor tension or micro cracks



Deburring of components with complex structures



Parts weighing up to 80 kg can be processed



Deburring and simultaneous washing, derusting, descaling and preserving



High economic efficiency thanks to simultaneous processing of multiple parts



Smoothing, polishing and compressing, as well as improvement of surfaces (Ra, Rt)



High economic efficiency thanks to short setup time



No warping after processing, no subsequent treatment required



Optimal integration into production processes

Our service

We not only deliver deburring systems, but also advise you about our PINFLOW system. At our site in Neumünster, we design complete systems for you, including the design and production of customer-specific clamping devices. We determine the optimal deburring medium using a specially developed program and determine the appropriate process parameters with our testing machine. In the event that a

system we have delivered does not function optimally, our service staff, as well as an extensive spare parts warehouse, are at your disposal. Our sales representatives are your qualified contact people. If desired, we will process sample parts for you on our machine. **Allow yourself to be convinced of the PINFLOW system's performance.** We will be happy to assist you.



Your contact person

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