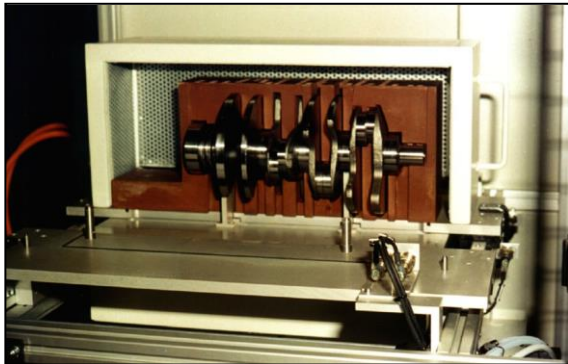


VACUUM CLEANING SYSTEM

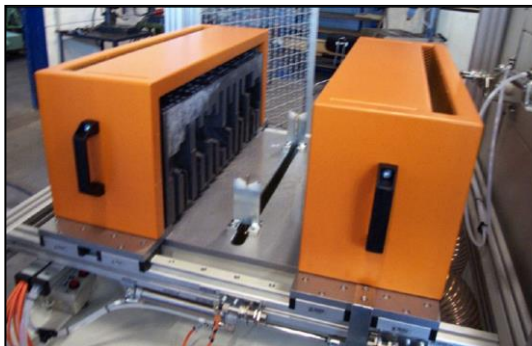
(Patent Number on File)



The Vacuum Cleaning System is a new means of efficiently cleaning your parts. It consists of two opposing plastic mold halves that close around the part, and a high powered vacuum that sucks chips and coolant off of the part leaving it clean and dry.

Coolant and chips can then be recovered and dispensed into their proper handling systems allowing the coolant to be recycled.

Due to the unit's compact design, it can be easily adapted to existing or new manufacturing systems. Compare the Vacuum Cleaning System with more traditional cleaning systems and it is easy to see the potential for this new system.



Dry Cleaning Units:

- Retain Oil or Emulsion with a simple vacuum process
- Small Footprint, fits into almost every production line
- Low Investment
- Very small operating costs
- Environmentally friendly
- Low Energy Consumption



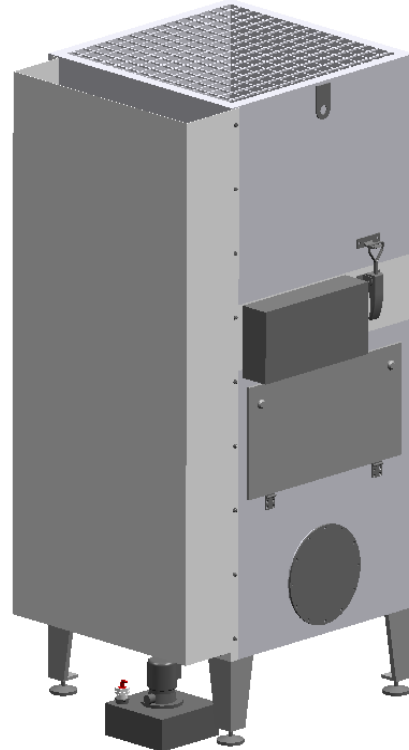
- Loads from top (by gantry) or bottom (lifted from conveyor)
- For special applications compressed air can also be used



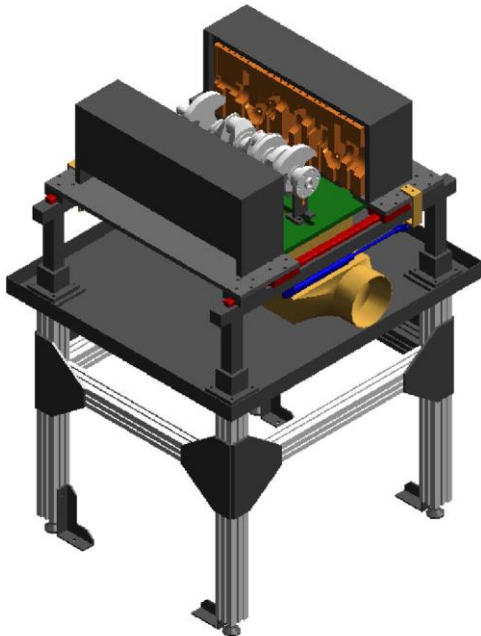
Vacuum Cleaning System

Technical Specifications (Sample Unit)

Cycle time: 60 seconds
 Net cleaning time: 45 seconds
 Max. noise level: ca. 74 dB (A)
 Dimensions-Suction Station:
 L x W x H 840 x 940 x 1350mm
 Weight-Suction Station: approx. 120kg
 Dimensions-Extraction Unit:
 L x W x H 840 x 1000 x 2000mm
 Weight-Suction Station: approx. 350kg
 Three phase: 480V 60HZ, 5kW
 Air connection: 6mm tube
 Operating pressure: 90psi



Extraction Unit for 8-Cylinder Crankshaft



Suction Unit

Over 400 units have been installed in over 20 plants including:

- | | |
|-----------------|---------------|
| Affina | Macimex |
| Audi | Mahle |
| BMW | Opel |
| Bosch | Skoda |
| DaimlerChrysler | Saturn |
| Dana | Thyssen-Krupp |
| Deutz | Visteon |
| Ford | Volkswagen |
| GM | |

EXISTING APPLICATIONS

Crankshafts
 Camshafts
 Gearshafts

Valve Bodies
 Gear Wheels
 Knuckles

Clutch Housings
 Fuel Pumps
 Connecting Rods

Differential Housings
 Differential Carriers
 Hydraulic Control Box