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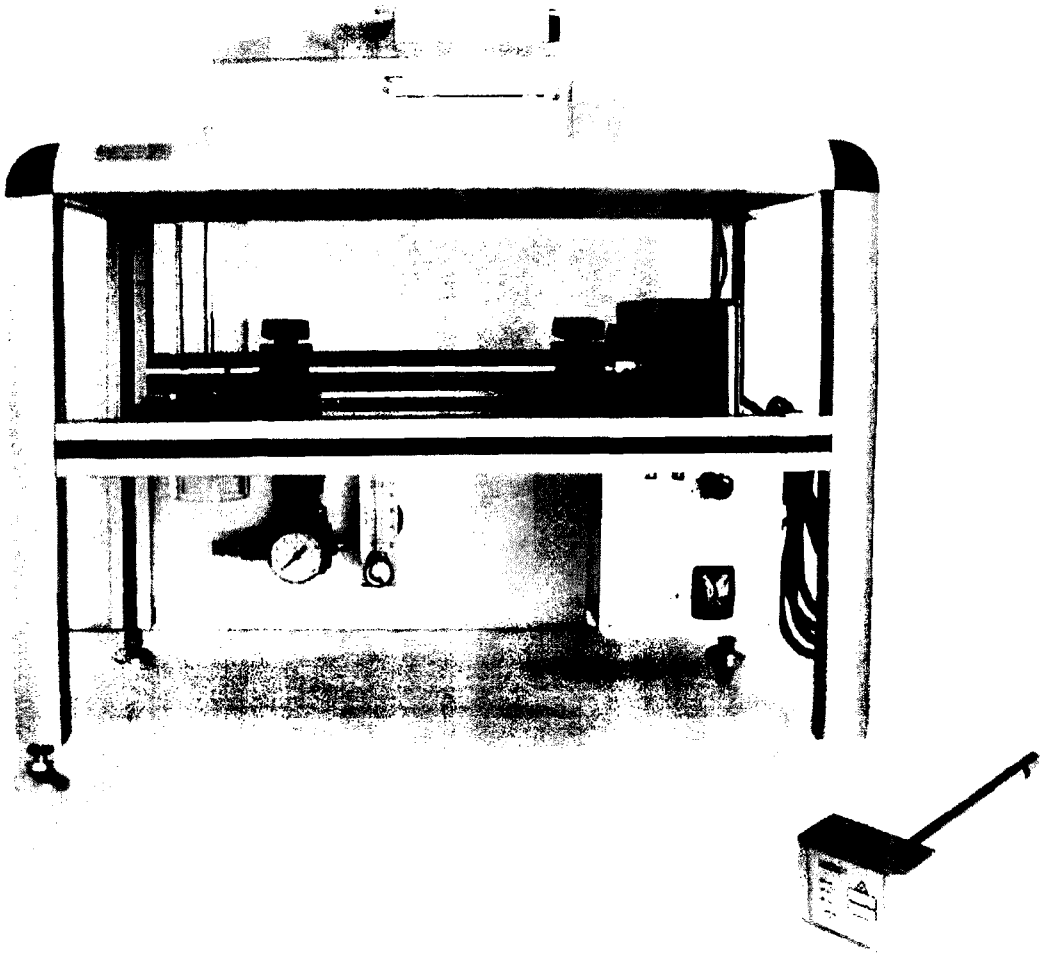
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parsum®
Gesellschaft für Partikel-, Strömungs- und Umweltmeßtechnik mbH



Operating Instructions

Atline Particle Measurement System IPP 70

as of 06/2009

parsum® - Gesellschaft für Partikel-, Strömungs- und Umweltmeßtechnik mbH
Reichenhainer Straße 34 – 36, 09126 Chemnitz, Germany
Tel. +49(0)371/26758690 Fax +49(0)371/26758699 Email info@parsum.de, Internet www.parsum.de

Table of contents

Page

Safety

General safety notes 2

Safety notes concerning explosion protection 2

Safety notes concerning connection to power system 2

General description

Warranty terms 3

Use in conformity with intended purpose 3

Scope of supply 4

Technical data 4

Putting into operation

Set-up of measuring system 5

Putting into operation 5

Execution of measurements 7

Notes on execution of measurements 7

Appendixes

Operating instructions for small feeding devices
KF and KR series 8

Operating instructions for VIBTRONIC® controllers
SRA€....-1 series 8

Note:
These operating instructions do not include repair instructions. In case repairs are required, please contact your supplier or turn directly to Parsum GmbH.

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Safety

The Atline Particle Measurement System IPP 70-S from Parsum-GmbH is a modern, efficient product representing the state-of-the-art in this field. If used in conformity with its intended purpose and by operators who are familiar with the present documentation, it is completely safe to operate. We accept no liability whatsoever for damage to property and personal injury resulting from non-observance of the safety notes contained in this manual.

General safety notes:

As owner you must make sure:

- *that persons instructed to perform work on or with the Atline Particle Measurement System IPP 70-S (measuring system) have been briefed on and fully understood all regulations relating to health & safety.*
- *that persons instructed to perform work on or with the Atline Particle Measurement System IPP 70-S (measuring system) have access at any time to the technical documentation supplied for this measuring system.*
- *that newly employed personnel are required to familiarise themselves with the present technical documentation before commencing any work with the measuring system so that they know how to handle it safely and in conformity with its intended purpose.*
- *Improper operation and use may result in personal injury and damage to property. The owner is responsible for his own safety and for the safety of his employees.*
- *that no unauthorised persons get access to the measuring system.*

Safety notes concerning explosion protection:

- *The Atline Particle Measurement System IPP 70-S must not be used in areas subject to explosion hazards (see also operating instructions for small feeding devices KF and VIBTRONIC® controllers from AViTEQ Vibrationstechnik GmbH appended to the present operating instructions)*

Safety notes concerning connection to power system:

- *The small feeding device KF may be connected to the AC power system only via the appropriate VIBTRONIC® controller. When mains voltage is applied, components inside the controller and the drive of the small feeding device carry a voltage dangerous to life. Make sure before connecting the device to the power system that the mains cable and the control cable are free from damage and that any contact with live components is excluded. All metallic parts of the Atline Particle Measurement System with which a person might get into contact are galvanically connected to the VIBTRONIC controller.*
- *Make sure that the mains socket outlet used by you has been installed with a functioning protective conductor.*

General description

Warranty terms

1. In the absence of written agreement to the contrary our warranty is valid for 12 months. The warranty is confined solely to the parts supplied by Parsum GmbH. No warranty is given for wear due to materials such as abrasion on the probe tube or fogging of the optical windows. The same applies to mechanical damage to the measurement probe resulting from improper fitting or removal. The warranty does not cover wearing parts. The laser module is a wearing part (its service life depends critically on the conditions of use, especially on temperature, on-time etc.). The laser module can be replaced only in the Parsum GmbH workshop.

2. Parsum GmbH warrants that the goods supplied are free of manufacturing defects. The suitability, classification and functioning of the goods supplied are determined solely by the performance specifications in the order acknowledgement, even if these are at variance with the purchase order.

3. In the absence of agreement to the contrary we are not liable for the goods supplied being suitable for the customer's intended purpose. The same applies to features expected by the customer, unless we have been able to carry out appropriate user-specific trials beforehand and the features concerned have been written into our order acknowledgement as binding.

4. Our warranty also ceases to be valid if persons other than those approved by us carry out repairs, repair attempts or other interventions or alterations to the goods supplied by us or use unsuitable accessories, insofar as the cause of the fault is related to this. An essential prerequisite for the warranty is adherence to the instruction book and operating manual.

Use in conformity with intended purpose

The Atline Particle Measurement System IPP 70-S is designed for the in-process measurement and/or laboratory measurement of flowable particle-containing product samples (powder, pellets, granules and the like) from bulk material processes. For routine measurements on the production floor and in all cases where results are required without delay for process control purposes, where screen analyses involve too much expenditure or where a laboratory is not within easy reach, the Atline Particle Measurement System from Parsum represents a cost-efficient alternative.
In addition to this, it is possible to use the particle probe IPP 70-S also for direct inline-measurement in a process (please refer to the information furnished in the User Manual for the IPP 70). Our measuring system can also be used alternately, for example for optimising a process for a certain period of time, for breaking in new plants or when changing over to another product.
The Atline Particle Measurement System IPP70-S is not intended for other purposes.

Scope of supply

The Atline Particle Measurement System IPP 70-S consists of:

- the system frame
- the specimen feed device consisting of a U-shaped vibrating chute with orifice blade, small feeding device KF with VIBTRONIC controller (AViTEQ) and a hopper/downpipe combination with protecting tube
- air supply unit for generating the purge air needed for keeping the inspection window free (consists of pressure regulator and rotameter)

For operating the Atline system, a probe IPP 70-S or -Se and a measurement computer on which the IPP measurement software is installed are required. The Atline Particle Measurement System IPP 70-S uses the same measurement software as the inline-particle measurement system IPP 70-S. The probe, measurement software and PC are not included in the scope of supply for the Atline system.

Further accessories such as scavenging cells and the inline-dispersing device of the IPP70 system can be used as and when needed. To allow exhaustion and additional dispersion to be carried out, a vacuum cleaner can be connected via a supplied adapter to the outlet end of the protecting tube.

Technical data

Probe IPP 70-S (see User Manual IPP 70-S or IPP 70-Se)

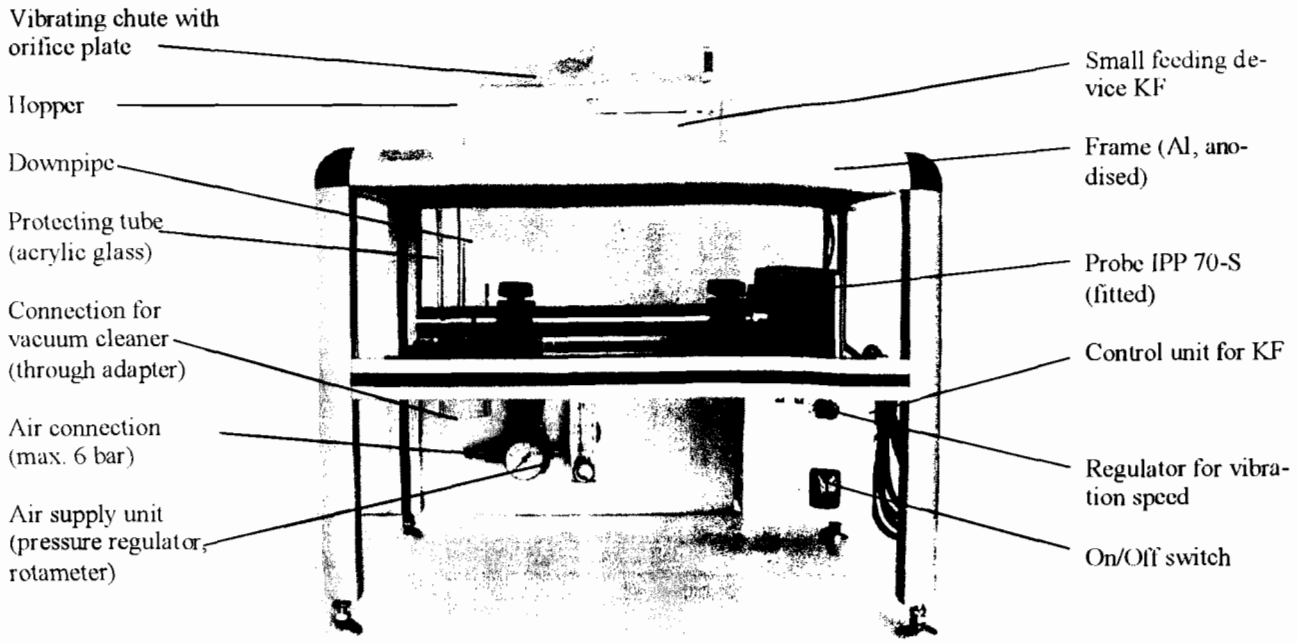
Atline system

System frame:	Aluminium profiles, anodised
Dimensions:	47x45x36 cm (W/H/D)
Vibrating chute:	U-shaped chute, high-grade steel
Orifice plate:	3mm-hole, high-grade steel
Vibrating conveyor:	KF 0,5 (for technical data: refer to appended operating instructions from company AViTEQ)
Controller:	VIBTRONIC SRA (for technical data: refer to appended operating instructions from company AViTEQ)
Hopper:	Polyethylene,
Downpipe:	High-grade steel, D6x0.5 (inside diameter 5 mm)
Protecting tube:	Acrylic glass D=50mm
Pneumatic unit:	max. 6bar, max. 10l/min
Measurement PC:	(refer to User Manual IPP 70-S or -Se)

Putting into operation

Set-up of measurement system

The set-up of the Atline Particle Measurement System IPP 70-S can be seen from the photograph (below).



The small feeding device KF with VIBTRONIC controller (make AViTEQ) for isolating the particle specimens to be measured and the air supply unit are permanently mounted to the system frame.

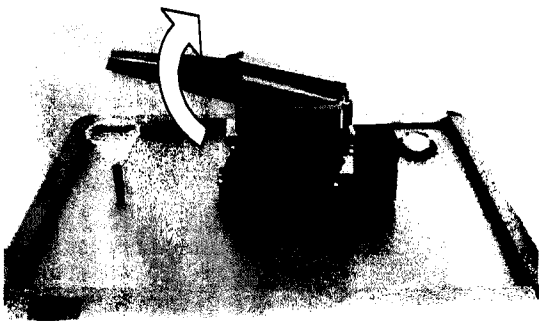
Putting into operation

- Insert the scavenging cell SZ22g (modified) into the measurement volume, and fasten it with the supplied screw M3.
- Then place the probe in position in the system frame at the measurement location as shown in the photograph. Fasten it with the two smaller plastic clamps in the system frame.
- Slip the acrylic glass protecting tube (D=50mm) with the two holes over the tip of the probe, and fasten it with the large plastic clamp on the frame.

- Then push the downpipe (D=6mm) with fitted hopper through the 6mm bore of the top plate, and insert it in the 6mm bore of the scavenging cell SZ22g (modified). The downpipe must be loosely fitted perpendicularly in the scavenging cell.

- If necessary, adjust the probe, protecting tube and downpipe once again relative to one another with a slight clearance. To this end, loosen again the plastic clamps on the probe and protecting tube and refasten them hand-tight after completing the re-adjustment.

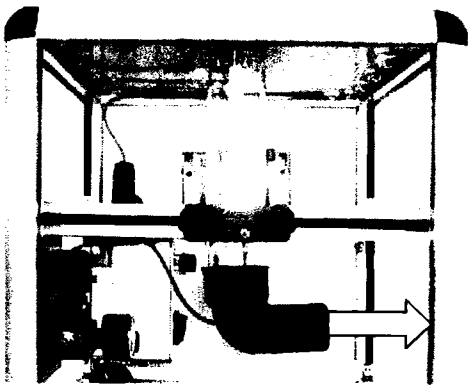
- After mounting the downpipe with fitted hopper, clamp the U-shaped chute with the orifice plate in the receptacle of the small feeding device KF. The orifice plate divides the chute into the specimen reception and specimen conveying portions. For removing the vibrating chute, fold its front end upwards (see photograph).



- Adjust the system frame on a working table to the horizontal position by adjusting the adjusting feet. To facilitate adjustment, you can use the spirit level on the plate of the system frame.

- After fitting all elements in the system frame, you can place a beaker underneath the acrylic glass tube for collecting specimens in the simplest case where the particles to be sampled are easily flowable.

- For particle specimens with a poorer flowability (e.g. coffee powder), it will be useful to additionally disperse the particle specimen isolated in the vibrating U-shaped chute with the help of vacuum. To this end, slip an adapter (elbow) onto the bottom end of the acrylic glass tube and connect the hose of a controllable vacuum cleaner (e.g. Festtool Absaugmobil CTL MINI, not part of the standard scope of supply) to the outlet end of the elbow. By regulating the vacuum cleaner you can now set the dispersion intensity to be used in the measurement set-up.



Connect a vacuum cleaner

- If the Atline Particle Measurement System IPP 70-S is to be operated for a prolonged period of time, it will be useful to operate the scavenging cell SZ22g-(modified) with scavenging air. To this end, connect the air connection of probe „int" via a 4mm pneumatic hose to the scavenging air outlet of the pneumatic unit (see User Manual IPP 70-S, -Se). The rotameter is set by default to 4l/min (dried, particle- and oil-free instrument air). Connect the pneumatic unit via the rapid-action coupling upstream of the pressure regulator to the compressed-air supply system.

Execution of measurements

- The probe is connected to the measurement PC.
- Turn on the measurement PC and start the measurement software (see User Manual IPP70). The Atline system now is ready for measurements.
- Fill a particle specimen quantity of about 5...10g into the specimen receptacle of the U-shaped chute.
- The first measurement of the small feeding device KF should be carried out at the smallest conveying rate. To this end, set the adjuster of the control unit to 0%. Then switch on the mains switch of the controller.
- The adjuster allows you to set the conveying rate and pre-dispersion (isolation) of the particle specimen prior to the measurement.
- Setting of the measurement parameters of the software is done in the same way as in the case of the inline-measurement. Bear in mind that different velocities have to be set, depending on the accessories used. If a vacuum cleaner with a high suction power is used to support dispersion, it may be necessary to select also a higher velocity range in the software at "Setting/Edit Settings/System ---Mean Velocity" (see User Manual IPP 70)

Notes on execution of measurements

- Be sure that the product is continuously conveyed by the vibrating chute in a small product flow towards the hopper and is fed in a thoroughly dispersed condition in the downpipe to the measurement volume of the probe.
- Clean the conveying chute, hopper and downpipe after each test with a brush (remove all particles).
- For powder and pellets, the specimen quantity should be approximately 5...10g.
- In the Atline measurements, the average mean "Loading" (see operating instructions for Inline-Particle-Probe IPP70) should be < 5% and the peak values should not exceed 10%. If the loading is too high, reduce the conveying rate.

Appendixes

The following appendixes form part of these operating instructions:

- ***Operating Manual Small Conveyor Units*** *Series KF and KR from AVITEQ Vibrationstechnik GmbH, Hattersheim-Eddersheim, Germany*
- ***Operating Manual VIBTRONIC® Controllers*** *for Magnetic Vibrators Series SRA(E)...-1as Panel Mounting Units and Cabinet Units from AVITEQ Vibrationstechnik GmbH, Hattersheim-Eddersheim, Germany*

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