Fluidking

Manual P/N 768 643 A
– English –

NORDSON (UK) LIMITED ● STOCKPORT ● UK

CE

Order number
P/N = Order number for Nordson products

Declaration of Conformity
98/37/EC
73/23/EEC

We,

Nordson (U.K.) Limited

of

Ashurst Drive, Cheadle Heath, Stockport, Cheshire, SK3 0RY, United Kingdom

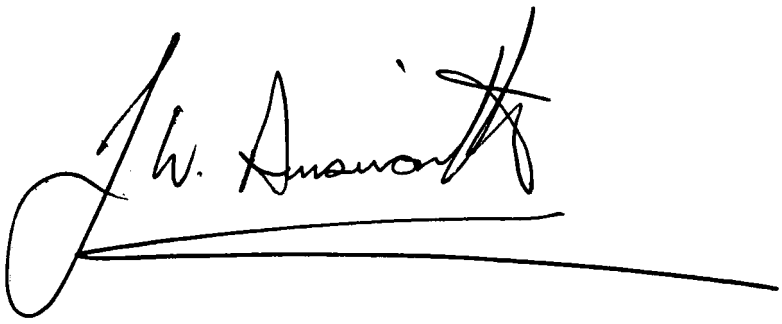
declare that under our sole responsibility for supply/manufacture of the product(s)

Product Name	Fluidking
Model Number(s)	All
Product Options	All

to which this declaration relates, is in conformity with the following standards and other normative documents

Safety	BS EN 60204–1:1993 "Safety of Machinery – Electrical equipment of machines" EN 60335:Part 1:1988 "Safety of household and similar electrical appliances" BS EN 292:1991 "Safety of machinery – Basic concepts, general principles for design"

following the provisions of 98/37/EC and 73/23/EEC Directives



Jim Ainsworth
Engineering Director

Nordson (U.K.) Ltd., 1st January 2002

NB ref EN45014 (BS7514)

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Congratulations on the Purchase of Your Nordson Product

Nordson equipment is engineered and manufactured in accordance with strict specifications, using high quality components and state–of–the–art technologies that assure reliable, long–term performance. Your product was thoroughly tested for proper operation prior to shipment.

Before unpacking and installing your new equipment, please read this manual. It is your guide to safe installation, productive operation and effective maintenance. We recommend that you keep the manual available for future reference.

Your Safety is Important to Nordson

Carefully read the *Safety* section. Your product is designed for safe operation when used according to the published instructions. Potential hazards exist when operating instructions are not followed.

Manufacturer of Equipment

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SK3 0RY

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For a list of local Nordson organisations, see *Nordson International*.

Nordson International

Europe

Country		Phone	Fax
Austria		43-1-707 5521	43-1-707 5517
Belgium		31-13-511 8700	31-13-511 3995
Czech Republic		4205-4159 2411	4205-4124 4971
Denmark	*Hot Melt*	45-43-66 0123	45-43-64 1101
	Finishing	45-43-66 1133	45-43-66 1123
Finland		358-9-530 8080	358-9-530 80850
France		33-1-6412 1400	33-1-6412 1401
Germany	*Erkrath*	49-211-92050	49-211-254 658
	Lüneburg	49-4131-8940	49-4131-894 149
	Düsseldorf - Nordson UV	49-211-3613 169	49-211-3613 527
Italy		39-02-904 691	39-02-9078 2485
Netherlands		31-13-511 8700	31-13-511 3995
Norway	*Hot Melt*	47-23 03 6160	47-22 68 3636
	Finishing	47-22-65 6100	47-22-65 8858
Poland		48-22-836 4495	48-22-836 7042
Portugal		351-22-961 9400	351-22-961 9409
Russia		7-812-11 86 263	7-812-11 86 263
Slovak Republic		4205-4159 2411	4205-4124 4971
Spain		34-96-313 2090	34-96-313 2244
Sweden	*Hot Melt*	46-40-680 1700	46-40-932 882
	Finishing	46 (0) 303 66950	46 (0) 303 66959
Switzerland		41-61-411 3838	41-61-411 3818
United Kingdom	*Hot Melt*	44-1844-26 4500	44-1844-21 5358
	Finishing	44-161-495 4200	44-161-428 6716
	Nordson UV	44-1753-558 000	44-1753-558 100

Distributors in Eastern & Southern Europe

DED, Germany		49-211-92050	49-211-254 658

Outside Europe / Hors d'Europe / Fuera de Europa

- For your nearest Nordson office outside Europe, contact the Nordson offices below for detailed information.
- Pour toutes informations sur représentations de Nordson dans votre pays, veuillez contacter l'un de bureaux ci-dessous.
- Para obtener la dirección de la oficina correspondiente, por favor diríjase a unas de las oficinas principales que siguen abajo.

Contact Nordson		Phone	Fax
Africa / Middle East			
DED, Germany		49-211-92050	49-211-254 658
Asia / Australia / Latin America			
Pacific South Division, USA		1-440-988-9411	1-440-985-3710
Japan			
Japan		81-3-5762 2700	81-3-5762 2701
North America			
Canada		1-905-475 6730	1-905-475 8821
USA	*Hot Melt*	1-770-497 3400	1-770-497 3500
	Finishing	1-440-988 9411	1-440-985 1417
	Nordson UV	1-440-985 4592	1-440-985 4593

Section 1

Safety

Section 1
Safety

1. Introduction

Read and follow these safety instructions. Task and equipment specific warnings, cautions, and instructions are included in equipment documentation where appropriate.

Make sure all equipment documentation, including these instructions, is accessible to all persons operating or servicing equipment.

2. Qualified Personnel

Equipment owners are responsible for making sure that Nordson equipment is installed, operated, and serviced by qualified personnel. Qualified personnel are those employees or contractors who are trained to safely perform their assigned tasks. They are familiar with all relevant safety rules and regulations and are physically capable of performing their assigned tasks.

3. Intended Use

Use of Nordson equipment in ways other than those described in the documentation supplied with the equipment may result in injury to persons or damage to property.

Some examples of unintended use of equipment include

- using incompatible materials
- making unauthorized modifications
- removing or bypassing safety guards or interlocks
- using incompatible or damaged parts
- using unapproved auxiliary equipment
- operating equipment in excess of maximum ratings

4. Regulations and Approvals

Make sure all equipment is rated and approved for the environment in which it is used. Any approvals obtained for Nordson equipment will be voided if instructions for installation, operation, and service are not followed.

5. Personal Safety

To prevent injury follow these instructions.

- Do not operate or service equipment unless you are qualified.
- Do not operate equipment unless safety guards, doors, or covers are intact and automatic interlocks are operating properly. Do not bypass or disarm any safety devices.
- Keep clear of moving equipment. Before adjusting or servicing any moving equipment, shut off the power supply and wait until the equipment comes to a complete stop. Lock out power and secure the equipment to prevent unexpected movement.
- Relieve (bleed off) hydraulic and pneumatic pressure before adjusting or servicing pressurized systems or components. Disconnect, lock out, and tag switches before servicing electrical equipment.
- While operating manual electrostatic spray guns, make sure you are grounded. Wear electrically conductive gloves or a grounding strap connected to the gun handle or other true earth ground. Do not wear or carry metallic objects such as jewelry or tools.
- If you receive even a slight electrical shock, shut down all electrical or electrostatic equipment immediately. Do not restart the equipment until the problem has been identified and corrected.
- Obtain and read Material Safety Data Sheets (MSDS) for all materials used. Follow the manufacturer's instructions for safe handling and use of materials, and use recommended personal protection devices.
- To prevent injury, be aware of less-obvious dangers in the workplace that often cannot be completely eliminated, such as hot surfaces, sharp edges, energized electrical circuits, and moving parts that cannot be enclosed or otherwise guarded for practical reasons.

6. Fire Safety

To avoid a fire or explosion, follow these instructions.

- Ground all conductive equipment in the spray area. Check equipment and workpiece grounding devices regularly. Resistance to ground must not exceed one mega–ohm.
- Shut down all equipment immediately if you notice static sparking or arcing. Do not restart the equipment until the cause has been identified and corrected.
- Do not smoke, weld, grind, or use open flames where flammable materials are being used or stored.
- Provide adequate ventilation to prevent dangerous concentrations of volatile materials or vapors. Refer to local codes or your material MSDS for guidance.
- Do not disconnect live electrical circuits while working with flammable materials. Shut off power at a disconnect switch first to prevent sparking.
- Know where emergency stop buttons, shutoff valves, and fire extinguishers are located. If a fire starts in a spray booth, immediately shut off the spray system and exhaust fans.
- Shut off electrostatic power and ground the charging system before adjusting, cleaning, or repairing electrostatic equipment.
- Clean, maintain, test, and repair equipment according to the instructions in your equipment documentation.
- Use only replacement parts that are designed for use with original equipment. Contact your Nordson representative for parts information and advice.

7. Action in the Event of a Malfunction

If a system or any equipment in a system malfunctions, shut off the system immediately and perform the following steps:

- Disconnect and lock out electrical power. Close pneumatic shutoff valves and relieve pressures.
- Identify the reason for the malfunction and correct it before restarting the equipment.

8. Disposal

Dispose of equipment and materials used in operation and servicing according to local codes.

Section 2

Description

Section 2
Description

1. Intended Use

The Fluidking system is an important component allowing a fast colour change of the Speedking Quick Colour Change Powder system. The Fluidking powder supply unit deigned to increase the degree of automation of the colour change process of a Powder System. This allows a colour change in an extremely short time of the internal working surfaces of the powder delivery and recovery system.

Description of Function Powder Feeding

The powder box(es) are placed directly on the vibrating table. The vibration assists in the consistent delivery of powder to the guns. The powder is fluidized local to the powder pump inlet syphon tube.

The table vibrations cause a uniformity of the powder level and prevent the accumulation of residual powder in the powder container edges. Thus, the powder may be consumed nearly completely, which ensures an optimal powder utilization.

The level-controlled syphon systems move to the bottom of the powder container. The feed air and the dosage air of the powder pumps are adjusted via the electrostatic control panel.

When reaching the end position, the powder may be refilled manually (option: automatic). The supply unit moves back automatically to the reference position and then to the working position, thus ensuring an interruption-free operation.

Section 3

Installation

Section 3
Installation

WARNING: Allow only qualified personnel to perform the following tasks. Observe and follow the safety instructions in this document and all other related documentation.

1. Transport

Transport the unit so as to avoid damage. Use suitable packaging materials and sturdy cartons.

Protect the unit from exposure to humidity, dust and vibrations.

2. Unpacking

Carefully unpack the unit to avoid damaging it. Check for damage caused during transport.

Save packing materials for possible later use. Otherwise recycle or dispose of properly according to local regulations.

3. Removing

Switch off the mains supply, then disconnect all electrical connections from the unit.

4. Storage

Pack the unit in suitable packing materials and sturdy cartons. Protect from humidity, dust and large temperature fluctuations (condensation).

5. Disposal

Dispose of properly according to local regulations.

6. Electrical

WARNING: Allow only qualified personnel to perform electrical connections.

A single supply cable is required to the control panel. The supply should be fed from a suitable disconnect device. Introduce the cable into the panel using an IP6X cable gland. Ensure that all the electrical wires are suitably sized for the fan motor loading and adequate fuse/circuit protection is provided at the source of supply.

NOTE: The fan motor is designed to be switched ”direct–on–line” (refer to the electrical circuit schematic supplied with the unit, for power requirements before installation).

On starting the fan motor (where fitted), check for correct rotation, normally clockwise looking at the motor from the impeller end, (air is pushed out of the exhaust on the fan scroll). Do this by starting and immediately stopping the fan motor. Proper fan rotation is extremely important. With the fan running in the wrong direction, it will deliver approximately 40% of its rated air volume. Correct by reversing any two leads on the load side of the fan motor starter.

7. Pneumatic

Before operating the feed centre, ensure that the air supply has reached a suitable quality and that air has been drawn off the system through the drain leg. This will ensure that any materials left in the line during installation do not enter the feed centre.

WARNING: The regulated air supply to reverse purge manifold has been pre–set to 4 bar (max) and under no circumstances should it be altered without prior consultation with Nordson.

8. Setting Up the Unit

WARNING: Allow only qualified personnel to perform the installation. Observe safety instructions.

Site Preparation

NOTE: Feed centres are generally delivered pre-assembled, where this is not practical due to shipping requirements or at the customers request that feed centre can be supplied ”flat pack” for on-site assembly.

NOTE: Installation of the Fluidking should not be undertaken without the presence of a Nordson representative or a suitably qualified person.

- Choose a level site on which to install the Fluidking, preferably as near to the powder booth as practically possible.

- Seal concrete floors with a suitable material to avoid dust. Other floor surfaces should be of a type that is easy to keep clean.

Section 4

Operation

Section 4
Operation

WARNING: Allow only qualified personnel to perform the following tasks. Observe and follow the safety instructions in this document and all other related documentation.

1. Operation Procedure

Switching on the Fluidking occurs via the operation panel (OP7). At the same time, the booth recovering components are activated.

Therefore, the following functions are described in association with the recovering system.

All Fluidking operating functions are now switched on and may be activated.

1. Select Installation *Operating Selection* Centre **ON.**

   - The supply units stay in the operation mode.

2. Put the powder container onto the vibration table and align in accordance with the corresponding suction systems.

3. Close the clamping device **B.B. CLO** at the operation panel:

   - The powder containers are centered by the bow and clamped.

4. Push operation selection **ON**:

   - The level-controlled suction systems move into the powder container.

5. Adjust the fluidizing pressure at the pressure regulator in the control panel:

CAUTION: A too high fluidizing pressure prevents an optimal powder suction.

1. Operation Procedure
(contd.)

6. The powder is supplied as soon as the spray guns are switched on.

7. When the powder container is nearly empty, the operation panel displays **lack of powder**:

   - This display allows visual (standard), acoustic or other (optional) adjustments.

8. When reaching *end position operation* the operation panel displays **refill powder**:

   - A manual or an automatic back-filling of powder is demanded.

9. After the manual or automatic filling of the container, the supply unit moves automatically out of the container and goes back in its level-controlled operation position.

10. After termination of a job, the supply units are set back to the stand-by position by pushing the Reset key **R** on the operation panel:

    - The clamping device opens automatically and the powder container may now be removed from the vibration table.

11. The Fluidking control has an emergency shutdown:

    - When releasing this function during a coating process, the Fluidking and all locked components are switched off. After the elimination of the cause, the installation may be started again.

2. Putting into Operation

WARNING: Before putting into operation:It is not recommmended to operate the installation without instruction and starting-up operation training carried out by the manufacturer!

- Observe safety notes (Section 1).
- No foreign objects or impurities may be within the Fluidking area (especially suction system/vibration table).
- All system components have to be connected to the Fluidking according to the electrical and the pneumatic schematic.
- Installation interlocks with Electrostatic Spray Equipment, conveyors, extinguishing installations, etc. must be ensured.
- The complete installation parameters have to be entered in the setup.

Main Switch On (4S3)

The installation is ready for operation.

Switching on the Installation at the Operation Panel

OP7 → A ***ON***

- The fan (respectively the fans) starts. When all the fans are in operation and the operation panel is lighting, the periphery is ready for operation.
- The Fluidking light is switched on.

Activate main Functions of Powder Supply Units

OP7 → A ***ON*** → B ***ON***

- The Fluidking is now ready for operation, the Fluidking light is on.

Activation of Powder Container Clamping Arm

OP7 → A **ON** → B **ON** → C **B.B. CLO**

- The powder container clamping bar is closed.

NOTE: Designations A to E See operating and message sequence Page 4–9

2. Putting into operation

(contd.)

Activation of Supply Units

OP7 → A ***ON*** → B ***ON*** → C ***B.B. CLO*** → D ***ON***

- As soon as operation ***ON*** is pushed, the supply units are lowered until the operating end position.
- The corresponding ***lack of powder*** messages E1.

Powder Refill Functions

- After reaching the operation end position and showing the **lack of powder** message, the display changes automatically to E3 **Refill**.
- There exist two possibilities for a Refill (see points *Manual refill* and *Automatic refilling*).

Manual Refill

- Refilling by hand:
  - The corresponding cylinder moves automatically back via stand-by position into the levelled operational position.

NOTE: Powder may only be re-filled after the „Refill“ message!

Automatic Refilling

OP7 → A ***ON*** → B ***ON*** → C ***B.B. CLO*** → D1 ***FRESHP. ON***

- The procedure for the automatic control occurs as for the manual refilling.
- The external fresh powder dosage may be activated via a potential-free-contact.
- When reaching the filling position, the dosage stops.

NOTE: The dosage quantity must be larger than the suctioned powder quantity of the correspondent supply unit.

NOTE: Designations A to E See operating and message sequence Page 4–9

2. Putting into Operation *(contd.)*

Prepare Stand by Position

OP7 → A ***ON*** → B ***ON*** → C ***B.B. CLO*** → D ***OPERATING R***

- The correspondent cylinders move back to the stand-by position.
- The powder container bows opens.

Activation of Fluidking Filter Cleaning

OP7 → A ***ON*** → B ***ON*** → C1 ***FILT ON***

- The filter cartridges are cleaned with help of compressed air. This procedure may be repeated at will.

NOTE: Activate the filter cleaning at least once per day!

Intermediate Rinsing

During and after long powder applications, it is recommended to activate the intermediate rinsing. The intermediate rinsing may be activated with the following two modes (see *During the operation* / *Before or after the operation*).

During the Operation

OP7 → A ***ON*** → B ***ON*** → C ***B.B. CLO*** → ***OPERATING ON*** → >> D1 **H.F. ON**

Before or After the Operation

OP7 → A ***ON*** → B ***ON*** → C >> C1 ***H.F. ON***

- Dosage and feed air connections at the injectors are treated with compressed air (mains pressure). Thus, the full powder tubes are rinsed.

NOTE: Designations A to E See operating and message sequence page 4–9

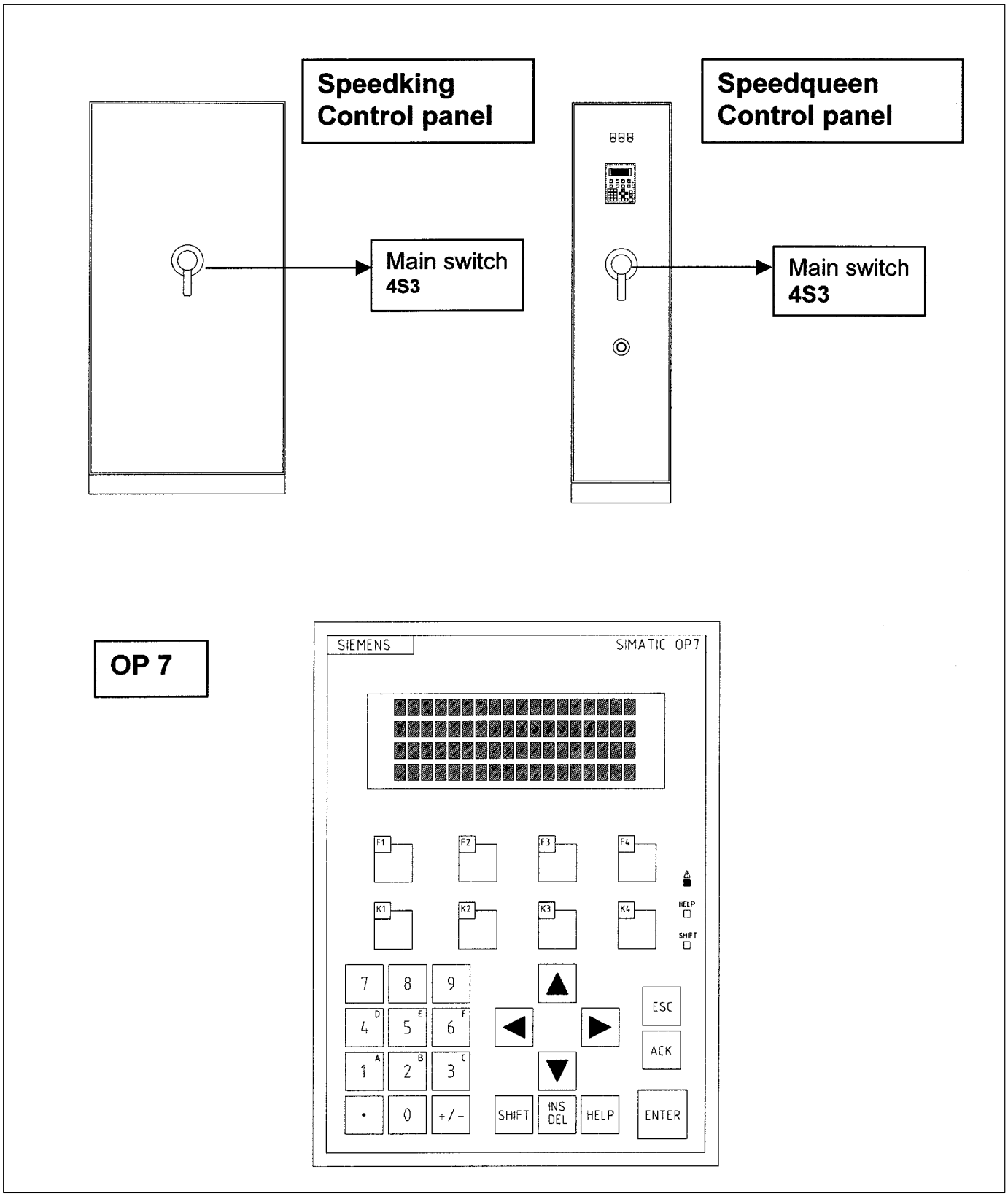

Fig. 4-1 OP7 Control Panel Facia

3. Briefly: What's Important

Before Switching on

Observe the safety notes before switching on the installation (see Section *Safety*).

Switching on the Fluidking – A

Switch on main switch 4S3. This switch has always to be kept on (see Fig. 4-1).

Switch on Fluidking at the operation panel OP7 → A ***ON*** (Fans start)

Switching on the Fluidking – B

OP 7 → A ***ON*** → B ***PLANT ON***

NOTE: The Fluidking can be cleaned independently from the booth components.

Switching off the Fluidking

OP 7 → A ***ON*** → B ***PLANT OFF***

NOTE: The main isolation switch 4S3 should only be switched off for repair or for maintenance works.

4. Colour Change Procedure

Introduction

As soon as the last working piece has passed the powder guns, the powder supply stops automatically (gap control) or manually (by hand). The compression at dosage and feed air is interrupted automatically by the application control.

Cleaning Process

As soon as the last parts are leaving the booth area, the Fluidking cleaning process starts. The needed instructions have to be introduced at the operation panel (OP7).

Cleaning procedure

Set back operation selection D ***CENTRE ON*** and activate intermediate rinsing. The suction unit moves up C1 ***H.F. ON*** and the powder container clamping device is opened. The original powder container is now removed and the recirculation tube connected to it, so that the small quantity of powder, which is still in circulation, may also be recycled. Afterwards, the manual cleaning of the suction unit can begin.

Activation of the automatic Fluidking cleaning

Push operation selection key C ***CENTRE CLE ON***.

To execute this procedure, the lifting devices move into the blow-off position (locking with application). When reaching this position, the suction unit lowers down. Shortly in front of the blow-off nozzles, the suction area of the plunge tubes is pre-cleaned with a short compressed-air stroke. Then, the complete suction unit lowers onto the blow-off nozzles and the complete powder tubing is cleaned with discontinued compressed-air strokes.

OPTION

After the tube cleaning process, the lifting devices move first to the booth centre and then move back to the booth cleaning position. On the way back, an external gun blow-off provides for the external cleaning of the gun body.

Cleaning of the Powder Pump

After the cleaning of the suction unit, the powder pump and the cyclone powder collecting surge hopper are cleaned (BAL4500161). After the run off of ***PP*** the recirculation bend is plugged and locked into the blow-out piece. By pressing C1 → ***PP ON*** at the OP 7, the powder centre will be cleaned. At this scope, the powder collecting surge of the cyclone has to be opened and the sieve has to be swivelled out. The powder collecting surge hopper has to be cleaned manually with compressed air.

Prepare a new Job

After termination of the cleaning process, the new powder container may be inserted in the Fluidking.

5. Control Devices

Display and Input at Operation Panel OP7

Input options and mode	Selection
Installation ON	A ON
Setup Plant	A Setup
Operating select. Centre ON	B ON
Operating select. Centre OFF	B OFF
Bow clamp	C B.B. CLO
Centre cleaning	C CLE ON
Powder feeding	D CENTRE ON
Centre fresh powder ON	D1 FRESHP. ON
Centre fresh powder OFF	D1 FRESHP. OFF
Centre intermediate cleaning	C1 H.F. ON
Centre intermediate cleaning	D1 H.F. ON
Powder pump OFF	D PP OFF
Powder pump cleaning	C1 PP ON

Fault message <u>with</u> operation shutdown
Emergency stop Centre
Emergency stop Panel
Fire Protection
Therm.Circuit breaker main currency
Therm. Circuit breaker Electrostatic Spray Equipment
Therm. Circuit breaker Fan 1
Therm. Circuit breaker Fan 2
Fault message <u>without</u> operation shutdown
Therm. Circuit breakter PC vibrator
Therm. Circuit breaker PC fan
Therm. Circuit breaker Electrostatic Spray Equipment

Putting in Operation Data

System data may only be entered or modified by Ramsier-trained personnel.

Initial data will be listed in the commissioning report.

Section 5

Maintenance

Section 5
Maintenance

WARNING: Allow only qualified personnel to perform the following tasks. Observe and follow the safety instructions in this document and all other related documentation.

1. Maintenance

Maintenance at Each Colour Change

- Check for precise lowering of the syphon tubes onto the blow-off nozzles during the tube cleaning process.
- Powder container clamping bar. Firm clamping of powder container must be ensured.

Daily Maintenance / Jobs to be Executed

- Functionality of the fluid tube.
  - Fluidization should be uniform and without air bubbles.
  - Fluid tube connections have to be screwed on directly.
  - Fluid tubes must be free of grease and moisture.
- Functionality of the cylinder.
  - Lowering process must stop when level probes touches powder.
- Activate filter cleaning (at least once a day).

Weekly Maintenance / Jobs to be Executed

In addition to the daily controls and the jobs to be executed (see *Controls at each Colour Change*), the following controls must be performed weekly:

- Functionality of powder pumps.
- Check compressed-air connections.
  - All compressed-air connections as:

    Atomizing and feeding air

    Fluidization

    Operational air and control air for pneumatic cylinders: control if leakage is existing.

Preventive Maintenance

- Empty collecting container of Fluidking.
- Replace filter cartridges after about 5’000 to 8’000 operational hours.
- Replace venturi nozzles after about 400 to 700 hours (depending on powder abrasivity).
- Replace driving nozzles after about 1200 –to 2’000 hours (depending on powder abrasives).

Section 6

Troubleshooting

Section 6
Troubleshooting

WARNING: Allow only qualified personnel to perform the following tasks. Observe and follow the safety instructions in this document and all other related documentation.

1. Important Hints for Troubleshooting

The following tables provide general information for the troubleshooting of basic problems. Sometimes more detailed information, circuit diagrams or measuring devices are also needed for troubleshooting.

It must be noted that a fault can occur for several reasons. It is advisable to check all possible causes for a given fault. Obvious causes of malfunction such as broken wires, missing fasteners etc., should be noted during visual inspections and corrected immediately.

The unit does not contain any user serviceable parts; approved parts available from Nordson must replace any parts that fail.

2. Table of Troubleshooting

Problem	Possible Cause	Corrective Action
Powder builds up on sieve mesh	Mesh not cleaned at frequent enough intervals	Clean mesh at more frequent intervals
	Mesh size too small for powder	Increase mesh size
	Rate of powder supply too high	Reduce rate of powder supply
Powder leaks from lid or base	Seals damaged	Replace seals
	Lid clamps too tight, lid distorted	Reduce tension on clamps and replace lid seal
Fan will not start.	Power Off	Switch on Power
	Overload operated	Re–set overload
	Wiring fault	Repair or replace
	Motor failure	Investigate cause. Replace if necessary
	Contactor fault	Repair or replace. Check push button wiring
Loss of extraction	Damper vibrated shut	Reset and lock
	Cartridges filters not clean	Check cleaning sequence and run for thirty (30) minutes
	Low pulse pressure	Set pressure at 6.4 bar (95p.s.i.)
	Cleaning valve fault	Repair or replace
Powder escaping	Door seals	Tighten star knobs. Check and replace seal if necessary.
	Cartridge leak	Check cartridge mounting seal. Tighten or replace cartridge.
		Check cartridges for punctures. Replace if any pdamage found.
	Powder hose leak	Check, replace or refit hose.
	Powder pump leak	Check all “O” rings. Replace if necessary

Section 7

Parts

Section 7
Parts

1. Introduction

To order parts, call the Nordson Customer Service Center or your local Nordson representative. Use this five-column parts list, and the accompanying illustration, to describe and locate parts correctly.

Using the Illustrated Parts List

Numbers in the Item column correspond to numbers that identify parts in illustrations following each parts list. The code NS (not shown) indicates that a listed part is not illustrated. A dash (—) is used when the part number applies to all parts in the illustration.

The six-digit number in the Part column is the Nordson Corporation part number. A series of dashes in this column (- - - - - -) means the part cannot be ordered separately.

The Description column gives the part name, as well as its dimensions and other characteristics when appropriate. Indentions show the relationships between assemblies, subassemblies, and parts.

Item	Part	Description	Quantity	Note
—	000 000	Assembly	1	
1	000 000	• Subassembly	2	A
2	000 000	• • Part	1	

- If you order the assembly, items 1 and 2 will be included.
- If you order item 1, item 2 will be included.
- If you order item 2, you will receive item 2 only.

The number in the Quantity column is the quantity required per unit, assembly, or subassembly. The code AR (As Required) is used if the part number is a bulk item ordered in quantities or if the quantity per assembly depends on the product version or model.

Letters in the Note column refer to notes at the end of each parts list. Notes contain important information about usage and ordering. Special attention should be given to notes.

2. Spare Parts

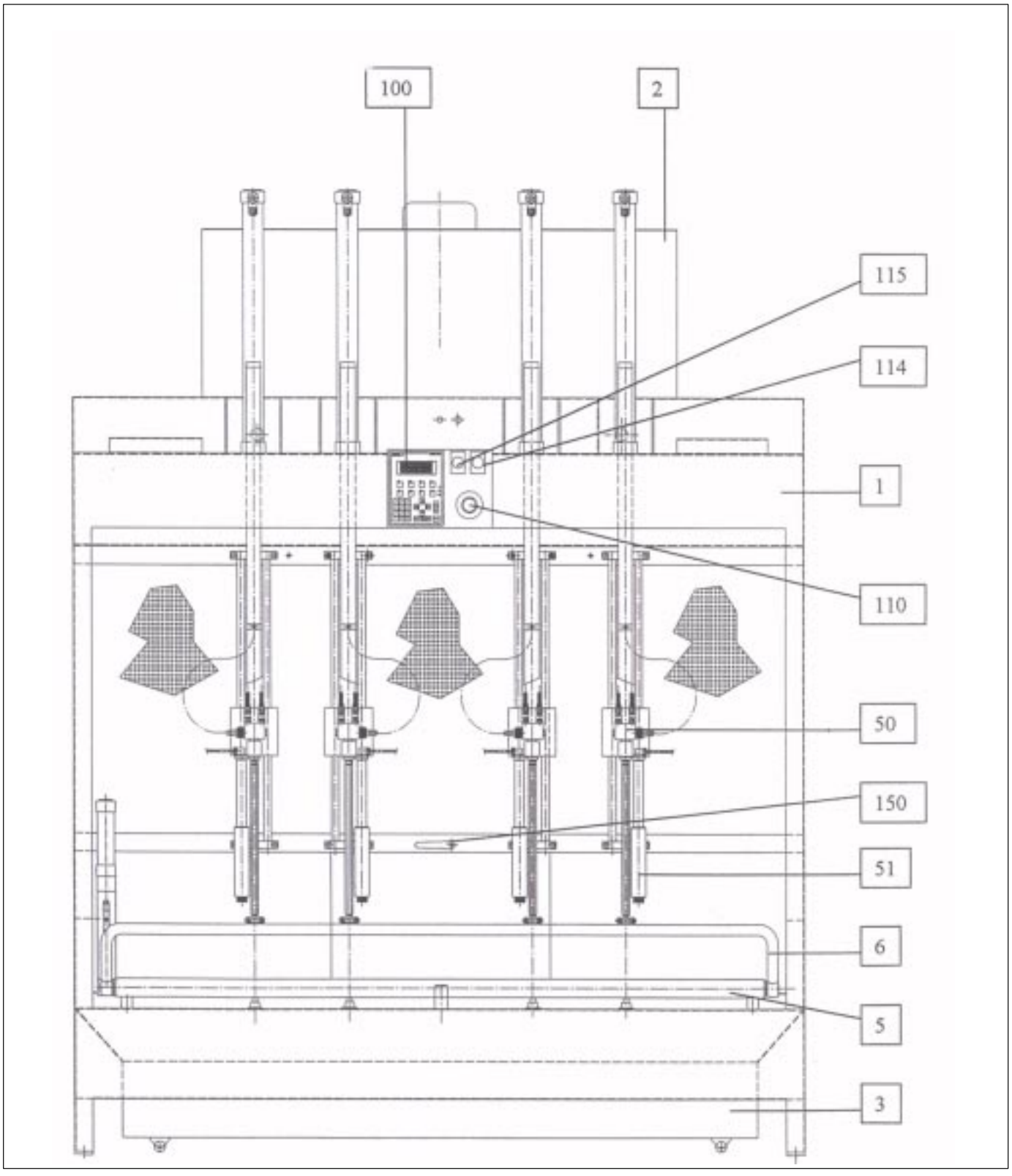

Fig. 7-1 Fluidking Front View

Item	Part	Description	Quantity	Note
-	-	Fluidking		
1	2200190	• Fluidking housing	1	
2	2200200	• Sound absorber	1	
3	2200167	• Container	1	
5	2200183	• Oscillating table	1	
6	2200193	• Container clamping	2	
10	2200186	• Silde	1	
11	2200177	• Injector holder 8 guns	1	
11	2200178	• Injector holder 9 guns	1	
12	2200166	• Extension	1	
13	2200181	• Clamp holder	4	
14	2200165	• Tube plate 8 guns	4	
14	2200164	• Tube plate 9 guns	4	
15	2200118	• Locking	2	
16	2200120	• Support plate 8 guns	1	
16	2200154	• Support plate 9 guns	1	
17	2200117	• Suction tube	16	
18	2200141	• Fluid air tube	2	
19	2200139	• Fluid air tube	2	
20	2200131	• T-piece	4	
21	393 462	• Fluid tube (2200102)	4	
22	2200142	• Support tube	4	
23	2200197	• Support plate 8 guns	1	
23	2200153	• Support plate 9 guns	1	
24	2200198	• Pressure plate	2	
25	2200126	• Side plate	2	
26	2200128	• Cylinder plate	1	
27	2200124	• Swivel support	1	
28	2200129	• Sliding holder	2	
30	2200146	• Distributor 8 guns	2	
30	2200147	• Distributor 9 guns	2	
31	2200121	• Blow out valve	16	
32	2200116	• Cover plate 8 guns	2	
32	2200185	• Cover plate 9 guns	2	
34	2200171	• Duct holder	1	
35	2200175	• Blow out connection P4 pump	1	
35	2200145	• Blow out connection P6 pump	1	
36	2200179	• Distributor UV	2	
37	2200194	• Distributor blow out valve	1	
38	2200201	• Lighting clamps	2	

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2. Spare Parts (contd.)

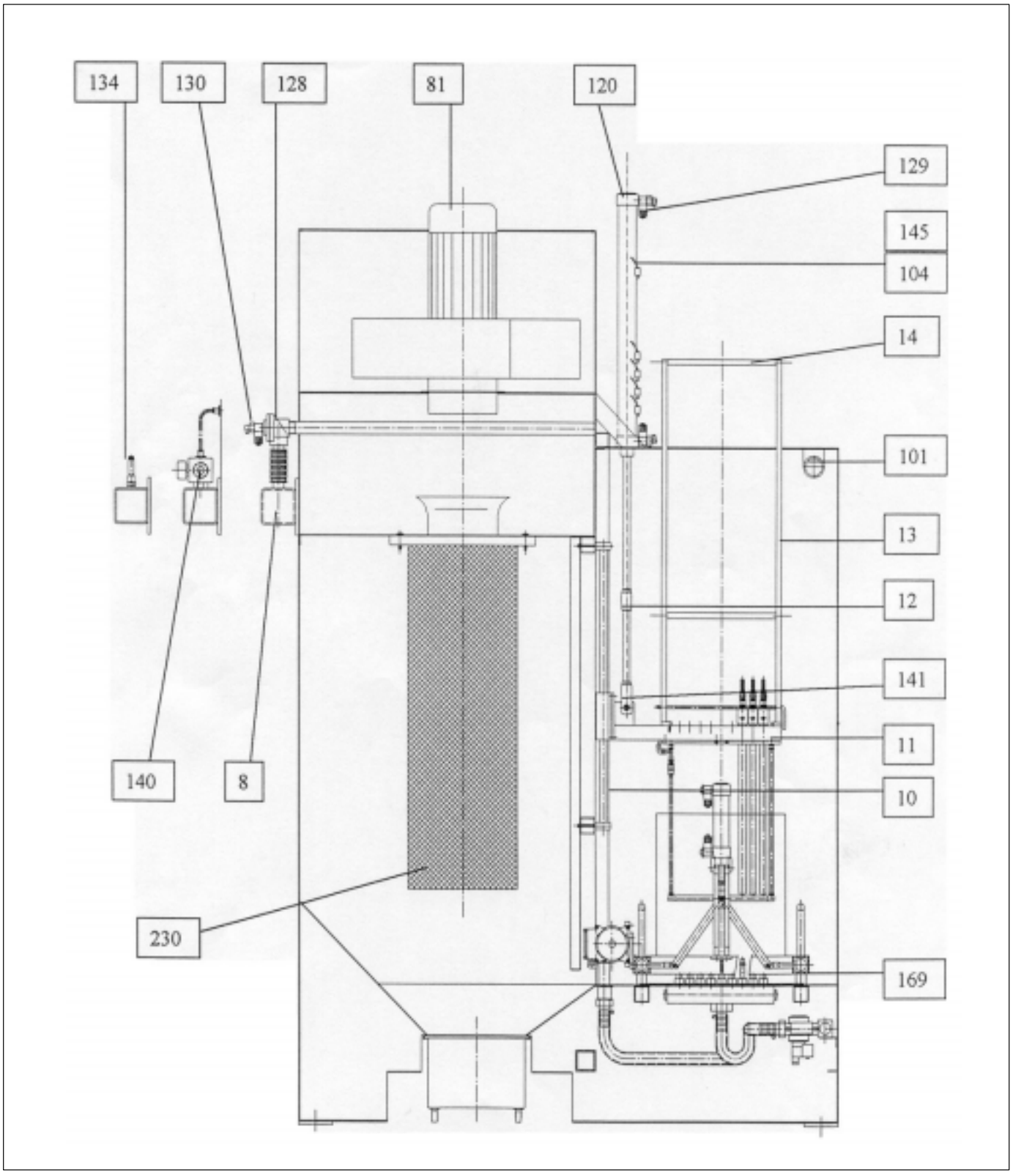

Fig. 7-2 Fluidking Side View

Item	Part	Description	Quantity	Note
39	2200199	• Distance case	2	
40	2200205	• Slider 2,2	1	
50	2200080	• Injektor	16	
51	2200081	• Level control complet	1	
53	2200204	• OP-housing	1	
81	9100051	• Ventilator	1	
82	9600305	• Oscillating motor	1	
100	9100151	• OP 7	1	
101	9100527	• Lighting	1	
104	9100503	• Approximaty switch	5	
110	9100619	• Emergency key	1	
114	9100520	• Lighting red	1	
115	9100528	• Lighting white	1	
120	9200315	• Cylinder 50-500	1	
121	9200314	• Cylinder 40-80	1	
127	9200204	• Valve	32	
128	9200320	• Membran valve	1	
129	9200196	• Multifunction valvel	2	
130	9200195	• Valve 1/2“-24VDC	2	
131	9200183	• Restrictor 8-1/4“	2	
132	9200182	• Restrictor 1/8“	2	
133	9200203	• Valve 3/4“-24VDC	3	
134	9200200	• Overpression valve 6 bar	1	
135	9200207	• Valve 1/4“-24VDC	1	
136	9200091	• Double connecting 3/4“	3	
137	9200121	• Tube connecting 1“	1	
139	9200070	• L-connector 8-1/8“	1	
140	9200069	• Angle screwing 1/4“	1	
141	9200505	• Clevis pin M16x1,5	1	
142	9200503	• Clevis pin M10x1,25	2	
143	9200416	• Angle	1	
144	9200414	• Nut 1/4“	1	
145	9200507	• Support	5	
148	9900202	• Clamp handle	1	
149	9600503	• Rolls	4	
150	9900201	• Lever	1	
151	9900212	• Clamp handle	2	
152	9200090	• Connector 1/8“	4	

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2. Spare Parts (contd.)

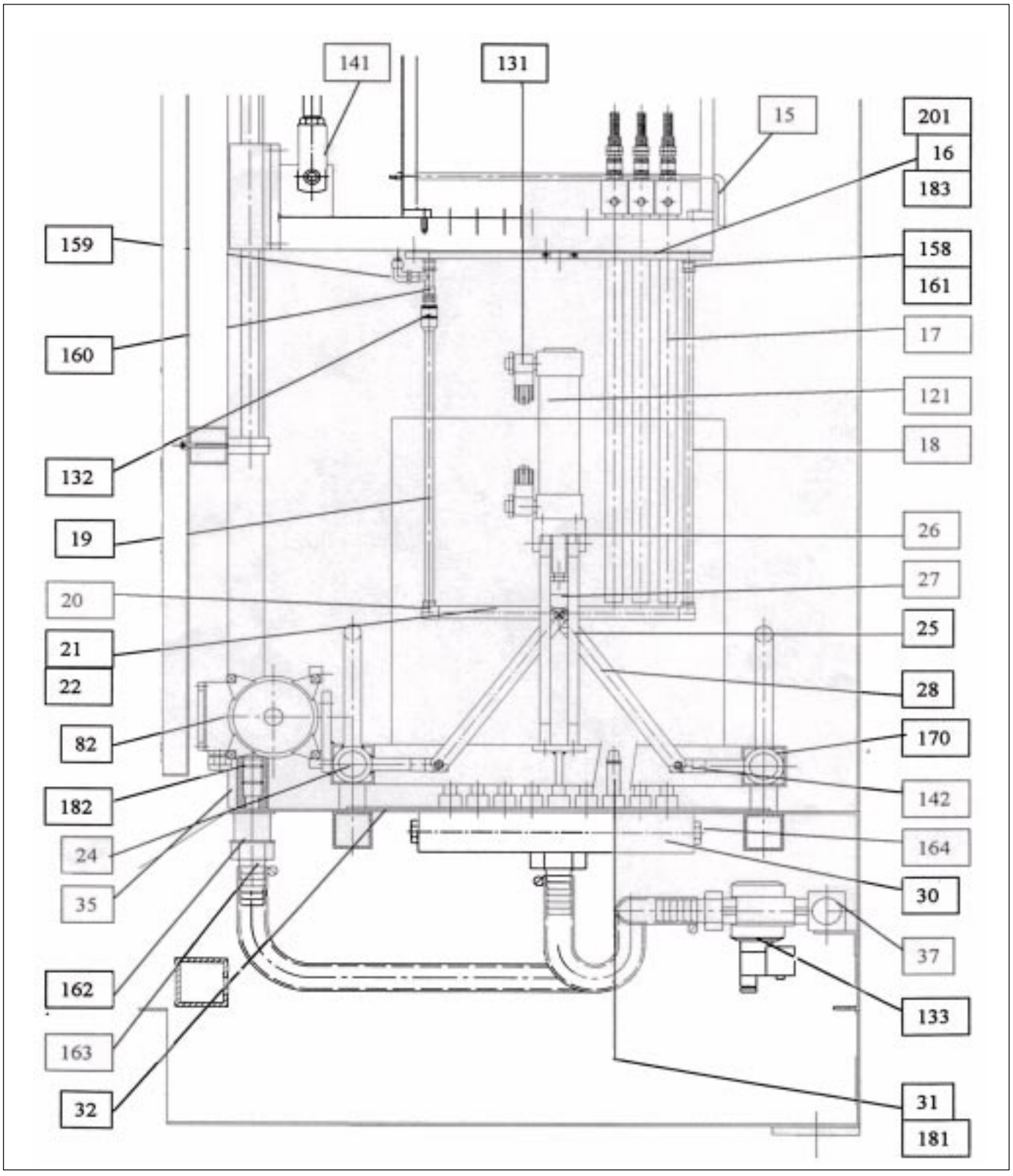

Fig. 7-3 Fluidking Internal View

Item	Part	Description	Quantity	Note
153	9400908	• Tube clip	2	
154	9200413	• Screw 1/4“	32	
155	9200415	• Screw 1/2“	1	
156	9200126	• Connector 8-1/4“	32	
157	9200094	• L-connector 8-1/8“	2	
158	9200134	• Swivel elbow 14-1/2“	33	
159	9200086	• Swivel elbow 8-1/8“	1	
160	9200089	• T-Connector 1/8“	2	
161	9200604	• Tube closure 1/8“	5	
162	9200411	• Connector 3/4“	1	
163	9200408	• Tube cover 3/4“	5	
164	9200601	• Shutter 1“	4	
165	9200107	• Double connecting 1/8-1/4“	1	
166	9200602	• Screw 1/2“	4	
167	9200076	• T-Swivel elbow 13-1/2“	1	
168	9200510	• L-connector	4	
169	9400903	• Oscillating element	4	
170	9300209	• Flanged bush	4	
171	9200075	• Connector 10-1/4“	1	
172	9200417	• Reducer 1-1/2“	1	
181	393 471	• O-Ring 11x2,5 (9400202)	16	
182	9400208	• O-Ring 21 x 2	2	
183	9400201	• O-Ring 17x1,5	16	
184	9300503	• Security ring 20x1,2	16	
185	9900112	• Filter cartridges	1	
186	9400293	• Gasket 1/2“	6	
187	9400299	• Gasket 1/4“	64	
188	9900113	• Venturi	1	
189	9300905	• Tube support	6	
190	9400102	• Expanded rubber	1	
191	9400103	• Absorber 440x2500	1	
199	9300056	• Bolt	1	
200	9400312	• Tube 8/6 weiss	32	
201	9400311	• Tube 19x3,5	1	
202	9400314	• Tube 10/7	1	
210	9100804	• Cable screwing PG11	2	

Section 8

Specifications

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1. Dimensions

Length	1600 mm
Width	1100 mm
Height	2600 mm
Weight	600 kg

2. Pneumatic Data

Compressed-air connection	Min 6 bar Max 7.5 bar
Actual max. compressed-air quantity	> 200 Nm^3/h
Compressed-air quality	Residual Water content: max. 1,3 g/Nm^3 Residual Oil content: max 0,01 mg/Nm^3
Compresssed-air consumption percleaning cycle	25 to 50 Nm^3/h

3. Electrical Data

Electrical connection	3 x 400 V / 50 Hz
System earth	according to VDE 0141
Power output of complete installation	2,2 kW

4. Exhaust Air Data

Fluidking	3000 m^3/h
Pure gas dust content	< 10 mg/m^3