

## **KARL SCHNELL GRINDER SPECIFICATION: KS Process Automat B 22 Type 250 300I**

### **Execution**

- total volume mixer bowl approx. 380 l, nominal volume approx. 300 l
- stationary design, with four height adjustable rubber feet, D = 100 mm
- direct drive of cutting set, stainless steel motor shaft
- stainless steel execution, 1.4301
- standard accessories

### **Main lid**

- hinged lid with seal, max. opening angle 80°
- manually operated, with gas pressure absorber
- safety switch with time delay

### **Pre-cutter system**

- for cutting and mixing
- cutting set with two 2-winged knives
- shaft insulation with axial face seal and seal housing with rotary shaft seal
- three phase current motor P = 9,2 kW, n = 2 880 rpm at 480 V / 60 Hz, IP 55

### **Emulsifier system**

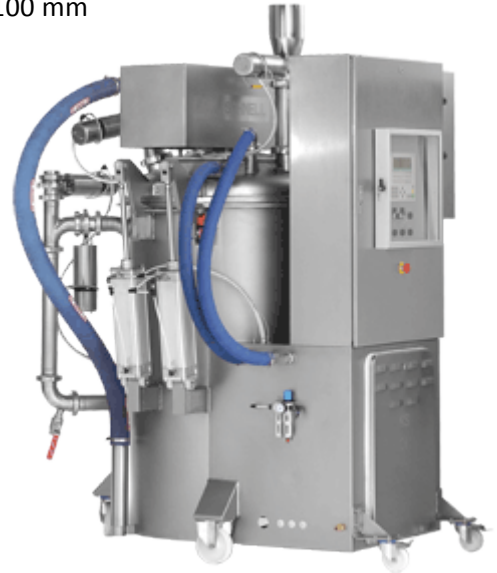
- to homogenize and to pump
- cutting housing/hole plate Ø 150 mm
- cutting set with one stainless steel knife head and one hole plate, hole size of your choice
- cutting set adjustment via nut and counter nut
- 2-winged knife head with exchangeable insert blades
- insert blades and hole plate in tool steel
- 2-winged ejector
- shaft insulation with axial face seal and seal housing with rotary shaft seal
- three phase current motor P = 9,2 kW, n = 2 880 rpm at 480 V / 60 Hz, IP 55

### **Unloading/recirculating system manual**

- when the product is recirculated, it is pumped back into the mixer bowl after it has passed the emulsifier, it is possible to achieve finest particle sizes
- outlet pipe and recirculating pipe DN 65, thread joints according to DIN 11851, 2 manually operated butterfly valves to switch from recirculating to unloading, outlet height 1 550 mm.
- manual butterfly valve DN 25 for draining, outlet height approx. 780 mm
- the product is pumped with the ejector of the emulsifier system

### **Electrical execution**

- mounted switch box, manual control, press buttons and displays are installed in the front door of the switch box, with additional Plexiglas protection cover
- voltage/frequency 480 V / 60 Hz/ 3 Ph
- control voltage 24V DC



B 22 - 300 l with options

## Special equipment for KS Process Automat B22

### **Inspection-and service flap (manway) for B 22- 300 I**

- for comfortable access to the cutting set
- flap 400 x 500 mm, manually locked
- with hinge, seal and safety switch with time delay



### **Loading hopper for minor ingredients**

- hopper 15 l, stainless steel
- welded flange DN 65, DIN 11851
- manually operated butterfly valve



### **Outlet for coarse products (bottom outlet)**

- for coarse products and products with coarse recipe components
- unloading without emulsifier (bypass)
- unloading of product via gravity (without pump)
- pneumatic KS-butterfly valve with pilot valve and position indicator in the bottom of the vessel
- outlet height approx. 600 mm
- outlet diameter DN 65, DIN 11851

### **Main lid pneumatically operated B 22**

- for standard flat lid
- stainless steel, double-acting pneumatic cylinder
- control via 5/3 solenoid valve
- luminous push-button key, lid „up“ and „down“, installed in the operating panel
- limit switch for position of lid „open“ and „close“
- central compressed-air connection R ¼“
- opening of the main lid max. 80°

### **Pump out/recirculating system automatic B 22**

- butterfly valves DN 65 pneumatically operated (compressed-air/spring), with position indicator
- luminous push-button keys installed in the operating panel
- central compressed-air connection R ¼“



### **Blow out system B 22**

*in combination with option*

*“automatic pump out/recirculating system” only*

- automatic draining of the outlet pipe when the emulsifier stops, after the unloading step is finished
- butterfly valves DN 65 pneumatically operated (compressed-air/spring), with position indicator
- pressure tank 10 l, max. 6 bar
- compressed air connection R ½ “ for hygienic air
- with pressure indicator and pressure controllers
- without filter for hygienic compressed air

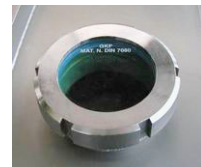


### **Air filter station B22**

- hygienic compressed air for blow out systems
- pressure indicator with pressure controllers, capacity up to 500 l/min
- coarse filter 3 micron, fine filter 0,01 micron and a charcoal filter
- connection R ½ “

### **Sight glass**

- installed on the main lid, DN 100
- glass according to DIN 7080



### **Water dosing system DN 25 for B 22**

- contact water meter DN 25
- hot water up to 90°C, max. 3,5 bar
- 4 impulse/litre, max. 100 l/min
- inclined seat valve with pneumatic drive and pilot valve
- inlet approx. 100 mm below upper edge of vessel
- luminous push-button key „on“ and „off“, digital display and pre-set possibility of the amount of water, installed in the operating panel
- connection R 1 “

### **Temperature probe**

- temperature sensor PT 100 three-wire conductor, installed in the bottom of the vessel, with amplifier
- temperature sensor completely made of stainless steel
- digital display installed in the operating panel

### **Temperature probe for PLC**

- digital display at the terminal
- temperature sensor PT 100 two-wire conductor with converter for signal 4-20 mA, installed in the bottom of the vessel
- temperature sensor completely made of stainless steel

### **Double jacket for B 22**

*in combination with option “temperature probe” only*

- for indirect heating with steam or hot water **or** for cooling with water, sole or glycol

- double jacket at the cylindrical section of the vessel, with insulation
- digital display and pre-set possibility of the temperature, installed in the operating panel
- automatic stop when the pre-set temperature is reached
- inclined seat valve with pneumatic drive and pilot valve
- luminous push-button key „on“ and „off“ installed in the operating panel
- connection R ¾“, max. pressure 2 bar, with overpressure protection valve, open outlet R ¾“

Responsibilities of client:

- supply pipe up to the inlet flange of the machine
- flexible connection with hose for example
- overpressure protection of the supply pipe
- pressure indicator with pressure controllers
- return line/derivation of the heating or cooling medium
- additional for steam: condensate trap and steam filter 25 micron

**Blow out system for double jacket**

*in combination with option “PLC” and option “double jacket” only*

- for indirect heating with steam or hot water **and** for cooling with water, sole or glycol
- draining of the double jacket with compressed air before steam heating
- switch over of inlet and outlet from cooling to heating
- automatic stop when the pre-set temperature is reached

**Agitator with wall scraper B 22**

only in combination with option „Main lid reinforced, pneumatically operated“

- made of stainless steel 1.4301, except gear motor, shaft seal, limit switch and scraper blade
- opening of the main lid max. 80°
- proxy switch for exact stop position of the agitator
- gear motor with brake installed on the main lid
- painted SEW gear motor with stainless steel cover, IP 55
- the wall scraper cleans the cylindrical part of the vessel
- easily changeable wall scraper blade made of reinforced PTFE
- luminous push-button keys agitator „on“/„off“, installed in the operating panel



**Technical data for B 22 - 300 l and 600 l**

Drive motor, power	1,1 kW
Drive motor, revolutions	16 rpm
Voltage/frequency	480 V / 60 Hz / 3 phases

**Vacuum system B 22**

only in combination with option „Main lid reinforced manually operated“ or option „Main lid reinforced, pneumatically operated“

- reinforced vessel

- main lid with one sight glass DN 100
- pneumatic butterfly valve DN 100 for ventilation on the main lid
- vacuum control with vacuum sensor
- digital display and pre-set possibility of the vacuum, installed in the operating panel
- automatic stop when the pre-set vacuum is reached
- inclined seat valve with pneumatic drive and pilot valve
- luminous push-button key „on“ and „off“ installed in the operating panel
- water ring vacuum pump IP 54, installed in the base frame  
(Material: Gray cast iron/Ceramics/Bronze)
- exhaust pipe with particle trap
- max. vacuum approx. 0,9 bar
- process water is drained completely and is replaced with fresh water
- water connection R ½“

*Technical data B 22 - 300 l*

<b>Suction volume</b>	<b>approx. 45 m<sup>3</sup>/h</b>
Water-flow rate	approx. 0,23 m <sup>3</sup> /h
Vacuum pump power	1,8 kW
Voltage/frequency	480 V / 60 Hz / 3 phases

**Main cover reinforced, pneumatically operated B 22**

for option “vacuum execution”

a must for option “agitator with wall scraper”

- reinforced, arched main cover with seal, pneumatically operated, instead of the standard flat main cover
- 2 stainless steel, double-acting pneumatic cylinder
- control via 5/3 solenoid valve
- luminous push-button key, cover “up” and “down”, installed in the operating panel
- limit switch for position of cover “open” and “close”
- central compressed-air connection R 3/8”
- opening of the main cover max. 80°
- 2 pneumatically operated claws to clamp the main cover
- safety switch with time delay

**Vacuum suctioning of ingredients B 22**

*in combination with option “vacuum system” only*

- for dry powder components **or** for liquid components  
after the max. vacuum is achieved, the pump stops and the inlet valve is opened, depending on the consistency of the ingredient this step might be repeated
- luminous push-button key valve „on“ and „off“ installed in the operating panel
- pneumatic butterfly valve DN 50, (air/air), with position indication
- vacuum hose DN 50, length 3 m

**Steam injection with steam nozzles**

*in combination with option “temperature probe” only*

- for direct heating with steam, heating up to 90°C
- KS-steam nozzles installed in the bottom of the vessel

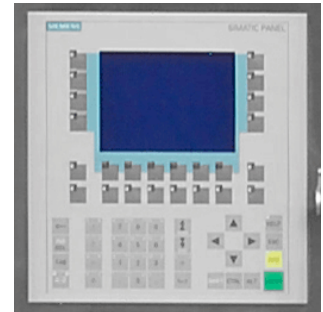
- steam pipe, steam diversion unit and flexible hose to the steam nozzle
- central steam connection, max. pressure 3,5 bar, min. 2 bar
- necessary amount of steam approx. 1,8 kg/min at 3,5 bar for each nozzle
- digital display and pre-set possibility of the temperature, installed in the operating panel
- automatic stop when the pre-set temperature is reached
- inclined seat valve with pneumatic drive and pilot valve
- luminous push-button key „on“ and „off“ installed in the operating panel
- exhaust pipe on the main lid

Responsibilities of client:

- supply pipe up to the inlet flange of the machine
- flexible steam connection to the machine (hose)
- overpressure protection of the supply pipe
- pressure indicator with pressure controllers
- return line/derivation line for condensate
- condensate trap
- steam filter 25 micron
- culinary steam

**PLC control system**

- Siemens S7 - 300 with operating panel OP 177
- analogue signals (PT 100/ 4-20 mA) are shown on the terminal
- manual and automatic control
- manual operation via keys at the terminal, with a PLC system there are no extra push buttons or displays are installed
- memory for 30 programs each with 20 program steps



**Motor options pre-cutting system**

- standard motors up to 11 kW are started directly
- from 11 kW on, a 2 speed pole changing motor is installed
- the power of directly started motors remains the same with frequency inverter drive, motor 13,5/17,5 kW becomes 18,5 kW with frequency inverter drive
- if a 20-60 Hz variable speed drive is installed, motors are equipped with 3 PTC resistors and a cooling fan is installed in the enlarged switch box with the frequency inverter

machine type	standard drive	reinforced drive	frequency inverter drive	speed rpm
B 22 - 300 l / 600 l	9,2 kW	13,5/17,5 kW		1 460/2 930

**Motor options emulsifier system**

- motors up to 11 kW are started directly
- the power of directly started motors remains the same with frequency inverter drive

- if a 20-60 Hz variable speed drive is installed, motors are equipped with 3 PTC resistors and a cooling fan is installed in the enlarged switch box with the frequency inverter

machine type	standard drive	reinforced drive	frequency inverter drive	speed rpm
B 22 - all sizes	9,2 kW	11 kW		2 930
B 22 - all sizes	9,2 kW		9,2 kW	1 150-3 450
B 22 - all sizes	9,2 kW		11 kW	1 150-3 450

#### **Knife heads in stainless execution**

- *Insert blades with locking screws made of tool steel*
- for cutting housing diameter 150 mm



2-winged, Id.-No. 126244

3-winged, Id.-No. 126245



#### **Pre Cutter Knives**

- *FV 175 knives made of stainless steel*
- two 2-winged pre cutter knives are installed crosswise

