Your FrymaKoruma CoBall Mill Type MS 50 IP
No. Description
1000 Product inlet
Product inlet connection: DN 25
Feeding reliability: by attached pressure transmitter with min./max. switch contact
Bead and product separation: with inlet gap 0.5mm
1002 Installation feeding pump: on a separate base plate next to the machine
1003 Feeding pump
Type: Eccentric screw pump NM021 hygienic
Motor capacity: 0.55 kW / 50Hz
Gear adjustment: with manual hand wheel
1009 Feed line between pump and mill: fixed piping
2000 Grinding Area, Grinding Tool
Maximum allowable pressure in product chamber: 2.5bar
Material stator: 1.4517
Material rotor: with wear-resistant Colmonoy coating
Material lid insert: 1.4517
2007 Grinding gap: 13mm
Peripheral speed of rotor: 13.1 m/s via v-belt
Milling Chamber Accessibility: via manual hydraulic opening mechanism
Operator safety: safety switch attached at stator
3000 Tempering of grinding area
Cooling of rotor, stator and lid insert: 4bar
Media inlet connection: Rp 3/4" with solenoid valve and pressure reduction valve
Media outlet connection: Rp 3/4"
4000 Grinding beads
4010 Material grinding beads: ZrO2 - Jyoti (Ceria) (zircon oxide)
Diameter: 2.4-2.8mm
5000 Optimized seal technology
5001 Sealing: double acting mechanical seal type HSHRC
Material product side: silicon carbide / silicon carbide
Material atmosphere side: silicon carbide / wolfram carbide
5003 Sealing liquid system (closed circuit)
scope of supply: installation, connection lines and wiring
Basic equipment:
- coolable pressure vessel with sight glass
- sealing liquid pump
- level switch
- pressure gauge with analogue display
- temperature switch
- flow switch
- filling spout
- pressure connection with pressure relief valve
- drain point
- cooling water connection with on-off valve and manual stop or control valve

Operating conditions sealing liquid pump:
- temperature up to 95 °C
- dynamic viscosity up to 30 mPas max.
Note:
- at the contact points of the sliding surfaces each mechanical seal secretes a minimal amount of sealing media into the product. Therefore the sealing media has to be compatible with the product, clean, lubricating, free from solids and harmless.
- the selection of the sealing media is the responsibility of the operating company.
- without any other information from the operating company, the functionality of the sealing system is designed for a media consisting of water/glycerine (80%/20%). Other sealing medias have to be approved by FrymaKoruma.

6000 High performance main drive
Execution: AC motor with (PTC) thermistor probe
6001 Capacity: 55 kW with terminal box
6004 Motor efficiency: IE3 according to IEC-60034-30 (valid for all motors)
Speed: 1500 rpm (50Hz)

7000 Product outlet
Product outlet connection: s-bow DN 32
Product safety: by attached PT100 thermometer with max. switch contact
7009 Bead and product separation: fix separating gap without sieve

8000 Machine housing
Housing, lid, door, bearing and belt guard made of stainless steel AISI304 (1.4301)
Varnish steel parts: RAL 9001 (cream)
The machine is installed on machine feet

9000 Electrical equipment
Installation of machine control cabinet MCC: mounted on machine housing
Material machine control cabinet: AISI304 (1.4301)
Control voltage: 24VDC
9003 Operating voltage: 460 Volt, 3 Phase, N, PE
Frequency: 60Hz
9004 Electrical components with UL mark of conformity
9802 Speed adjustment for main drive
Frequency inverter for main drive: integrated in machine control cabinet MCC, inclusive parameterisation and wiring.

Automation

Installation of human machine interface HMI: integrated in machine control cabinet MCC

Automation Level 1

The PLC, Type Siemens S7, controls all the functions (Basic Operations). After a set point is entered and the function is started, the PLC controls the equipment like pumps, motors, dosing valves, etc. The operator panel has a Touch screen panel, and the machine can be operated and monitored in manual mode. The operating status of the plant is displayed on the operator panel. Each available Basic Operation can be started or stopped by pressing the corresponding icon at the operator panel. All occurring interrupts are displayed on the control screen with date. After confirming the message, the text will be cleared and the halted Basic Operation can be restarted.

Execution

HMI: Type Siemens Touch Panel 7"
SPS: Type Siemens S7-1500

Structure

User Management
Language Switch
Alarming
Status Indicator
Set points and Parameters
Manual operation

11000 Accessories

Master plate for wear-measuring of rotor/stator
V-belt tension measuring tool

12000 Material, surface, characteristics

Material of product contacting parts: AISI 316L (1.4404, 1.4435), 1.4571, 1.4517, 1.4408
Material of elastomeres: EPDM
Surface of piping:
Average peak to valley height inside: Ra ≤ 0.8 µm
Welded joint: Ra ≤ 1.6 µm
Welded joint outside: not polished
Surface of grinding area:
Average peak to valley height inside: Ra ≤ 0.8 µm
Average peak to valley height outside: Ra ≤ 1.6 µm
Welded joint outside: not polished
Protection type (general): IP54

13000 Mechanical interface

13001 Fittings product lines (inclusive internal): TriClamp ISO 2852/O.D. (inch)
Fittings of media piping: ISO 7-1

14000 Documentation

Instruction manual Mill: 2 x CD in English
External documentation: English or German
Inscription: English