

HOW TO DESIGN A SUBSYSTEM IN 10 MIN

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- ▶ Tailormade fans for industrial, maritime and offshore processes
- ▶ Gas filtration, cooling/heating, inert gas, pneumatic transport....
- ▶ Design based on system requirement
 - ▶ Gas flow
 - ▶ Temperature of gas
 - ▶ Type of gas
 - ▶ Required pressure



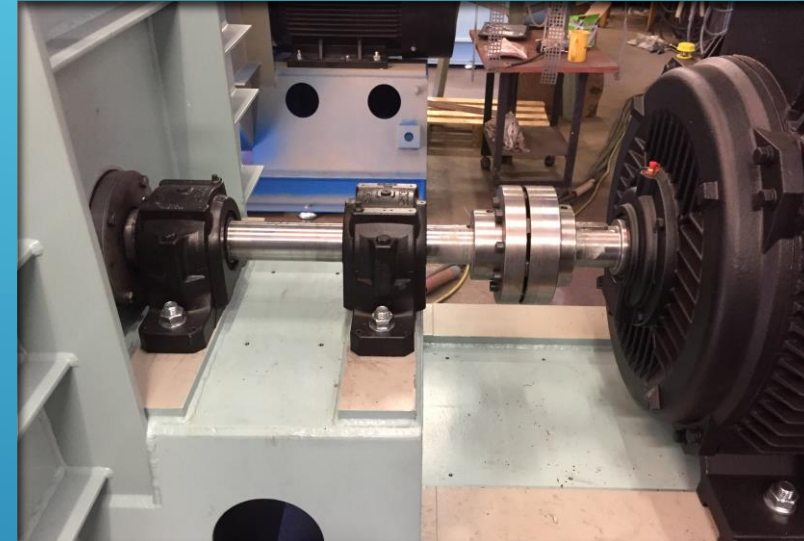
CONFIGURATIONS DEPENDING ON SYSTEM REQUIREMENTS

- ▶ Impeller diameter: 0,5 to 3,2 meters
- ▶ Rotating 350 rpm to 3600 rpm
- ▶ Temperatures -30 to 600 °C
- ▶ Vertical vs horizontal mounted
- ▶ Direct or belt driven
- ▶ Driven by electrical or fossil motor



CONFIGURATIONS DEPENDING ON SYSTEM REQUIREMENTS

- ▶ Single, in series or parallel
- ▶ Impeller mounted on motor or axle
- ▶ Placed on ship, oil platform or land
- ▶ Black steel, hard metal, stainless steel
- ▶ 3 Impeller designs



ADDITIONAL FEATURES

- ▶ Speed manipulator
 - ▶ Gearbox, hydraulic coupling, flexible coupling, frequency converter
- ▶ Performance monitoring
- ▶ Automated lubrication
- ▶ Noise, heat insulated
- ▶ Spark proof
- ▶ Cleaning or cooling



TOOLS

- ▶ 3 excel programs:
- ▶ Fan type and size decision (High level design)
 - ▶ Based on customer needs
- ▶ Design calculations (Detailed design)
- ▶ Cost and time calculation
 - ▶ Based on type, size and experience

USN SILICONE

- ▶ Project SESG 2018
 - ▶ Clean air
 - ▶ 100 °C
 - ▶ Air flow 80.000 m³/h
 - ▶ Inlet pressure -3 kPa
 - ▶ Pressure increase 8 kPa



OUTPUT

- ▶ High level design and noise level
- ▶ Detailed design
- ▶ Production cost and time
- ▶ Preliminary drawing
- ▶ Quotation


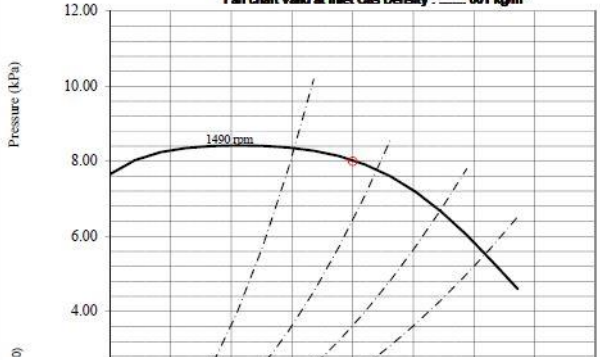


Diagram for FLEBU fan type BK 002

Inlet Diameter, cm: 90 Fan: USM Silicones

Project: SESG

Fan chart valid at Inlet Gas Density : 001 kg/m³



1(1)
Växyö 22/11/2018

Quotation no: 2018

To: USN Silicones

Your reference: SESG 0

Our reference: CJR

Pos 1.1
1 pc **FLEBU Fan Type BK 1.81/90-5**

The fan is designed for: Frequency drive control

- Bearings: Grease lubricated, SPM nipples, PT100
- Shaft seal: Standard, Klingersal
- Axial dismantling of fan wheel
- Flexible coupling with cover
- Back wings
- Cooling disc w/cover
- Inspection door
- Drainage
-
- Anti vibration mounting
-
- Material: Fanwheel-St. 52.3, Housing-St. 37.2, Steel frame-St. 37.2
- Surface treatment: 80 µm Alkyd
- Motor: 250 KW, 4 pole, IE2, 690V, 50Hz for frequency drive
Pt100 2-wire in bearings. Special winding insulation for frequency converter supply. Heating element, 200-240V.
Insulated bearing at N-end.

Price total per fan: 35,700 EUR

Not included in scope:
- Concrete foundation, Insulation, Frequency converter

Delivery time: 14-16 working weeks. (Motors to be checked at order).

Terms of Delivery: FCA Tallinn. NLD1. VAT not included.

Terms of Payment: Prepayed

Guarantee: Warranty period of 24 month from take over, max 36 month from delivery.

Documentation: Flebu standard, Swe/Eng.

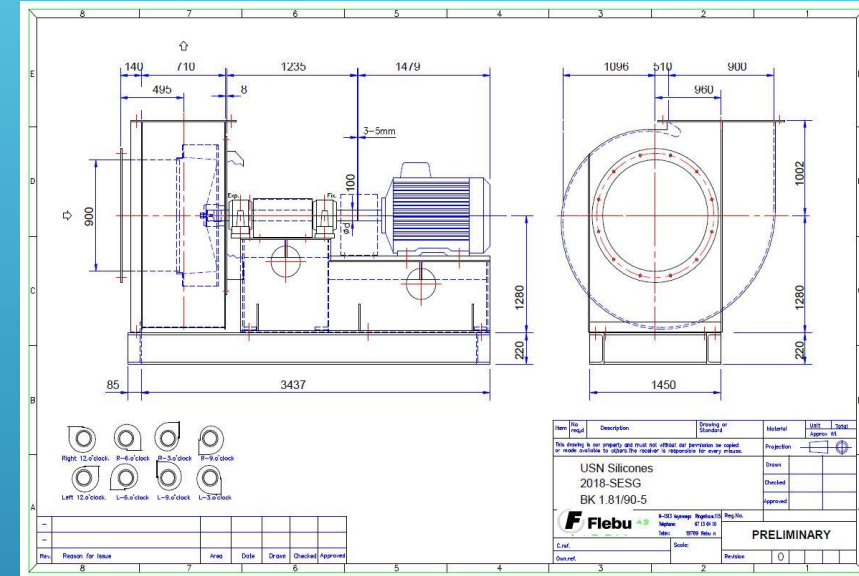
Validity: 30 days.

We trust that you will find our quotation favourable and we look forward to a continued dialog regarding this project. Do not hesitate to contact us if you have any questions.

Best regards

CJR
FLEBU

Item	Part	Description	Quantity	Material	Unit	Total														
This drawing is our property and must not, without our permission, be copied or made available to others. No liability is accepted for any errors.																				
USN Silicones 2018_SESG BK 1.81/90-5																				
Flebu PRELIMINARY																				
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THE END

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