POWERFILM 600

Technical specification:

General description:

The **Thin Film Evaporator *600*** has a heating surface of 6,6 sqm according to the first estimation of the size which is based on customers process data.

Feed	**500-750**	**kg/h**
Temperature:	30 – 35	°C
Solids	3-10	%
Residue		
Sludge thickness	15-25	%
Operating Pressure	**100**	**mbar abs**
Heating Temperature	**150**	**°C**

We recommend the ***POWERFILM* - design.** The main advantages are:

- **Higher efficiency** compared with other types.
- **Higher product quality** due to heavily reduced entrainment. The advanced wipers geometry reduce splashing to a minimum.
- **Longest lifetime** of wipers due to special mechanical design.

There is **no need to use a bottom bearing.** To reduce the risk of packings on fixed parts on the bottom of the evaporator we chose **sliding blocks** to support the wiper basket.

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First start-up: GIG Karasek would like to recommend an inspection of the erected Evaporator by a serviceman prior to commissioning.
During this inspection the release for start-up will be issued.
If there is no demand on this inspection GIG Karasek will cancel mechanical guarantee.

For any further questions please don´t hesitate to contact following persons:

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Technical: Mr. Christian Nöhammer
phone: +43-2662-42780- 259

We hope that our quotation will meet your requirement

We would be happy to work with you on this project in the future.

Mit freundlichen Grüßen / kind regards

i.A. i.A

GIG Karasek GmbH
A-2640 GLOGGNITZ-STUPPACH

Enclosure: Technical specification, Spare part list for two years operation

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The evaporator is equipped with a **double shell with internal guiding spiral**, which gives **best flexibility** for the future as it allows to use **steam or hot oil**.
The **heating surface** is **completely machined** to optimise the heat transfer. **In addition** the wiped surface is **grinded** (R_a<3,2µm) to reduce wearing on the wiperblades to a minimum.

The **drive unit** of all GIG Karasek Thin Film Evaporators is made of **stainless steel**.
The whole evaporator is nearly corrosion free.
A **double mechanical seal** is applied at the top cover plate to seal up the rotor shaft against the vessel. The **sealing liquid system is included** in our scope of supply.

A very special item, which **saves** a lot of **maintenance time** and **cost**, is our **rotor suspension device**. This device allows to **maintain the mechanical seal without removing the rotor**.

A short summary of our reference list for similar applications.

BASF

POWERFILM IN SEVERAL SIZES

BAYER

POWERFILM IN SEVERAL SIZES

Lurgi

POWERFILM IN SEVERAL SIZES

Enclosed to this page you will find the detailed technical specification of the evaporator.

Design data:

Internal:	Pressure:	-1/+0,5 bar g
	Temperature:	-10/+160 °C
Jacket:	Pressure:	-1/+6 bar g
	Temperature:	-10/+160 °C

Stress calculation according to AD 2000-Regulation.

Design characteristics:

Heating surface:	6,60 m²
Inside diameter:	565 mm
Ratio Diameter to Lenght:	1:6,58
No. of heating sections:	2
Overall dimensions:	ca. ø1100x6500

Evaporator body:

Cover plate:		incl. suspension device, excl. thermal barrier
Vapour section:		excl. enlargement, excl. heating
Vapour nozzle:		circular
Feed Nozzle:		1 pc.
Jacket:		execution as jacket incl. spiral
	Body flanges:	massive stainless steel
	Bolts:	hexagon screws
Gasket facing:		tongue / groove
Bottom part:		cone incl. heating
Brackets:		☒ 2 brackets on vapour section
		☐ Support ring on vapour section
		Sliding brackets on the bottom part

Rotor:

Type:	***POWERFILM***
Design:	massive stainless teel follow up type, special shape for little wearing
Circumferential speed:	approx. 3,7 m/s
Rotor speed:	approx. 125 rpm
No of wiperblades per wiper section:	6 pc. / 9 sections
Distributor:	distribution ring
Separator:	none

Drive:

Type:	Getriebebau Nord / Siemens / SEW	
Execution:	Spur wheel motor	
Power:	11	kW
Voltage:	400/690	V
Frequency:	50	Hz
System of protection:	IP 55	
Ex-Protection:	-	
VIK-execution:	Yes	
Class of insulation:	F	
Inverter operation:	Yes (10-50Hz; inverter in clients scope)	
PTC:	Yes	
Shape:	V1	

Coupling:

Connection between gear motor and rotor. Execution as torsinally elastic coupling.

Type:	Rotex alternative N-Eupex

Mechanical seal:

Type:	John Crane Typ CK 725
Body material:	stainless steel
Slidering pairing product side:	SIC / Carbon
Slidering pairing atmospheric side:	Carbon / SIC
Gaskets product side:	Viton
Other gaskest:	Viton
Additional equipment:	Sealing liquid vessel incl. cooling coil
	Hand filling pump
	Pressure gauge (local display)
	Thermometer (local display)
	Level switch (with Min- and Max- Alarm)
	Ventilation and drain
Tube fittings:	Gyrolok
Sealing medium:	e.g. white oil

Bearing:

Top bearing:	Spherical roller bearing	
Bottom bearing:	Sliding Blocks	
	Material	PTFE/Carbon
	Trunnion:	not necessary
	Lubrication:	not necessary
	Flushing:	not necessary

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Materials:

Product side:	1.4404 / 1.4571
Jacket:	1.4301
Wipers:	1.4404 / 1.4571
Drive unit / Outer parts:	1.4301
Bolts:	A2-70
Gaskets:	Flat gasket GORETEX DF

Surfaces:

Wiped surface:	machined Ra<3,2 µm
Vapour section:	pickled and passivated
Bottom part:	pickled and passivated
Rotor:	pickled and passivated
Other surfaces:	pickled and passivated
Outer surface:	pickled and passivated

Additional Equipment and Notes:

- None

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Weight:

Total empty weight:	approx. 3800kg	without insulation
Filled with water:	approx. 4900kg	without insulation

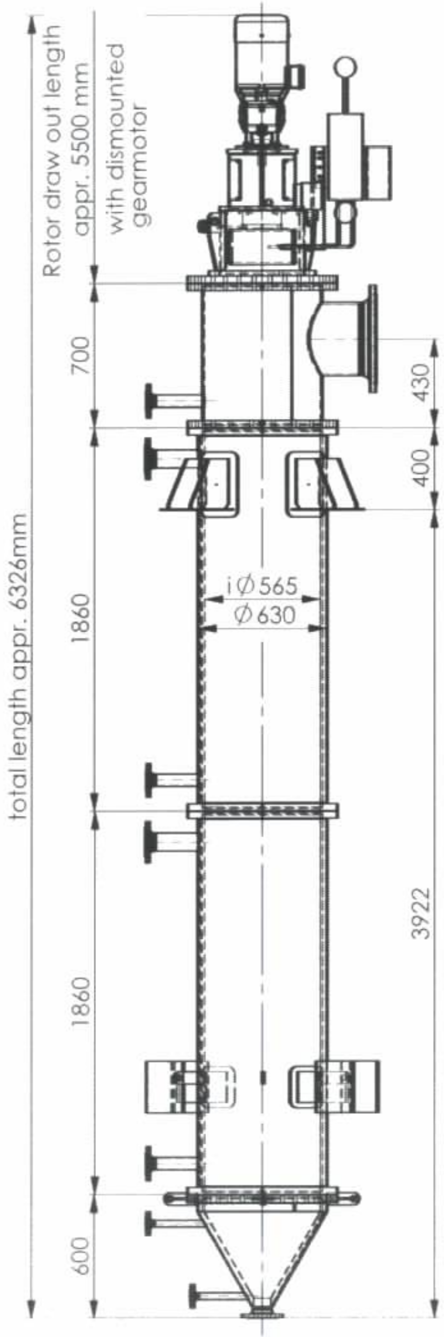
Inspection:

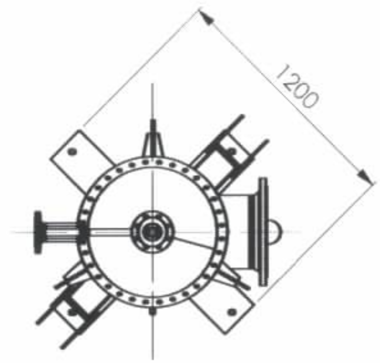
☒ TÜV:	(acc. to PED 97/23/EG Modul G)
☒ customers inspector:	
☒ internal inspection:	
Cold water pressure test:	Vessel and Jacket
Mechanical test run:	internal inspection

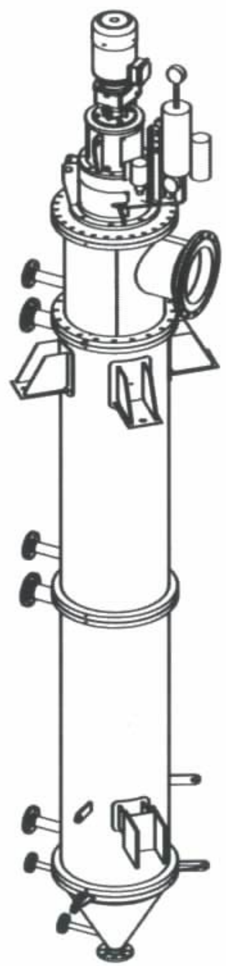
Documentation:

- TÜV
- CE – Documentation consisting of:
  - Statement of conformity acc. to appliing EU-directives (if applicable)
  - Operation manual, maintenance instructions
  - Documents for gear motor, coupling, mechanical seal, sealing liquid system
  - Test reports
  - Manufacturing drawings for pressure vessel, part list, assembly drawings for rotor and drive unit

end of specification







Rev	Name		Datum	Änderung
	DATUM DATE	NAME		KUNDE CLIENT IN-EKO
GEZEICHNET DRAWN	14.11.13	Nöhammer		
GEPRÜFT CHECKED				
SCHWEISSFACHING. WELDING ENG				ANLAGE PLANT

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MAßSTAB SCALE

Bezeichnung: Description:

THIN FILM EVAPORATOR
POWERFILM 600

GIG-NR. P113-7544

Z.NR. DRG.NR.

ÄND.-REV.

EDV-NR. P:\Angebot\2013\P113-7544\Solid Works\POWERFILM 600\POWERFILM 600