INDUSTRIAL FREESTANDING CHIMNEYS

Design, Engineering and Production of freestanding chimneys and exhaust systems for the industrial sector

www.jeremias-group.com

More than 40 years

Manufacturing and innovation

JEREMIAS, is an industrial group with its headquarters based in Germany with over **40 years of experience** in design, production and development of solutions for the exhaust of gases. Jeremias is the technology leading manufacturer of factory-made exhaust systems, industrial stacks and freestanding chimneys

From the very beginning the **industrial group Jeremias** has steadily grown being today a global player with its presence in more than **60 countries** and with **8 production plants** around the world (Europe and North America), with more than 1200 staff members.

The Jeremias Group offers technical support during all the different project stages; providing system design, back pressure calculations, fire rating, the required material specifications and installation drawings in various formats including BIM REVIT.

Sales Network in 60 countries

More than 100.000 references

8 production plants

More than 1200 staff members

Our professional **Team**

is committed to help you in your daily work with a customer service department always at your service.

www.jeremias-group.com
industrial@jeremias-group.com

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Industrial
Engineering

In addition to the wide range of factory-made stainless-steel modular chimney and exhaust systems, Jeremias presents **“Jeremias Industrial division”,** an exclusive department focused on providing engineering solutions for the exhaust at industrial facilities.

Jeremias Industrial division offers sizing calculations, 3D and 2D design, manufacturing and installation of freestanding chimneys steel stacks and windshields for all types of industrial exhaust installations.

Jeremias Industrial division is the ideal engineering partner for the industry offering a comprehensive service by highly qualified professionals in the field of smoke and gas exhaust, having all the necessary software tools to provide the expected technical support in industrial projects.

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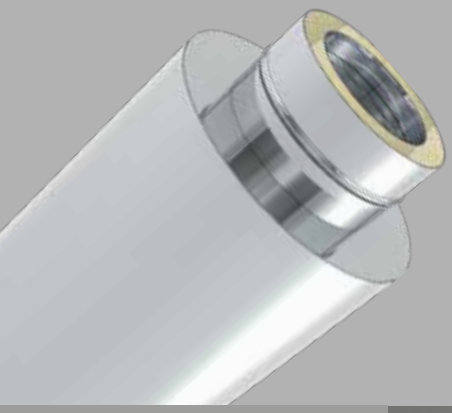
Industrial chimneys



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Certification, Quality and Standards

INDUSTRIAL FREESTANDING CHIMNEYS

SERIE FSA

Double wall insulated inner pipe and load bearing external stack "Windshield"

Application
Combined cycles, cogeneration, boilers, Gen sets, chemical extractions, Biomass ....

Anchoring system:
Base flange or anchoring cage

Bearing element:
Outer tube

Exhaust pipe
AISI 304 / AISI 316

Insulation
A1 - Rock wool
A2- Mineral wool
30, 50, or 100 mm thickness

Internal back ventilation
along the complete system

External stack
S235 / S275 / S355 / AISI 304

Inner pipe number
1

Finishing
RAL painted
different cladding options
stainless steel bright annealed / mat / galvanised steel

SERIE FSA-X

X- Double wall insulated inner pipes and load bearing external stack "Windshield"

Application
Combined cycles, cogeneration, boilers, Gen sets, chemical extractions, Biomass ...

Anchoring system:
Base flange and/or anchoring cage

Bearing element:
Outer tube

Exhaust pipe
AISI 304 / AISI 316

Insulation
A1 - Rock wool
A2- Mineral wool
30, 50, or 100 mm thickness

Internal back ventilation
along the complete system

External stack
S235 / S275 / S355 / AISI 304

Inner pipe number
≥ 2

Finishing
RAL painted
different cladding options
stainless steel bright annealed / mat / galvanised steel

JEREMIAS INDUSTRIAL DIVISION

Service

Study of the specific requirements
Site survey including access restrictions
Calculation of diameters, thicknesses, materials.
Feasibility study & cost estimation. Continuous communication with the client.
Quote follow up

Calculations

Static calculation.
Report of loads at critical points.
Resonance frequency calculation.
Seismic calculations.

Design 2D/3D

Transport drawings / design
Anchor cage drawing
list of materials required
Production drawings.

Production

Longitudinal welding - Laser cut, - plasma.
Bending machines, large diameters, special pieces.

Logistic

Transport organization.
Crane and installation
project coordination

Installation

Site surveys.
Qualified installation teams,
Supervision. and commissioning,
Tracking deadlines

SERIE FSB

Double wall insulated chimney stack with internal load bearing pipe "Freestanding Chimney"

Applications
Big boilers, chemical extract, industrial ovens...

Anchoring system:
Base flange or anchoring cage

bearing element
inner pipe

Exhaust pipe
AISI 304 / AISI 316
S235 / S355 / S275

Insulation
A1 - Rock wool
A2- Mineral wool
30, 50, or 100 mm thickness

External pipe
Cladding AISI 304 or AISI 316, aluminium galvanised steel

inner liner number
1

Finishing
RAL painted
different cladding options stainless steel bright annealed / mat / galvanised steel

SERIE FSC

Stainless steel single wall ventilation tower

Applications
Air exhaust / intake
Ventilation and air conditioning

Anchoring system:
Base flange

load bearing element Single wall duct
Exhaust pipe
AISI 304 / AISI 316

Finishing
RAL painted
stainless steel bright annealed / mat /

SERIE FSA

Freestanding Industrial chimney with double wall insulated inner liner and load bearing external stack "Windshield"

The inner gap between the insulated inner pipe and the outer stack guarantees a constant back ventilation along the system, avoiding the outer pipe reach the structural temperature limits

1 **Terminal**
Allows back ventilation along the complete system

2 **Vibration damper**
Reduces the impact of oscillations, guaranteeing the stability of the chimney.

3 **Exhaust inner liner**
Material: AISI 316, AISI 304.
Thickness: 1.5 - 2 - 3 mm.

4 **Insulation**
High density rockwool with galvanized wire.
Thickness: 30 to 100 mm, depending on the temperature.

5 **Ladder**
Single rail ladder / safety cage ladder with intermediate platforms.

6 **Sampling points**
Allows the connection of measuring equipment for maintenance requirements

7 **Platform**
In angle from 135º to 360º.
width from 800 to 2500 mm.
Manufactured in steel S235JR galvanised, other material options available

8 **T-Branch**
Flanged connection or connection to Jeremias modular systems

9 **Clean out opening**
access for inspection and maintenance**. Ø250, Ø600 mm**, different door options

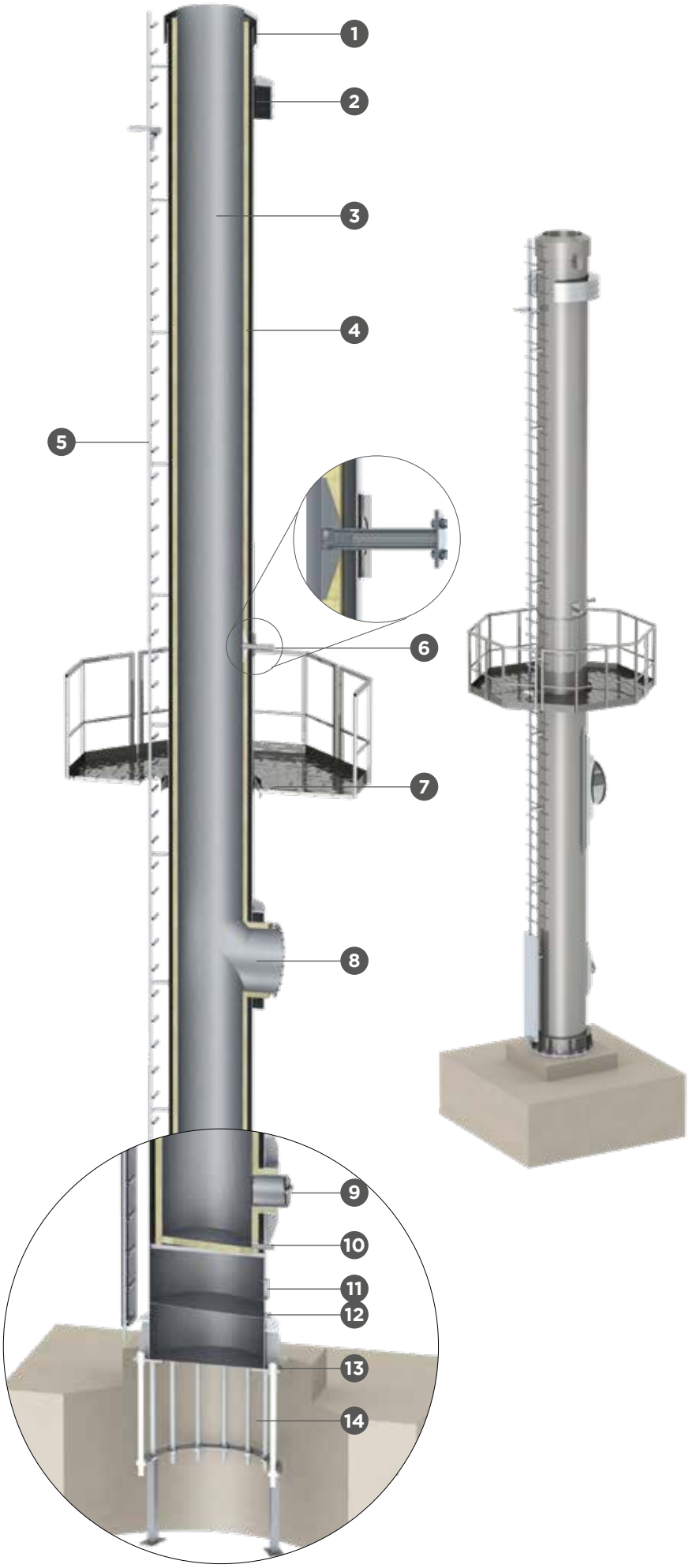
10 **Inner pipe drain**
Sloped base plate to allow removal of inside condensates

11 **Back ventilation**
Ventilation grill to allow a continuous inside air flow from base till top.

12 **Outer pipe drain**

13 **Base flange**
with reinforcements

14 **Anchor cage**



SERIE FSB

Double wall insulated chimney stack with internal load bearing pipe "Freestanding Chimney"

1 **Open Terminal**

2 **Exhaust inner liner**
Material: AISI 316, AISI 304, S235, S275, S355

3 **External cladding**
Material: AISI 316, AISI 304, Aluminium, other options
Thickness: 0.8 - 1.5 - 2 mm.

4 **Ladder**
Single rail ladder / safety cage ladder with intermediate platforms.

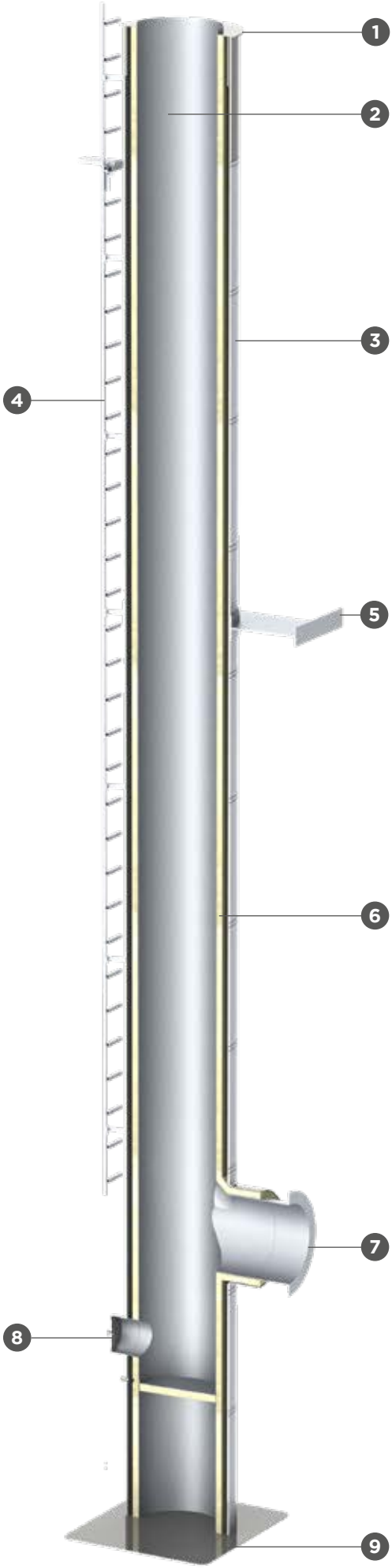
5 **Wall support/bracket (optional)**
Helps reducing the total loads and the thickness of the structural tube and foundation.

6 **Insulation**
High density rockwool with galvanized wire.
Thickness: 30 to 100 mm, depending on the temperature.

7 **T-Branch**
Flanged connection or connection to Jeremias modular systems

8 **Clean - out opening**
Access for inspection and maintenance. Ø250, Ø600 mm,

9 **Base flange**



SERIE FSA-X

Freestanding Industrial chimney with multiple double wall insulated inner liners and load bearing external stack "Windshield"

The inner gap between the insulated inner pipe and the outer stack guarantees a constant back ventilation along the system, avoiding the outer pipe reach the structural temperature limits

1 Terminal
Allows back ventilation along the complete system

2 Exhaust inner liners
Material: AISI 316, AISI 304, S235, S355
Thickness: 1.5, 2.3 mm.

3 Insulation
High density rockwool with galvanized wire.
Thickness: 30 to 100 mm, depending on the temperature.

4 Platform
in angle from 135° to 360°.
width from 800 to 2500 mm.
Manufactured in steel S235JR galvanised, other options available

5 T-Branch (two or more)
Flanged connection or connection to Jeremias modular systems

6 Clean out opening
access for inspection and maintenance.
Ø250, Ø600 mm, different door options

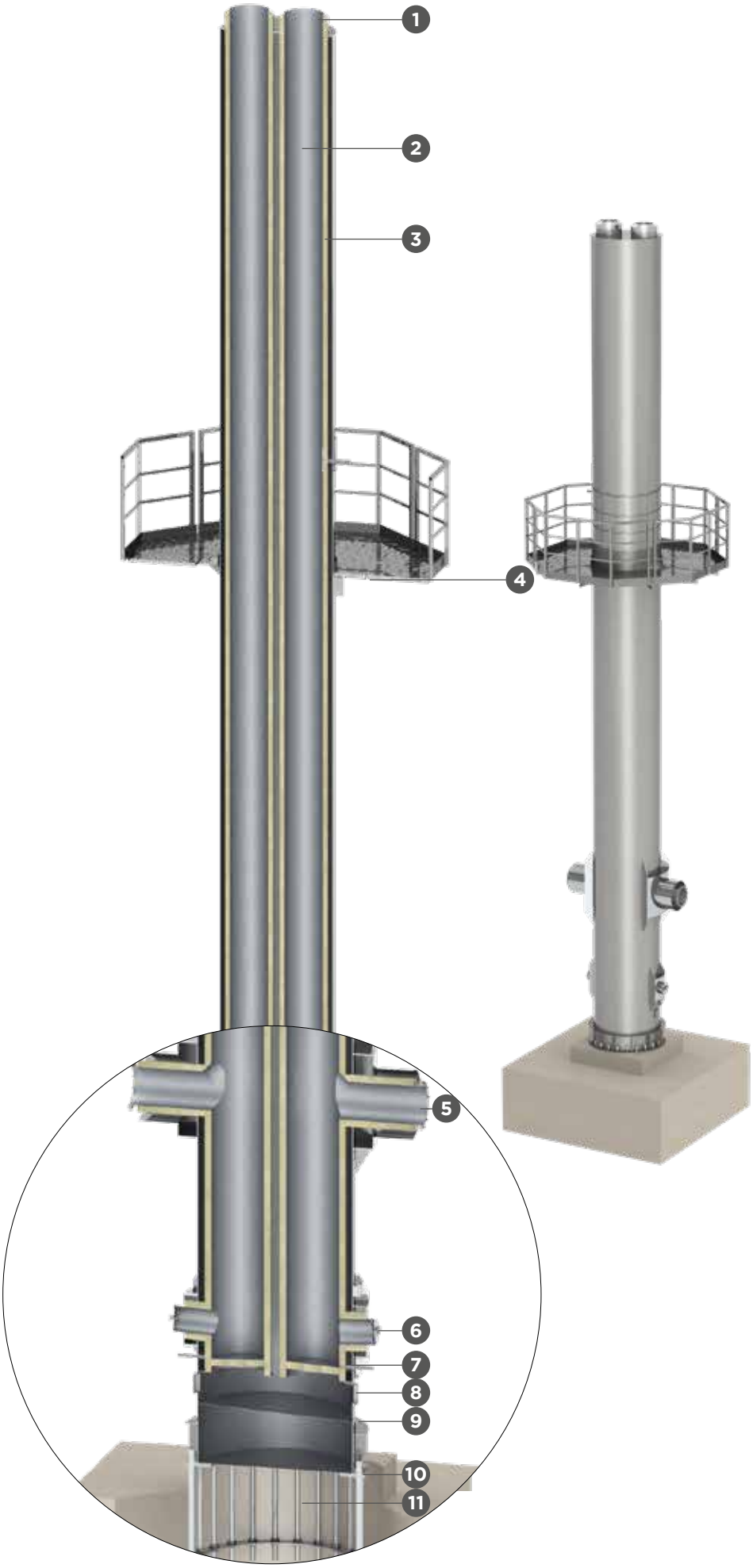
7 Inner pipe drain

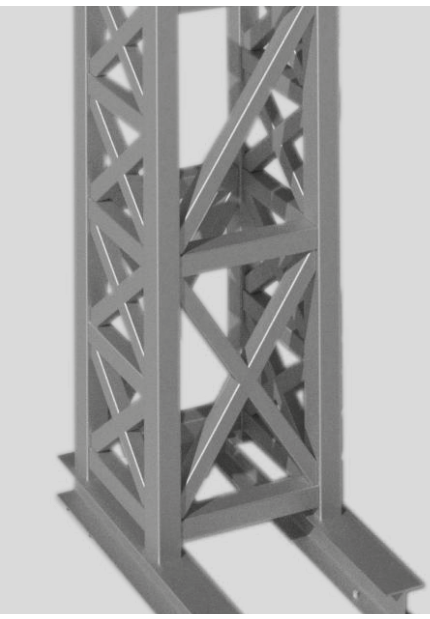
8 Back ventilation
Ventilation grill to allow a continuous inside air flow from base till top.

9 outer pipe drain

10 Base flange
with reinforcements

11 Anchor cage





STEEL **& LATTICE STRUCTURES**

Steel structures and lattice masts to support Jeremias modular exhaust systems (DW-ECO, DW-KL ...). These mast-supported solutions are sometimes the ideal solution in projects where ground anchoring or access is restricted. The time and place flexibility for the installation is the biggest advantage of these solutions.

The structures can be design in a modular way for better transportation and logistics inside the construction site.

Project features

Static calculation of the structure according to building regulations. Project study in phases depending on the area, construction site. specific needs...

Construction details:

Anchoring with concrete foundation and/or base plate

Steel profiles: IP, HEB, circular / square, in L...

Materials: S235JR, S275JR, galvanised steel, AISI 304, AISI 316...

Lifting lugs

Pre-assembled structure in factory or on site.

Modular exhaust systems can be installed on the mast at the factory or on site depending the needs of the client

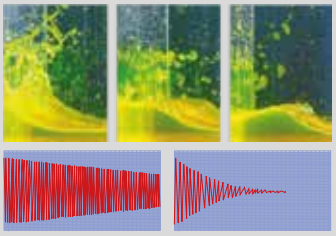
Additional Options

Platform for sample points
Cage or rail ladder.
Lightning rod
Beacon lights.
RAL painted finishing, glossy, matte ...
Special treatments depending on the area (C3, C4, C5)

CONSTRUCTION DETAILS

Open terminal: It allows the expansion of the inner tube and the internal back ventilation of the chimney.

Vibration damper:
Due to the effect of the wind, it is recommended to use a vibration damper. The oscillations are damped by the internal movement of the liquids placed in chambers



Oscilations without vibration damper

Oscilations with vibration damper

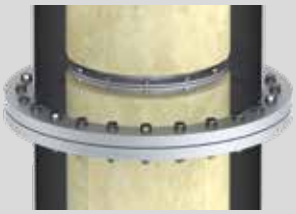
Sampling points and nozzles
nozzles for connection of sampling and inspection equipment normally Installed at 1.5 m high with respect to the platform and at 5 x Ø int. of the horizontal smoke connection.

Platform
for access to the sampling nozzles Made of galvanized S235JR steel with tramex floor. Railing, dimensions and angles according the specific needs

Ladder
Single rail ladder / safety cage ladder with Ø700 mm. different options

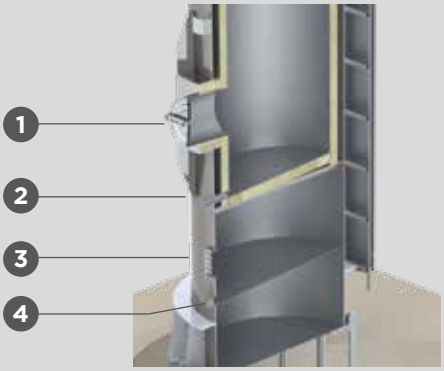
Chimney in several sections
When the chimney is manufactured in several sections due to the length or special requirements, each section is joined by bolts flanged both the inner and outer pipe

this way the tightness and structural union is granted



Chimney base details

1. Clean out opening.
2. inner drain.
3. back ventilation.
4. External pipe drain.



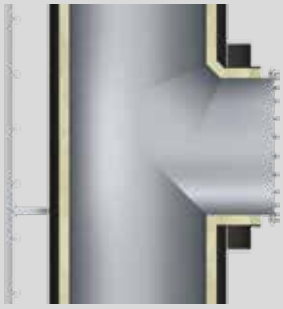
T-Branches

45º

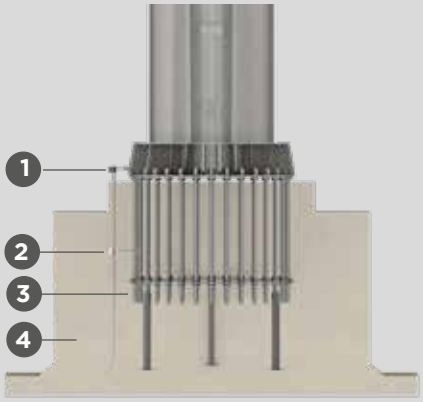
45º

Different connection angles depending on the needs of the installation.
Flanged connection or to modular Jeremias exhaust systems etc.
External protection jacket to cover welds and close the connection.

90º / 87º



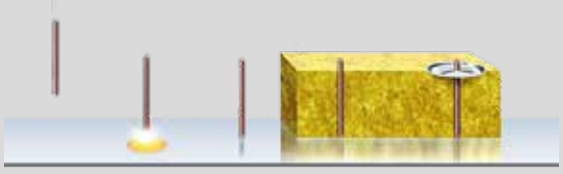
90º / 87º



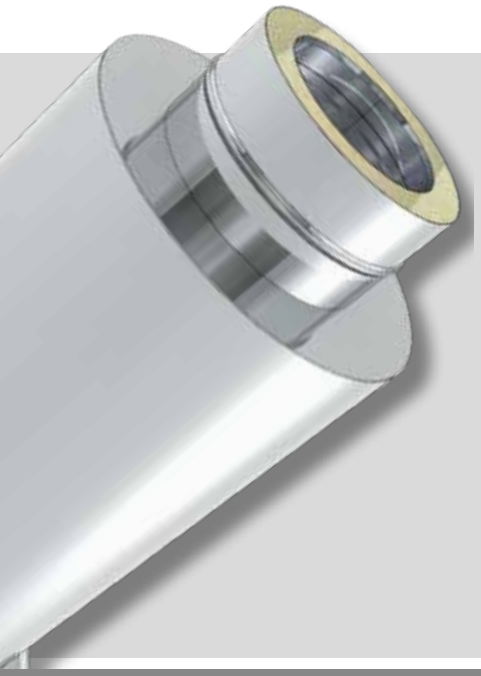
Anchoring cage
Double centering ring with anchor bolts.
It is supplied prior to the chimney, to install into the concrete foundation

1. Earthing plug
2. connection to the Earthing plug
3. Anchoring cage
4. Concrete foundation

Insulation fixing
Insulation fixing with steel plate and pins welded to the inner tube. Through this system, a correct fixing of the insulation is ensured as well as the continuous insulation along the entire vertical.



SURFACE TREATMENTS FOR THE OUTER STACK		
C3	Moderate	Low pollution areas, and less aggressive environments. Production areas with average humidity levels, and residential areas.
C4	High	Pollution zones and medium aggressive environments. Chemical environments and pools.
C5	very high	Coastal areas with high humidity levels, aggressive industrial environments, continuous condensation, and areas with high pollution.



SILENCERS

Jeremias Industrial Division
Noise Control Solutions

Many facilities using biomass, diesel or gas, situated close to residential areas can generate annoying noise during operation. The noises that are generated in their different frequency ranges require a specific treatment for their attenuation avoiding possible discomfort and meet the local noise requirements

Jeremias Industrial Division develops the most appropriate solutions for noise attenuation and control, Our R&D engineering team ensures the most suitable solution for each installation using our in-house testing bench

JEREMIAS INDUSTRIAL FEATURES

- **Big product range of standard solutions**
- **Special fabrication:**
  - **On site noise measurements**
  - **complete study including the exhaust system design**
  - **Personalized advice depending on the type of application**
  - **specific design**
  - **complete installation of the demanded solution**

MATERIALS AISI 304, AISI 316, polypropylene, PPS

FINISHING
shiny, matt, RAL painted

ATTENUATION MATERIAL
Combination of high density mineral wools

AVAILABLE DIAMETERS
Standard from Ø130 to Ø 600
bigger diameters under request

FEATURES
TIG/LASER welding
horizontal / vertical installation

JEREMIAS STANDARD SILENCERS

Absorption Silencers

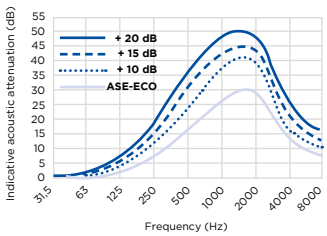
These passive silencers use porous material such as mineral wool to achieve attenuation, mainly in the medium and high frequency range. Any acoustic energy is absorbed by friction effects on the wool and transformed into heat

Modular absorption silencer
ASE - ECO
Base attenuation 15 o 25 dB
T max: 200ºC
P max: 200 Pa
wet conditions

+

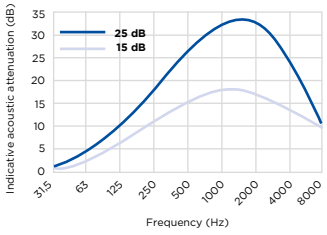
EXTENSIBLE
Possibility of increasing the attenuation by adding one of these 3 modules.

- 10 dB
- 15 dB
- 20 dB



Absorption Silencers DW
ASD-B DW: P: 200 Pa, wet
ASD-DW: P: 40 Pa, dry

15 o 25 dB attenuation
connection DW-ECO Jeremias
T max: 200ºC

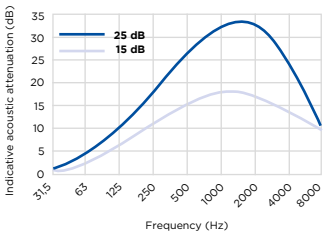


Absorption silencer EW

ASD-B EW: P: 200 Pa, wet

ASD-EW: P: 40 Pa, dry

15 o 25 dB attenuation
standard connection EW-ECO Jeremias
T max: 200ºC

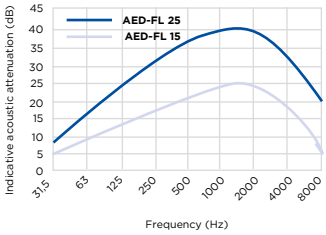


Flanged absorption silencer AED-AEL

Aligned flanges **AED**

L - Flanges **AEL**

20 o 30 dB attenuation
T max: 600ºC
P max: 5000 Pa
Suitable for wet conditions
conical KL connection as an option



Combined silencers

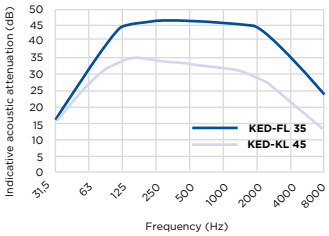
This type combines absorption silencers with several resonance chambers for the additional attenuation of lower frequencies. Each of the chambers are responsible for filtering out a specific frequency range, which leads to broadband attenuation of the noise.

Combined Silencer with flanges

Aligned flanges **KED**

L - Flanges **KEL**

20 o 45 dB attenuation
T max: 600ºC
P max: 5000 Pa
Suitable for wet conditions
conical KL connection as an option

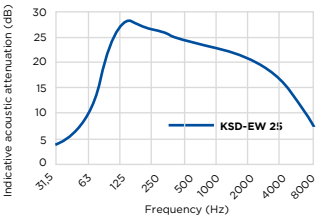


Combined silencer

KSD-B: P max: 200 Pa, wet

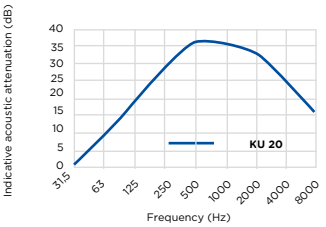
KSD-EW: P max: 40 Pa, dry

25 dB Attenuation



Combined Silencer KU

35 dB attenuation
T max: 600ºC
P max: 5000 Pa



Noise Insulating Cores

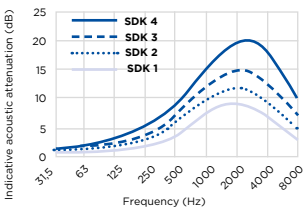
Noise insulating cores are predominantly designed for retrofitting in chimneys and contribute to effectively reducing noise peaks according to the principles of absorption. They are suspended from above and therefore very easy to install.

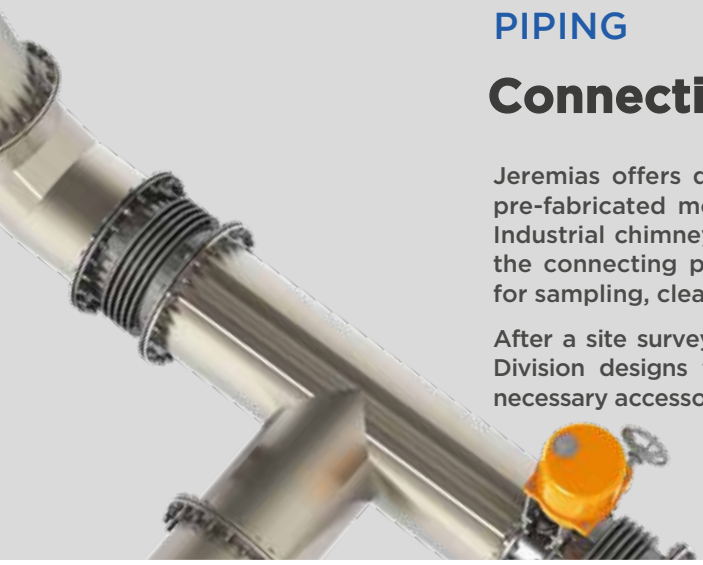
Noise insulating core SDK

5, 8 , 10 , 15 dB Attenuation

Installation in existing chimney / duct

Length in accordance with the level of attenuation L: 1000, 1500, 2000, 3000 mm





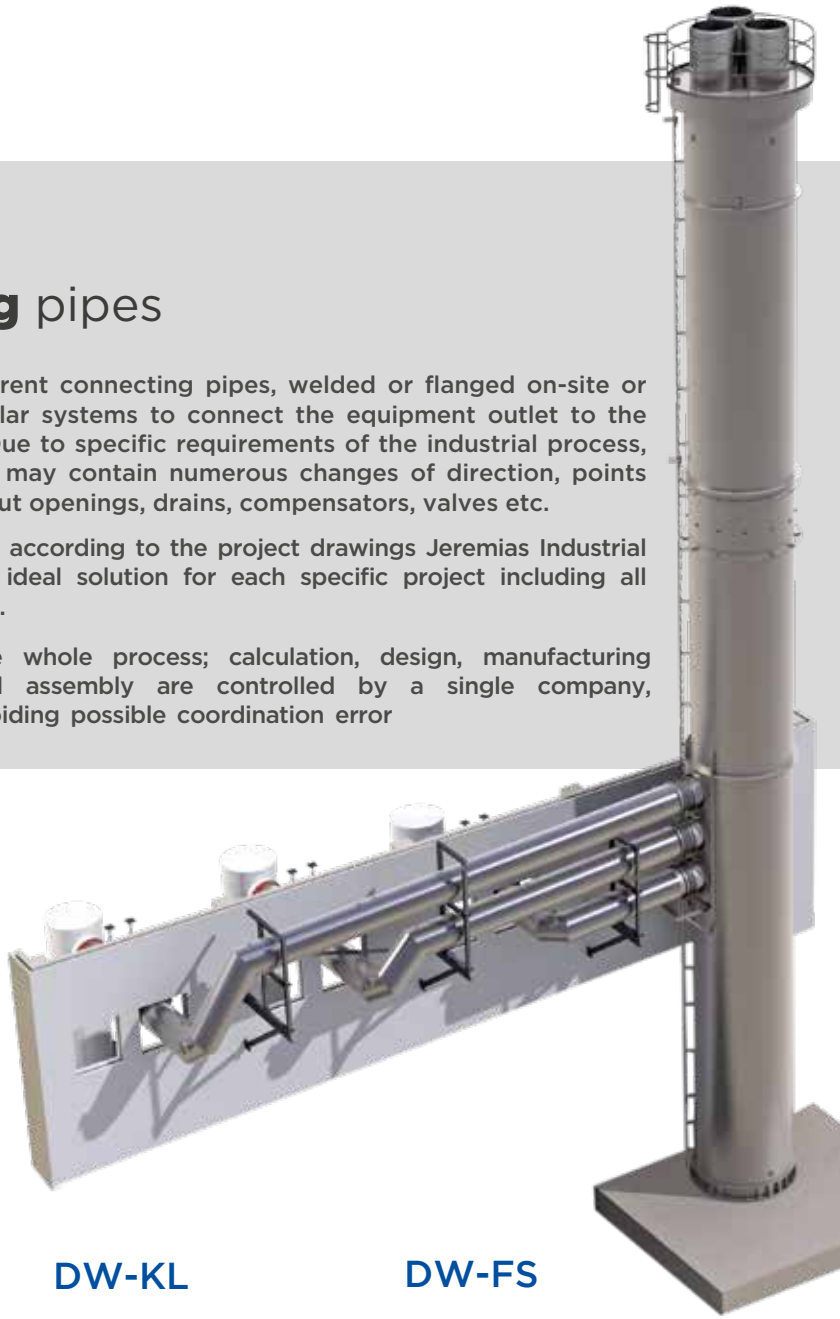
PIPING

Connecting pipes

Jeremias offers different connecting pipes, welded or flanged on-site or pre-fabricated modular systems to connect the equipment outlet to the Industrial chimney. Due to specific requirements of the industrial process, the connecting pipe may contain numerous changes of direction, points for sampling, clean-out openings, drains, compensators, valves etc.

After a site survey or according to the project drawings Jeremias Industrial Division designs the ideal solution for each specific project including all necessary accessories.

The whole process; calculation, design, manufacturing and assembly are controlled by a single company, avoiding possible coordination error



MODULAR CONNECTING PIPE

MATERIAL
AISI 304 / AISI 316 / GALVA

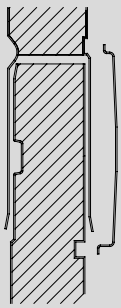
FINISHING
Bright annealed, mat, powder coated RAL

INSULATION
High density rigid mineral wool (120kg/m³)
thickness from 25 to 100mm

S. STEEL THICKNESS
from 0.4 mm to 1.5 mm

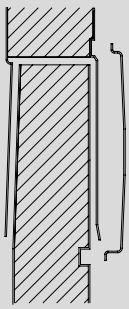
AVAILABLE DIAMTERS
Ø80 a Ø 1000 mm

DW-ECO

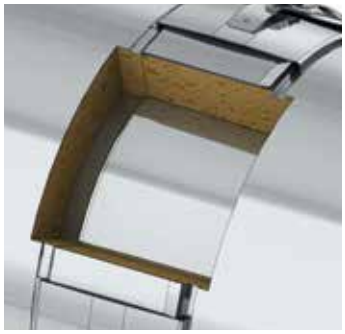


Male-Female push fit connection
secured by locking band 2.0

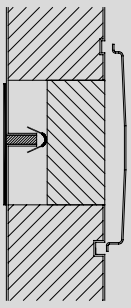
DW-KL



Conical Male-Female push fit connection
secured by locking band 2.0

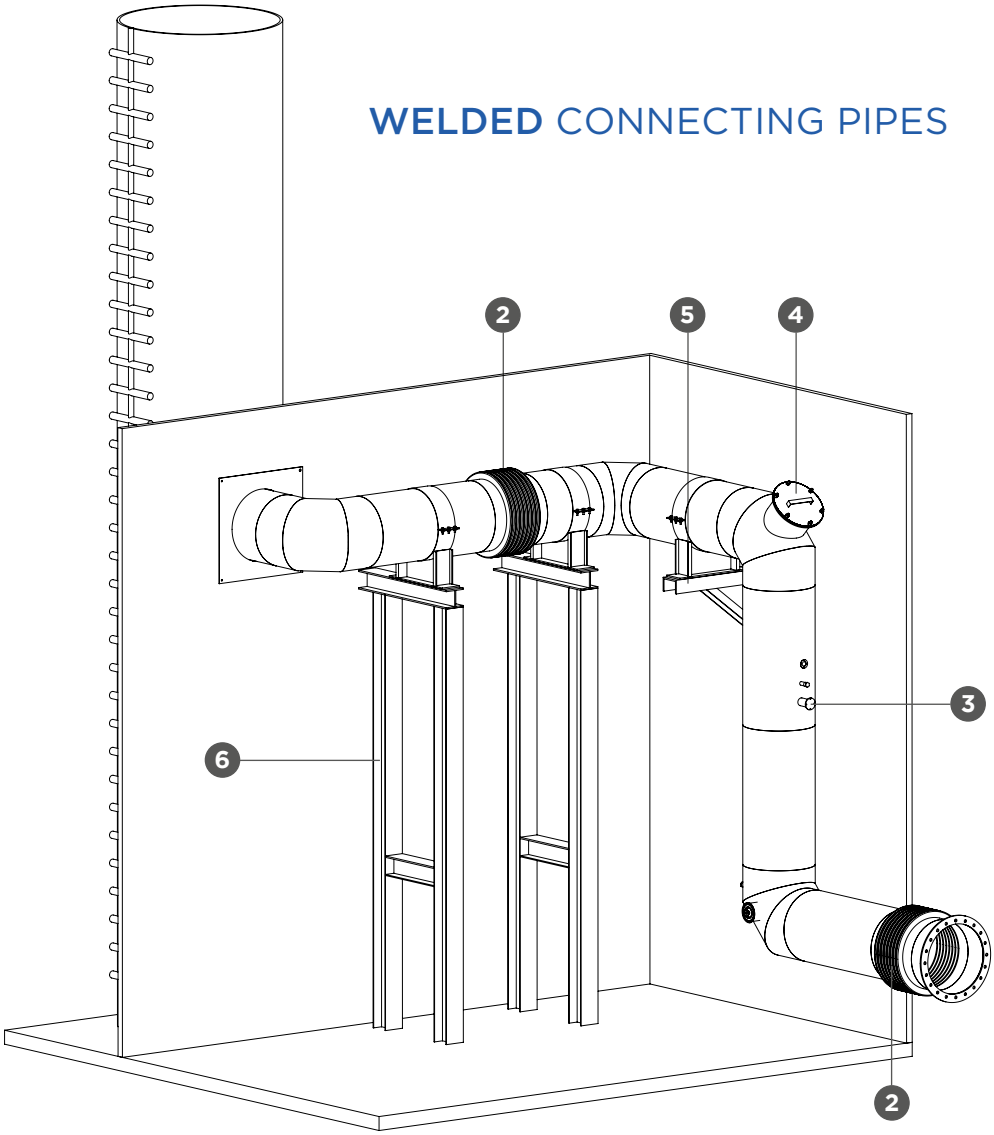


DW-FS



Flange connection secured by internal V-band and licking band 2.0 in the external

WELDED CONNECTING PIPES



MATERIAL
AISI 304 / AISI 316 / GALVA

FINISHING
BA, mat, powder coated RAL,

STEEL THICKNESS
From 0.5 to 6 mm

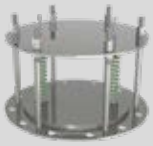
AVAILABLE DIAMETERS
80 to 2000 mm

Dampers/ Valves

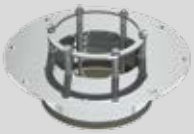
Manual damper with safety lock

motorised damper

Motorised damper with security return system in case of power failure



Explosion relief valve



implosion relief valve

2 Expansion bellows

3 Sampling points

4 Clean out openings

5 Wall supports

6 Custom made metal structures

VENTILATION TOWERS FSC

Ventilation Towers manufactured in single wall stainless steel, for both expulsion and air discharge.

TERMINAL with LOUVRES

1. **Top cap**
2. **opening from 180º to 360º**
3. **Bright annealed or polished stainless-steel ducting**
4. **Base plate**

OPEN TERMINAL

1. **Mesh**
2. **Bright annealed or polished stainless steel ducting**
3. **Water collector**
4. **Drain**
5. **Base plate**

TERMINAL WITH LOUVRES

OPEN TERMINAL

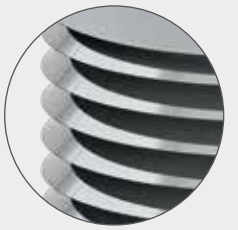
TYPES OF TERMINALS

0º

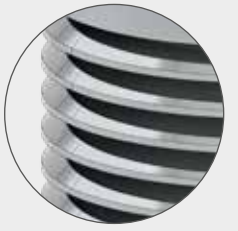
With slope 3-45º

Conical 3-30º

LOUVRES



45º at edge



45º folded edge

Certification, Quality and Standards

jeremias®
CHIMNEY SYSTEMS

Through CE certificates and factory quality control, Jeremias grants the proper chimney operation and durability on each specific project

> Jeremias products are subject to strict quality controls to ensure proper operation and durability

Certifications

- Certificates according to current regulations
  - CE standard for industrial chimneys EN 13084-7.
  - CE standard EN 1090-1 for steel structures
- Statics in accordance with the Eurocode
- Seismic and wind calculations according to the specific region

Quality

- Row materials control
- Quality monitoring through along production
  - Welding control with penetrating liquids
  - Controls and dimensional tolerances
  - Qualified welders using certified welding processes
- Finishing Control
  - Paint layers
  - Polished, shot blasting, pickling.

Our **experience speaks for itself**

The wide variety of our product range, has allowed us to be present for and collaborate in important commercial and industrial projects, together with leading mechanical & electrical companies and in very diverse sectors in continous coordination with large engineering companies, architecture studios and big developers.

FSA, Ø 1500 mm, 50m height

Desulfurization treatment plant

Burgos

FSC, Ø 2.760 mm, 18 m height

Ventilation

Cambrils

Combined Heat and Power

Varese

2 FSA-2, Ø700 y 1000 mm, 20 m height

2 FSA, Ø 350 y 550 mm, 18m height

Hot water Boiler and gen-set

San Sebastián

3 FSA, Ø 500 y 650 mm, 15 m height

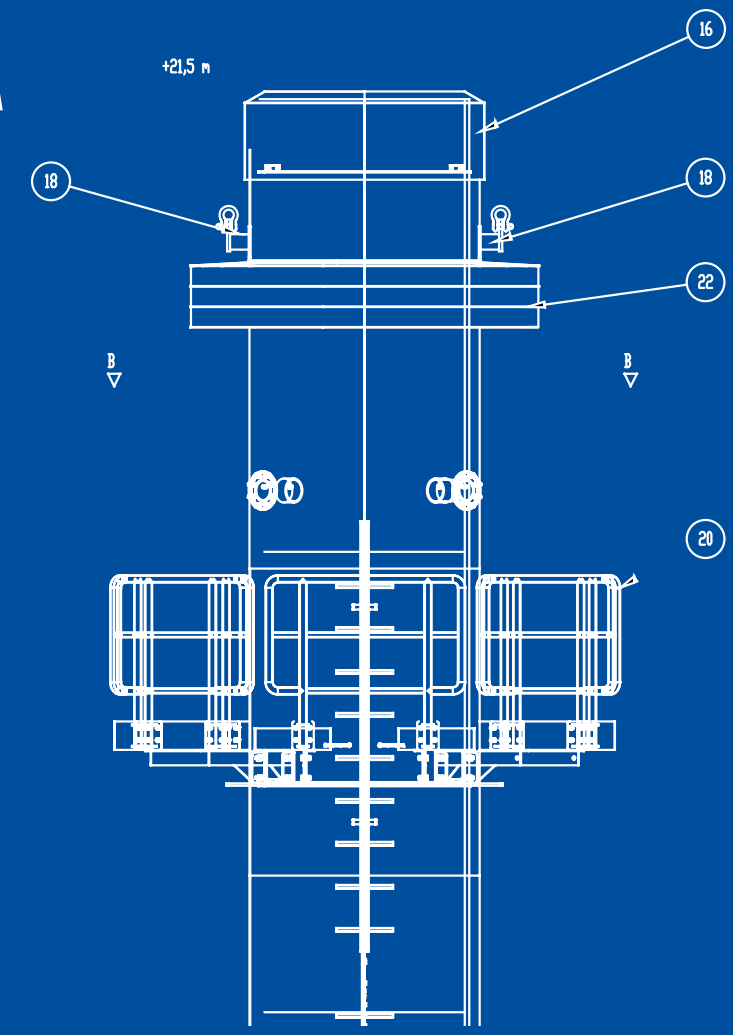
Energy centre

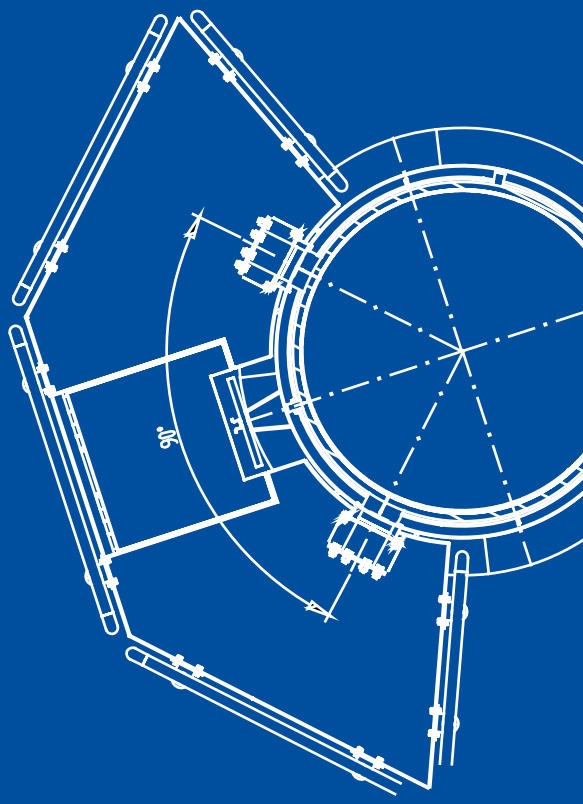
Andorra

Biomass energy centre

Burgos

FSA, Ø800, 25 m height





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jeremias®
CHIMNEY SYSTEMS

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