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.

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
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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.
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

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

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.

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 135° to 360°. 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
Open Terminal

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

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

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

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

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

T-Branch
Flanged connection or connection to Jeremias modular systems

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

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 designed 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 on 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)
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.

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 to 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.
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.

T-Branches

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.

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

SURFACE TREATMENTS FOR THE OUTER STACK

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>Moderate</td>
</tr>
<tr>
<td>C4</td>
<td>High</td>
</tr>
<tr>
<td>C5</td>
<td>very high</td>
</tr>
</tbody>
</table>
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 ± 25 dB
T max: 200°C
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 ± 25 dB attenuation
Connection DW-ECO Jeremias
T max: 200°C
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: 200°C

Flanged absorption silencer AED-AEL
Aligned flanges **AED**
L - Flanges **AEL**
20 o 30 dB attenuation
T max: 600°C
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: 600°C
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: 600°C
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
JEREMIAS INDUSTRIAL DIVISION - PIPING

**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 DIAMETERS**

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

1. Manual damper with safety lock
2. Motorised damper
3. Motorised damper with security return system in case of power failure
4. Explosion relief valve
5. Implosion relief valve

Expansion bellows
Sampling points
Clean out openings
Wall supports
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 180° to 360°
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

TYPES OF TERMINALS

- With slope 3-45°
- Conical 3-30°

LOUVRES

- 45° at edge
- 45° folded edge
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 continuous coordination with large engineering companies, architecture studios and big developers.

Desulfurization treatment plant

FSA, Ø 1500 mm, 50m height

Burgos

Ventilation

FSC, Ø 2.760 mm, 18 m height

Cambrils

Combined Heat and Power

2 FSA-2, Ø700 y 1000 mm, 20 m height

Varese
**Hot water Boiler and gen-set**

2 FSA, Ø 350 y 550 mm, 18m height

San Sebastián

3 FSA, Ø 500 y 650 mm, 15 m height

Andorra

**Biomass energy centre**

FSA, Ø800, 25 m height

Burgos