

# SYSTEM | TWIN-P / -PL

Concentric flue systems for Gas applications that operate independent of the room air







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## WE ARE THERE FOR YOU

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## YOUR PARTNER JEREMIAS

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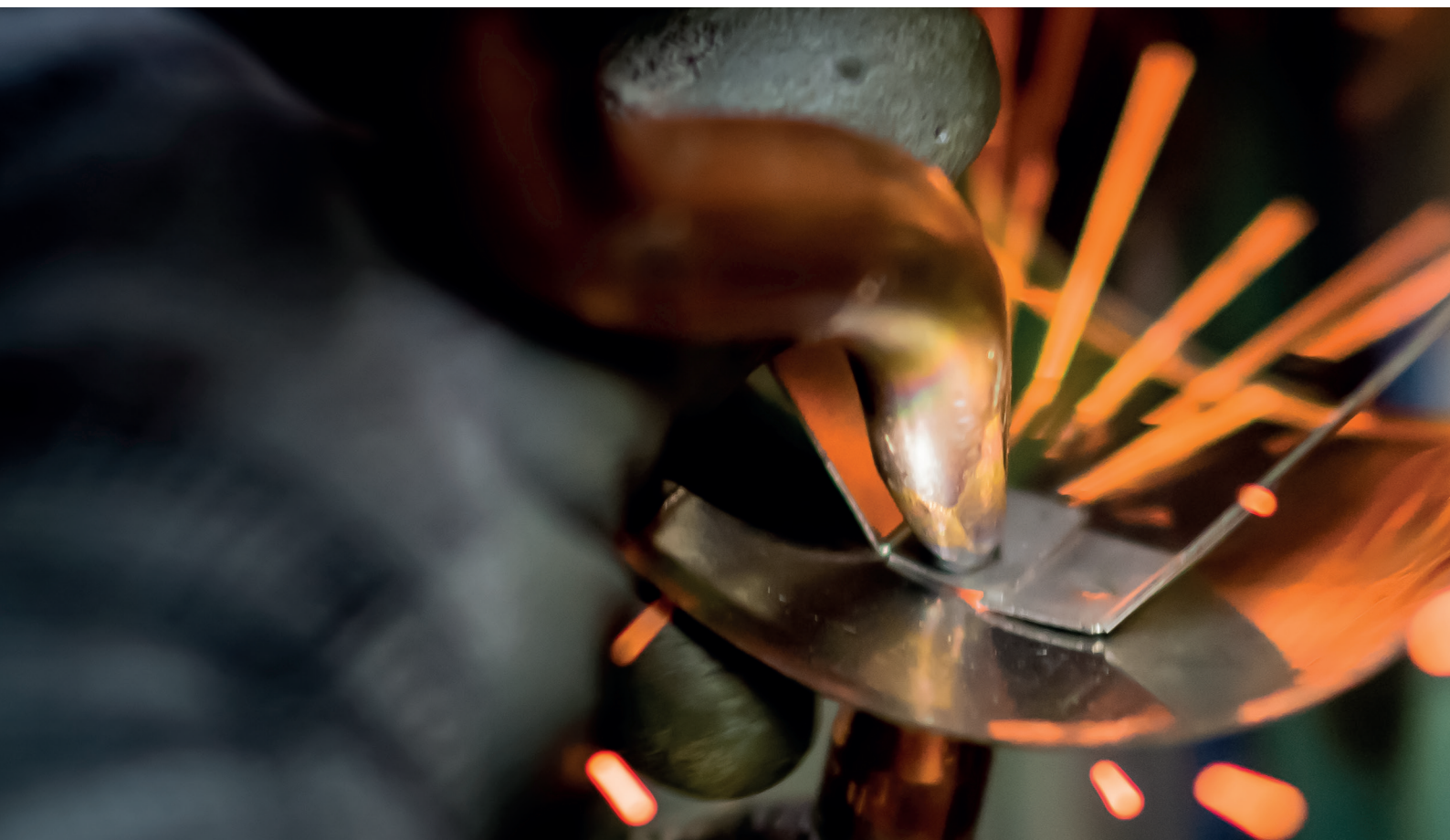
The Jeremias Group, headquartered in Wassertrüdingen (Bavaria), is one of the world's leading manufacturers of flue systems and chimney systems in all areas of heat and power generation for industrial and residential applications.

Strong, open and international – that's how we have been presenting ourselves for almost 50 years. Worldwide production sites and sales offices represent entrepreneurial success, ambitious visions and healthy growth.

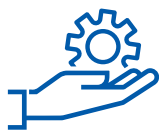
With innovative products, outstanding service and highly qualified employees, we want to inspire our customers every day and achieve the goal of sustainable joint success.

Currently, our product range includes more than 100 different CE certified systems for private and commercial applications as well as free-standing steel chimneys with a diameter of up to four meters.

This brochure provides you with a comprehensive overview of characteristics, application and installation of our concentric flue gas system TWIN-P and TWIN-PL for gas applications that operate independent of the room air.







## SERVICE

- Flexible production
- Special solutions tailored to customer needs
- Planning support and designing advice
- Chimney calculation
- Chimney sizing
- Country specific approvals
- Professional customer service
- Free software solutions



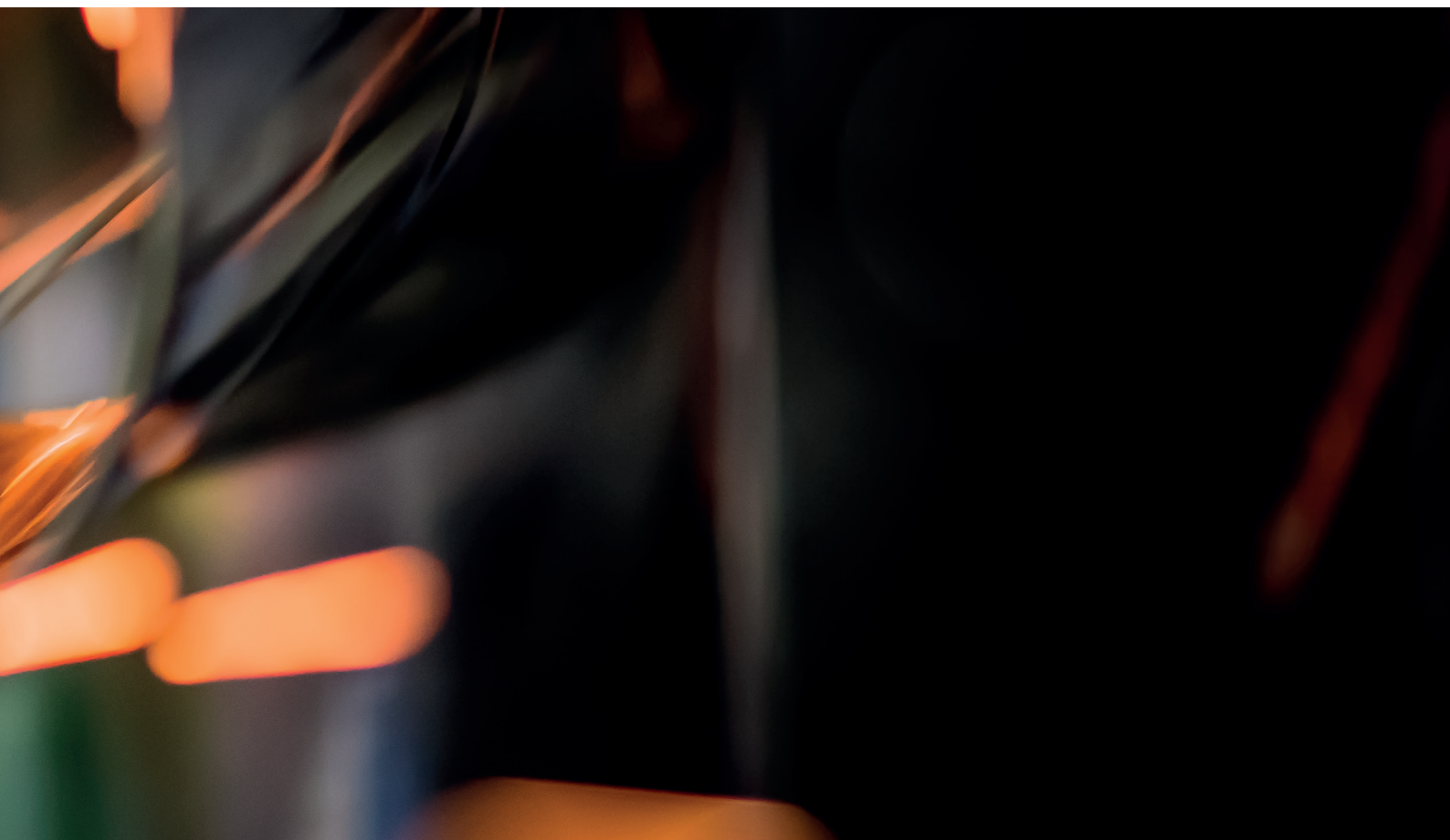
## QUALITY

- More than 100 CE certified systems
- CNC laser cutting and stamping technology
- Special stainless steel alloys
- Condensate/gas tight, polished welding seams
- 25-year guarantee
- ISO 9001 certified



## INNOVATION

- The largest range of products in the market
- System development with boiler, CHP and stove manufacturers
- Inhouse development of manufacturing machines
- Inhouse test facility for stainless steel chimney systems and silencers
- Computer-based simulations





## SYSTEM TWIN-P

### PRESSURIZED CONCENTRIC FLUE SYSTEM

#### DESCRIPTION

Concentric, pressure tight **indoor/outdoor** flue system with plastic inner pipe and stainless steel outer pipe for appliances that operate independent of the room air.

#### MATERIAL

Inner: PP (Polypropylen)

Outer: 1.4509 (441)

#### SURFACE

Highly polished

Upon request: matte, powder coated, copper

#### WALL THICKNESS

Inner: 2,0 mm

Outer: 0,5 mm

#### DIAMETER

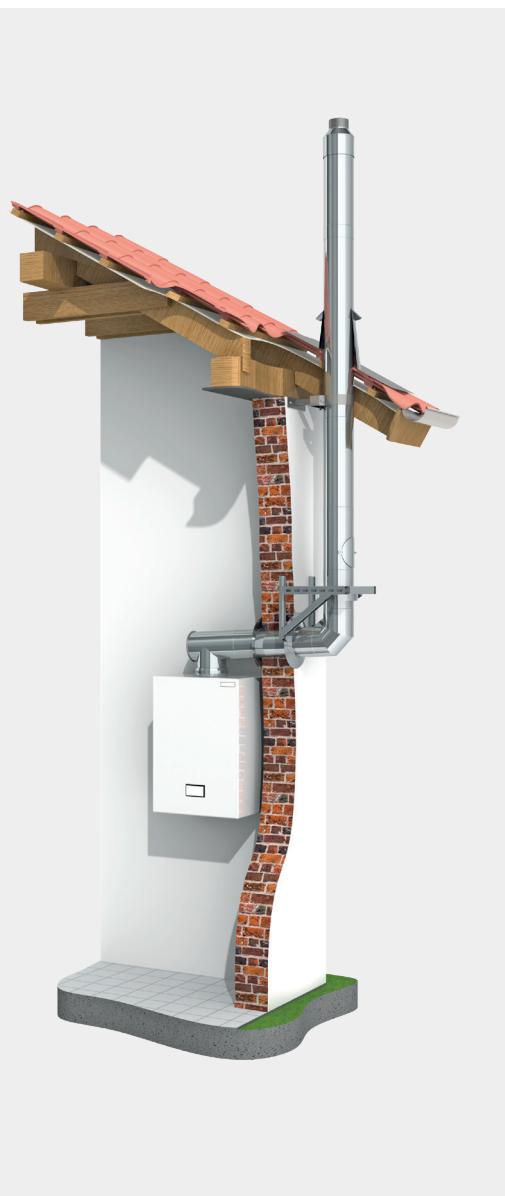
60/100 mm, 80/125 mm, 100/150 mm and 110/160 mm

#### CONNECTION

Connection plug sleeve/groove with special internal seal in the flue pipe, no groove in the outer pipe

#### CLAMP FITTING / GASKET

Supplied with inner pipe gasket as standard. When installed as a connection line internally, an external seal with clamp fitting TWP1490 has to be installed at the boiler connection.







## CHARACTERISTICS

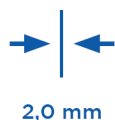
- Connection of appliances that operate independent of the room air to concentric or single-wall flue systems
- Combination with TWIN-PL, EW-PPS, EW-PP FLEX possible
- For appliances where roof or wall discharge is required
- Installation in the riser without clamp fitting (TWP45 clamp fittings optionally available upon request)

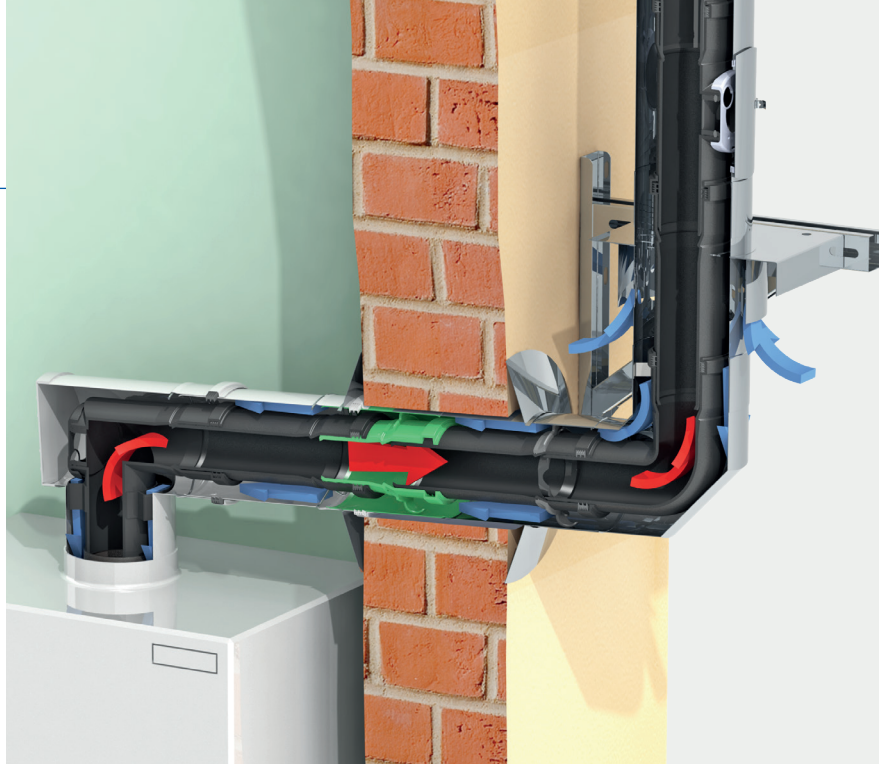
## AREA OF APPLICATION

- Operation independent of room air
- Condensing boilers
- CHP
- Gas powered heating pumps
- Fuel cells
- Water heaters



## SYSTEM PROPERTIES





## SYSTEM TWIN-PL

### PRESSURIZED CONCENTRIC CONNECTION PIPE

#### DESCRIPTION

Concentric, pressure tight **indoor** flue system with plastic inner pipe and galvanised powder coated outer pipe for appliances that operate independent of the room air, or when using the fireplace as a roof heating system.

#### MATERIAL

Inner: PP (Polypropylen)

Outer: galvanised, powder coated

#### SURFACE

White, powder coated (RAL9016)

#### WALL THICKNESS

Inner: 2,0 mm

Outer: 0,5 - 0,6 mm

#### DIAMETER

60/100 mm, 80/125 mm, 100/150 mm and 110/160 mm

#### CONNECTION

Plug connection sleeve/groove with special internal seal in the flue and outer pipe

#### CLAMP FITTING / GASKET

Pre-mounted gasket on the inner and outer pipe. No clamp fitting.







## CHARACTERISTICS

- Connection of appliances that operate independent of the room air to concentric or single-wall flue systems
- Combination with TWIN-P, EW-PPS, EW-PP-FLEX possible
- For appliances where roof discharge is required

## AREA OF APPLICATION

- Connection line for operation independent of room air
- Condensing boilers
- CHP
- Gas powered heating pumps
- Fuel cells
- Water heaters



## SYSTEM PROPERTIES



# PROPERTIES

Our concentric flue systems are pipe-in-pipe systems that use the annular gap between the outer and inner pipes to provide a controlled air supply to modern, room air independent appliances.

## CONCENTRIC TWIN SYSTEMS

Appliances require oxygen for combustion and those types that depend on room air draw it from the surrounding installation/living space. New fresh air is constantly supplied through spaces between windows and doors or from special vents in the outer wall.

In modern energy-efficient houses that have an air-tight shell, the combustion efficiency reduces gradually as the appliance draws all the available oxygen from the room. Besides, it can also lead to a lack of oxygen in the living space and dangerous exhaust gases could even leak out from the appliance, unless appropriate safety measures are implemented.

This problem can be solved by using room air independent appliances, which draw the air they need for combustion from the outside in a controlled way via closed air flue systems such as our concentric TWIN-P and TWIN-PL flue systems. The intake air finds its way into the system via the orifice or ventilation inlets and is channelled to the appliance via the annular gap between the inner and outer pipes.



## ADDITIONAL POSITIVE EFFECTS

- Based on the counterflow principle, the cold fresh air is pre-heated along the flue gas line and thus increase the efficiency of the condensing boiler.
- Since the TWIN systems are closed ventilation/exhaust systems, they do not require a conventional chimney. Thus, appliances can be integrated anywhere in the building – for instance in niches, storage rooms or even built-in wardrobes (fire, manufacturers and safety regulations must be observed)





## SEALS AND CLAMP FITTINGS

Elements of the TWIN-PL connection line are supplied with pre-mounted gaskets in the inner and outer pipe and you do not need to use clamp fitting during installation. The TWIN-P system also comes with pre-mounted gaskets in the PP inner pipe. Even here, there is no need for clamp fittings in the riser. However, if the system is used as a connection line, a sealed clamp fitting (TW1490) is essential to prevent the intake air from mixing with the air in the room.



## PERFECTLY FITTING DEVICE CONNECTION ADAPTER

Jeremias offers you the suitable TWIN-P/-PL connection piece for any appliance. For this purpose, simply specify your exact type of equipment when placing the order and we will manufacture the boiler connection individually.



## FREE MOVEABLE INNER PIPE

The inner pipe is centered in the outer sheathing using special spacers and since there is no fixed connection between the inner and outer pipe, this also allows for linear expansion of the inner pipe.



## INDIVIDUAL APPEARANCE

While the white powder coated TWIN-PL connection line can be perfectly integrated into any building, the standard version of the TWIN-P system is supplied with a highly polished stainless steel outer pipe. Upon request, surfaces are also available with a matte, copper or powder coated finish in almost any RAL colour.



## FURTHER ADVANTAGES

- Cost-effective solution
- Easy-to-assemble sleeve/groove plug connection
- High-quality EPDM seals in the inner pipe
- Pressure tightness up to 5,000 Pa
- Straight lengths can be shortened to suit site requirements
- Hassle-free combination with single-wall EW-PPS and EW-PP FLEX systems
- Expert team provides free dimensioning and planning support

# CLASSIFICATIONS

The Declaration of Performance provides information on the classification of the flue gas system. It lists product characteristics and specific installation regulations and thus provides evidence of the usability with the relevant appliance.

The TWIN-P and TWIN-PL systems have been classified as follows:

	1	2	3	4	5	6	7	8	9
<b>Model 2 TWIN-P</b>	< DN200	T120	H1	W	2	000	LE	E	U0
	≥ DN200	T120	P1	W	2	000	LE	E	U0
<b>Model 2a TWIN-P (V)</b>	DN60-110	T120	H1	W	2	000	LE	E	U0
<b>Model 2b TWIN-P (Cu)</b>	DN60-110	T120	H1	W	2	000	LE	E	U0
<b>Model 3 TWIN-PL</b>	< DN200	T120	H1	W	2	000	LI	E	U0
	≥ DN200	T120	P1	W	2	000	LI	E	U0

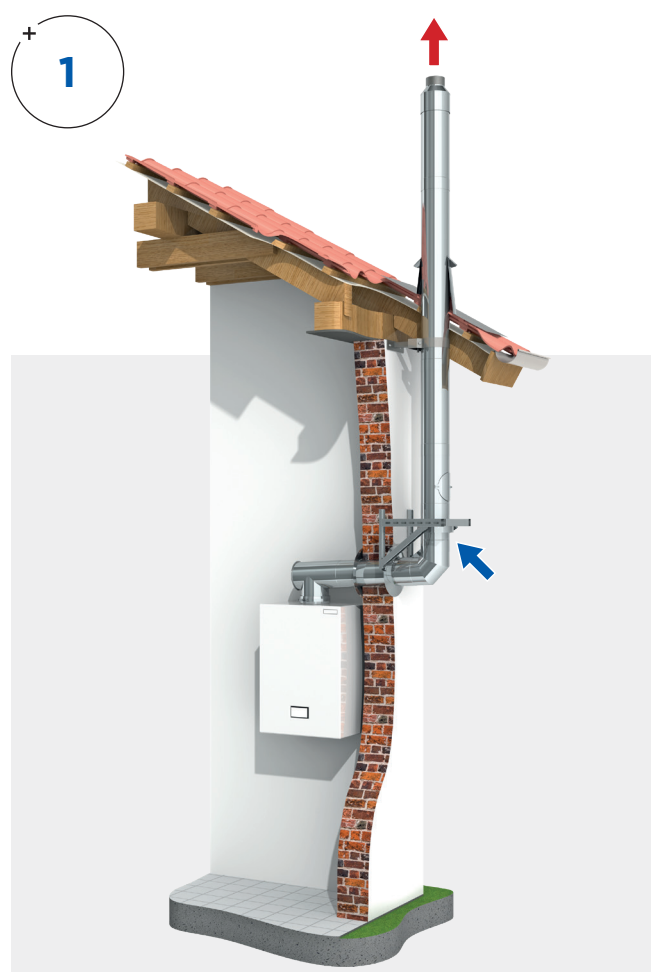
- 1 Inner diameter in mm
- 2 Temperature class  
T120: Operation up to 120°C flue gas temperature
- 3 Pressure class  
H1: High pressure up to 5,000 Pa  
P1: Positive pressure up to 200 Pa
- 4 Condensate resistance W:  
Humid operation
- 5 Corrosion resistance class  
2: Gas and heating oil with a sulphur content of up to 0,2%
- 6 Distance from flammable building materials  
O: Not soot fire resistant  
OO: 0 mm
- 7 Place of installation  
LE: Inside & outside buildings  
LI: Inside buildings
- 8 Fire behavior  
E: Bad reaction to fire
- 9 Sheathing  
UO: Non-flammable sheathing



Declaration of Performance (DOP)	
No. 9174 043 DOP 2020-06-17	
1. Unique identification code of the product-type:	Chimney systems with rigid or flexible inner liner and formed parts made of polypropylene plastics acc. EN 14471:2013+A1:2015 type Jeremias PP
2. Type, batch or serial number or any other element allowing identification of the construction product as required under Article 11(4):	Chimney system with rigid or flexible plastic inner pipes type Jeremias-PP <sup>1)</sup>
Model 1 ew-pp-starr	< DN200 T120 - H1 - W2 - O20 - LI - E - U
Model 2 twin-p <sup>2)</sup>	≥ DN200 T120 - P1 - W2 - O20 - LI - E - U
Model 2a) twin-p (V) <sup>3)</sup>	< DN200 T120 - H1 - W2 - O00 - LE - E - U0
Model 2b) twin-p (Cu) <sup>4)</sup>	≥ DN200 T120 - P1 - W2 - O00 - LE - E - U0
Model 3 twin-pl	< DN200 T120 - H1 - W2 - O00 - LI - E - U0
Model 4 ew-pps-flex	DN60 - < DN110 T120 - H1 - W2 - O00 - LI - E - U0
	> DN110 - DN160 T120 - P1 - W2 - O00 - LI - E - U0
3. Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:	Convey the products of combustion from heating appliances to the outside atmosphere
4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required under Article 11(5):	<b>Jeremias GmbH</b> Oßersieder Straße 11-14 DE-41711 Wassertrüdingen Tel.: +49 8922 68 68 0 Fax: +49 8922 68 68 60 Email: info@jeremias.de
5. Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 10(2):	not applicable
6. System or systems of assessment and verification of constancy of performance of the construction product as set out in CPR, Annex V:	System 2+ and System 3
7. In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:	Notified factory production control certification body no. 0036 performed the initial inspection of the manufacturing plant and of factory production control and the continuous surveillance, assessment and evaluation of factory production control and issued the certificate of conformity 0036 CPR 9174 043 of the factory production control.



# SELECTED INSTALLATION VARIANTS



## EXTERNAL INSTALLATION

A TWIN-P connection flue is passed through the house wall to the outside, where it continues as a TWIN-P riser with an elbow of 87°, cleaning, intake air element, until it reaches the flue end.



## EXTERNAL INSTALLATION WITH TWIN-PL CONNECTION LINE

The connection flue is composed of the concentric system TWIN-PL, which passes through the house wall towards the outside and is transformed into a TWIN-P riser by means of a TWPL930 adapter. To allow for thermal linear expansion, a telescopic compensator must always be used for offset installation (for instance, to overcome roof protrusions).

## SELECTED INSTALLATION VARIANTS



### ROOF DISCHARGE APPLIANCES WITH TWIN-PL

The concentric flue system TWIN-PL is fitted to a heating system and passes vertically through the roof where it is terminated with a vertical flue terminal. In this construction, the terminal joint must be located beneath the roof cladding to prevent the penetration of rain water in the annular gap.



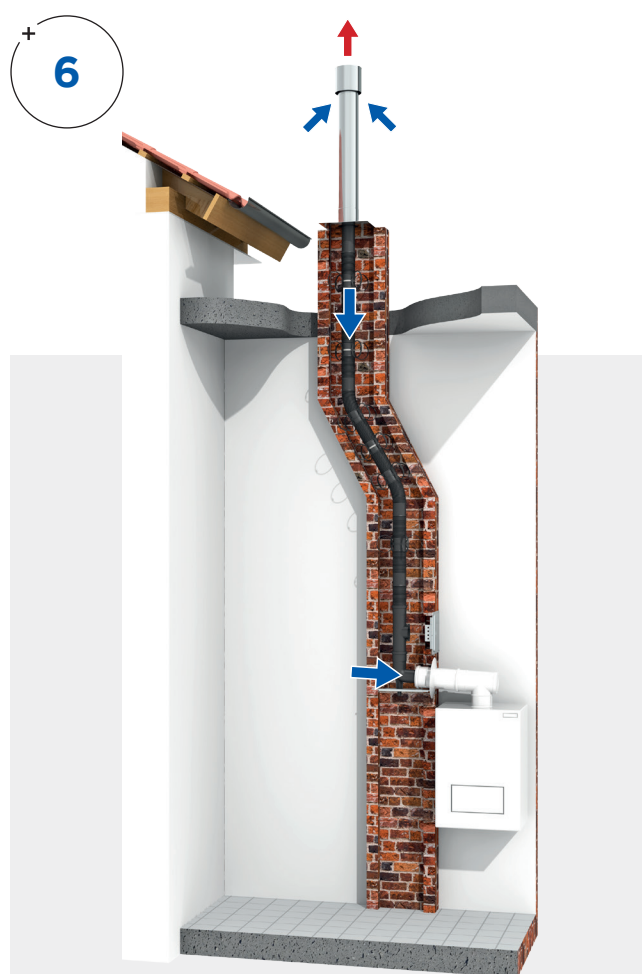
### ROOF DISCHARGE APPLIANCES WITH TWIN-P

This installation is almost identical to Variant 3, however, a concentric TWIN-P flue gas line is passed vertically from the appliance upwards through the roof. It allows for higher above-roof termination, because in this case the direction of the external joint of the pipe prevents the penetration of rain water in the annular gap.



### EW-PPS/PP FLEX IN SHAFT

A TWIN-PL connection line leads to an existing shaft where it joins the EW-PPS/PP FLEX plastic system by means of a PP1760 connection element – in this case, air intake is delivered by the shaft. The system is terminated by a cowl cover with a weather-proof stainless steel orifice pipe (PP342).



### IN-SHAFT INSTALLATION WITH TWIN-P CHIMNEY EXTENSION

This installation is almost identical to Variant 5, however, the ventilation/exhaust line is extended towards the outside with the concentric TWIN-P system until the required chimney height is reached. The transition from the shaft to the TWIN-P system is achieved with a TWP847.



## SELECTED INSTALLATION VARIANTS



### TWIN-P IN-SHAFT INSTALLATION

This installation is almost identical to Variant 6, however, the flue gases are channelled upwards through the shaft by means of TWIN-P system elements. This variant is particularly recommended for use with dirty shafts to ensure “clean” air intake. An 87° tee with bottom support can be used together with the EW-FU system element to support the system in the shaft.



### MULTIPLE CONNECTION

When several heating devices are connected to a concentric flue gas line, one TWIN-PL connection line for each device is passed through the house wall and then joined to an externally mounted flue gas system of the type TWIN-P. In this case, telescopic compensators TWP1102 must be used and each must be positioned beneath the tee joint. Appliances must also be equipped with backflow prevention and their flue classification must match the specific system. In this case, please contact the experts at the Jeremias quotation department. Also see Jeremias range of collective flue systems SED and SET ranges.



### EQUIPMENT WITH SEPARATE FLUE GAS/INTAKE AIR CONNECTOR

The intake air element TWP849 is used for connecting the concentric flue system TWIN-P to appliances with separate flue gas/intake air connector. Intake air is ensured by connecting a flexible EW-PP FLEX plastic pipe to the intake air connectors of the appliance. Further installation up to the chimney orifice can be laid out in one of the previously described variants to match the structural characteristics.

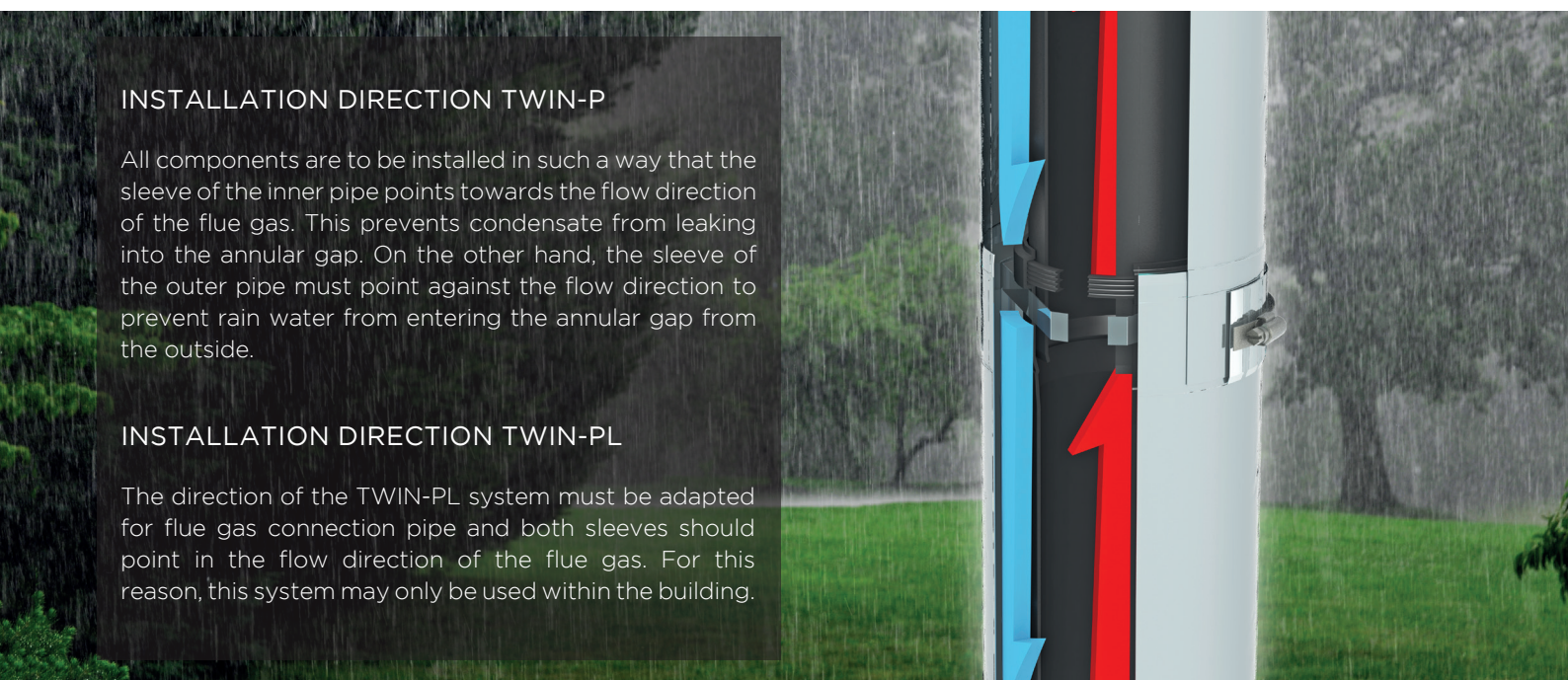
# INSTALLATION INSTRUCTIONS

## INSTALLATION DIRECTION TWIN-P

All components are to be installed in such a way that the sleeve of the inner pipe points towards the flow direction of the flue gas. This prevents condensate from leaking into the annular gap. On the other hand, the sleeve of the outer pipe must point against the flow direction to prevent rain water from entering the annular gap from the outside.

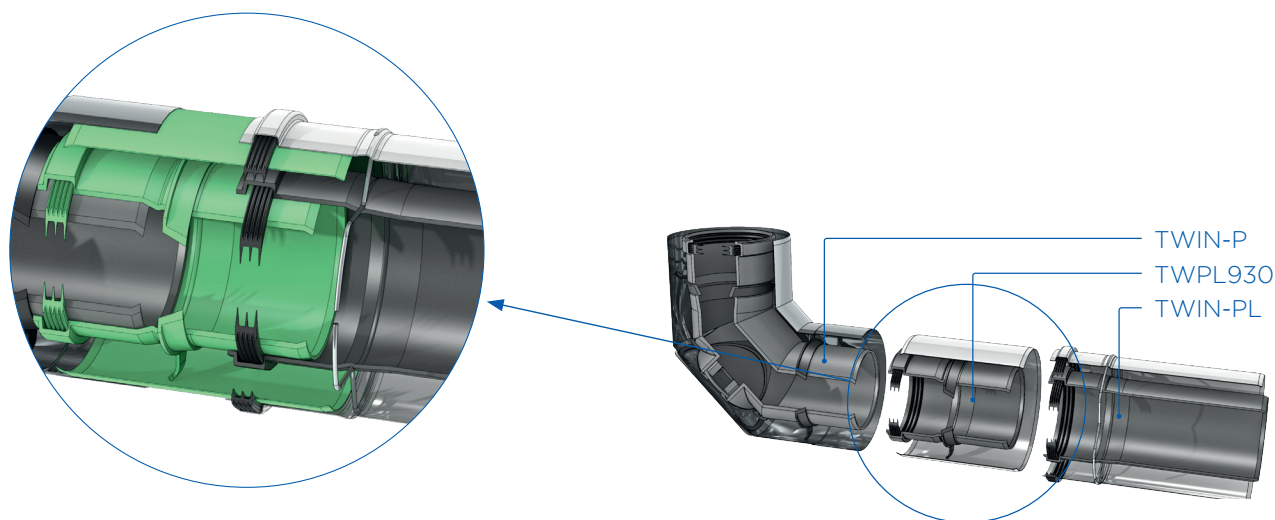
## INSTALLATION DIRECTION TWIN-PL

The direction of the TWIN-PL system must be adapted for flue gas connection pipe and both sleeves should point in the flow direction of the flue gas. For this reason, this system may only be used within the building.



## ATTACHMENT

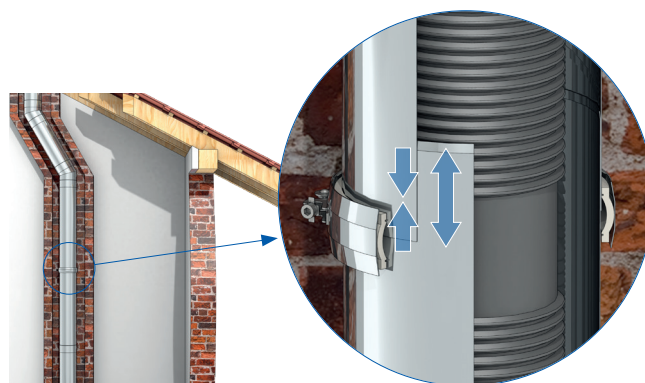
Due to the different attachment directions, a special TWPL930 adapter is needed for the transition from the TWIN-PL connection line to the TWIN-P system.





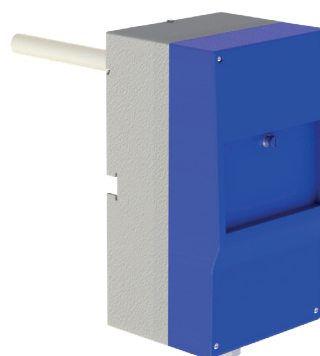
## THERMAL LINEAR EXPANSION

The thermal linear expansion of polypropylene (PP) inner pipes is about 8 mm per metre at an average flue gas temperature of 80°C. With a concentric flue gas line of 5 m, this adds up to 40 mm of expansion, which is easily absorbed by the flue end. However, a telescopic compensator TWP1102 / TWPL1102 must always be installed in multiple connection systems, before distortions (diversions) or tee connections.



## SAFETY TEMPERATURE LIMITER

As opposed to condensing appliances, gas-driven heat pumps, CHPs or fuel cells work continuously. Therefore, the connected flue system can barely cool down and is additionally subject to higher excess pressure and exhaust velocities. To prevent damage to the PP inner pipes, we therefore recommend the installation of a safety temperature limiter (PP423), which is factory pre-set to 110°C.



## FURTHER INSTALLATION INSTRUCTIONS

Before installing the following components, please ensure that you have a device-specific system certification for each particular case, and if necessary, contact the appliance manufacturer. The installation must be done professionally according to the installation instructions or applicable national regulations (in Germany it is especially important to observe the DIN V 18160-1 and the applicable LBauO (local building regulations) together with the FeuVo (fire regulations), the relevant DIN standards and all other construction and safety legislation).

Before installing you have to consult the local environmental health officer and carry out a risk assessment in line with IGEM UP 10 (latest edition). For simple installation and a perfect fit of the elements, lubricate each bead side to facilitate sliding on the EPDM with silicone spray or similar. For connection to the appliance, always use a connection adapter, which we gladly provide for your appliance type. Air intake elements must be installed with sufficient ground clearance to prevent dirt, such as sediments or insects, from entering the air duct.

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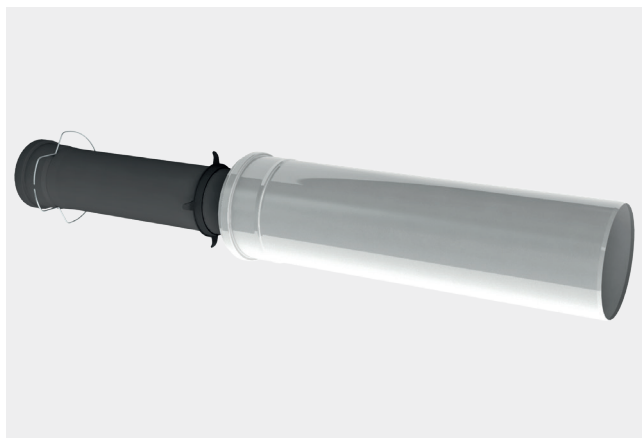
# INSTALLATION INSTRUCTIONS

## SHORTENING A TWIN-PL LENGTH ELEMENT

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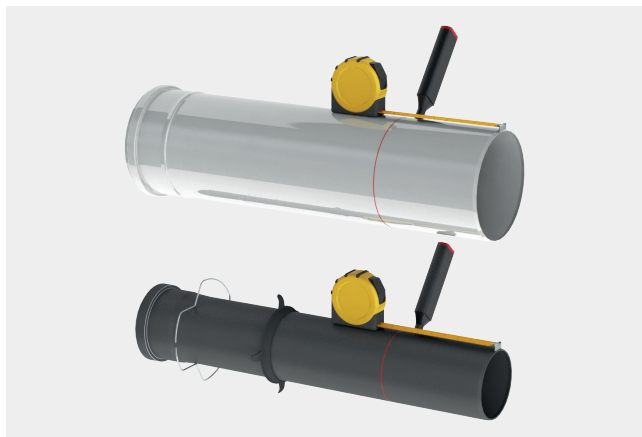
<sup>+</sup>  
**1**

Slide all pipe parts off each other as illustrated (pull out inner pipe on the bead side to prevent pipes from hooking into each other)



<sup>+</sup>  
**2**

Mark the desired length (each of the coupled pipe ends is required!)



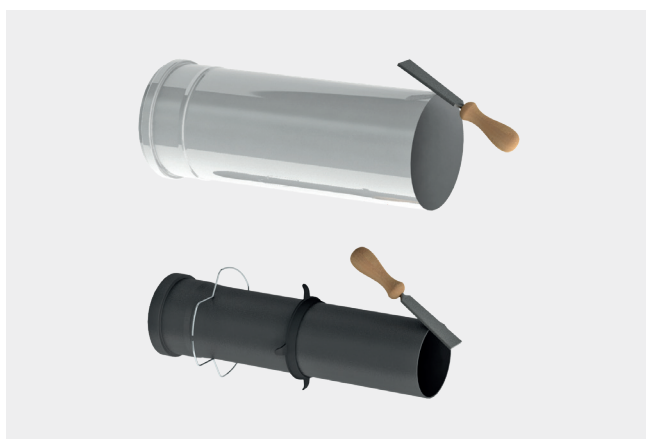
<sup>+</sup>  
**3**

Separate pipe parts



**NOTE:**

Spacers can be easily removed when shortening because the inner pipe is re-centred automatically once it is fitted into the attaching component



<sup>+</sup>  
**4**

Deburr cut edges inside and out



<sup>+</sup>  
**5**

Join pipe parts



<sup>+</sup>  
**6**

Result



## GERMANY

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Jeremias high quality products to be installed only by selected experts.

The expert in your area: