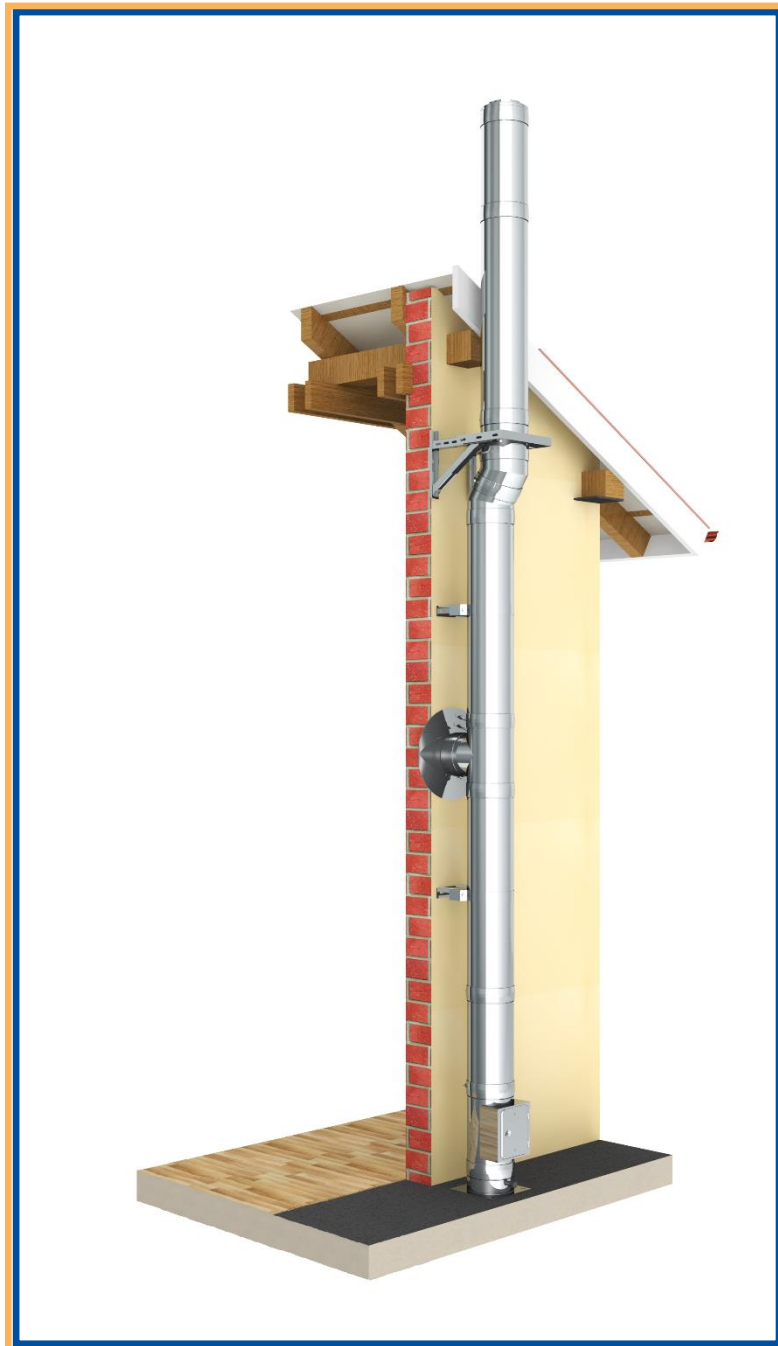




Double wall flue system type DW-ECO-TITAN (DW-ECO 2.0)





Double wall flue system type DW-ECO-TITAN (DW-ECO 2.0)

Certification 0036 CPD 9174 015 according to EN 1856-1

(For further information see Declaration of Performance of system DW-ECO-TITAN)

Product information

"Chimneys - Requirements for metal chimneys
Part 1: System chimney products" DIN EN 1856-1:2009

Manufacturer's identification: **jeremias GmbH**
Opfenrieder Str. 11-14
91717 Wassertrüdingen
Tel.: +49 (0) 9825 / 68 68-50
Fax: +49 (0) 9825 / 68 68-68
Internet: www.jeremias.de
E-Mail: info@jeremias.de

Product trade name: **DW-ECO-TITAN** (double wall chimney system with 25 mm heat insulation)

Certification office: TÜV SÜD Industrie Service GmbH

Name and position of the responsible person: **Stefan Engelhardt** CEO

Identification of accompanying documentation

0.1	Metal chimney	EN 1856-1	T400	N1	W	V2-L99050	O30 O45 O60	80 - 300 350 - 450 500 - 600	Double wall chimney system, moisture resistant, with 25 mm insulation, ventilated throughout the whole length, without covering. Locking band necessary. Operation mode in negative pressure.
0.2	Metal chimney	EN 1856-1	T600	N1	W	V2-L99050	O50 O75 O100	80 - 300 350 - 450 500 - 600	Double wall chimney system, moisture resistant, with 25 mm insulation, ventilated throughout the whole length, without covering. Locking band necessary. Operation mode in negative pressure.
0.3	Metal chimney	EN 1856-1	T600	N1	D	V2-L99050	G70 G105 G140	80 - 300 350 - 450 500 - 600	Double wall chimney system, sootfire resistant, with 25 mm insulation, ventilated throughout the whole length, without covering. Locking band necessary. Operation mode in negative pressure.

Product description	
Standard number	EN 1856-1
Temperature class	T400
Pressure range class	N1
Corrosion resistance	W
Specification of inner tube material	V2-L99050
Sootfire resistance (G: yes / O: no) and distance to combustible materials (mm)	O30, O45, O60, O50, O75, O100
Nominal diameter (Ø) (inner tube) in mm	G70, G105, G140

Properties of a multi-wall metal chimney system

Compressive strength:

Maximum load (see installing instructions)

Flow resistance:

Average roughness: 1.0 mm,
Zeta-values according to DIN EN 13384-1
(see installing instructions)

Thermal resistance: 0.26 m²K/W

Bending strength:

Angular assembly:
Maximum length between two supports: 3 m at 90°

Tensile strength:

See installing instructions

Wind load: free standing end above last fixation:

≤3 m up to ≤Ø300 mm (0.5 mm wall thickness)
≤2.5 m Ø350 – ≤Ø400 mm (0.5 mm wall thickness)
≤1.5 m Ø450 – ≤Ø600 mm (0.6 mm wall thickness)

Maximum distance between vertical supports: 4 m

Freeze-thaw resistance: Yes

Cleaning:

The chimney system is only allowed to be cleaned with cleaning devices made of plastic or rust-resistant stainless steel.

Vers. 2013/06





Double wall flue system type DW-ECO-TITAN (DW-ECO 2.0)

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Model 1:

Exhaust gas system for all oil and gas firing installations in negative pressure for dry or wet operation mode. Possible fields of application: oil- and gas boilers, ventilating systems, ovens, air heaters, industrial facilities etc. The proof that the temperature of the interior wall of the system's upper end is above the water vapour dew point temperature of the exhaust gas at a constant temperature can be abandoned.

The flue system is for negative pressure up to 40 Pa.

Classification acc. to EN 1856-1:

Exhaust gas system EN 1856-1 T400 - N1 - W - V2 - L99050 - Oxx*

Model 2:

Exhaust gas system for all oil and gas firing installations in negative pressure for dry or wet operation mode. Possible fields of application: oil- and gas boilers, ventilating systems, ovens, air heaters, industrial facilities etc. The proof that the temperature of the interior wall of the system's upper end is above the water vapour dew point temperature of the exhaust gas at a constant temperature can be abandoned.

The flue system is for negative pressure up to 40 Pa.

Classification acc. to EN 1856-1:

Exhaust gas system EN 1856-1 T600 - N1 - W - V2 - L99050 - Oxx*

Model 3:

Exhaust gas system for all conventional firing installations (oil, gas and solid fuel¹) in negative pressure for dry operation mode. Possible fields of application: open fireplaces, tile stoves, ovens, oil- and gas boilers, pellet-boilers etc. The mensuration of the cross sectional area acc. to EN 13384 has to assure that the temperature of the interior wall of the system's upper end at a constant temperature is above the water vapour dew point of the exhaust gas.

The flue system is for negative pressure up to 40 Pa.

Classification acc. to EN 1856-1:

Exhaust gas system EN 1856-1 T600 - N1 - D - V2 - L99050 - Gxx*

xx *: The distance to combustible materials depends on the diameter, see table 3.

¹excluding anthracite coal from Ibbenbüren, Germany



2 MOUNTING AND REGULATIONS

The installing has to be performed professionally according to the installing instructions respectively according to the valid national regulations.

In Germany in particular DIN V 18160-1, as well as the applicable rules of regional building (LBauO), firing regulations (FeuVO), relevant DIN standards and all other building- and safety regulations.

The required cross section has to be determined according to DIN EN 13384 and has to be re-checked by the executing specialist firm.

Attention: Before the installation the design of the system has to be clarified with the concerned district chimney sweeper.



The suitability and safe usability of the exhaust system is to be certified by a competent district chimney sweeper before commissioning.

3 MOUNTING HEIGHTS

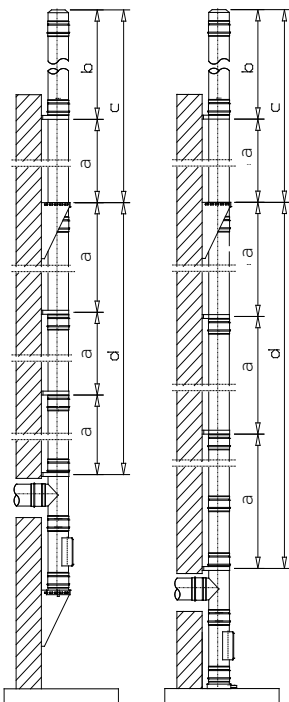


Figure 1: Mounting heights

	Measure a max. distance between wall supports	Measure b free standing height above last support	Measure c height above support	Measure d height above pipe tee connection	
Clamp Inside Ø mm	dweco 21	dweco21			
Wall thickness inner pipe 0.5 mm	130	4	3	53	34
	150	4	3	41	28
	180	4	3	38	21
	200	4	3	37	17
	250	4	3	32	16
	300	4	3	27	15
	350	4	2.5	24	13
	400	4	2.5	22	11
Wall thickness inner pipe 0.6 mm	450	4	1.5	20	10
	500	4	1.5	16	10
	600	4	1.5	15	10

Table 1: Mounting heights (in m)



STRENGTH OF DOWEL CONNECTION in kN

Inner pipe Ø in mm	Wall brackets dw 01			Wall spacer dw 21			Length of cantilever m
	Wall space			Wall space			
	50 - 120 mm	250 mm	400 mm	50 - 120 mm	250 mm	400 mm	
130	0.93	1.34	1.84	1.27	1.99	2.82	3.00
150	0.97	1.38	1.89	1.31	2.01	2.83	3.00
180	1.03	1.446	1.97	1.48	2.22	3.09	3.00
200	0.88	1.18	1.56	1.37	2.00	2.75	3.00
250	0.96	1.27	1.66	0.88	1.27	1.71	1.50
300	1.04	1.36	1.76	0.94	1.31	1.74	1.50
350	1.12	1.46	1.86	1.05	1.41	1.84	1.50
400	1.21	1.55	1.97	0.93	1.21	1.55	1.50
450	1.30	1.65	2.08	1.09	1.40	1.78	1.50
500	1.30	1.63	2.02	1.10	1.39	1.74	1.50
600	1.48	1.82	2.23	1.25	1.54	1.89	1.50
Number of dowel	4	4	4	2	2	2	

Table 2: Strength of dowel connection

Important advice to the table of dowel-connection strength:

The dowel-connection strength in the table is the angular tensile force per dowel.

The wall space of the chimney system is allowed to be up to 40 cm.

The dowel strengths for the wall spacers are valid at heights above base up to 20 m.

For heights above base up to 8 m a reduction factor of 0.63 is valid.

For heights above base between 20 m and 100 m an extension factor of 1.38 has to be observed.

At wall spaces >40 cm special attachments / wall brackets are to be used according to the static confirmatory test.



4

MINIMUM DISTANCE TO COMBUSTIBLE MATERIALS

4.1 VERTICAL PART

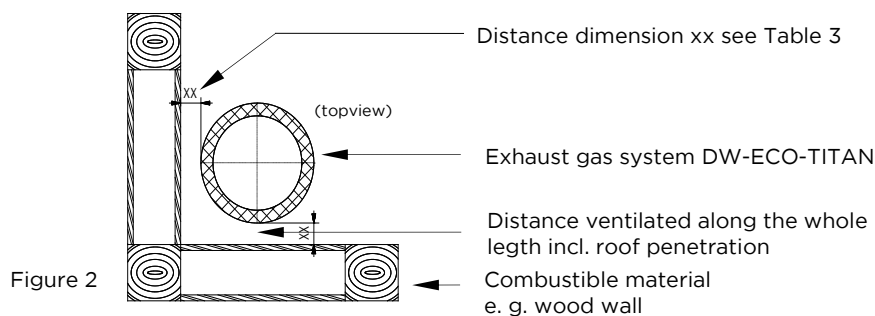
When used as exhaust gas line (oil, gas) a minimum distance to combustible materials of 30 mm (T400) and 50 mm (T600) is valid max. nominal diameter of inner tube up to 300 mm, is valid.

For bigger diameters the distances increase accordingly, see table 3.

For solid fuel fireplaces T600 a minimum distance to combustible materials of 70 mm to a max. nominal diameter of inner tube up to 300 mm applies.

For bigger diameters the distances increase accordingly, see table 3.

Attention: The distance to combustible materials refers to a ventilated installation throughout the whole length (see Figure 2)!



Model	Temperature level	Pressure level	Condensate resistance	Corrosion resistance and flue liner material specification	Sootfire resistance and distance to combustible materials	Nominal diameter (Ø-inner tube)	Application
0.1	T400	N1	W	V2-L99050	O30 (= 30 mm) O45 (= 45 mm) O60 (= 60 mm)	Ø80 - 300 Ø350 - 450 Ø500 - 600	Oil, gas and solid fuel firing installations for dry operation mode
0.2	T600	N1	W	V2-L99050	O50 (= 50 mm) O75 (= 75 mm) O100 (= 100 mm)	Ø80 - 300 Ø350 - 450 Ø500 - 600	Oil & gas firing installations for wet and dry operation mode
0.3	T600	N1	D	V2-L99050	G70 (= 70 mm) G105 (= 105 mm) G140 (= 140 mm)	Ø80 - 300 Ø350 - 450 Ø500 - 600	Oil, gas and solid fuel firing installations for dry operation mode

Table 3: Distances to combustibles materials

Note:



For closed / non-ventilated ducts of the vertical exhaust system through ceilings / roofs made of or with combustible building materials, the local or national regulations apply.

If the mentioned conditions cannot be met, it is possible to use our tested wall, ceiling and roof ducts LUX-ECO & LUX-NOVA, which have national approvals.

Please also note the corresponding installation instructions.



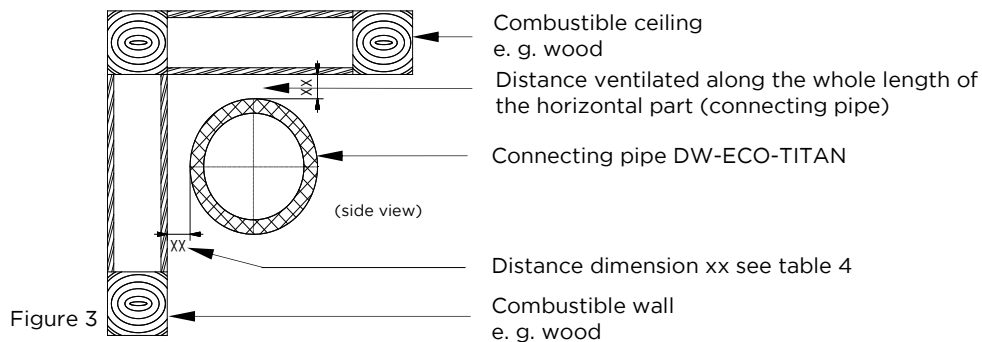
4.2 HORIZONTAL PART (connecting pipe)

When used as exhaust gas line (oil, gas) up to T450 a minimum distance to combustible materials of 50 mm is valid.

If fireplaces (oil, gas and solid fuel) are connected up to T600, the minimum distance to combustible materials increases to 100 mm.

The mentioned distances are shown in Table 4 and apply to a maximum nominal width of the system of 600 mm.

Attention: The distance to combustible materials refers to a ventilated installation throughout the whole length (see Figure 3)!



Model	Temperature level	Pressure level	Condensate resistance	Corrosion resistance and flue liner material specification	Sootfire resistance and distance to combustible materials	Nominal diameter (Ø-inner tube)	Application
0.1	T450	N1	W	V2-L99050	O 50 M* (= 50 mm)	Ø80 - 600	Oil & gas firing installations for wet and dry operation mode
0.2	T600	N1	D	V2-L99050	G 100 M* (= 100 mm)	Ø80 - 600	Oil, gas and solid fuel firing installations for dry operation mode
0.3	T600	N1	W	V2-L99050	O 100 M* (= 100 mm)	Ø80 - 600	Oil & gas firing installations for wet and dry operation mode

*M = Distance tested/ measured

Table 4: Distances to combustibles materials

Note:



For closed / non-ventilated ducts of the connecting pipe through walls made of or with combustible building materials, the local or national regulations apply.

If the mentioned conditions cannot be met, it is possible to use our tested wall, ceiling and roof ducts LUX-ECO & LUX-NOVA, which have national approvals.

Please also note the corresponding installation instructions.



5

INSTALLATION OF THE FLUE SYSTEM

5.1 CONSTRUCTION OF PIPES

All components have to be mounted in a way, that the nozzle of the inner pipe is above or rather in flow direction of the exhaust gas, while the nozzle of the outer pipe has to show converse to the flow direction of the exhaust gas.

Every surge is protected by a locking band.

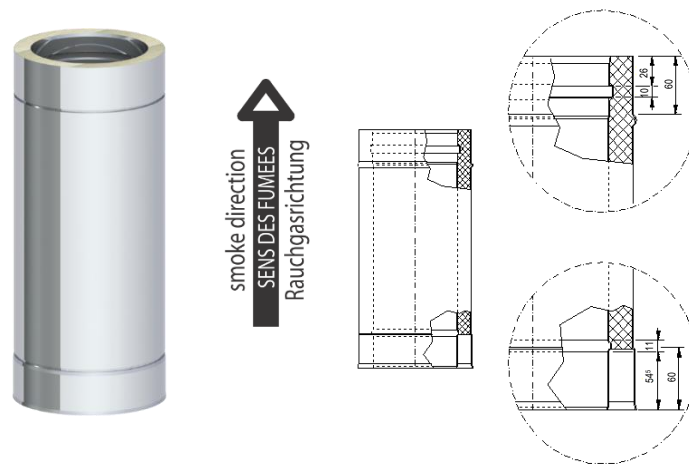


Figure 4:
Length element

5.2 WALL BRACKETS MADE OF STAINLESS STEEL

When a chimney is supported at a bearing wall, mounting is possible “blade upwards” (Figure 5) or “blade downwards“ (Figure 6).

The wall brackets & cross sections may only be mounted blade „downwards“ (Figure 7).

Please note the strength of the dowel connection.

For the installation wall brackets have to be used which are stable enough for the mentioned mounting heights in Table 1!

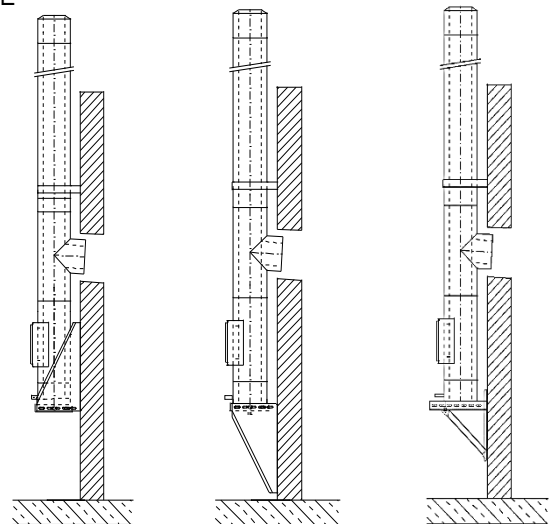


Figure 5:
setup with base plate with lateral condensate outlet and “upward wall bracket”

Figure 6:
setup with base plate with condensate outlet at bottom and “downward wall bracket”

Figure 7:
setup with base plate with condensate outlet and “downward wall bracket”

Attention:



From inner diameter 350 mm of the system all wall brackets are mount “upwards” (Figure 5).

Note:



Console plates may only be used up to a max. inner diameter of 600 mm. For larger diameters wall supports & cross sections are to be used according to the static design.



5.3 TELESCOPIC SUPPORT

If chimney is supported at bottom - the height of the support is adjustable.

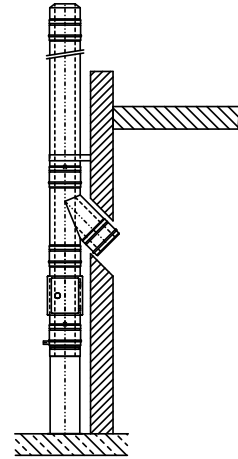


Figure 8:
Mounting with telescopic support

5.4 CONCRETE SOCKET

A stable, non-combustible concrete base plate is used for base mounting.

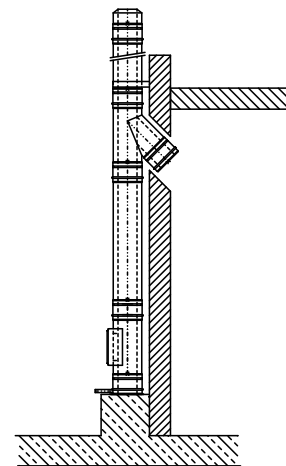


Figure 9:
Setup with base plate for socket mounting

5.5 BASE PLATE

The insulated base plate with or without condensate drain for connection to the drainage pipe has to be fixed on the support. The open base plate is used as base plate for intermediate support or as direct bonnet of the chimney system on a support (e.g. open fireplace, industrial plant).

Note:



The closed base plate should only be used, if the chimney is solely for dry operation mode and the entry of rainwater is limited by appropriate measures e.g. rain cap.

The locking band of the end cap is included in the delivery of the base plates.

If a base plate for intermediate support DWETN07Ø is used, an additional locking band DW-ECO989 + Ø is required.



5.6 CLEAN-OUT ELEMENT

The element with clean-out opening is set on the base plate. The position of the clean-out and inspection opening has to be planned according to the valid standards or rather the local regulations.

We recommend to approve this with the concerned district chimney sweeper in advance before the installation.

Note: In order to be able to carry out cleaning and inspection work from the bottom of the exhaust system more easily, it is recommended to install the cleaning element offset by approx. 90° to the T connection (see Figure 10).

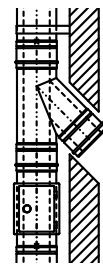
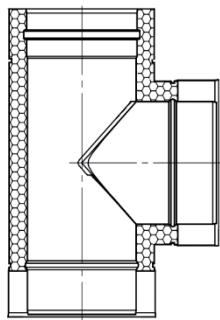


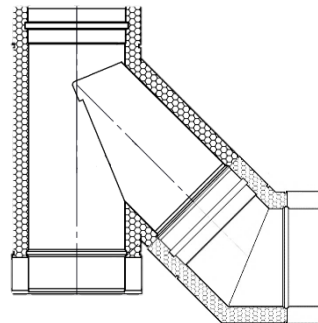
Figure 10:
Cleaning element offset to the T-connection

5.7 CONNECTION ELEMENT TO THE UPRIGHT PART

The connection of the connection line to the exhaust gas system can be realised with the pipe tee connection 90° or the pipe tee connection 45° (fluidic more favourable because of low-zeta-value).



Pipe tee 90°



Pipe tee 45° with pipe bend 45°

Figure 11: Connection to a vertical exhaust gas system

Attention: Due to the components of the system, it is advisable to dispense with a wet operating mode of the exhaust system and if possible, to use the DW-ECO-TITAN-AL system.



Note: If the storm collar has to be placed on a locking band, then the assembly is only possible with a specially produced storm collar made according to customer specifications!



5.8 SUPPORTS

The wall spacers act as fixation of the exhaust gas system at the wall or at steel-support constructions.

The rigid wall spacer has a wall space of 50 mm.

The adjustable wall spacers are used at bigger wall distances.

Note:



Basically a wall spacer has to be attached above every tee piece, which dissipates emerging wind forces into the building, so that they are not transmitted to the connecting piece of the fireplace.

The maximum distances between the single attachments and the dowel-connection strengths have to be observed at all wall attaching bands. (see point 3 „Mounting heights“).

The brackets should always be mounted near element joints.

5.9 INTERMEDIATE SUPPORT

If the maximum mounting heights are exceeded (see Figure 1 and Table 1), intermediate supports should be considered, which are stable enough to absorb the static load.

This is ensured through the stainless steel wall brackets and the base plate for intermediate support (see Figure 12).

Note:



It's advisable to put a wall spacer after the last intermediate support to derive the expected wind loads before.

Furthermore, the instructions in point 5.2 „Wall brackets made of stainless steel“ must be observed.

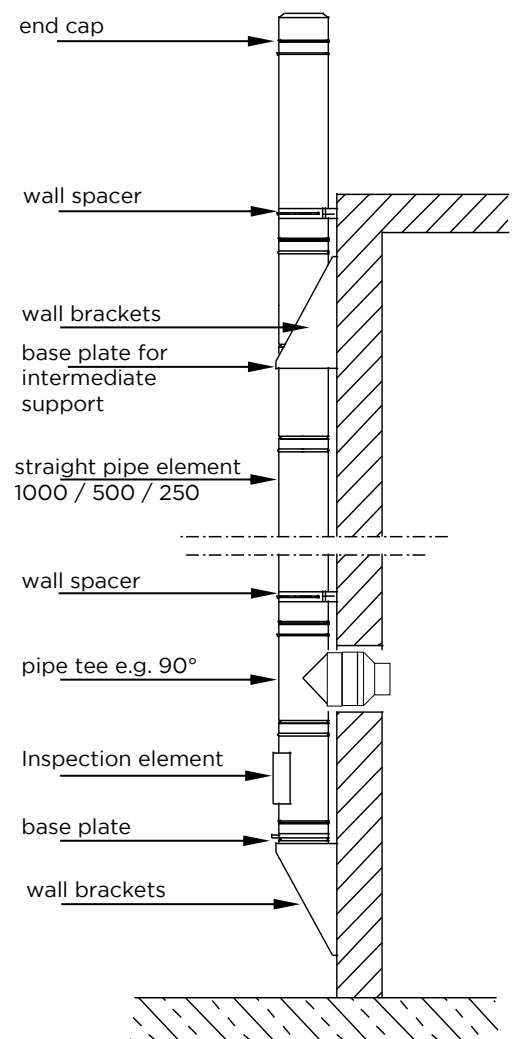


Figure 12: mounting with intermediate support



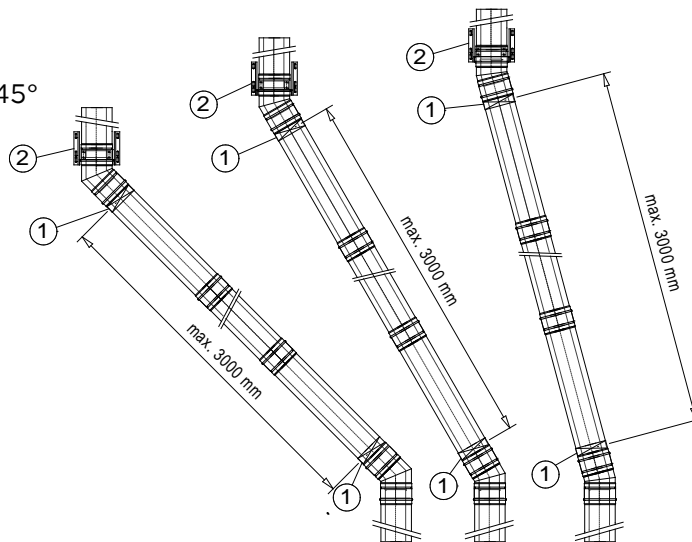
5.10 INCLINED RUN

If the exhaust gas system is to be moved, the maximum dimensions of the following drawing (see Figure 13) should be observed. Please also note that after an offset intermediate supports with wall brackets have to be used (see Figure 13).

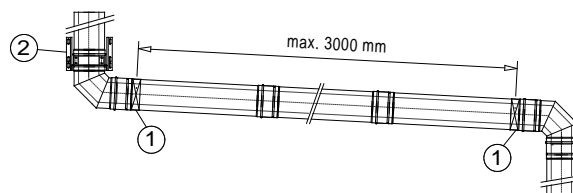
Note: An inclined run to the vertical of 90° is possible, but it must be ensured that the chimney is only for dry operation mode.



Inclined run 15° / 30° / 45°



Inclined run 90°



- ① Attachment with wall spacer dw-eco 20-24
- ② Intermediate support and wall bracket

Figure 13: Structure inclined run

After an inclined run the weight of the elements must be intercepted with a base plate for intermediate support and cantilevers & cross rail or wall brackets.

Attention: Please note that during high exhaust gas temperatures and/ or great lengths, ahead of an inclined run appropriate actions have to be taken to compensate the thermal elongation e. g. with a compensator.



Note:



Please consider that the clean-out openings have to be according to the national regulations (in Germany according to DIN V 18160-1).



5.11 FLASHING KIT

Flashing kits are available for all slopes (with grading of 10°, with sealing zones made of stainless steel or lead). These guarantee the temperature-independent linear expansion of the chimney.

The storm collar (included in scope of delivery) has to be screwed to the chimney element and to be sealed (see Figure 14). To achieve a suffice ventilation in the roof area the storm collar has to be fixed about 2-3 cm above of the stainless steel flashing kit.

The storm collar must be sealed accordingly.

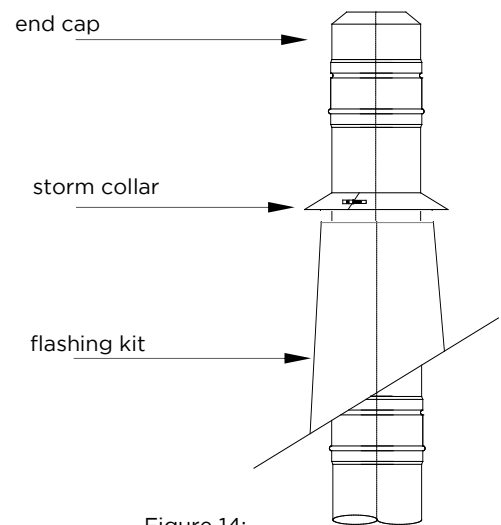


Figure 14:
Flashing kit

Note:



However the storm collar must not be mounted on the locking band above the roof flashing!

5.12 MOUNTING ABOVE THE ROOF

During planning of the exhaust gas system the minimum height above the roof has to be considered.

The double wall System DW-ECO-TITAN can be executed freestanding up to 3.00 m (see Table 1) from the last attachment.

(above a nominal diameter of 300 mm of the system, two-lane wall spacers must be used).

If the height above the last wall support exceeds the ones given in Table 1, a cantilever (see Figure 15) or a 2-point wire bracket is necessary.

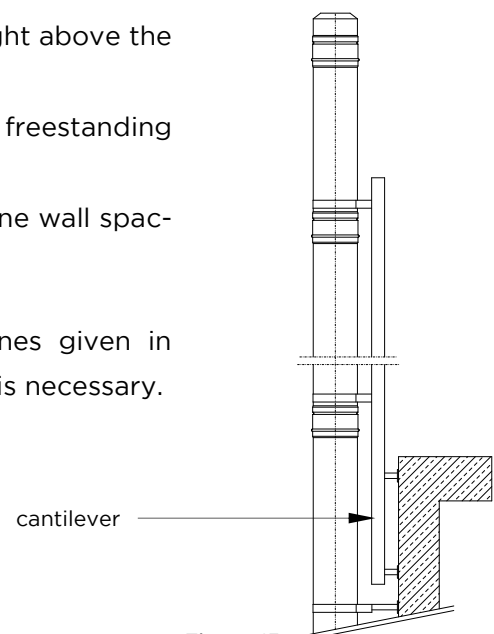


Figure 15:
Setup with cantilever



5.13 PROTECTION AGAINST ACCIDENTAL CONTACT

At an exhaust gas temperature above 200°C, a surface temperature of more than 70°C can be expected and therefore a contact protection in the accessible area (except the installation area, e.g. in case of public transport, in public buildings) is required up to a height of 2 m above the floor e.g. one also needs to have contact protection in public places.

The contact protection must not obstruct the rear ventilation.

5.14 LIGHTNING PROTECTION

Lightning protection has to be performed according to the relevant technical regulations.

Requirements result in Germany from DIN EN 62205-3 (VDE 0185-305-3) (Protection of structural works with persons), DIN VDE 0100-410 (Construction of low-voltage systems: protective measures; Protection against electric shock) and DIN VDE 0100-540 (Construction of low-voltage systems part 5 to 54: Selection and erection of electrical equipment – earth termination service and protective conductors)



Attention: Execution has to be done by a specialised firm!



6

CONDENSATE DRAIN

6.1 GENERAL NOTES

The discharge of condensation and rainwater to the sewage is to be provided by the customer (connect sewage connection point to the exhaust system)!

Especially when solid fuel burners are connected, the condensate drain should be cleaned regularly and the deposits must be cleared in order to ensure the discharge of rainwater and condensate.

Note:



If there is no or slight accumulation of condensate and rainwater then dust can be removed from the condensate drain during cleaning work on the exhaust system.

It is advisable to take measures which prevent the freezing of outdoor condensate drain or siphon, in particular if regular condensation is expected.

6.2 CONDENSATE NEUTRALISATION

Please observe the national as well as the local regulations.

If condensation neutralization is necessary then our neutralization units are available.

6.3 CONDENSATE RETURN TO THE HEAT GENERATOR

In case of a humid operation in the connection line, at least 3° slope to the heat generator is to be laid. The resulting condensate can be dissipated via this, if this is suitable, otherwise measures must be taken to ensure to complete drainage of the condensate, e. g. by a condensation trap with siphon.

6.4 CONDENSATION GUIDE AT THE BOTTOM

Condensate and rainwater from the vertical part of the exhaust system flows into the base plate with condensate drain via the inner wall and from there into the condensate discharge or in the neutralization unit, which can be drained via the house drain.

Note:



In order to ensure the complete drainage of rain water and condensate, in particular in a humid operating mode of the exhaust system, as standard there are no sealing caps on the condensate drains of the base plates.

In this way a possible moisture penetration in the insulation as well as the freezing of bottom in the winter can be avoided.



7

EXAMPLE

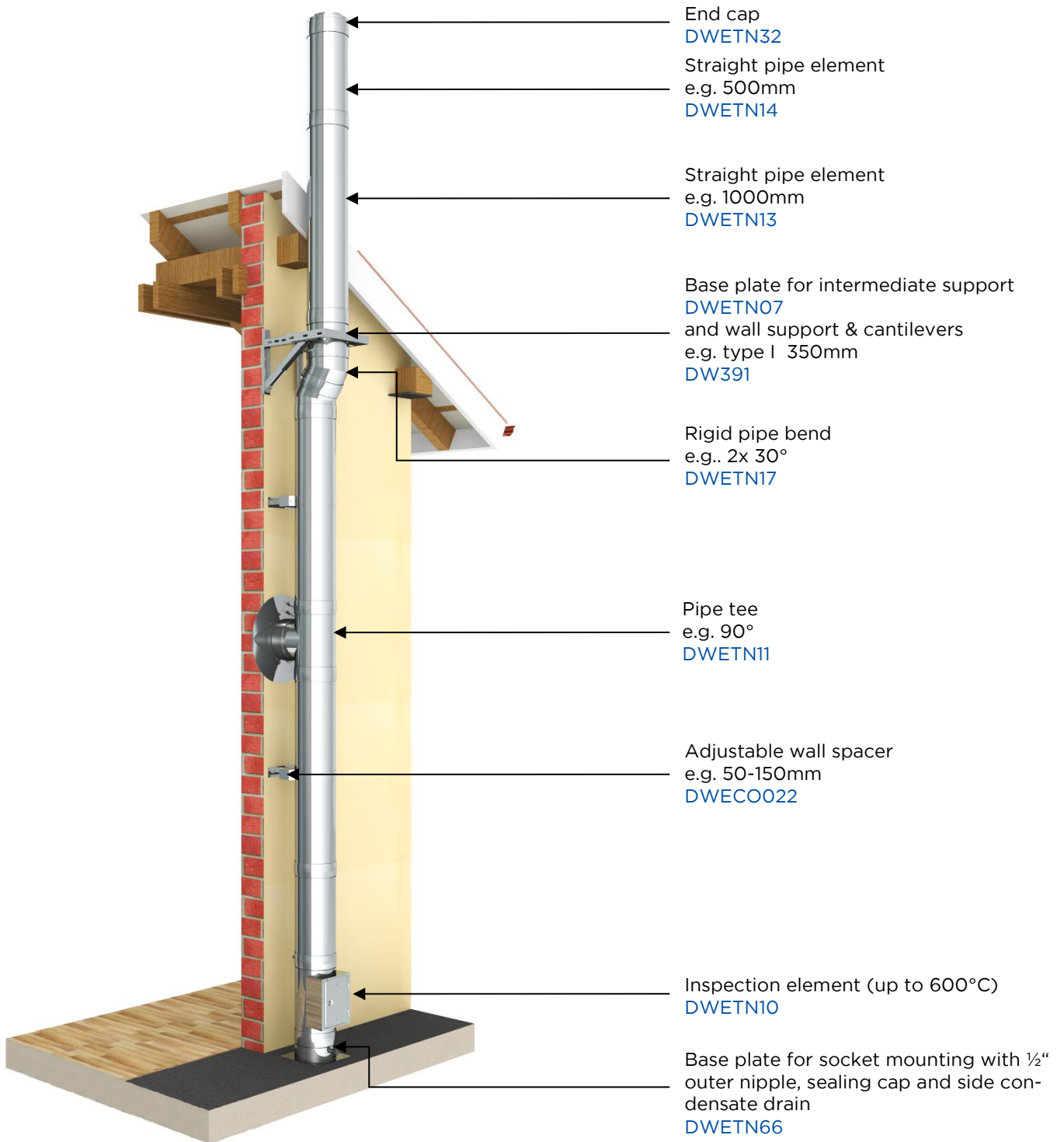


Figure 16: Example



8

GENERAL NOTES

The exhaust gas system DW-ECO-TITAN was developed and tested for gas leaks, corrosion resistance and secure installation. Therefore, only original parts of the system Jeremias DW-ECO-TITAN must be used. In addition the manufacturer's specifications and installing instructions have to be met.

Technical changes are reserved!

9

LABELING AFTER INSTALLATION

The installed exhaust gas system has to be fitted depending on the application with the following nameplate. Depending on the application, the corresponding classification must be ticked or filled.

Marking of the connecting line is not required, for this the declaration of performance as proof of usability is sufficient.

In the Login area of our homepage www.jeremias.de you will find detailed instructions for completing the nameplate.


Attention:	This label must not be covered nor removed!		
Manufacturer:	Fa. Jeremias		
Flue gas system:	DW-ECO-TITAN / double wall system		
DoP-No.:	9174 015 DOP 2018-01-08		
Product designation:	01. EN 1856-1 T400 - N1 - W - V2 - L99050 - Oxx <input type="checkbox"/> (please tick) 02. EN 1856-1 T600 - N1 - W - V2 - L99050 - Oxx <input type="checkbox"/> (please tick) 03. EN 1856-1 T600 - N1 - D - V2 - L99050 - Gxx <input type="checkbox"/> (please tick)		
Flue gas system designation acc. national regulation:	_____ (EN 1443 / EN 15287-1 / ...)		
xx The distance to combustible materials depends on the diameter, see declaration of performance DW-ECO-TITAN			
Nominal diameter:	please indicate Ø mm	
Thermal resistance:		> 0,26 m ² K/W	
Distance to combustible materials: mm back ventilated		
Installation company:	_____	Phone: _____	
	_____	Installation date: _____	

Figure 17: System label DW-ECO-TITAN

