

INSTALLATION INSTRUCTIONS

System DW-ECO-TITAN

Certification 0036 CPD 9174 015 according to DIN 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:

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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	
Temperature class	
Pressure range class	
Condensate resistance (W: wet / D: dry)	
Corrosion resistance	
Specification of inner tube material	
Sootfire resistance (G: yes / O: no) and distance to combustible materials (mm)	
Nominal diameter (Ø) (inner tube) in mm	

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

1 SYSTEM OVERVIEW

Modell 1:

Exhaust gas system for all conventional firing installations in negative pressure for dry or wet operation mode. Possible fields of application: oil- and gas boilers, 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 exhaust gas system is for negative pressure to 40 Pa.

Classification acc. to EN 1856-1:

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

Modell 2:

Exhaust gas system for all conventional firing installations in negative pressure for dry or wet operation mode. Possible fields of application: oil- and gas boilers, 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 exhaust gas system is for negative pressure to 40 Pa.

Classification acc. to EN 1856-1:

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

Modell 3:

Exhaust gas system for all conventional firing installations in negative pressure for dry operation mode. Possible fields of application: oil- and gas boilers, open fireplaces, tile stoves, pellet-boilers, ovens, 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 exhaust gas system is for negative pressure 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

2 MOUNTING AND REGULATIONS

The installing has to be performed professionally according to the mounting manual 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 rechecked by the executing specialist firm. Before the mounting the completion of the system has to be coordinated with the district chimney sweeper in charge.

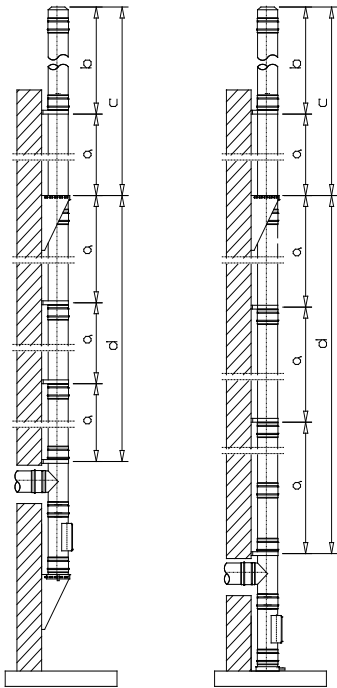


figure 1: Mounting heights

	Mounting heights and distances in m				
	Inside - \varnothing in mm	Measure a max. distance between wall spacer	Measure b free standing length from last wall bracket	Measure c mounting heights from intermediate support	Measure d mounting heights over pipe tee connection
	clamp	eco-dw21	eco-dw21		
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 the dowel connection in kN

Cross sectional area	Wall brackets dw 01			Wall brackets dw 21			
Interior pipe	Wall space			Wall space			Length of cantilever
(/)	50 - 120	250	400	50 - 120	250	400	
mm	mm	mm	mm	mm	mm	mm	m
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 per support	4	4	4	2	2	2	

table 2: Strength of the 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 territory up to 20 m.

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

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

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

4 MINIMUM DISTANCE TO COMBUSTIBLE MATERIALS in the vertical part

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

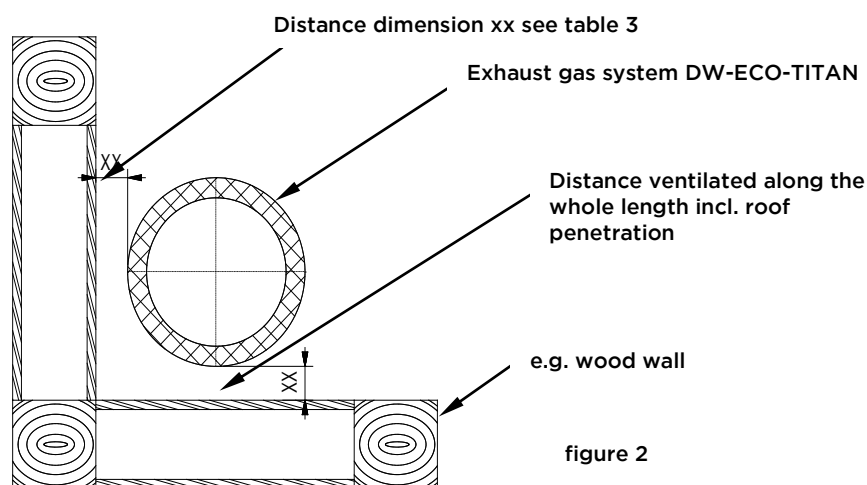
For bigger diameters the distances increase accordingly, see table 3.

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.

The distance to combustible materials refers to a ventilated installation throughout the whole length!

For wall ducts the local resp. national regulations apply, you can also use the Jeremias certificated wall-, ceiling-, roof penetration LUX-ECO & LUX-NOVA. These wall ducts are only approved in Germany, Austria and Switzerland.



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 for wet and 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 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 fuels for dry operation mode

table 3: Distances

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INSTALLATION OF THE CHIMNEY SYSTEM

FITTING OF ELEMENTS

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.

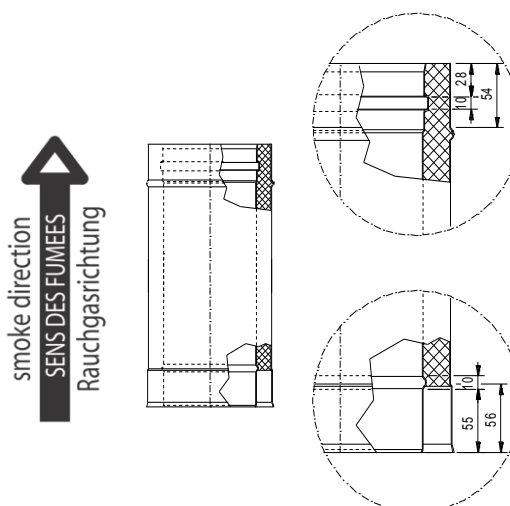


figure 3:
length element

WALL BRACKETS MADE OF STAINLESS STEEL

When chimney is supported at a bearing wall.

Mounting is possible blade downwards and blade upwards.

Please note the dowel connection forces.

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

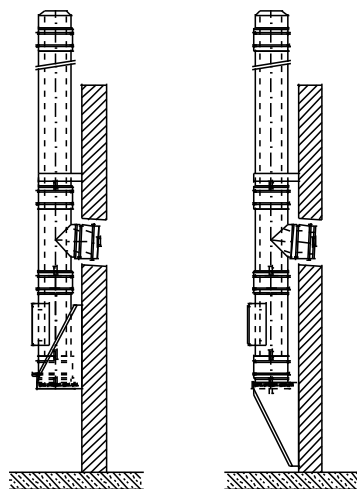


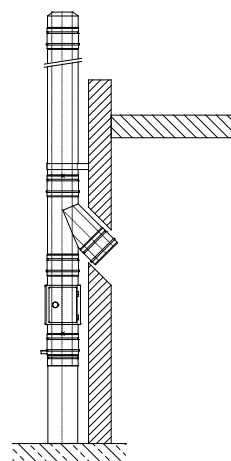
figure 4: setup with base plate with lateral condensate outlet and "upward wall bracket"

figure 5: setup with base plate with condensate outlet at bottom and "downward wall bracket"

TELESCOPIC SUPPORT

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

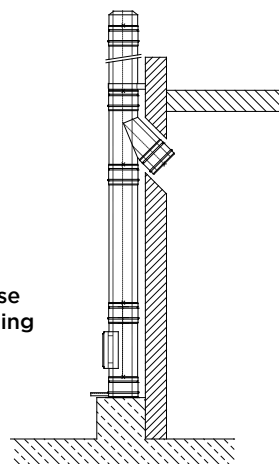
figure 6: mounting with telescopic support



CONCRETE SOCKET

If mounted on a concrete socket a base plate for socket mounting has to be used.

figure 7: setup with base plate for socket mounting



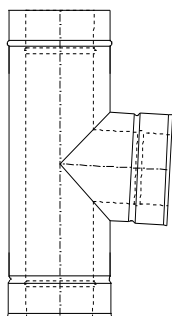
CLEAN-OUT ELEMENT

The element with clean-out opening is set on the base plate.

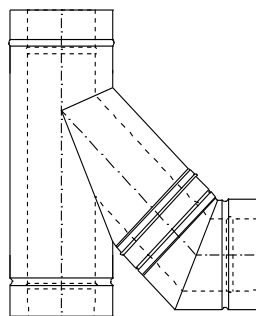
The position of the clean-out and inspection opening has to be planned according to the valid standards or rather the local regulations.

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 87° or the pipe tee connection 45° (fluidic more favourable because of low zeta-value).



Pipe tee connection 87°



Pipe tee connection 45° with pipe bend 45°

figure 8: Connecting to a vertical exhaust gas system

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.

Basically a wall spacer has to be attached above every tee piece.

The maximum distances between the single attachments and the dowel-connection strengths have to be observed at all wall attaching bands.

The supports should always be mounted near to an element surge.

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 9).

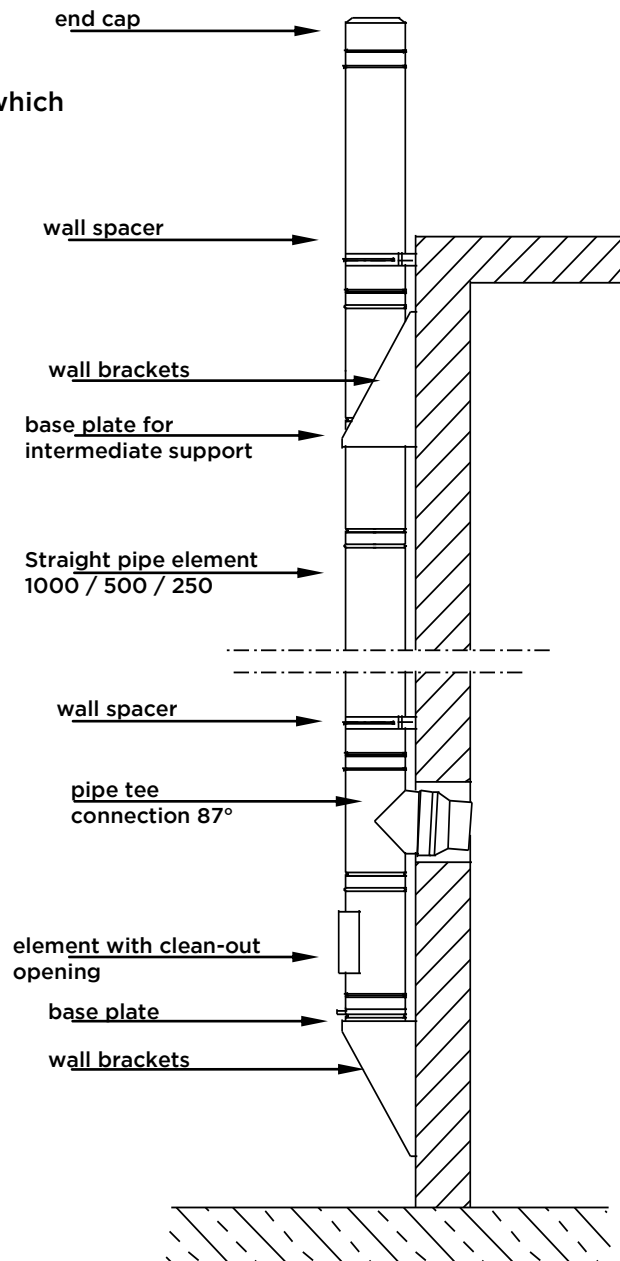


figure 9: mounting with intermediate support

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 10). To achieve a suffice ventilation in the roof area the storm collar has to be fixed about 2 cm above of the stainless steel flashing kit.

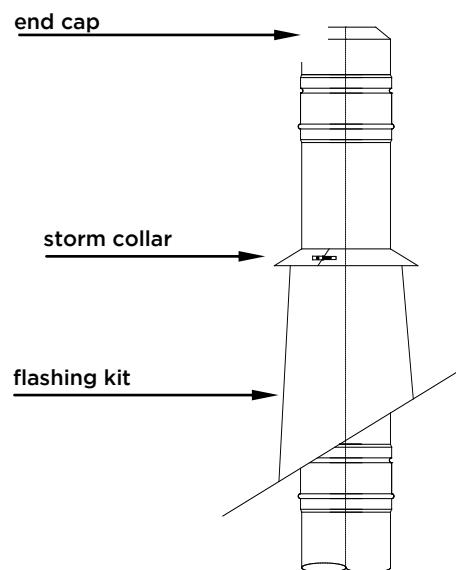


figure 10: flashing kit

MOUNTING ABOVE THE ROOF

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

The double wall systems of Jeremias can be executed freestanding 3 m from the last attachment up to Ø 300 mm.

If the heigh above the last wall support exceeds 3 m, a cantilever is necessary (see figure 11)

(For other diameters see table 1)

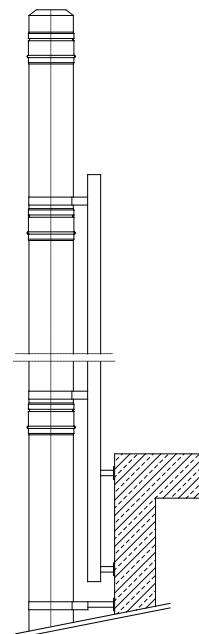


figure 11: mounting with cantilever

LIGHTNING PROTECTION

Lightning protection has to be performed on site according to the relevant technical regulations. Requirements result from DIN V VDE V 0185-3 and DIN VDE 0100-540 (Protection of structural works with persons). Execution has to be done by a specialized firm.

INSIDE APPLICATIONS

For applications installed inside ventilated elements with integrated exhaust air leading can be mounted as penetration (see figure 12). If the height above the last support exceeds 3 m, the 3-point-guy wire bracket can achieve a higher mounting.

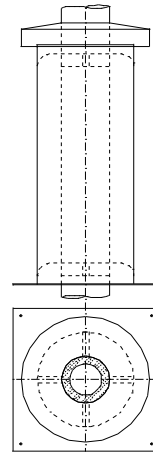
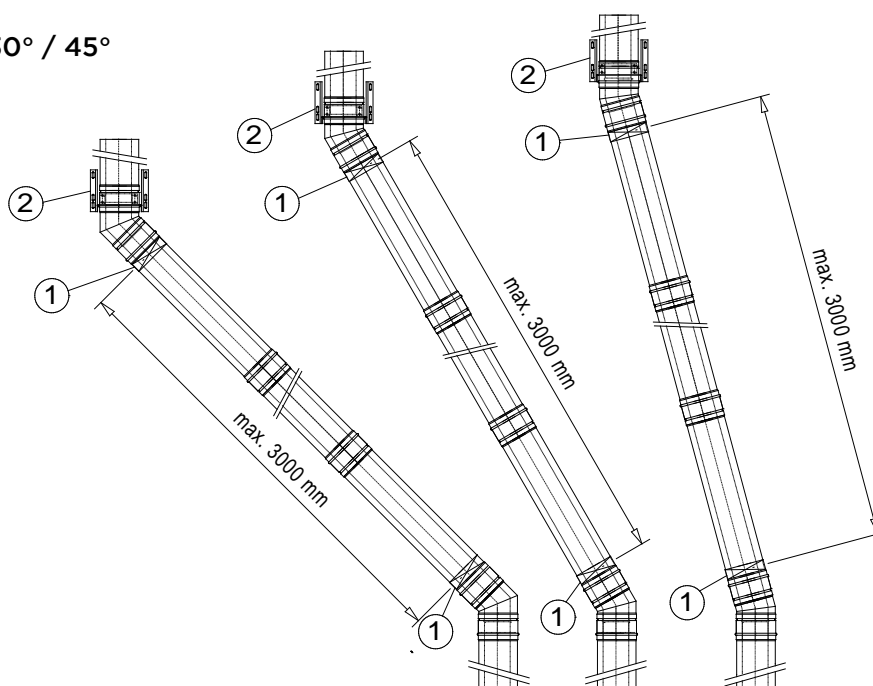


figure 12: setup ventilated element with integrated exhaust air leading

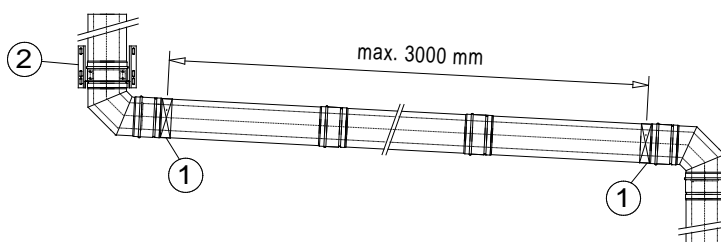
INCLINED RUN

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).

Inclined run 15° / 30° / 45°



Inclined run 87°



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

figure 13: Structure inclined run

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.

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

CONCLUDING INSTRUCTIONS

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 installation instructions have to be met.

Technical changes are reserved!

6

LABELING AFTER INSTALLATION

The installed exhaust gas system has to be fitted depending on the application with the following 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 2013-06-17		
Product designation:	01. EN 1856-1 T400 - N1 - W - V2 - L99050 - Oxx 02. EN 1856-1 T600 - N1 - W - V2 - L99050 - Oxx 03. EN 1856-1 T600 - N1 - D - V2 - L99050 - Gxx		
Flue gas system designation:	01. DIN V 18160-1 T400 - N1 - W - 2 - Oxx - L.....* <input type="checkbox"/> (please tick) 02. DIN V 18160-1 T600 - N1 - W - 2 - Oxx - L.....* <input type="checkbox"/> (please tick) 03. DIN V 18160-1 T600 - N1 - D - 3 - Gxx - L.....* <input type="checkbox"/> (please tick)		
Flue gas system designation acc. another national regulation:	<div>(EN 1443 / EN 15287-1)</div> <div>*according to the relevant state building regulations</div>		
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 14: system label DW-ECO-TITAN