TECHNICAL DATA SHEET (1/3)

T - 4460 _ VRD

General description

The **VRD** self-drilling screw is designed to assemble 2 metal sheets in one single operation.

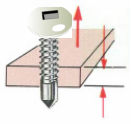
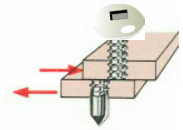
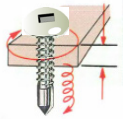
This screw is specially designed to minimize air leakage at drill point : the diameter of the drill is designed so that the drill of the screw does not exceed the diameter of the screw's shank. The threaded shank will then perfectly fit into the hole. Thanks to this reduced drill, the VRD assures a better air tightness.

It can drill into a combined total thickness of 1,9mm.

The VRD screw has a square recess. Thanks to its drill point, no need to punch a hole or drill beforehand.

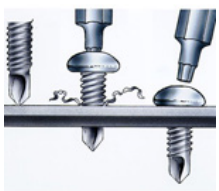
- Made of hardened carbon steel
- Zinc plated (free of hexavalent chromium)
- Pan head with square recess
- Delivered with the appropriate bit in each box
- Serration under the head for a better grip
- Manufactured according to DIN 7504

Technical specification

Screw dia.	Bit size	Soft steel sheet thickness	Tension pull-out 	Shear (two sheets overlap) 	Tensil strength 	Torque 
4,2 mm	KH2	0,9 mm	120 kg	330 kg	700 kg	4,7 Nm
		1,2 mm	180 kg	390 kg		
		1,5 mm	210 kg	450 kg		
		1,9 mm	400 kg	460 kg		
4,8 mm	KH2	0,9 mm	150 kg	370 kg	1000kg	7,3 Nm
		1,2 mm	240 kg	540 kg		
		1,5 mm	310 kg	600 kg		
		1,9 mm	430 kg	640 kg		

*The values listed are ultimate averages achieved under standard laboratory conditions. These results are given only as a guide and not as a warranty.
An appropriate safety factor must be determined for the designed purpose.

Application



- Self-drilling screws are designed to perform best when driven at 1800 to 2500 rpm.
- Drill point length must exceed total thickness of material to be fastened including gaps.
- Overdriving may result in torsion failure of screws or strip out of the fastening grip.
- The screw must penetrate beyond the metal structure with a minimum of 3 threads.

Airthightness test report

VRD

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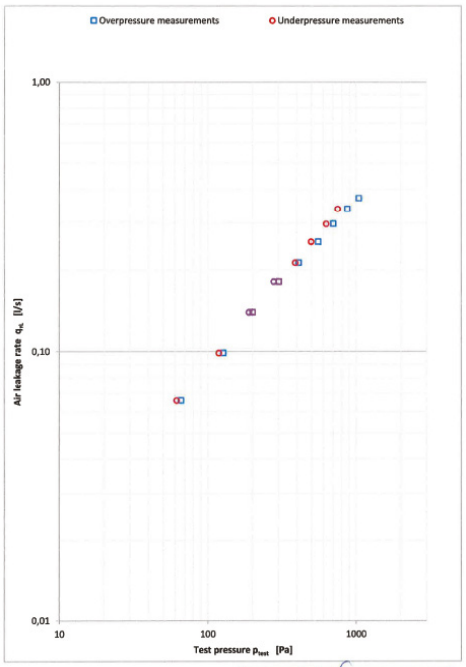
C.S.T.C. W.T.C.B. VE



C.S.T.C. W.T.C.B. VE

VDK

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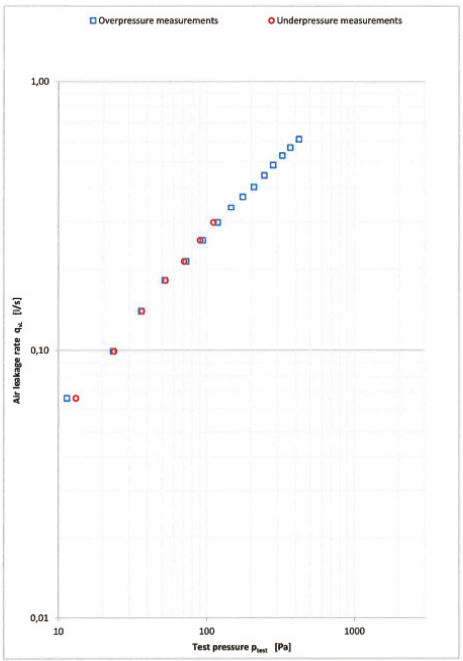

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Description of the sample
Strip made of galvanized steel (thickness 0,6 mm - width 17 mm)
fixed on a circular sheet metal duct (diametre 200 mm - length 750 mm) by means of
100 self-drilling screws made of zinc plated steel with round head with square recess
(4,2 x 13 mm Climatech VRD)

Measuring devices:	Calibration:	Organization:
Platon GTLK	22-05-1989	Platon
Minneapolis DG700/01	8-04-2014	CSTC-WTCB
Airflow TA460-P	18-06-2013	TSI Airflow
Airflow TA460-P	18-06-2013	TSI Airflow

Reference values for the ductwork: **Date of test:** 13-06-2014

Diameter of the ductwork	0,2	m
Length of the ductwork	0,8	m

Measurements - Positive pressure

Air temperature	21	°C
Barometric pressure	100535	Pa

Test pressure p_{test} (Pa)	Air leakage rate q_{VL} (l/s)
66	0,066
127	0,099
201	0,140
302	0,181
409	0,214
554	0,255
701	0,297
870	0,34
1043	0,37

Measurements - Negative pressure

Air temperature	21,35	°C
Barometric pressure	100530	Pa

Test pressure p_{test} (Pa)	Air leakage rate q_{VL} (l/s)
-62	0,066
-119	0,099
-189	0,140
-279	0,181
-389	0,214
-497	0,255
-627	0,296
-748	0,34

C.S.T.C. W.T.C.B.

Normalized values

Static pressure (Pa)	Leakage air flow (l/s)	Static pressure (Pa)	Leakage air flow (l/s)
100	0,09	-75	0,07
250	0,16	-100	0,09
500	0,24	-250	0,16
750	0,31	-500	0,26
1000	0,37	-750	0,34

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fixed on a circular sheet metal duct (diametre 200 mm - length 750 mm) by means of
100 self-drilling screws made of zinc plated steel with round head with square recess
(4,2 x 13 mm Climatech VDK)

Measuring devices:	Calibration:	Organization:
Platon GTLK	22-05-1989	Platon
Minneapolis DG700/01	8-04-2014	CSTC-WTCB
Airflow TA460-P	18-06-2013	TSI Airflow
Airflow TA460-P	18-06-2013	TSI Airflow

Reference values for the ductwork: **Date of test:** 13-06-2014

Diameter of the ductwork	0,2	m
Length of the ductwork	0,8	m

Measurements - Positive pressure

Air temperature	21	°C
Barometric pressure	100680	Pa

Test pressure p_{test} (Pa)	Air leakage rate q_{VL} (l/s)
11	0,066
23	0,099
36	0,140
52	0,182
73	0,215
94	0,256
119	0,297
146	0,34
175	0,37
208	0,40
245	0,45
281	0,49
324	0,53
367	0,57
422	0,61

Measurements - Negative pressure

Air temperature	20,65	°C
Barometric pressure	100695	Pa

Test pressure p_{test} (Pa)	Air leakage rate q_{VL} (l/s)
-13	0,066
-24	0,099
-37	0,140
-53	0,182
-70	0,215
-90	0,256
-111	0,297

C.S.T.C. W.T.C.B.

Normalized values

Static pressure (Pa)	Leakage air flow (l/s)	Static pressure (Pa)	Leakage air flow (l/s)
20	0,10	-20	0,09
50	0,17	-30	0,12
100	0,26	-50	0,17
250	0,46	-75	0,23
400	0,61	-100	0,28