1972-2002
Control guide collection
Säätöopas kokoelma
Injusterinsguide kollektion
Collection de guide de reglage

Halton

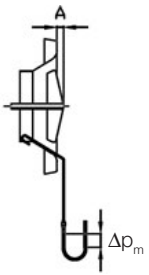
SISÄLLYSLUETTELO

Halton

$q_v = k \times \sqrt{\Delta p_m}$

URA

poistoilma
frånluft
exhaust air
extraction



Ø 100

1970-1976

A	k
-12	0,62
-9	1,01
-6	1,4
-3	1,75
0	2,20
3	2,50
6	2,85
9	3,30
12	3,61

Ø 150

1970-1976

A	k
-6	1,12
-3	1,73
0	2,45
3	2,90
6	3,40
9	4,11
12	4,72

Ø 200

1977-1978

A	k
+3	1,21
6	2,35
9	3,22
12	4,15
15	5,18
18	6,15
21	7,40
24	8,80

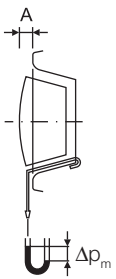
Halton

$q_v = k \times \sqrt{\Delta p_m}$

URH, UHA, URH-S (FRH 1999 ->)

poistoilma
frånluft
exhaust air
extraction

Ø 100



1978-1987

A	k
-15	0,52
-12	0,76
-9	0,95
-6	1,18
-3	1,38
0	1,60
3	1,90
6	2,16
9	2,43
12	2,72

1988-1996

A	k
-12	0,55
-9	0,75
-6	0,97
-3	1,19
0	1,42
3	1,70
6	2,00
9	2,25
12	2,50

1997-2001

A	k
-15	0,43
-12	0,63
-9	0,83
-6	1,02
-3	1,22
0	1,42
3	1,65
6	1,88
9	2,11
12	2,33

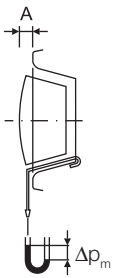
Halton

$q_v = k \times \sqrt{\Delta p_m}$

URH, UHA, URH-S (FRH 1999 ->)

poistoilma
frånluft
exhaust air
extraction

Ø 125



1980-1987

A	k
-15	0,41
-12	0,70
-10	0,90
-7	1,18
-5	1,35
-3	1,53
0	1,96
3	2,27
5	2,45
10	3,00
15	3,58

1988-1996

A	k
-12	0,65
-9	0,93
-6	1,23
-3	1,59
0	1,89
3	2,19
6	2,58
9	2,92
12	3,20
15	3,58

1997-2001

A	k
-15	0,65
-12	0,92
-9	1,22
-6	1,53
-3	1,84
0	2,17
3	2,52
6	2,83
9	3,14
12	3,46
15	3,77

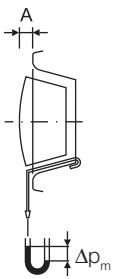
Halton

$q_v = k \times \sqrt{\Delta p_m}$

URH, UHA, URH-S (FRH 1999 ->)

poistoilma
frånluft
exhaust air
extraction

Ø 150



1990-1996

A	k
-12	1,01
-9	1,33
-6	1,75
-3	2,14
0	2,56
3	2,98
6	3,29
9	3,74
12	4,24
15	4,47
18	4,95

1997-2001

A	k
-12	1,17
-9	1,53
-6	1,91
-3	2,34
0	2,73
3	3,16
6	3,58
9	4,01
12	4,46
15	4,87
18	5,28

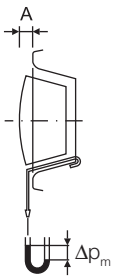
Halton

$q_v = k \times \sqrt{\Delta p_m}$

URH, UHA, URH-S (FRH 1999 ->)

poistoilma
frånluft
exhaust air
extraction

Ø 160



1978-1987

A	k
-15	0,80
-12	1,18
-10	1,40
-5	2,12
-3	2,32
0	2,75
3	3,20
5	3,54
10	4,23
15	5,07

1988-1996

A	k
-12	1,00
-9	1,28
-6	1,62
-3	2,09
0	2,46
3	2,95
6	3,35
9	3,77
12	4,38
15	4,73
18	5,20

1997-2001

A	k
-12	1,16
-9	1,51
-6	1,90
-3	2,31
0	2,75
3	3,25
6	3,73
9	4,22
12	4,67
15	5,12
18	5,58

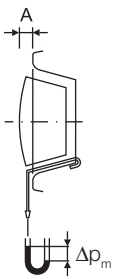
Halton

$q_v = k \times \sqrt{\Delta p_m}$

URH, UHA, URH-S (FRH 1999 ->)

poistoilma
frånluft
exhaust air
extraction

Ø 200



1980-1982

A	k
-18	1,10
-15	1,57
-10	2,33
-5	3,31
-3	3,59
0	4,11
3	4,56
5	5,00
10	6,17
15	7,17
18	7,75

1983-1987

A	k
0	1,00
3	1,60
5	2,37
10	3,75
15	5,30
20	6,95
25	8,25
30	9,80

1988-1996

A	k
3	1,52
6	2,02
9	2,83
12	3,58
15	4,24
20	5,48
25	6,60

1997-2001

A	k
3	1,78
6	2,46
9	3,24
12	3,97
15	4,69
20	5,88
25	6,95

Halton

$q_v = k \times \sqrt{\Delta p_m}$

URH, UHA, URH-S (FRH 1999 ->)

tuloilma
tilluft
supply air
soufflage

Ø 100

1978-1987	
A	**k**
-9	0,90
-6	1,18
-3	1,40
0	1,77
3	2,29
6	2,74
9	2,98
12	3,35

Ø 125

1978-1987	
A	**k**
-9	1,18
-6	1,58
-3	1,96
0	2,32
3	2,96
6	3,35
9	3,69
12	4,00
15	4,40

Ø 160

1978-1987	
A	**k**
-9	1,58
-6	1,98
-3	2,54
0	2,98
3	3,80
6	4,39
9	4,74
12	5,27
15	5,76

Halton

$q_v = k \times \sqrt{\Delta p_m}$

URH, UHA, URH-S (FRH 1999 ->)

tuloilma
tilluft
supply air
soufflage

Ø 200

1978-1.2.1983

A	k
-12	2,37
-9	3,01
-6	3,78
-3	4,24
0	4,78
3	5,50
6	6,32
9	7,27
12	7,62
15	8,25
18	8,94

1.10.1983-1987

A	k
0	1,34
3	2,36
6	3,89
9	4,70
12	5,38
15	5,98
18	6,45
21	7,12
25	8,00

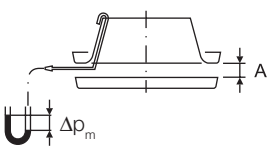
Halton

$q_v = k \times \sqrt{\Delta p_m}$

ULA

tuloilma
tilluft
supply air
soufflage

Ø 100



360°

1985-1987	
A	**k**
3	1,80
6	3,11
9	4,13
12	4,78

180°

A	**k**
3	1,48
6	2,00
9	2,26
12	2,76
15	3,23

360°

1988-2001	
A	**k**
3	1,58
6	3,35
9	4,00
12	4,52
15	4,95

360°

A	**k**
3	1,48
6	3,14
9	3,75
12	4,23
15	4,64

Halton

$q_v = k \times \sqrt{\Delta p_m}$

ULA

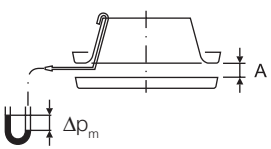
tuloilma
tilluft
supply air
soufflage

Ø 100

180°

1988-2001

A	k
3	1,37
6	2,20
9	2,46
12	2,80
15	3,00



180°

A	k
3	1,31
6	2,11
9	2,36
12	2,68
15	2,87

Ø 125

360°

1985-1987

A	k
3	1,90
6	4,00
9	5,53
12	7,38
15	8,37

180°

A	k
3	1,67
6	3,00
9	3,60
12	3,89
15	4,36

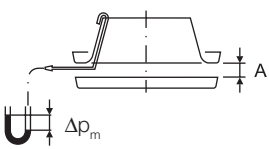
Halton

$q_v = k \times \sqrt{\Delta p_m}$

ULA

tuloilma
tilluft
supply air
soufflage

Ø 125



1988-2001

360°

A	k
3	2,60
6	3,68
9	5,16
12	6,71
15	7,12

360°

A	k
3	2,49
6	3,52
9	4,95
12	6,43
15	6,82

180°

A	k
3	1,79
6	3,00
9	3,50
12	4,00
15	4,50

180°

A	k
3	1,57
6	2,63
9	3,07
12	3,51
15	3,95

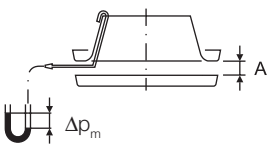
Halton

$q_v = k \times \sqrt{\Delta p_m}$

ULA

tuloilma
tilluft
supply air
soufflage

Ø 160



360°

1985-1987	
A	**k**
3	2,28
6	4,74
9	6,93
12	8,96
15	11,20
20	14,00

180°

A	**k**
3	2,09
6	3,35
9	4,01
12	4,74
15	5,16
20	6,20

360°

1988-2001	
A	**k**
3	2,58
6	4,47
9	6,71
12	8,94
15	11,18
20	13,48

360°

A	**k**
3	2,52
6	4,56
9	6,55
12	8,73
15	10,91
20	13,16

Halton

$q_v = k \times \sqrt{\Delta p_m}$

ULA

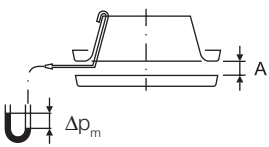
tuloilma
tilluft
supply air
soufflage

Ø 160

180°

1988-2001

A	k
3	1,79
6	3,00
9	3,87
12	4,74
15	5,59
20	6,32



180°

A	k
3	1,76
6	2,96
9	3,82
12	4,67
15	5,51
20	6,23

Ø 200

360°

1985-1987

A	k
3	2,55
6	5,27
9	7,07
12	10,24
15	12,60
20	15,81

180°

A	k
3	2,34
6	3,69
9	4,33
12	5,12
15	5,81
20	6,74

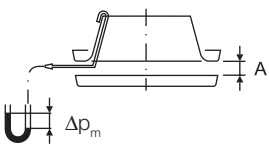
Halton

$q_v = k \times \sqrt{\Delta p_m}$

ULA

tuloilma
tilluft
supply air
soufflage

Ø 200



360°

1988-2001

A	k
3	2,68
6	6,39
9	9,49
12	11,18
15	14,14
20	16,97

360°

A	k
3	2,43
6	5,79
9	8,59
12	10,12
15	12,80
20	15,36

180°

A	k
3	2,83
6	3,87
9	5,66
12	6,76
15	8,49
20	9,49

180°

A	k
3	2,86
6	3,91
9	5,71
12	6,83
15	8,57
20	9,58

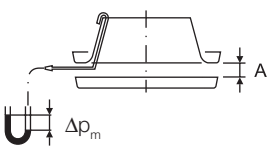
Halton

$q_v = k \times \sqrt{\Delta p_m}$

ULA

poistoilma
frånluft
exhaust air
extraction

Ø 100



1985-1987

A	k
3	1,64
6	3,08
9	4,00
12	4,52
15	5,00

1988-2001

A	k
3	1,30
6	2,41
9	3,28
12	4,06
15	4,57

A	k
3	1,36
6	2,51
9	3,42
12	4,23
15	4,77

Ø 125

1985-1987

A	k
3	2,01
6	3,48
9	4,50
12	5,70
15	6,75

Halton

$q_v = k \times \sqrt{\Delta p_m}$

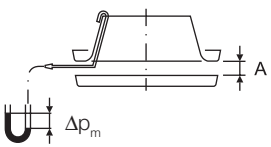
ULA

poistoilma
frånluft
exhaust air
extraction

Ø 125

1988-2001

A	k
3	1,48
6	3,31
9	4,26
12	5,25
15	6,33



A	k
3	1,51
6	3,38
9	4,35
12	5,36
15	6,46

Ø 160

1985-1987

A	k
3	2,28
6	4,15
9	5,98
12	7,22
15	8,43

1988-2001

A	k
3	1,85
6	4,12
9	5,26
12	6,56
15	7,55

A	k
3	1,77
6	3,93
9	5,01
12	6,25
15	7,20

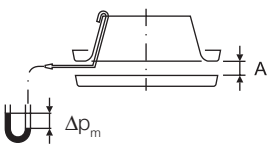
Halton

$q_v = k \times \sqrt{\Delta p_m}$

ULA

poistoilma
frånluft
exhaust air
extraction

Ø 200



1985-1987

A	k
3	2,26
6	4,47
9	6,45
12	9,04
15	11,95

1988-2001

A	k
3	2,92
6	5,14
9	6,94
12	8,74
15	11,03

A	k
3	3,13
6	5,51
9	7,44
12	9,37
15	11,83

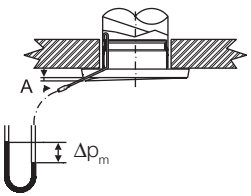
Halton

$q_v = k \times \sqrt{\Delta p_m}$

ULC

tuloilma
tilluft
supply air
soufflage

Ø 100

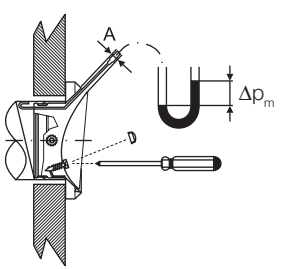


1993-2001	
A	**k**
3	0,75
4	1,11
5	1,56
6	1,90
8	2,32
10	2,77
11	3,16
12	3,53
13	3,88

ULE

tuloilma
tilluft
supply air
soufflage

Ø 100



1993-2001	
A	**k**
3	0,80
4	1,05
5	1,30
6	1,49
7	1,74
8	1,98
10	2,48
12	2,96
15	3,50

Halton

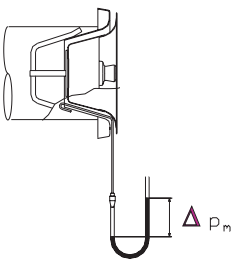
$q_v = k \times \sqrt{\Delta p_m}$

ULS

tuloilma
tilluft
supply air
soufflage

Ø 100

1994-1998	
A	**k**
3,5	1,06
6,5	1,44
11	1,95

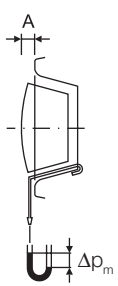


URS

poistoilma
frånluft
exhaust air
extraction

Ø 100

1998-2001	
A	**k**
-15	0,5
-12	0,8
-10	1,0
-5	1,4
0	1,9
5	2,3
10	2,8

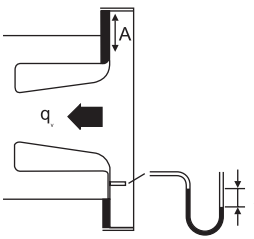


Halton

$q_v = k \times \sqrt{\Delta p_m}$

EVA

poistoilma
frånluft
exhaust air
extraction



300x150

1990-2001

A	k
0	1,90
1	2,68
2	4,02
3	5,77
4	7,07
5	9,00
6	10,61
7	12,50

500x150

A	k
0	3,54
1	5,66
2	8,49
3	11,18
4	14,14
5	16,43
6	18,97
7	21,00

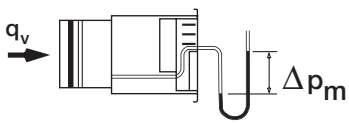
800x150

A	k
0	6,00
1	10,95
2	14,61
3	18,26
4	23,57
5	28,00
6	32,27
7	35,00

$q_v = k \times \sqrt{\Delta p_m}$

TLA

tuloilma
tilluft
supply air
soufflage



1985-1989

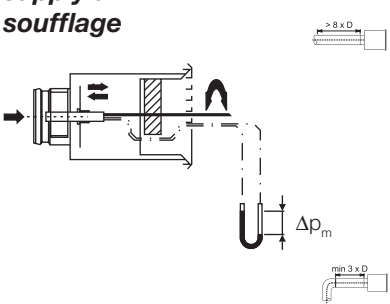
	TLA	k
80	**300x100**	4,00
100	**400x150**	5,47
125	**500x100**	8,75
160	**500x200**	12,00
160	**600x200**	16,01
200	**800x250**	20,58

1990-1996

	TLA	k
80	**300x100**	4,50
100	**400x150**	7,50
125	**500x100**	10.60
160	**500x200**	15,70
200	**800x250**	26,40

TLB/TLC

tuloilma
tilluft
supply air
soufflage



1994-2001

A	k
80	3,8
100	6,2
125	10,5
160	18,8
200	27,8

1994-2001

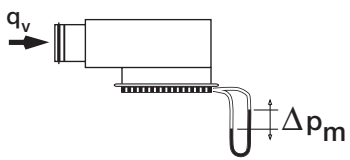
A	k
80	4,3
100	6,8
125	12,9
160	22,4
200	32,9

Halton

$q_v = k \times \sqrt{\Delta p_m}$

TKA

tuloilma
tilluft
supply air
soufflage



1985-1989

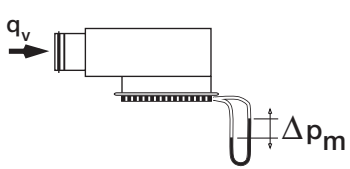
TKA	k
80	3,1
100	4,8
125	7,8
160	13,2
200	20,9
250	32,4

1990-1992

TKA	k
80	3,7
100	5,3
125	9,5
160	14,4
200	24,0
250	36,0

TKB/TKC

tuloilma
tilluft
supply air
soufflage



1993

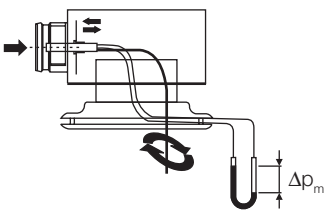
TKB	k
80	3,7
100	5,3
125	8,9
160	15,7
200	25,5
250	40,7

Halton

$q_v = k \times \sqrt{\Delta p_m}$

TKB/TKC

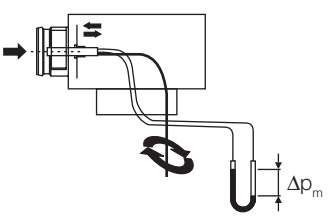
tuloilma
tilluft
supply air
soufflage



1994-1998

TKB/TKC (TRH)	> 8 x D k
80	3,7
100	6,5
125	10,8
160	19,4
200	29,7
250	48,8

TKB/TKC (TRH)	min 3 x D k
80	4,3
100	7,5
125	12,6
160	21,9
200	31,0
250	51,5



1999-2001

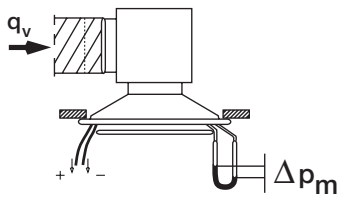
TKB/TKC (TRI/S)	> 8 x D k
100	6,0
125	9,9
160	16,9
200	28,3
250	47,9
315	78,6

TKB/TKC (TRI/S)	min 3 x D k
100	7,5
125	12,6
160	21,9
200	31,0
250	51,5
315	

$q_v = k \times \sqrt{\Delta p_m}$

PRH

tuloilma
tilluft
supply air
soufflage

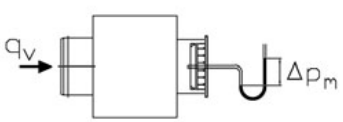


1980-1996

PRH	k
100	4,0
125	6,4
160	10,7
200	17,5
250	26,0
315	43,0
400	60,0

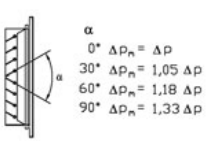
PRG+TS+HV

tuloilma
tilluft
supply air
soufflage



1985-1987

A	k
200x100	8,7
300x100	14,0
400x100	17,4
500x100	23,7
300x150	21,6
400x150	31,3
500x150	39,5
800x150	58,0
500x200	54,0
600x200	58,0

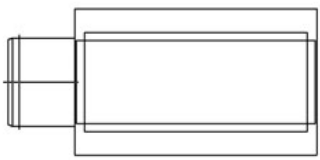


Halton

$q_v = k \times \sqrt{\Delta p_m}$

PRG-1+TS+HV

tuloilma
tilluft
supply air
soufflage



1988-1991

A	k
150x100	5,1
200x100	9,1
300x100	13,5
400x100	17,1
500x100	23,7
300x150	21,5
400x150	31,6
500x150	41,8
600x150	45,6
800x150	60,9
300x200	31,6
400x200	37,3
500x200	53,8
600x200	60,9
1000x200	93,7

1992-1996

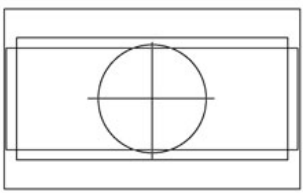
A	k
150x100	5,06
200x100	9,13
300x100	14,14
400x100	16,90
500x100	25,00
300x150	20,12
400x150	33,54
500x150	42,43
600x150	50,00
800x150	56,92
300x200	33,54
400x200	35,78
500x200	50,60
600x200	56,92
1000x200	91,25

Halton

$q_v = k \times \sqrt{\Delta p_m}$

PRG-2+TS+HV

tuloilma
tilluft
supply air
soufflage



1988-1991

A	k
150x100	6,4
200x100	9,1
300x100	14,1
400x100	17,9
500x100	24,0
600x100	24,0
200x150	11,8
300x150	22,1
400x150	31,6
500x150	36,5
600x150	59,6
1000x150	76,1
400x200	44,7
500x200	50,0
600x200	63,9
800x200	84,5
600x300	94,9

1992-1996

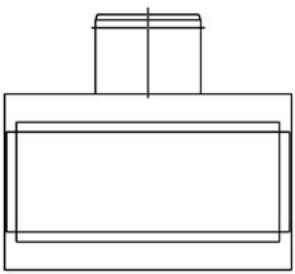
A	k
150x100	6,39
200x100	9,13
300x100	14,14
400x100	15,81
500x100	22,14
600x100	22,14
250x150	11,18
300x150	20,08
400x150	28,46
500x150	40,00
600x150	60,00
1000x150	76,06
400x200	45,00
500x200	50,00
600x200	63,64
800x200	79,05
600x300	98,99

Halton

$q_v = k \times \sqrt{\Delta p_m}$

PRG-3+TS+HV

tuloilma
tilluft
supply air
soufflage



1988-1991

A	k
200x100	8,0
300x100	14,0
400x100	16,4
500x100	35,4
300x150	20,9
400x150	29,8
500x150	35,4
600x150	35,4
800x150	52,8
300x200	25,6
500x200	48,0
600x200	59,8
800x200	67,1
500x300	67,1
600x300	85,7
800x300	99,0

1992-1996

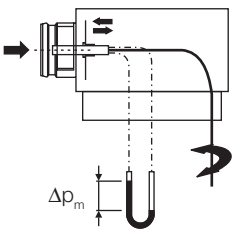
A	k
200x100	8,22
300x100	14,14
400x100	17,68
500x100	34,64
300x150	20,12
400x150	30,00
500x150	34,64
600x150	34,64
800x150	55,90
300x200	27,39
500x200	50,00
600x200	59,76
800x200	75,00
500x300	75,00
600x300	84,85
800x300	94,87

Halton

$q_v = k \times \sqrt{\Delta p_m}$

PRL

tuloilma
tilluft
supply air
soufflage



1997-1998

PRL		k
200x100	**125**	10,8
300x100	**160**	19,5
400x100	**160**	19,7
500x100	**200**	30,0
300x150	**200**	30,0
400x150	**250**	49,0
500x150	**250**	48,9
800x150	**315**	77,7
400x200	**315**	49,0
500x200	**315**	77,7
800x200	**315**	77,7

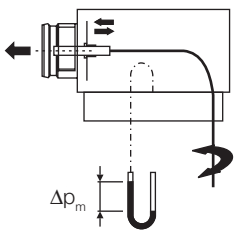
PRL		k
200x100	**125**	12,6
300x100	**160**	21,7
400x100	**160**	21,7
500x100	**200**	33,9
300x150	**200**	33,9
400x150	**250**	55,5
500x150	**250**	50,1
800x150	**315**	83,3
400x200	**315**	55,5
500x200	**315**	83,3
800x200	**315**	83,3

Halton

$q_v = k \times \sqrt{\Delta p_m}$

PRL-P

poistoilma
frånluft
exhaust air
extraction



1997-1998

WDD, TS-HV		k
200x100	**125**	13,4
300x100	**160**	19,7
400x100	**160**	26,6
500x100	**200**	34,8
300x150	**200**	32,7
400x150	**250**	39,9
500x150	**250**	52,3
800x150	**315**	94,4
400x200	**315**	58,6
500x200	**315**	77,7
800x200	**315**	130,8

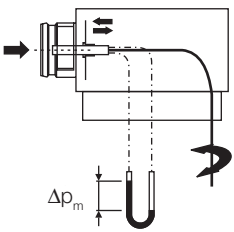
ALE, FLU		k
200x100	**125**	9,2
300x100	**160**	14,3
400x100	**160**	20,2
500x100	**200**	25,8
300x150	**200**	23,8
400x150	**250**	30,4
500x150	**250**	38,6
800x150	**315**	67,1
400x200	**315**	42,9
500x200	**315**	56,1
800x200	**315**	92,4

Halton

$q_v = k \times \sqrt{\Delta p_m}$

PRI/S

tuloilma
tilluft
supply air
soufflage



1999-2001

PRI/S		k
200x100	125	10,1
300x100	160	17,0
400x100	160	17,0
500x100	200	27,7
300x150	200	27,8
400x150	250	47,2
500x150	250	46,2
600x150	250	45,8
800x150	315	80,8
400x200	250	51,2
500x200	315	92,9
600x200	315	82,7
800x200	315	79,3

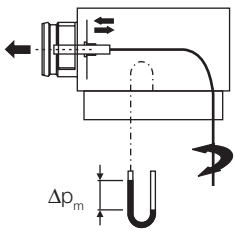
PRI/S		k
200x100	125	12,6
300x100	160	21,7
400x100	160	21,7
500x100	200	33,9
300x150	200	33,9
400x150	250	55,5
500x150	250	50,1
600x150	250	51,1
800x150	315	83,3
400x200	250	55,5
500x200	315	83,3
600x200	315	93,1
800x200	315	83,3

Halton

$q_v = k \times \sqrt{\Delta p_m}$

PRI/E

poistoilma
frånluft
exhaust air
extraction



1999-2001

WDD, TS-HV		k
200x100	125	12,4
300x100	160	19,7
400x100	160	26,9
500x100	200	33,1
300x150	200	31,1
400x150	250	43,3
500x150	250	54,5
600x150	250	61,9
800x150	315	86,9
400x200	315	53,7
500x200	315	65,3
600x200	315	85,6
800x200	315	116,4

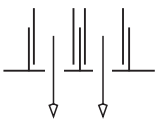
ALE, FLU		k
200x100	125	9,9
300x100	160	14,2
400x100	160	18,3
500x100	200	19,1
300x150	200	21,9
400x150	250	30,7
500x150	250	39,0
600x150	250	52,6
800x150	315	54,9
400x200	315	39,9
500x200	315	62,9
600x200	315	72,3
800x200	315	84,2

AGC		k
300x100	160	17,9
500x100	250	30,8
400x150	250	40,5
400x200	250	58,0
500x200	315	71,7
600x200	315	88,9

$q_v = k \times \sqrt{\Delta p_m}$

PLL+TLL (TPL)

tuloilma
tilluft
supply air
soufflage



(1...10)

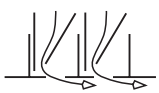
300-1x125

1985-1991

A	k
1	2,80
(1)	3,81
3	4,24
2-3 (2.3)	4,95
(4)	5,98

600-1x125

A	k
1	4,95
2 (1)	8,94
3.4 (2)	11,79
6-10 (3-10)	14,61



1...10

600-1x200

A	k
3	16,00
(4)	20,00
(3)	22,63
5.6 (4)	25,46
8.10 (5-10)	30,43

Sivulle puhallus:
rakojen lukumäärä ilman sulkuja.
Suoraan puhallus:
rakojen lukumäärä suluissa.

Inblåsning åt sidan:
antal spalter utan parenteser.
Rak inblåsning:
antal spalter i parenteser.

The throw directed sideways:
number of slots without parentheses.
The throw directed ahead:
number of slots in parentheses.

900-1x160

A	k
1	8,40
2 (1)	13,42
3	16,00
4 (2.3)	18,26
6-10 (4-10)	20,83

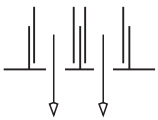
900-2x200

A	k
3	20,28
4	25,56
4.6 (3)	36,51
8.10 (4-10)	52,95

$q_v = k \times \sqrt{\Delta p_m}$

PLL+TLL (TPL)

tuloilma
tilluft
supply air
soufflage



(1...10)

1...10

Sivulle puhallus:
rakojen lukumäärä ilman sulkuja.
Suoraan puhallus:
rakojen lukumäärä suluissa.

Inblåsning åt sidan:
antal spalter utan parenteser.
Rak inblåsning:
antal spalter i parenteser.

The throw directed sideways:
number of slots without parentheses.
The throw directed ahead:
number of slots in parentheses.

1200-1x200

1985-1991

A	k
1	13,42
2 (1)	17,89
4 (2)	23,60
6-10 (4-10)	27,04

1200-2x200

A	k
3	28,46
4	37,27
5-10 (3)	49,50
(4-10)	59,16

1500-1x200

A	k
1	14,23
2 (1)	21,54
3.4 (2)	28,46
6-10 (4-10)	33,33

1500-2x250

A	k
3	38,73
4	49,02
5.6 (3)	63,25
8.10 (4)	74,54
(5-10)	91,29

1800-1x200

A	k
1	16,71
2 (1)	24,12
3 (2)	29,81
4-10 (3-10)	34,30

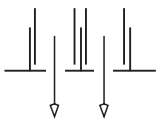
1800-2x250

A	k
3	49,50
4	63,64
5.6	78,26
8 (3)	100,00
(4, 5)	118,32
10 (6-10)	135,22

$q_v = k \times \sqrt{\Delta p_m}$

PLL+TLL (TPL)

tuloilma
tilluft
supply air
soufflage



(1...10)

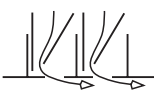
300-1x125

1992-1996

A	k
1	2,83
(1)	3,68
3	4,74
2-3 (2.3)	4,95
(4)	6,32

600-1x125

A	k
1	5,00
2 (1)	8,33
3.4 (2)	11,34
6-10 (3-10)	14,14



1...10

600-1x200

A	k
3	15,81
(4)	20,12
(3)	22,36
5.6 (4)	25,00
8.10 (5-10)	30,00

Sivulle puhallus:
rakojen lukumäärä ilman sulkuja.
Suoraan puhallus:
rakojen lukumäärä suluissa.

Inblåsning åt sidan:
antal spalter utan parenteser.
Rak inblåsning:
antal spalter i parenteser.

The throw directed sideways:
number of slots without parentheses.
The throw directed ahead:
number of slots in parentheses.

900-1x160

A	k
1	8,16
2 (1)	13,42
3	15,81
4 (2.3)	18,26
6-10 (4-10)	21,10

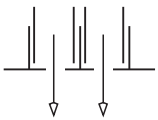
900-2x200

A	k
3	22,36
4	23,72
4.6 (3)	36,51
8.10 (4-10)	56,57

$q_v = k \times \sqrt{\Delta p_m}$

PLL+TLL (TPL)

tuloilma
tilluft
supply air
soufflage



(1...10)

1...10

Sivulle puhallus:
rakojen lukumäärä ilman sulkuja.
Suoraan puhallus:
rakojen lukumäärä suluissa.

Inblåsning åt sidan:
antal spalter utan parenteser.
Rak inblåsning:
antal spalter i parenteser.

The throw directed sideways:
number of slots without parentheses.
The throw directed ahead:
number of slots in parentheses.

1200-1x200

1992-1996

A	k
1	13,42
2 (1)	17,68
4 (2)	25,46
6-10 (4-10)	30,43

1200-2x200

A	k
3	28,58
4	36,74
5-10 (3)	49,49
(4-10)	55,47

1500-1x200

A	k
1	14,23
2 (1)	20,41
3.4 (2)	28,46
6-10 (4-10)	33,81

1500-2x250

A	k
3	40,00
4	46,48
5.6 (3)	63,90
8.10 (4)	76,06
(5-10)	94,87

1800-1x200

A	k
1	16,43
2 (1)	28,35
3 (2)	31,62
4-10 (3-10)	33,54

1800-2x250

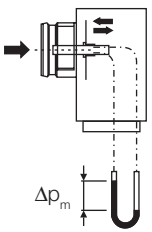
A	k
3	49,49
4	63,90
5.6	78,26
8 (3)	100,62
(4, 5)	109,54
10 (6-10)	127,28

Halton

$q_v = k \times \sqrt{\Delta p_m}$

SLL+PLL=SPL

tuloilma
tilluft
supply air
soufflage



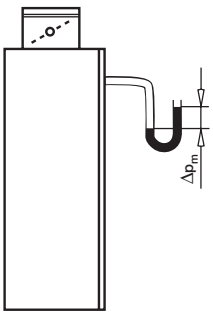
Pituus	Rako	1997-2001 Ø D	>6xD k	min. 3xD k
572	1	1x160	19	22
	2-3	1x200	28	32
	4	1x250	49	51
872	1	1x160	19	22
	2-3	1x200	28	32
	4	1x250	49	51
1172	1	1x160	19	22
	2-3	1x200	28	32
	4	1x250	49	51
1472	1	2x160	19	22
	2-3	2x200	28	32
	4	2x250	49	51
1772	1	2x160	19	22
	2-3	2x200	28	32
	4	2x250	49	51

Halton

$q_v = k \times \sqrt{\Delta p_m}$

LVA

tuloilma
tilluft
supply air
soufflage



1988-1990

Ø	k
160	14,85
200	28,87
315	63,25
400	106,90

1992

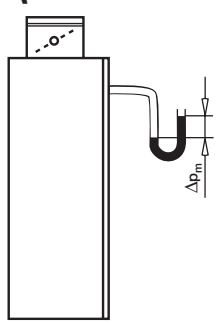
Ø	k
200	48,11
250	72,17
315	115,47
400	187,08

1993

Ø	k
160	14,43
200	48,11
250	72,17
315	115,47
400	187,08

LOVAIR (LVA UUSI)

tuloilma
tilluft
supply air
soufflage



1990-1991

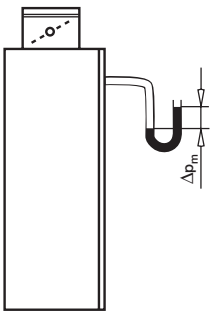
Ø	k
200	47,14
250	68,82
315	109,11
400	180,74

Halton

$q_v = k \times \sqrt{\Delta p_m}$

LVD

tuloilma
tilluft
supply air
soufflage



1988-1991

Ø	k
200	47,14
315	82,16
400	125,00

1992

Ø	k
200	47,43
315	82,16
400	126,49

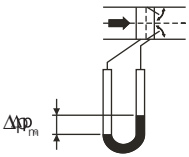
1993

Ø	k
100	6,71
125	13,42
160	13,42
200	47,43
250	56,92
315	82,16
400	126,49

Halton

$q_v = k \times \sqrt{\Delta p_m}$

PRA



Ø 80

1984-1999

A	k
1	0,86
2	1,30
3	2,00
4	3,10
5	4,70
6	7,40

Ø 100

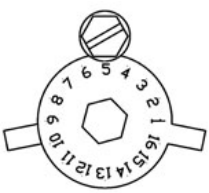
1978-1983

A	k
1	1,0
2	1,4
3	2,2
4	3,4
5	5,8
6	11,2

1984-1999

A	k
1	1,8
2	2,55
3	3,6
4	5,1
5	7,1
6	9,9

1978-1983

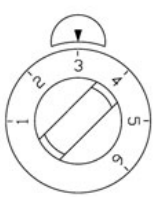


Ø 125

1978-1983

A	k
1	1,8
2	2,0
3	3,1
4	5,0
5	8,6
6	14,9

1984-1999



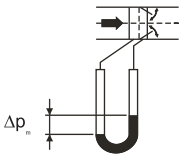
1984-1999

A	k
1	2,6
2	3,7
3	5,2
4	7,2
5	10,0
6	13,9

Halton

$q_v = k \times \sqrt{\Delta p_m}$

PRA



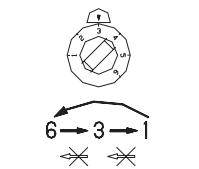
Ø 150

1978-1983

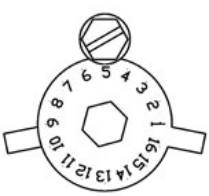
A	k
1	1,8
3	2,6
4	4,0
5	5,8
6	8,2
7	11,2
8	15,0
9	27,5

1984-1999

A	k
1	3,8
2	5,3
3	7,5
4	10,4
5	14,4
6	19,6



1978-1983

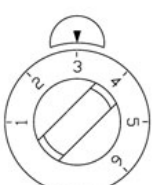


Ø 160

1978-1983

A	k
1	2,3
2	2,8
3	3,5
4	4,7
5	6,5
6	9,3
7	12,7
8	18,2
9	27,5

1984-1999

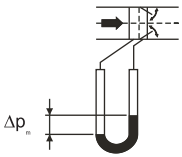


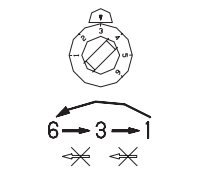
1984-1999

A	k
1	4,5
2	6,3
3	8,7
4	11,8
5	16,2
6	22,4

$q_v = k \times \sqrt{\Delta p_m}$

PRA





Ø 200

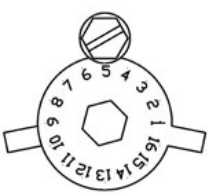
1978-1983

A	k
1	3,7
3	4,0
4	5,1
5	6,9
6	9,0
7	12,5
8	16,1
9	22,0
10	30,5

1984-1999

A	k
1	6,6
2	9,2
3	13,0
4	18,1
5	25,3
6	35,0

1978-1983

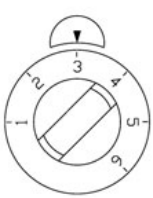


Ø 250

1978-1983

A	k
1	5,0
3	8,0
4	10,0
5	14,5
6	21,0
7	29,0
8	36,0
9	50,0
10	65,0
11	80,0

1984-1999



1984-1999

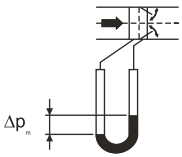
A	k
1	9,7
2	13,8
3	19,4
4	26,8
5	37,5
6	52,0

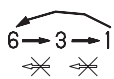
Halton

$q_v = k \times \sqrt{\Delta p_m}$

PRA

Ø 300





SÄÄTÖSUUNTA
REGLERING DIREKTION
ADJUSTMENT DIRECTION

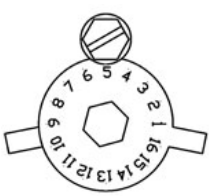
1978-1983

A	k
1	7,9
3	10,4
4	14,5
5	20,5
6	27,5
7	39,0
8	52,5
9	72,5
10	97,5
11	128,0
12	156,5

1984-1999

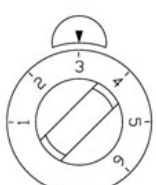
A	k
1	15,5
2	21,5
3	30,0
4	41,5
5	58,5
6	81,5

1978-1983



Ø 315

1984-1999



1978-1983

A	k
1	10,0
3	12,0
4	16,0
5	21,0
6	29,0
7	37,0
8	49,0
9	65,0
10	90,0
11	145,0

1984-1999

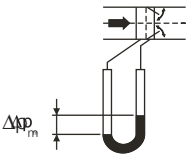
A	k
1	16,2
2	22,5
3	31,5
4	44,0
5	61,0
6	86,0

Halton

$q_v = k \times \sqrt{\Delta p_m}$

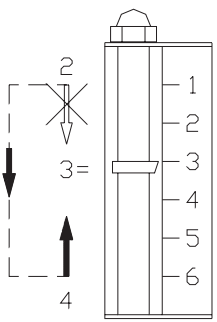
PRA

Ø 350



1978-1983

A	k
0	8,1
0,5	12,0
1	16,0
1,5	26,5
2	47,5
2,5	82,0
3	200,0



SÄÄTöSUUNTA
REGLERING DIREKTION
ADJUSTMENT DIRECTION

1984-1999

A	k
1	17,3
2	24,5
3	35,4
4	50,0
5	70,7
6	100,0

Ø 400

1978-1983

A	k
0,5	19,8
1	27,0
1,5	37,5
2	54,0
2,5	82,0
3	132,0
3,5	225,0

1984-1999

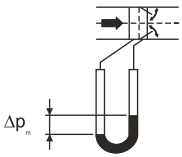
A	k
1	20,5
2	26,5
3	36,0
4	55,0
5	86,0
6	137,0

Halton

$q_v = k \times \sqrt{\Delta p_m}$

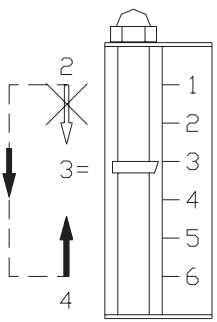
PRA

Ø 500



1978-1983

A	k
0,5	27,5
1	39,5
1,5	59,5
2	88,0
2,5	128,0
3	180,0
3,5	260,0



SÄÄTöSUUNTA
REGLERING DIREKTION
ADJUSTMENT DIRECTION

1984-1999

A	k
1	27,5
2	39,0
3	59,0
4	86,0
5	123,0
6	175,0

Ø 600

1978-1983

A	k
0,5	41,0
1	63,0
1,5	89,0
2	120,0
2,5	155,0
3	205,0
3,5	285,0
4	408,0
4,5	633,0

1984-1999

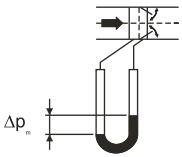
A	k
1	46,2
2	67,1
3	94,9
4	134,2
5	187,1
6	260,9

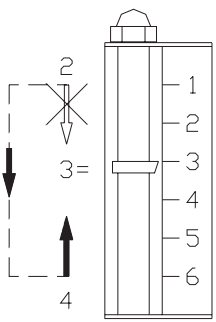
Halton

$q_v = k \times \sqrt{\Delta p_m}$

PRA

Ø 630





SÄÄTäSUUNTA
REGLERING DIREKTION
ADJUSTMENT DIRECTION

1978-1983

A	k
0,5	41,5
1	64,0
1,5	91,0
2	119,0
2,5	151,0
3	203,0
3,5	265,0
4	405,0
4,5	566,0

1984-1999

A	k
1	65,0
2	90,0
3	115,0
4	154,0
5	202,0
6	265,0

Ø 800

1978-1983

A	k
0	133,0
0,5	160,0
1	183,0
1,5	218,0
2	255,0
2,5	313,0
3	395,0
3,5	466,0
4	600,0
4,5	790,0
5	1000,0

1984-1999

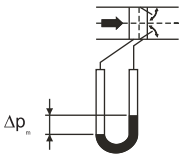
A	k
1	98,0
2	137,0
3	198,0
4	280,0
5	393,0
6	570,0

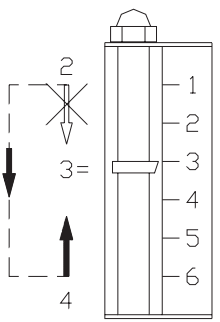
Halton

$q_v = k \times \sqrt{\Delta p_m}$

PRA

Ø 1000





SÄÄTöSUUNTA
REGLERING DIREKTION
ADJUSTMENT DIRECTION

1978-1983

A	k
0	182,0
0,5	202,0
1	236,0
1,5	273,0
2	313,0
2,5	348,0
3	405,0
3,5	495,0
4	585,0
4,5	712,0
5	875,0
5,5	1080,0
6	1340,0

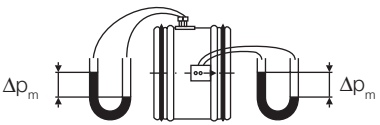
1984-1999

A	k
1	144,0
2	220,0
3	310,0
4	440,0
5	620,0
6	890,0

Halton

$q_v = k \times \sqrt{\Delta p_m}$

MSD



$$\frac{\Delta p_1 + \Delta p_2}{2} = \Delta p_m$$

1985-2000	
A	**k**
100	7,13
125	11,30
160	18,80
200	30,00
250	47,30
315	76,30
400	125,00
500	198,00
630	319,00
800	521,00
1000	825,00

Halton

$q_v = k \times \sqrt{\Delta p_m}$

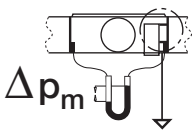
AVA-S

Ø 100

1990-1993

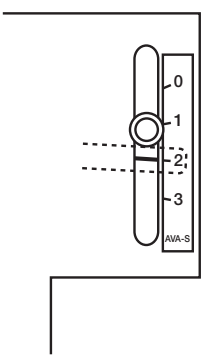
A	k
1	0,80
2	1,27
3	1,69

Ø 125



A	k
1	1,00
2	1,67
3	2,37

Ø 160



A	k
1	1,55
2	2,64
3	3,84

Ø 200

A	k
1	1,86
2	3,16
3	5,16

Ø 250

A	k
1	2,61
2	5,00
3	8,00

Ø 315

A	k
1	4,35
2	8,37
3	13,52

Halton

$q_v = k \times \sqrt{\Delta p_m}$

KVA

sieppausilma
kapningsluft
capture air
jet de captation

1500

1984-1991

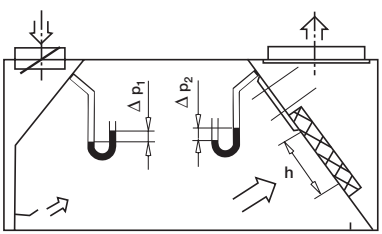
A	k
1	3,04

2000

A	k
1	3,84

2500

A	k
1	4,47



$q_v = k \times \sqrt{\Delta p_m}$

KVA

poistoilma
frånluft
exhaust air
extraction

1500

1984-1987

A	k
2 h=145	32,86
2 h=240	46,29

1988-1991

A	k
2 h=145	36,51
2 h=240	47,43

2000

1984-1987

A	k
2 h=145	44,72
2 h=240	62,02

1988-1991

A	k
2 h=145	44,72
2 h=240	65,09

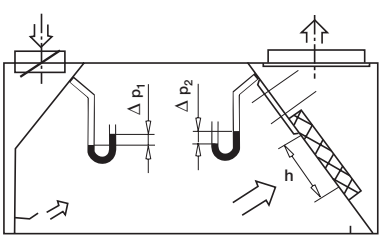
2500

1984-1987

A	k
2 h=145	55,90
2 h=240	79,06

1988-1991

A	k
2 h=145	60,00
2 h=240	85,75



Halton

$q_v = k \times \sqrt{\Delta p_m}$

KVB

poistoilma
frånluft
exhaust air
extraction

1500

1988-1991

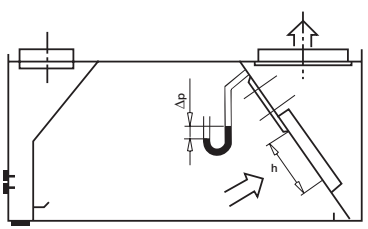
A	k
h=145	36,51
h=240	47,43

2000

A	k
2 h=145	44,72
2 h=240	64,99

2500

A	k
2 h=145	59,63
2 h=240	87,04

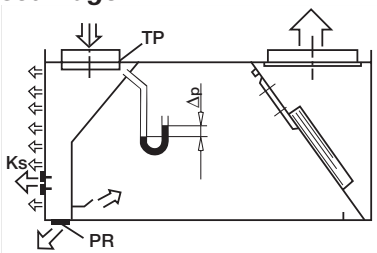


Halton

$q_v = k \times \sqrt{\Delta p_m}$

KVB

tuloilma
tilluft
supply air
soufflage



1500

1988-1991

H=400	k
1	42,43
2	53,03

H=570	k
1	57,35
2	67,08

H=800	k
1	80,00
2	87,29

2000

H=400	k
1	51,45
2	70,71

H=570	k
1	70,71
2	83,56

H=800	k
1	100,00
2	111,42

2500

H=400	k
1	65,47
2	89,44

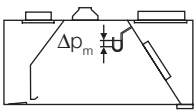
H=570	k
1	90,00
2	104,26

H=800	k
1	127,80
2	140,00

$q_v = k \times \sqrt{\Delta p_m}$

KVF/KVI

poistoilma
frånluft
exhaust air
extraction



L=1000

1992-2000

sokeita suod. **blinda filter** **blind filters** **soufflage**	**k**
0	28,5
1	15,7

L=1500

sokeita suod. **blinda filter** **blind filters** **soufflage**	**k**
0	40,0
1	28,5
2	15,7

L=2000

sokeita suod. **blinda filter** **blind filters** **soufflage**	**k**
0	53,5
1	40,0
2	28,5

L=2500

sokeita suod. **blinda filter** **blind filters** **soufflage**	**k**
0	70,0
1	53,5
2	40,0
3	28,5

L=3000

sokeita suod. **blinda filter** **blind filters** **soufflage**	**k**
0	80,0
1	70,0
2	53,5
3	40,0

Halton

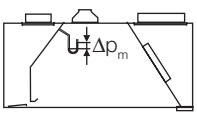
$q_v = k \times \sqrt{\Delta p_m}$

KVF/KVI

tuloilma
tilluft
supply air
soufflage

yleistuloilma
extra tilluft
general supply
soufflage generale

1 = ei, nej, no, non
2 = kyllä, ja, yes, oui



1000

1992-2000

H=400	k
1	26,8
2	31,0

H=555	k
1	57,5
2	71,5

1500

H=400	k
1	44,2
2	48,1

H=555	k
1	69,5
2	86,0

2000

H=400	k
1	61,1
2	64,0

H=555	k
1	84,7
2	104,0

2500

H=400	k
1	71,0
2	73,0

H=555	k
1	106,0
2	122,0

3000

H=400	k
1	88,0
2	91,0

H=555	k
1	127,0
2	145,0

Halton

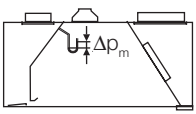
$q_v = k \times \sqrt{\Delta p_m}$

KVI

sieppausilma
kapningsluft
capture air
jet de captation

1992-2000

L (mm)	k
1000	2,7
1500	4,2
2000	6,0
2500	7,0
3000	8,8



Halton

$q_v = k \times \sqrt{\Delta p_m}$

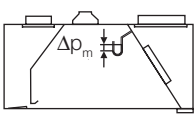
KVF/KVI

yleispoisto
extra frånluft
general exhaust
extraction generale

1992-2000

H=400	k
1	5,5
2	6,2
3	7,1
4	8,4
5	9,1

H=555	k
1	7,5
2	8,4
3	9,7
4	11,6
5	12,8

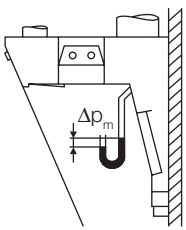


Halton

$q_v = k \times \sqrt{\Delta p_m}$

KVG

poistoilma
frånluft
exhaust air
extraction

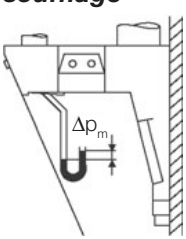


1992-2001

L (mm)	k
1200	27,1
1600	40,4
2000	54,6
2400	50,6

KVG

tuloilma
tilluft
supply air
soufflage



1992-2001

L (mm)	k
1200	27,1
1600	29,6
2000	34,2
2400	39,8

KVG+P+PRA

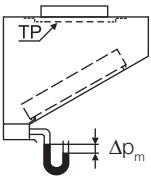
1992-2001

A = PRA:n säätöasento	k
1	7,3
6	15,3

Halton

$q_v = k \times \sqrt{\Delta p_m}$

KSA-K/KSK



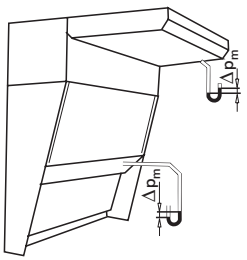
1985-2001	
A	**k**
11	16,9
12	32,0
13	48,1
22	32,5
24	62,2
26	90,9

$q_v = k \times \sqrt{\Delta p_m}$

COMFO LCI

poistoilma
frånluft
exhaust air
extraction

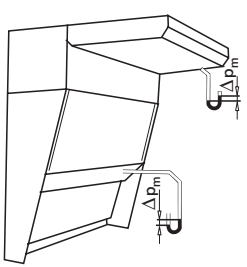
1992-1998	
L (mm)	**k**
1400	90
1200	81
1000	69

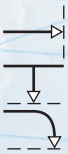


COMFO LCI

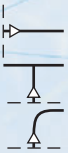
tuloilma
tilluft
supply air
soufflage

1992-1998	
LxA (mm)	**k**
1400x800	37
1200x800	30
1000x800	27





tuloilma
tilluft
supply air
soufflage



poistoilma
frånluft
exhaust air
extraction

Halton