



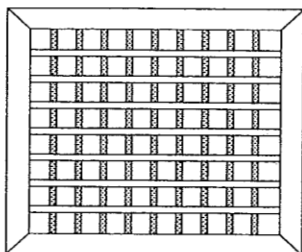
Grilles & Registers

Double deflection grille WBG - 2HV

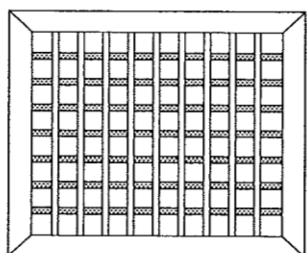




WBG - 2HV and 2VH Wall Mounted Double Deflection Grilles



WBG - 2HV



WBG - 2VH

The WBG-2HV and WBG-2VH universal double deflection grilles are most commonly used as a side-wall supply grille.

The WBG-2HV is constructed of 2 sets of individually adjustable deflector blades, with the horizontal set at the front (to control throw/drop) and the vertical set at the back (to control spread). The WBG-2VH on the other hand has the vertical set of blades at the front and the horizontal set at the back.

The Wong Bros 2HV and 2VH models are available in an extensive range of standard and made to measure sizes.

When equipped with an opposed blade volume control damper, not only does it control the amount of air required, it also acts to provide an even distribution of air throughout the entire face of the grille.

Where flexible duct or rigid round ducts are concerned, the WBG-2HV or WBG-2VH may even be equipped with a square to round neck adaptor for quick and easy co-ordination.

Though calibrated and tested for supply applications, the WBG-2HV and WBG-2VH can also be used as a fresh air grille, exhaust air grille or even as a return air grille.

Standard Features:

- Extruded aluminium construction for durability and light weight.
- Louvre blades shall be of an airfoil profile to minimise unnecessary turbulence and noise.
- Individually adjustable blades set in air rigid aluminium extruded frames.
- Natural anodise finish or standard epoxy powder coating.

Optional Accessories:

- Opposed Blade Volume Dampers (OBD)
- Square to Round Neck Adaptors (ADR)
- Removable core type construction c/w hinged mechanism or screw fasteners. (For installation of filter media or easy access thru duct for maintenance.



SELECTION/LOCATION OF REGISTERS/GRILLES

The following text that has been prepared is intended to assist Engineers & Designers to achieve and maintain an optimum operating system, incorporating a suitable Wong Bros Register.

Part I

Should a designer consider the use of a register/grille, the structural & technical elements of the conditioned space and the performances of the outlet are to be carefully matched and studied. A high quality of air diffusion in the occupied zone could be achieved and maintained if the following factors are to be considered altogether.

- 1) Maintaining desirable conditions within the conditioned space - The objective of air diffusion is to create a well balanced combination of air motion, humidity and temperature in the occupied zone. Inability to maintain these conditions could cause discomfort to occupants, which primarily arises due to excessive air motion (draft), excessive variations in room air temperature or failure to meet load requirements (ie. to deliver correct amount of air to different locations).
- 2) Effective mixing of air - Effective ventilation requires a complete mixture (by induction) of the total air in the specified space with the conditioned air that has been supplied.
- 3) (i) Grille mounting height
 - (ii) Direction of air throw (toward wall, away from wall or both)
 - (iii) Distance between Grilles or distance between grille and wall.

Throw may be selected for an entire or a substantial portion of the distance between the outlet and the enclosing wall. For optimum air diffusion, the air should drop before striking the wall or in other cases, an opposing air stream. To promote greater air motion where high ceilings are concerned, it is necessary to adopt a longer throw, but drop should never be exceeded into the 1800mm level. For VAV designs, a throw that exceeds the maximum design volume may even be desirable but again, the total air drop should not reach the occupied zone. Spread should be sufficient so that the space at the end of the throw is totally blanketed.

- 4) Outlet vane deflection setting - It directly affects the throw and drop. Tests shows that the vane depth should be greater or equals the distance between the vanes, otherwise airstream control would not be possible. The most desirable setting would be one that causes a ceiling effect (where the total air glides along the surface of the ceiling).
- 5) The heating & cooling load design - Depends on buildings' construction type, application, size and interior design. Both, type and location of outlets can be determined when local sources of heat gain or loss which promotes convection currents (effects of radiation) are being studied. Outlets would hence be located where any undesirable convection currents are evident (ie. counteraction by directing cool air towards the heat source and/or positioning an exhaust or return grille adjacent to it).
- 6) The desired air diffusion criterias (ie. permissible noise, pattern of distribution, supplied air volumes, pressure loss, required throw) and the actual technical performance of the grille (Part II of this section).

In other words, proper air diffusion would have been categorised into two different tasks.

- To obtain an acceptable entrainment of room air by the primary airstream. To monitor air motion and temperature differences to the required limits before the air enters the zone of occupancy.
- The counteraction or neutralization of any undesirable convection currents or effects due to radiation within the space.





SELECTION/LOCATION OF REGISTERS/GRILLES

Part II Actual Performance of Grille

- 1) The following performance data are the results of actual tests conducted by VIPAC Engineers and Scientists Ltd. (Registered under the National Association of Testing Authorities). The test set up was in general accordance with Air Diffusion Council (USA) Equipment Test Code 1062: GRD - 84.

Acoustics - Australian standards 1217.2 - 1985.
"Acoustic - Determination of Sound Power levels of Noise Sources Part 2 - Precision methods of broad band sources in reverberation rooms"

Airflow - Air Diffusion Council (USA)
Equipment test code 1062: GRD - 84

Throw & Static
Pressure Drop - Air Diffusion Council (USA)
Equipment test code 1062: GRD - 84

- 2) For each given Air volume (l/s), the static pressure drop (Pa), noise rating (dB) and throw (m) are provided for a range of sizes. The individual Neck Velocities can be achieved by dividing the air volume by the neck area. The following results were obtained without the addition of any accessories.

In the event where an Opposed blade damper is installed, both the pressure and the noise level would increase.

The following table outlines the approximate variations of both noise level and pressure drop.

Effective Damper Opening	100%	80%	70%	50%
Total Pressure	1	1.15	2	4
dB Increase	0	4.5	8	16

For instance, to obtain the approximate value for damper opening at 80%,

- (i) Take pressure drop multiply by 1.15
- (ii) Add 4.5dB to actual value





Diffuser Sizes For Which Nomogram Predictions Are Provided

Using The Nomograms:

The tables below outline the various sizes of diffusers for which data prediction and Nomograms have been presented.

For example if you wish to determine the data corresponding to a diffuser with a nominal neck size of 400mm x 400mm, then Category D should be used.

For sizes not listed below, the nearest corresponding size can be used as an approximation, although some discrepancies may occur between the predicted data and that obtained in practice.

Nominal Face Size		Nominal Neck Size		Category
(mm)	(mm)	(mm)	(mm)	
150	150	90	90	A1
150	250	90	190	A2
150	350	90	290	A3
150	450	90	390	A4
150	550	90	490	A5
150	650	90	590	A6
150	750	90	690	A7
150	850	90	790	A8

Nominal Face Size		Nominal Neck Size		Category
(mm)	(mm)	(mm)	(mm)	
250	250	190	190	B1
250	350	190	290	B2
250	450	190	390	B3
250	550	190	490	B4
250	650	190	590	B5
250	750	190	690	B6
250	850	190	790	B7
250	950	190	890	B8

Nominal Face Size		Nominal Neck Size		Category
(mm)	(mm)	(mm)	(mm)	
350	350	290	290	C1
350	450	290	390	C2
350	550	290	490	C3
350	650	290	590	C4
350	750	290	690	C5
350	850	290	790	C6
350	950	290	890	C7
350	1050	290	990	C8

Nominal Face Size		Nominal Neck Size		Category
(mm)	(mm)	(mm)	(mm)	
450	450	390	390	D1
450	550	390	490	D2
450	650	390	590	D3
450	750	390	690	D4
450	850	390	790	D5
450	950	390	890	D6
450	1050	390	990	D7
450	1150	390	1090	D8



Nominal Face Size		Nominal Neck Size		Category
(mm)	(mm)	(mm)	(mm)	
550	550	490	490	E1
550	650	490	590	E2
550	750	490	690	E3
550	850	490	790	E4
550	950	490	890	E5
550	1050	490	990	E6
550	1150	490	1090	E7
550	1250	490	1190	E8

Nominal Face Size		Nominal Neck Size		Category
(mm)	(mm)	(mm)	(mm) ^{nom}	
650	650	590	590	F1
650	750	590	690	F2
650	850	590	790	F3
650	950	590	890	F4
650	1050	590	990	F5
650	1150	590	1090	F6
650	1250	590	1190	F7
650	1350	590	1290	F8

Nominal Face Size		Nominal Neck Size		Category
(mm)	(mm)	(mm)	(mm)	
750	750	690	690	G1
750	850	690	790	G2
750	950	690	890	G3
750	1050	690	990	G4
750	1150	690	1090	G5
750	1250	690	1190	G6
750	1350	690	1290	G7
750	1450	690	1390	G8

TECHNICAL PERFORMANCE DATA

Unit Type: DOUBLE DEFLECTION GRILLE MODELS WBG 2HV/2VH (Category A)

• NND - Nominal Neck Dimensions

• NFD - Nominal Face Dimensions

Cat.	Size (mm)	Flow (l/s)	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	225
A1	NND 90x90	Pressure Drop (Pa)	44.5	68.5	98.0	132.0	171.5	215.5	264.5	319.0	377.5	441.5	510.0	583.0	661.5	744.0	832.0	924.0	1021.5	
	NFD 150x150	Noise Rating*	2	7	11	15	18	21	23	26	29	32	35	38	40	43	45	47	49	
		Throw** (m)	6.6	7.4	8.0	8.6	9.0	9.4	9.8	10.0	10.4	10.6	10.8	11.2	11.4	11.6	11.8	12.0	12.0	
A2	NND 90x190	Pressure Drop (Pa)			22.0	30.0	38.5	48.5	59.5	72.0	85.0	99.5	115.0	131.5	149.0	167.5	187.5	208.0	230.0	289.5
	NFD 150x250	Noise Rating*			4	7	10	13	15	18	20	21	23	25	26	28	31	33	35	39
		Throw** (m)			6.0	6.6	7.0	7.4	7.8	8.2	8.4	8.8	9.0	9.2	9.4	9.6	9.8	10.0	10.2	10.6
A3	NND 90x290	Pressure Drop (Pa)				13.0	17.0	21.0	26.0	31.0	37.0	43.0	50.0	57.0	64.5	73.0	81.5	90.5	100.0	125.5
	NFD 150x350	Noise Rating*				3	6	9	11	13	15	17	19	20	22	23	24	26	27	31
		Throw** (m)				5.4	6.0	6.4	6.8	7.0	7.4	7.6	8.0	8.2	8.4	8.6	8.8	9.0	9.2	9.6
A4	NND 90x390	Pressure Drop (Pa)					9.5	12.0	14.5	17.5	20.5	24.0	28.0	32.0	36.0	40.5	45.5	50.5	56.0	70.0
	NFD 150x450	Noise Rating*					3	5	8	10	12	14	16	17	19	20	21	23	24	27
		Throw** (m)					5.2	5.6	6.0	6.4	6.6	6.8	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.8
A5	NND 90x490	Pressure Drop (Pa)					6.0	7.5	9.0	11.0	13.0	15.5	18.0	20.5	23.0	26.0	29.0	32.5	35.5	45.0
	NFD 150x550	Noise Rating*					0	3	6	8	10	12	13	15	16	18	19	20	21	24
		Throw** (m)					4.6	5.0	5.4	5.6	6.0	6.2	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.2
A6	NND 90x590	Pressure Drop (Pa)						5.0	6.5	7.5	9.0	10.5	12.5	14.0	16.0	18.0	20.0	22.5	25.0	31.0
	NFD 150x650	Noise Rating*						1	4	6	8	10	11	13	14	16	17	18	19	22
		Throw** (m)						4.4	4.8	5.2	5.6	5.8	6.0	6.2	6.6	6.8	7.0	7.2	7.4	7.8
A7	NND 90x690	Pressure Drop (Pa)							4.5	5.5	6.5	8.0	9.0	10.5	12.0	13.5	15.0	16.5	18.0	23.0
	NFD 150x750	Noise Rating*							2	4	6	8	10	11	13	14	15	17	18	21
		Throw** (m)							4.4	4.8	5.0	5.4	5.6	5.8	6.2	6.4	6.6	6.8	6.8	7.2
A8	NND 90x790	Pressure Drop (Pa)							3.5	4.5	5.0	6.0	7.0	8.0	9.0	10.0	11.5	12.5	14.0	17.5
	NFD 150x850	Noise Rating*							1	3	5	7	8	10	11	13	14	15	16	19
		Throw** (m)							4.0	4.4	4.8	5.0	5.2	5.6	5.8	6.0	6.2	6.4	6.6	7.0

* Based upon a 10 dB Room absorption

** To a terminal air velocity of 0.5 m/s

TECHNICAL PERFORMANCE DATA

Unit Type: DOUBLE DEFLECTION GRILLE MODELS WBG 2HV/2VH (Category A)

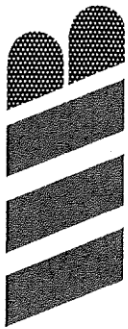
• NND - Nominal Neck Dimensions

• NFD - Nominal Face Dimensions

Cat.	Size (mm)	Flow (l/s)	250	275	300	325	350	375	400	425	450	475	500	600	700	800	900	1000	1250
A1	NND 90x90	Pressure Drop (Pa)																	
	NFD 150x150	Noise Rating*																	
		Throw** (m)																	
A2	NND 90x190	Pressure Drop (Pa)	355.5	428.0	507.0														
	NFD 150x250	Noise Rating*	43	47	50														
		Throw** (m)	11.0	11.4	11.6														
A3	NND 90x290	Pressure Drop (Pa)	154.5	185.5	220.0	257.0	297.0	340.0	385.5	433.5	484.5	538.5	595.0						
	NFD 150x350	Noise Rating*	35	39	42	45	48	51	53	56	58	60	62						
		Throw** (m)	10.0	10.2	10.6	10.8	11.0	11.4	11.6	11.8	12.0	12.2	12.4						
A4	NND 90x390	Pressure Drop (Pa)	86.0	104.0	123.0	143.5	166.0	190.0	215.5	242.0	271.0	301.0	332.5	474.0					
	NFD 150x450	Noise Rating*	30	33	37	40	43	45	48	50	52	54	56	63					
		Throw** (m)	9.2	9.4	9.8	10.0	10.4	10.6	10.8	11.0	11.2	11.4	11.6	12.2					
A5	NND 90x490	Pressure Drop (Pa)	55.0	66.5	78.5	92.0	106.0	121.5	137.5	155.0	173.0	192.5	212.5	303.0	409.0	531.0			
	NFD 150x550	Noise Rating*	27	30	32	35	38	41	43	46	48	50	52	59	65	70			
		Throw** (m)	8.6	8.8	9.2	9.4	9.8	10.0	10.2	10.4	10.6	10.8	11.0	11.6	12.2	12.6			
A6	NND 90x590	Pressure Drop (Pa)	38.5	46.0	54.5	64.0	73.5	84.5	95.5	107.5	120.5	133.5	147.5	210.5	284.5	369.0	464.0		
	NFD 150x650	Noise Rating*	25	27	30	32	35	37	40	42	44	47	49	56	61	67	71		
		Throw** (m)	8.0	8.4	8.8	9.0	9.2	9.4	9.6	10.0	10.2	10.2	10.4	11.2	11.6	12.2	12.6		
A7	NND 90x690	Pressure Drop (Pa)	28.0	34.0	40.0	47.0	54.5	62.0	70.5	79.0	88.5	98.5	108.5	155.0	209.5	271.5	341.5	419.5	
	NFD 150x750	Noise Rating*	23	25	28	30	32	35	37	39	42	44	46	53	59	64	68	72	
		Throw** (m)	7.6	8.0	8.2	8.6	8.8	9.0	9.2	9.6	9.6	9.8	10.0	10.8	11.2	11.8	12.2	12.6	
A8	NND 90x790	Pressure Drop (Pa)	21.5	26.0	31.0	36.0	41.5	47.5	54.0	61.0	68.0	75.5	83.5	119.0	160.5	208.5	262.0	322.0	497.0
	NFD 150x850	Noise Rating*	22	24	26	29	31	33	35	37	39	41	43	50	56	61	66	70	78
		Throw** (m)	7.4	7.6	8.0	8.2	8.4	8.8	9.0	9.2	9.4	9.6	9.8	10.4	10.8	11.4	11.8	12.2	13.0

* Based upon a 10 dB Room absorption

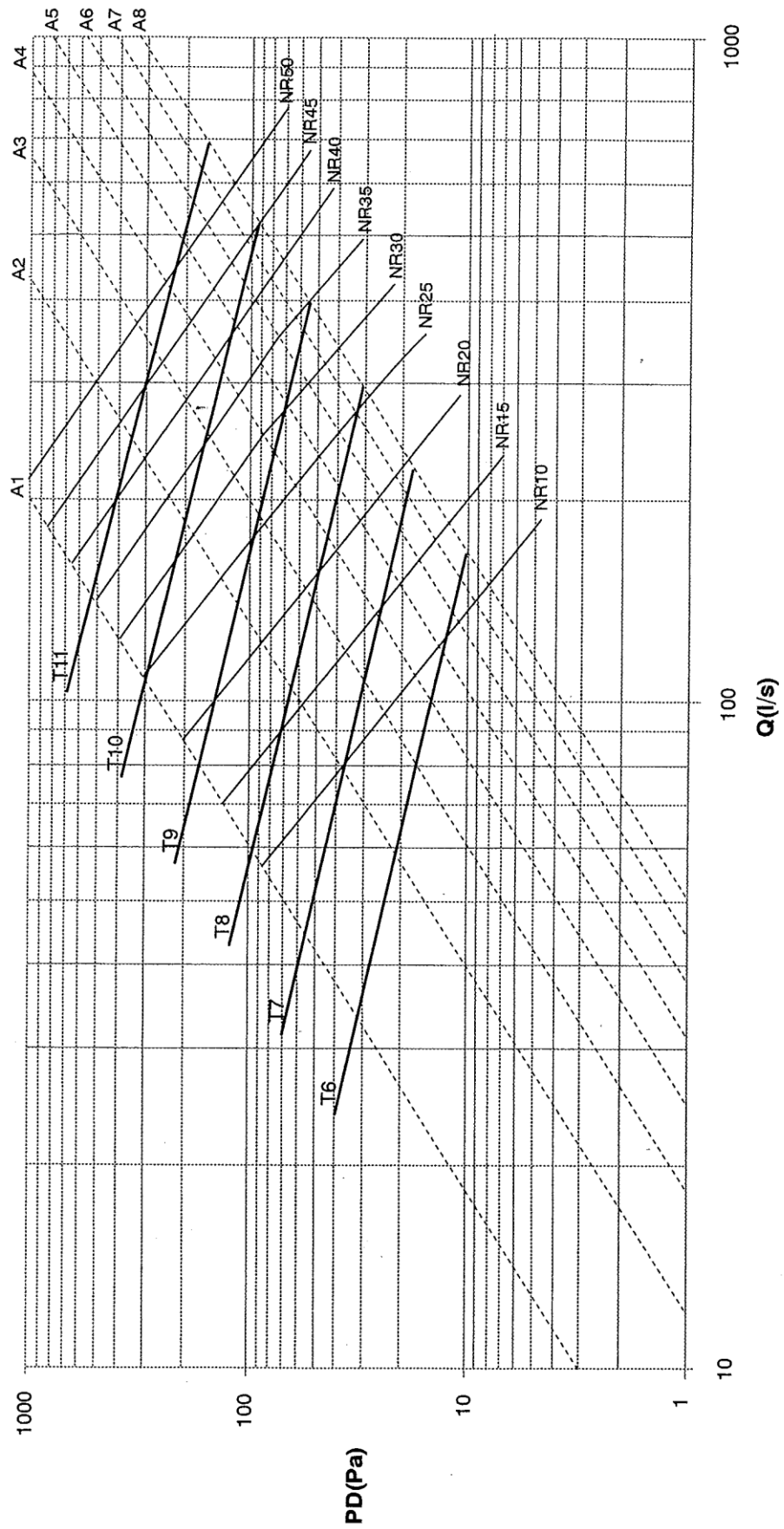
** To a terminal air velocity of 0.5 m/s


WONG BROTHERS

SELECTION NOMOGRAM PRESSURE DROP vs FLOW vs THROW vs NR

DOUBLE DEFLECTION GRILLES
MODEL TYPES WBG-2VH & WBG-2HV (Category A)

---- = PD vs flow
 — = Throw, metres
 — = NR, 10-50



TECHNICAL PERFORMANCE DATA

Unit Type: DOUBLE DEFLECTION GRILLE MODELS WBG 2HV/2VH (Category B)

• NND - Nominal Neck Dimensions

• NFD - Nominal Face Dimensions

Cat.	Size (mm)	Flow (l/s)	80	90	100	110	120	130	140	150	160	170	180	190	200	225	250	275	300	325
B1	NND 190x190	Pressure Drop (Pa)	8.5	11.0	13.5	16.0	19.0	22.5	26.0	29.5	33.5	38.0	42.0	47.0	52.0	65.0	80.0	96.5	114.0	133.5
	NFD 250x250	Noise Rating*	2	5	7	10	12	13	15	17	18	20	21	22	23	26	29	33	36	39
		Throw** (m)	5.0	5.4	5.8	6.2	6.6	6.8	7.0	7.2	7.6	7.8	8.0	8.2	8.2	8.6	9.0	9.4	9.6	10.0
B2	NND 190x290	Pressure Drop (Pa)		5.0	6.0	7.0	8.5	9.5	11.0	13.0	14.5	16.5	18.5	20.5	22.5	28.5	35.0	42.0	49.5	58.0
	NFD 250x350	Noise Rating*		1	3	5	7	9	11	12	14	15	17	18	19	22	24	27	29	32
		Throw** (m)		4.4	4.8	5.0	5.4	5.6	6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.6	8.0	8.2	8.6	8.8
B3	NND 190x390	Pressure Drop (Pa)				4.0	4.5	5.5	6.5	7.0	8.0	9.0	10.0	11.5	12.5	16.0	19.5	23.5	27.5	32.5
	NFD 250x450	Noise Rating*				2	4	6	8	9	11	12	14	15	16	19	21	23	26	28
		Throw** (m)				4.2	4.6	4.8	5.2	5.4	5.6	5.8	6.0	6.2	6.4	6.8	7.2	7.4	7.8	8.0
B4	NND 190x490	Pressure Drop (Pa)					3.0	3.5	4.0	4.5	5.0	6.0	6.5	7.5	8.0	10.0	12.5	15.0	17.5	20.5
	NFD 250x550	Noise Rating*					2	4	5	7	8	10	11	12	14	16	19	21	23	25
		Throw** (m)					4.0	4.2	4.4	4.8	5.0	5.2	5.4	5.6	5.8	6.2	6.6	6.8	7.2	7.4
B5	NND 190x590	Pressure Drop (Pa)						2.5	3.0	3.0	3.5	4.0	4.5	5.0	5.5	7.0	8.5	10.5	12.5	14.5
	NFD 250x650	Noise Rating*						2	3	5	7	8	9	10	12	14	17	19	21	23
		Throw** (m)						3.8	4.0	4.2	4.4	4.6	4.8	5.0	5.2	5.6	6.0	6.4	6.6	7.0
B6	NND 190x690	Pressure Drop (Pa)							2.0	2.5	2.5	3.0	3.5	3.5	4.0	5.0	6.5	7.5	9.0	10.5
	NFD 250x750	Noise Rating*							2	3	5	6	8	9	10	13	15	17	19	21
		Throw** (m)							3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.2	5.6	6.0	6.2	6.6
B7	NND 190x790	Pressure Drop (Pa)								2.0	2.0	2.5	2.5	3.0	3.0	4.0	5.0	6.0	7.0	8.0
	NFD 250x850	Noise Rating*								2	4	5	6	7	9	11	14	16	18	20
		Throw** (m)								3.4	3.6	3.8	4.0	4.2	4.4	4.8	5.2	5.6	6.0	6.2
B8	NND 190x890	Pressure Drop (Pa)								1.5	1.5	2.0	2.0	2.5	2.5	3.0	4.0	4.5	5.5	6.5
	NFD 250x950	Noise Rating*								1	2	4	5	6	7	10	13	15	17	19
		Throw** (m)								3.0	3.4	3.6	3.8	4.0	4.2	4.6	5.0	5.2	5.6	5.8

* Based upon a 10 dB Room absorption

** To a terminal air velocity of 0.5 m/s

TECHNICAL PERFORMANCE DATA

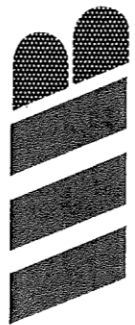
Unit Type: DOUBLE DEFLECTION GRILLE MODELS WBG 2HV/2VH (Category B)

- NND - Nominal Neck Dimensions
- NFD - Nominal Face Dimensions

Cat.	Size (mm)	Flow (l/s)	350	375	400	425	450	475	500	600	700	800	900	1000	1250	1500	1750	2000	2500
B1	NND 190x190	Pressure Drop (Pa)	154.0	176.0	200.0	225.0	251.5	279.5	309.0	440.5	594.5								
	NFD 250x250	Noise Rating*	42	45	47	49	52	54	56	63	69								
		Throw** (m)	10.2	10.4	10.6	10.8	11.0	11.2	11.4	12.2	12.6								
B2	NND 190x290	Pressure Drop (Pa)	67.0	76.5	87.0	97.5	109.0	121.5	134.0	191.0	258.0	335.0	421.5	517.0					
	NFD 250x350	Noise Rating*	34	37	39	41	44	46	48	55	61	66	70	74					
		Throw** (m)	9.2	9.4	9.6	9.8	10.0	10.2	10.4	11.0	11.6	12.0	12.4	12.8					
B3	NND 190x390	Pressure Drop (Pa)	37.5	43.0	48.5	54.5	61.0	68.0	75.0	107.0	144.0	187.0	235.5	289.0	446.0	636.5			
	NFD 250x450	Noise Rating*	30	32	34	36	38	40	42	49	55	60	65	69	77	84			
		Throw** (m)	8.4	8.6	8.8	9.0	9.2	9.4	9.6	10.2	10.8	11.2	11.6	12.0	12.8	13.6			
B4	NND 190x490	Pressure Drop (Pa)	24.0	27.5	31.0	35.0	39.0	43.5	48.0	68.5	92.0	119.5	150.5	184.5	285.0	407.0	549.0		
	NFD 250x550	Noise Rating*	27	29	31	33	35	36	38	45	51	56	60	64	73	80	86		
		Throw** (m)	7.8	8.0	8.2	8.4	8.6	8.8	9.0	9.6	10.2	10.6	11.0	11.4	12.2	12.8	13.4		
B5	NND 190x590	Pressure Drop (Pa)	16.5	19.0	21.5	24.0	27.0	30.0	33.5	47.5	64.0	83.0	104.5	128.5	198.0	282.5	381.5	495.0	
	NFD 250x650	Noise Rating*	25	27	29	31	32	34	35	41	47	52	57	61	69	76	82	88	
		Throw** (m)	7.2	7.4	7.6	8.0	8.2	8.2	8.4	9.2	9.6	10.2	10.6	10.8	11.6	12.4	13.0	13.4	
B6	NND 190x690	Pressure Drop (Pa)	12.0	14.0	16.0	18.0	20.0	22.0	24.5	35.0	47.0	61.0	77.0	94.5	146.0	208.0	281.0	364.5	563.0
	NFD 250x750	Noise Rating*	23	25	27	29	30	32	33	39	44	49	54	58	67	74	79	85	93
		Throw** (m)	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.6	9.2	9.6	10.0	10.4	11.2	12.0	12.4	13.0	13.8
B7	NND 190x790	Pressure Drop (Pa)	9.5	10.5	12.0	13.5	15.5	17.0	19.0	27.0	36.0	47.0	59.0	72.5	112.0	159.5	215.5	279.5	432.0
	NFD 250x850	Noise Rating*	21	23	25	27	29	30	32	37	42	47	51	55	64	71	77	82	91
		Throw** (m)	6.4	6.6	7.0	7.2	7.4	7.6	7.6	8.4	8.8	9.4	9.8	10.2	10.8	11.6	12.0	12.6	13.4
B8	NND 190x890	Pressure Drop (Pa)	7.5	8.5	9.5	11.0	12.0	13.5	15.0	21.0	28.5	37.0	47.0	57.5	88.5	126.5	171.0	221.0	342.0
	NFD 250x950	Noise Rating*	20	22	24	25	27	29	30	36	40	45	49	53	62	69	75	80	88
		Throw** (m)	6.2	6.4	6.6	6.8	7.0	7.2	7.4	8.0	8.6	9.0	9.4	9.8	10.6	11.2	11.8	12.2	13.0

* Based upon a 10 dB Room absorption

** To a terminal air velocity of 0.5 m/s



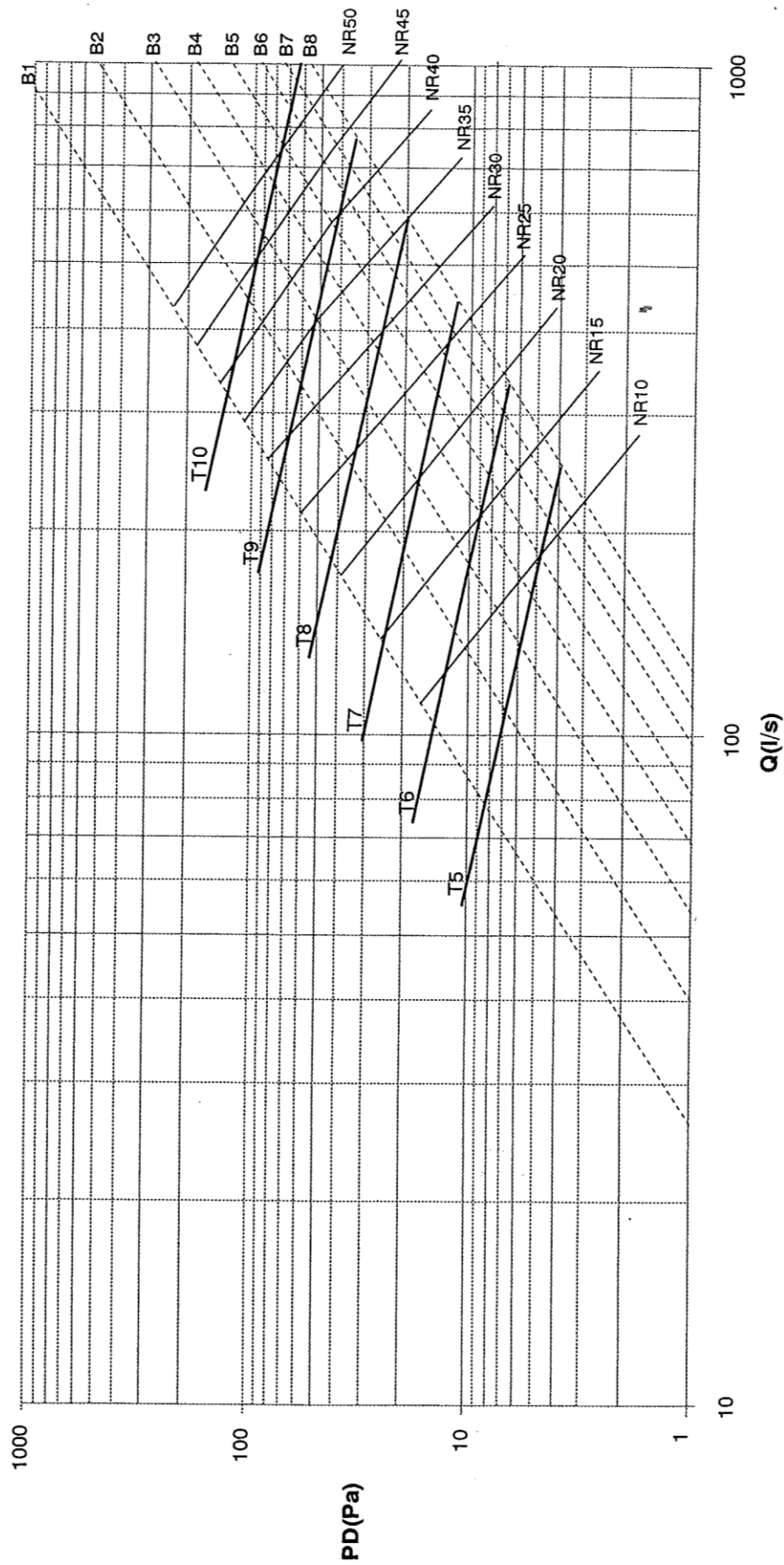
WONG BROTHERS

**SELECTION NOMOGRAM
PRESSURE DROP vs FLOW vs THROW vs NR**

DOUBLE DEFLECTION GRILLES

MODEL TYPES WBG-2VH & WBG-2HV (Category B)

- =PD vs flow
- =Throw, metres
- =NR, 10-50



TECHNICAL PERFORMANCE DATA

Unit Type: DOUBLE DEFLECTION GRILLE MODELS WBG 2HV/2VH (Category C)

- NND - Nominal Neck Dimensions
- NFD - Nominal Face Dimensions

Cat.	Size (mm)	Flow (l/s)	110	120	130	140	150	160	170	180	190	200	225	250	275	300	325	350
C1	NND 290x290	Pressure Drop (Pa)	3.0	3.5	4.0	5.0	5.5	6.5	7.0	8.0	9.0	10.0	12.5	15.0	18.0	21.5	25.0	29.0
	NFD 350x350	Noise Rating*	1	3	5	6	8	9	11	12	13	15	17	20	22	24	26	28
		Throw** (m)	3.8	4.2	4.4	4.8	5.0	5.2	5.4	5.6	5.8	6.0	6.4	6.8	7.2	7.4	7.8	8.0
C2	NND 290x390	Pressure Drop (Pa)			2.5	2.5	3.0	3.5	4.0	4.5	5.0	5.5	7.0	8.5	10.0	12.0	14.0	16.0
	NFD 350x450	Noise Rating*			2	3	5	6	8	9	10	12	14	17	19	21	23	25
		Throw** (m)			3.6	4.0	4.2	4.4	4.6	4.8	5.0	5.2	5.6	6.0	6.4	6.6	7.0	7.2
C3	NND 290x490	Pressure Drop (Pa)				1.5	2.0	2.5	2.5	3.0	3.0	3.5	4.5	5.5	6.5	7.5	9.0	10.5
	NFD 350x550	Noise Rating*				1	3	4	5	7	8	9	12	14	16	18	20	22
		Throw** (m)				3.4	3.6	3.8	4.0	4.2	4.4	4.6	5.0	5.4	5.8	6.0	6.4	6.6
C4	NND 290x590	Pressure Drop (Pa)					1.5	1.5	2.0	2.0	2.0	2.5	3.0	3.5	4.5	5.5	6.0	7.0
	NFD 350x650	Noise Rating*					1	2	4	5	6	7	10	12	15	17	18	20
		Throw** (m)					3.0	3.2	3.6	3.8	4.0	4.0	4.6	5.0	5.2	5.6	5.8	6.0
C5	NND 290x690	Pressure Drop (Pa)						1.0	1.5	1.5	1.5	2.0	2.0	3.0	3.5	4.0	4.5	5.5
	NFD 350x750	Noise Rating*						1	2	3	4	6	8	11	13	15	17	18
		Throw** (m)						2.8	3.0	3.2	3.4	3.6	4.0	4.4	4.8	5.2	5.4	5.6
C6	NND 290x790	Pressure Drop (Pa)							1.0	1.0	1.0	1.5	1.5	2.0	2.5	3.0	3.5	4.0
	NFD 350x850	Noise Rating*							1	2	3	4	7	9	12	14	15	17
		Throw** (m)							2.6	2.8	3.0	3.2	3.8	4.0	4.4	4.8	5.0	5.4
C7	NND 290x890	Pressure Drop (Pa)								1.0	1.0	1.0	1.5	1.5	2.0	2.5	3.0	3.0
	NFD 350x950	Noise Rating*								1	2	3	6	8	10	12	14	16
		Throw** (m)								2.6	2.8	3.0	3.4	3.8	4.2	4.4	4.8	5.0
C8	NND 290x990	Pressure Drop (Pa)									1.0	1.0	1.0	1.5	1.5	2.0	2.5	2.5
	NFD 350x1050	Noise Rating*									1	2	5	7	9	11	13	15
		Throw** (m)									2.4	2.6	3.0	3.4	3.8	4.2	4.4	4.6

* Based upon a 10 dB Room absorption

** To a terminal air velocity of 0.5 m/s

TECHNICAL PERFORMANCE DATA

Unit Type: DOUBLE DEFLECTION GRILLE MODELS WBG 2HV/2VH (Category C)

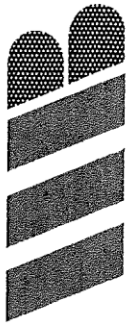
• NND - Nominal Neck Dimensions

• NFD - Nominal Face Dimensions

Cat.	Size (mm)	Flow (l/s)	375	400	425	450	475	500	600	700	800	900	1000	1250	1500	1750	2000	2500
C1	NND 290x290	Pressure Drop (Pa)	33.0	37.5	42.5	47.5	52.5	58.0	83.0	112.0	145.0	183.0	224.5	347.0	494.5			
	NFD 350x350	Noise Rating*	30	32	34	36	38	40	47	53	58	62	66	75	82			
		Throw** (m)	8.2	8.4	8.6	8.8	9.0	9.2	9.8	10.4	10.8	11.2	11.6	12.4	13.2			
C2	NND 290x390	Pressure Drop (Pa)	18.5	21.0	23.5	26.5	29.5	32.5	46.5	62.5	81.0	102.0	125.5	193.5	276.5	373.0	484.0	
	NFD 350x450	Noise Rating*	27	29	30	32	34	35	41	47	52	57	61	69	76	82	87	
		Throw** (m)	7.4	7.6	7.8	8.0	8.2	8.4	9.0	9.6	10.0	10.4	10.8	11.6	12.4	12.8	13.4	
C3	NND 290x490	Pressure Drop (Pa)	12.0	13.5	15.0	17.0	19.0	21.0	29.5	40.0	52.0	65.5	80.0	124.0	176.5	238.5	309.5	477.5
	NFD 350x550	Noise Rating*	24	26	28	29	31	32	38	43	48	52	56	65	72	78	83	92
		Throw** (m)	6.8	7.0	7.2	7.4	7.6	7.8	8.4	9.0	9.4	9.8	10.2	11.0	11.6	12.2	12.8	13.6
C4	NND 290x590	Pressure Drop (Pa)	8.0	9.5	10.5	12.0	13.0	14.5	20.5	28.0	36.0	45.5	55.5	86.0	122.5	165.5	215.0	332.0
	NFD 350x650	Noise Rating*	22	23	25	27	29	30	35	40	44	49	53	61	69	74	80	88
		Throw** (m)	6.4	6.6	6.8	7.0	7.2	7.4	8.0	8.6	9.0	9.4	9.8	10.6	11.2	11.8	12.2	13.0
C5	NND 290x690	Pressure Drop (Pa)	6.0	7.0	7.5	8.5	9.5	10.5	15.0	20.5	26.5	33.5	41.0	63.5	90.5	122.0	158.0	244.5
	NFD 350x750	Noise Rating*	20	22	23	25	27	28	33	38	42	46	50	59	66	71	77	85
		Throw** (m)	6.0	6.2	6.4	6.6	6.8	7.0	7.6	8.0	8.6	9.0	9.4	10.0	10.8	11.2	11.8	12.6
C6	NND 290x790	Pressure Drop (Pa)	4.5	5.5	6.0	6.5	7.5	8.0	11.5	15.5	20.5	25.5	31.5	48.5	69.5	93.5	121.5	187.5
	NFD 350x850	Noise Rating*	19	20	22	23	25	26	32	36	40	44	47	56	63	69	74	83
		Throw** (m)	5.6	5.8	6.0	6.2	6.4	6.6	7.2	7.8	8.2	8.6	9.0	9.8	10.4	11.0	11.4	12.2
C7	NND 290x890	Pressure Drop (Pa)	3.5	4.9	4.5	5.5	6.9	6.5	9.0	12.5	16.0	20.5	25.0	38.5	55.0	74.0	96.0	148.5
	NFD 350x950	Noise Rating*	17	19	20	22	23	25	30	35	39	42	45	54	61	67	72	80
		Throw** (m)	5.2	5.4	5.6	5.8	6.0	6.2	6.8	7.4	7.8	8.2	8.6	9.4	10.0	10.6	11.0	11.8
C8	NND 290x990	Pressure Drop (Pa)	3.0	3.5	4.0	4.5	5.0	5.0	7.5	10.0	13.0	16.5	20.5	31.5	44.5	60.0	78.0	120.5
	NFD 350x1050	Noise Rating*	16	18	19	21	22	24	29	34	37	41	44	52	59	65	70	78
		Throw** (m)	5.0	5.2	5.4	5.6	5.8	6.0	6.6	7.2	7.6	8.0	8.4	9.2	9.8	10.2	10.8	11.6

* Based upon a 10 dB Room absorption

** To a terminal air velocity of 0.5 m/s



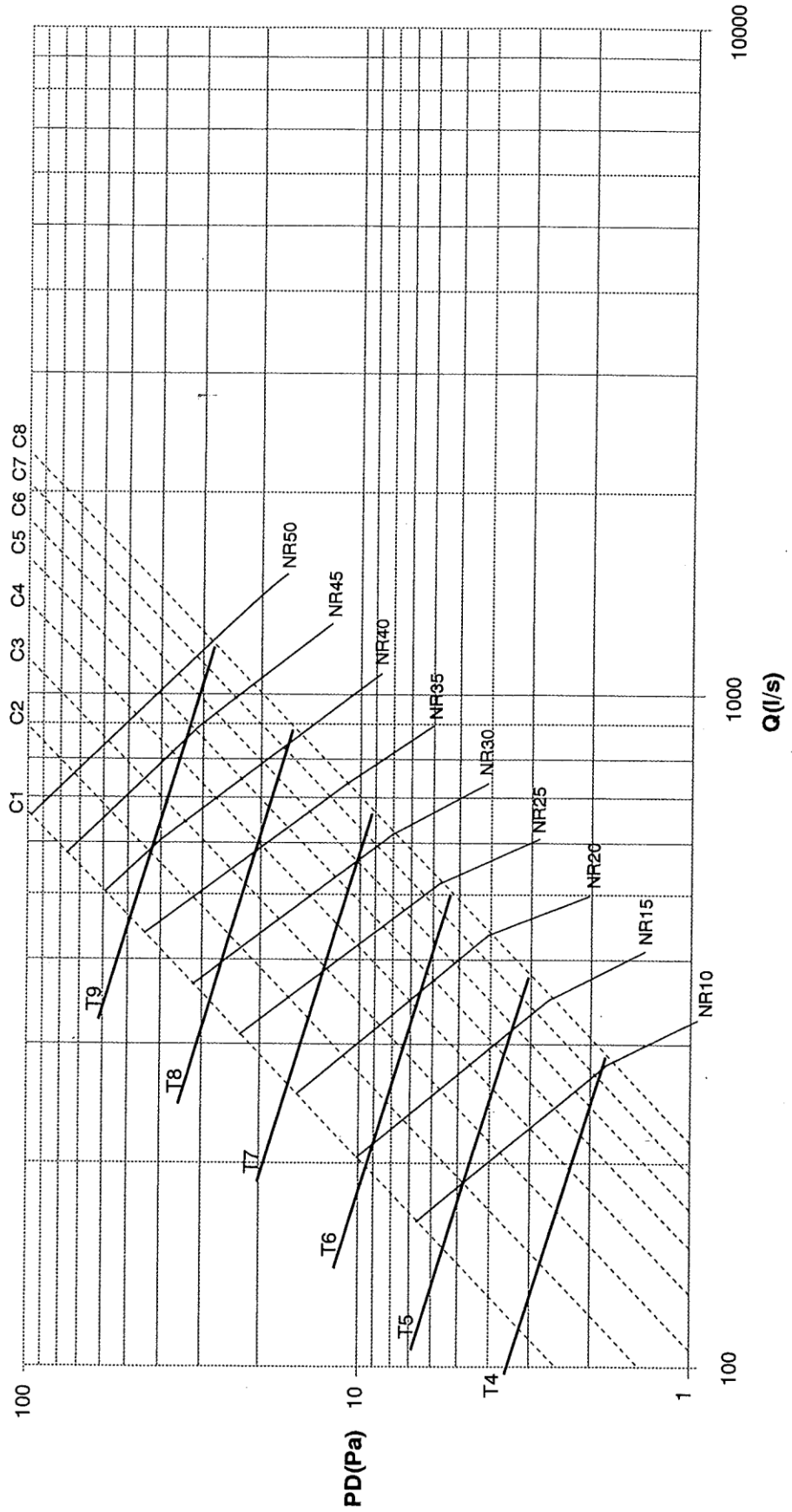
WONG BROTHERS

**SELECTION NOMOGRAM
PRESSURE DROP vs FLOW vs THROW vs NR**

DOUBLE DEFLECTION GRILLES

MODEL TYPES WBG-2VH & WBG-2HV (Category C)

- = PD vs flow
- = Throw, metres
- = NR, 10-50



TECHNICAL PERFORMANCE DATA

Unit Type: DOUBLE DEFLECTION GRILLE MODELS WBG 2HV/2VH (Category D)

• NND - Nominal Neck Dimensions

• NFD - Nominal Face Dimensions

Cat.	Size (mm)	Flow (l/s)	140	150	160	170	180	190	200	225	250	275	300	325	350	375	400
D1	NND 390x390	Pressure Drop (Pa)	1.5	1.5	2.0	2.0	2.5	3.0	3.0	4.0	4.5	5.5	6.5	8.0	9.0	10.5	12.0
	NFD 450x450	Noise Rating*	0	2	3	5	6	7	8	11	14	16	18	20	21	23	25
		Throw** (m)	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.8	5.2	5.6	5.8	6.2	6.4	6.5	6.8
D2	NND 390x490	Pressure Drop (Pa)			1.5	1.5	1.5	2.0	2.0	2.5	3.0	3.5	4.5	5.0	6.0	6.5	7.5
	NFD 450x550	Noise Rating*			1	2	4	5	6	0	11	13	15	17	19	21	22
		Throw** (m)			3.0	3.2	3.4	3.6	3.8	4.2	4.6	5.0	5.2	5.6	5.8	6.0	6.2
D3	NND 390x590	Pressure Drop (Pa)				1.0	1.0	1.0	1.5	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
	NFD 450x650	Noise Rating*				0	2	3	4	7	9	11	13	15	17	19	20
		Throw** (m)				2.6	2.8	3.0	3.2	3.6	4.0	4.4	4.8	5.0	5.2	5.6	5.8
D4	NND 390x690	Pressure Drop (Pa)					1.0	1.0	1.0	1.5	1.5	2.0	2.0	2.5	3.0	3.5	4.0
	NFD 450x750	Noise Rating*					0	1	3	5	8	10	12	14	15	17	18
		Throw** (m)					2.4	2.6	2.8	3.2	3.6	4.0	4.4	4.6	4.8	5.2	5.4
D5	NND 390x790	Pressure Drop (Pa)						.5	1.0	1.0	1.0	1.5	1.5	2.0	2.5	2.5	3.0
	NFD 450x850	Noise Rating*						0	1	4	6	8	10	12	14	16	17
		Throw** (m)						2.2	2.4	2.8	3.2	3.6	4.0	4.2	4.4	4.8	5.0
D6	NND 390x890	Pressure Drop (Pa)							.5	1.0	1.0	1.0	1.5	1.5	2.0	2.0	2.5
	NFD 450x950	Noise Rating*							0	3	5	8	10	11	13	15	16
		Throw** (m)							2.2	2.6	3.0	3.2	3.6	4.0	4.2	4.4	4.6
D7	NND 390x990	Pressure Drop (Pa)								.5	1.0	1.0	1.0	1.5	1.5	1.5	2.0
	NFD 450x1050	Noise Rating*								2	5	7	9	11	12	14	16
		Throw** (m)								2.2	2.6	3.0	3.4	3.6	3.8	4.2	4.4
D8	NND 390x1090	Pressure Drop (Pa)								.5	.5	1.0	1.0	1.0	1.0	1.5	1.5
	NFD 450x1150	Noise Rating*								2	4	6	8	10	12	14	16
		Throw** (m)								2.0	2.4	2.8	3.0	3.4	3.6	3.8	4.0

* Based upon a 10 dB Room absorption

** To a terminal air velocity of 0.5 m/s

TECHNICAL PERFORMANCE DATA

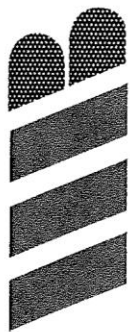
Unit Type: DOUBLE DEFLECTION GRILLE MODELS WBG 2HV/2VH (Category D)

- NND - Nominal Neck Dimensions
- NFD - Nominal Face Dimensions

Cat.	Size (mm)	Flow (l/s)	425	450	475	500	600	700	800	900	1000	1250	1500	1750	2000	2500	3000
D1	NND 390x390	Pressure Drop (Pa)	13.0	15.0	16.5	18.0	26.0	35.0	45.5	57.0	70.0	108.0	154.5	208.5	270.5	417.5	
	NFD 450x450	Noise Rating*	27	28	30	32	37	41	47	51	55	64	71	77	82	90	
		Throw** (m)	7.0	7.2	7.4	7.6	8.2	8.8	9.2	9.6	10.0	10.8	11.4	12.0	12.6	13.4	
D2	NND 390x490	Pressure Drop (Pa)	8.5	9.5	10.5	11.5	16.5	22.5	29.0	36.5	45.0	69.0	98.5	133.0	173.0	267.0	
	NFD 450x550	Noise Rating*	24	26	27	29	34	39	43	47	52	59	66	72	77	86	
		Throw** (m)	6.4	6.6	6.8	7.0	7.6	8.2	8.6	9.0	9.4	10.2	10.8	11.4	11.8	12.8	
D3	NND 390x590	Pressure Drop (Pa)	6.0	6.5	7.5	8.0	11.5	15.5	20.0	25.5	31.0	48.0	68.5	92.5	120.0	185.5	
	NFD 450x650	Noise Rating*	22	23	25	26	32	36	40	44	47	56	63	69	74	83	
		Throw** (m)	6.0	6.2	6.4	6.6	7.2	7.8	8.2	8.6	9.0	9.8	10.4	10.8	11.4	12.2	
D4	NND 390x690	Pressure Drop (Pa)	4.5	5.0	5.5	6.0	8.5	11.5	15.0	18.5	23.0	35.5	50.5	68.0	88.5	136.5	
	NFD 450x750	Noise Rating*	20	21	23	24	30	34	38	42	45	53	60	66	71	80	
		Throw** (m)	5.6	5.8	6.0	6.2	6.8	7.2	7.8	8.2	8.6	9.2	10.0	10.4	11.0	11.8	
D5	NND 390x790	Pressure Drop (Pa)	3.5	3.5	4.0	4.5	6.5	9.0	11.5	14.5	17.5	27.0	38.5	52.5	68.0	105.0	
	NFD 450x850	Noise Rating*	18	20	22	23	28	33	37	41	44	52	57	63	69	77	
		Throw** (m)	5.2	5.4	5.6	5.8	6.4	7.0	7.4	7.8	8.2	9.0	9.6	10.0	10.6	11.4	
D6	NND 390x890	Pressure Drop (Pa)	2.5	3.0	3.5	3.5	5.0	7.0	9.0	11.5	14.0	21.5	30.5	41.5	53.5	83.0	118.5
	NFD 450x950	Noise Rating*	18	20	21	23	28	32	37	41	44	51	57	62	67	75	82
		Throw** (m)	4.8	5.0	5.2	5.4	6.0	6.6	7.0	7.4	7.8	8.6	9.2	9.8	10.2	11.0	11.6
D7	NND 390x990	Pressure Drop (Pa)	2.0	2.5	2.5	3.0	4.0	5.5	7.5	9.0	11.5	17.5	25.0	33.5	43.5	67.5	96.0
	NFD 450x1050	Noise Rating*	18	19	21	22	28	32	37	40	44	52	57	62	66	74	80
		Throw** (m)	4.6	4.8	5.0	5.2	5.8	6.4	6.8	7.2	7.6	8.4	9.0	9.4	10.0	10.8	11.4
D8	NND 390x1090	Pressure Drop (Pa)	2.0	2.0	2.0	2.5	3.5	4.5	6.0	7.5	9.5	14.5	20.5	28.0	36.0	56.0	79.5
	NFD 450x1150	Noise Rating*	17	19	21	22	27	32	37	40	44	52	57	62	66	74	80
		Throw** (m)	4.4	4.6	4.8	4.8	5.6	6.0	6.6	7.0	7.4	8.0	8.6	9.2	9.6	10.4	11.2

* Based upon a 10 dB Room absorption

** To a terminal air velocity of 0.5 m/s



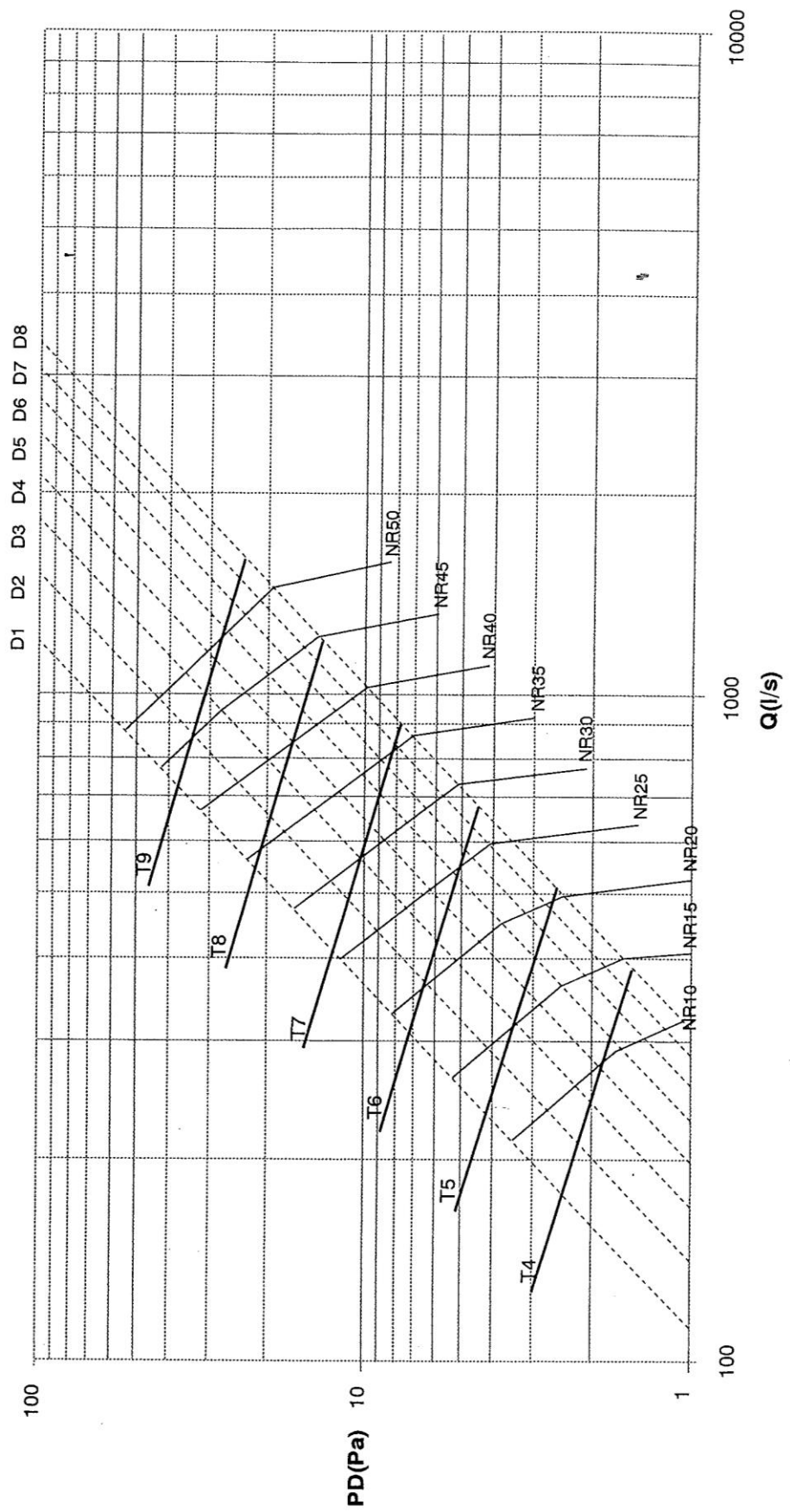
WONG BROTHERS

**SELECTION NOMOGRAM
PRESSURE DROP vs FLOW vs THROW vs NR**

DOUBLE DEFLECTION GRILLES

MODEL TYPES WBG-2VH & WBG-2HV (Category D)

- = PD vs flow
- = Throw, metres
- = NR, 10-50



TECHNICAL PERFORMANCE DATA

Unit Type: DOUBLE DEFLECTION GRILLE MODELS WBG 2HV/2VH (Category E)

• NND - Nominal Neck Dimensions

• NFD - Nominal Face Dimensions

Cat.	Size (mm)	Flow (l/s)	170	180	190	200	225	250	275	300	325	350	375	400	425	450
E1	NND 490x490	Pressure Drop (Pa)	1.0	1.0	1.0	1.0	1.5	2.0	2.5	2.5	3.0	3.5	4.0	5.0	5.5	6.0
	NFD 550x550	Noise Rating*	0	1	3	4	6	9	11	13	15	17	18	20	21	23
		Throw** (m)	2.6	2.8	3.0	3.2	3.6	4.0	4.4	4.6	5.0	5.2	5.4	5.6	5.8	6.0
E2	NND 490x590	Pressure Drop (Pa)			1.0	1.0	1.0	1.5	1.5	2.0	2.0	2.5	3.0	3.5	4.0	4.0
	NFD 550x650	Noise Rating*			1	2	5	7	9	11	13	15	16	18	19	20
		Throw** (m)			2.4	2.6	3.0	3.4	3.8	4.2	4.4	4.6	5.0	5.2	5.4	5.6
E3	NND 490x690	Pressure Drop (Pa)				.5	1.0	1.0	1.0	1.5	1.5	2.0	2.0	2.5	3.0	3.0
	NFD 550x750	Noise Rating*				0	3	6	8	10	12	13	15	16	18	20
		Throw** (m)				2.2	2.6	3.0	3.4	3.6	4.0	4.2	4.4	4.8	5.0	5.2
E4	NND 490x790	Pressure Drop (Pa)					.5	1.0	1.0	1.0	1.5	1.5	1.5	2.0	2.0	2.5
	NFD 550x850	Noise Rating*					2	5	7	9	11	12	14	16	18	19
		Throw** (m)					2.2	2.6	3.0	3.4	3.6	3.8	4.2	4.4	4.6	4.8
E5	NND 490x890	Pressure Drop (Pa)					.5	.5	.5	1.0	1.0	1.0	1.5	1.5	1.5	2.0
	NFD 550x950	Noise Rating*					1	4	6	8	10	12	14	16	17	19
		Throw** (m)					2.0	2.2	2.6	3.0	3.2	3.6	3.8	4.0	4.2	4.4
E6	NND 490x990	Pressure Drop (Pa)					.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.5	1.5
	NFD 550x1050	Noise Rating*					1	3	5	7	9	11	13	15	17	19
		Throw** (m)					1.6	2.0	2.4	2.6	3.0	3.2	3.6	3.8	4.0	4.2
E7	NND 490x1090	Pressure Drop (Pa)						.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.5
	NFD 550x1150	Noise Rating*						2	5	7	9	11	13	15	17	18
		Throw** (m)						1.8	2.0	2.4	2.8	3.0	3.2	3.4	3.6	3.8
E8	NND 490x1190	Pressure Drop (Pa)						.5	.5	.5	.5	.5	.5	1.0	1.0	1.0
	NFD 550x1250	Noise Rating*						2	4	6	9	11	13	15	16	18
		Throw** (m)						1.4	1.8	2.2	2.4	2.8	3.0	3.2	3.4	3.6

* Based upon a 10 dB Room absorption

** To a terminal air velocity of 0.5 m/s

TECHNICAL PERFORMANCE DATA

Unit Type: DOUBLE DEFLECTION GRILLE MODELS WBG 2HV/2VH (Category E)

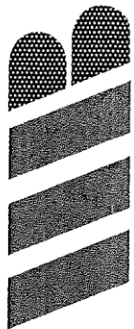
• NND - Nominal Neck Dimensions

• NFD - Nominal Face Dimensions

Cat.	Size (mm)	Flow (l/s)	475	500	600	700	800	900	1000	1250	1500	1750	2000	2500	3000
E1	NND 490x490	Pressure Drop (Pa)	6.5	7.5	10.5	14.5	18.5	23.5	28.5	44.0	63.0	85.0	110.5	170.5	
	NFD 550x550	Noise Rating*	24	26	31	36	40	43	47	55	62	68	73	82	
		Throw** (m)	6.2	6.4	7.0	7.6	8.0	8.4	8.8	9.6	10.2	10.8	11.2	12.0	
E2	NND 490x590	Pressure Drop (Pa)	4.5	5.0	7.5	10.0	13.0	16.0	20.0	30.5	44.0	59.0	76.5	118.5	
	NFD 550x650	Noise Rating*	22	23	29	33	37	41	44	52	59	65	70	78	
		Throw** (m)	5.8	6.0	6.6	7.2	7.6	8.0	8.4	9.2	9.8	10.2	10.8	11.6	
E3	NND 490x690	Pressure Drop (Pa)	3.5	4.0	5.5	7.5	9.5	12.0	14.5	22.5	32.5	43.5	56.5	87.0	124.5
	NFD 550x750	Noise Rating*	21	23	28	33	37	41	44	51	57	62	67	75	82
		Throw** (m)	5.4	5.6	6.2	6.6	7.2	7.6	8.0	8.6	9.4	9.8	10.4	11.0	11.8
E4	NND 490x790	Pressure Drop (Pa)	2.5	3.0	4.0	5.5	7.5	9.0	11.0	17.5	25.0	33.5	43.5	67.0	95.5
	NFD 550x850	Noise Rating*	21	22	28	32	37	40	44	51	57	62	66	74	80
		Throw** (m)	5.0	5.2	5.8	6.4	6.8	7.2	7.6	8.4	9.0	9.4	10.0	10.8	11.4
E5	NND 490x890	Pressure Drop (Pa)	2.0	2.5	3.5	4.5	6.0	7.5	9.0	13.5	19.5	26.5	34.5	53.0	75.5
	NFD 550x950	Noise Rating*	20	22	27	32	36	40	44	51	57	62	66	74	80
		Throw** (m)	4.6	4.8	5.4	6.0	6.4	6.8	7.2	8.0	8.6	9.2	9.6	10.4	11.0
E6	NND 490x990	Pressure Drop (Pa)	1.5	2.0	2.5	3.5	4.5	6.0	7.0	11.0	16.0	21.5	28.0	43.0	61.5
	NFD 550x1050	Noise Rating*	20	22	27	32	36	40	44	51	57	62	66	73	79
		Throw** (m)	4.4	4.6	5.2	5.8	6.2	6.6	7.0	7.8	8.4	8.8	9.4	10.2	10.8
E7	NND 490x1090	Pressure Drop (Pa)	1.5	1.5	2.0	3.0	4.0	5.0	6.0	9.5	13.0	18.0	23.0	35.5	51.0
	NFD 550x1150	Noise Rating*	20	21	27	32	36	40	43	51	57	62	66	73	79
		Throw** (m)	4.0	4.2	5.0	5.4	6.0	6.4	6.8	7.4	8.0	8.6	9.0	9.8	10.4
E8	NND 490x1190	Pressure Drop (Pa)	1.0	1.5	2.0	2.5	3.5	4.0	5.0	8.0	11.0	15.0	19.5	30.0	43.0
	NFD 550x1250	Noise Rating*	20	21	27	32	36	40	43	51	57	62	66	73	79
		Throw** (m)	3.8	4.0	4.6	5.2	5.8	6.2	6.4	7.2	7.8	8.4	8.8	9.6	10.2

* Based upon a 10 dB Room absorption

** To a terminal air velocity of 0.5 m/s

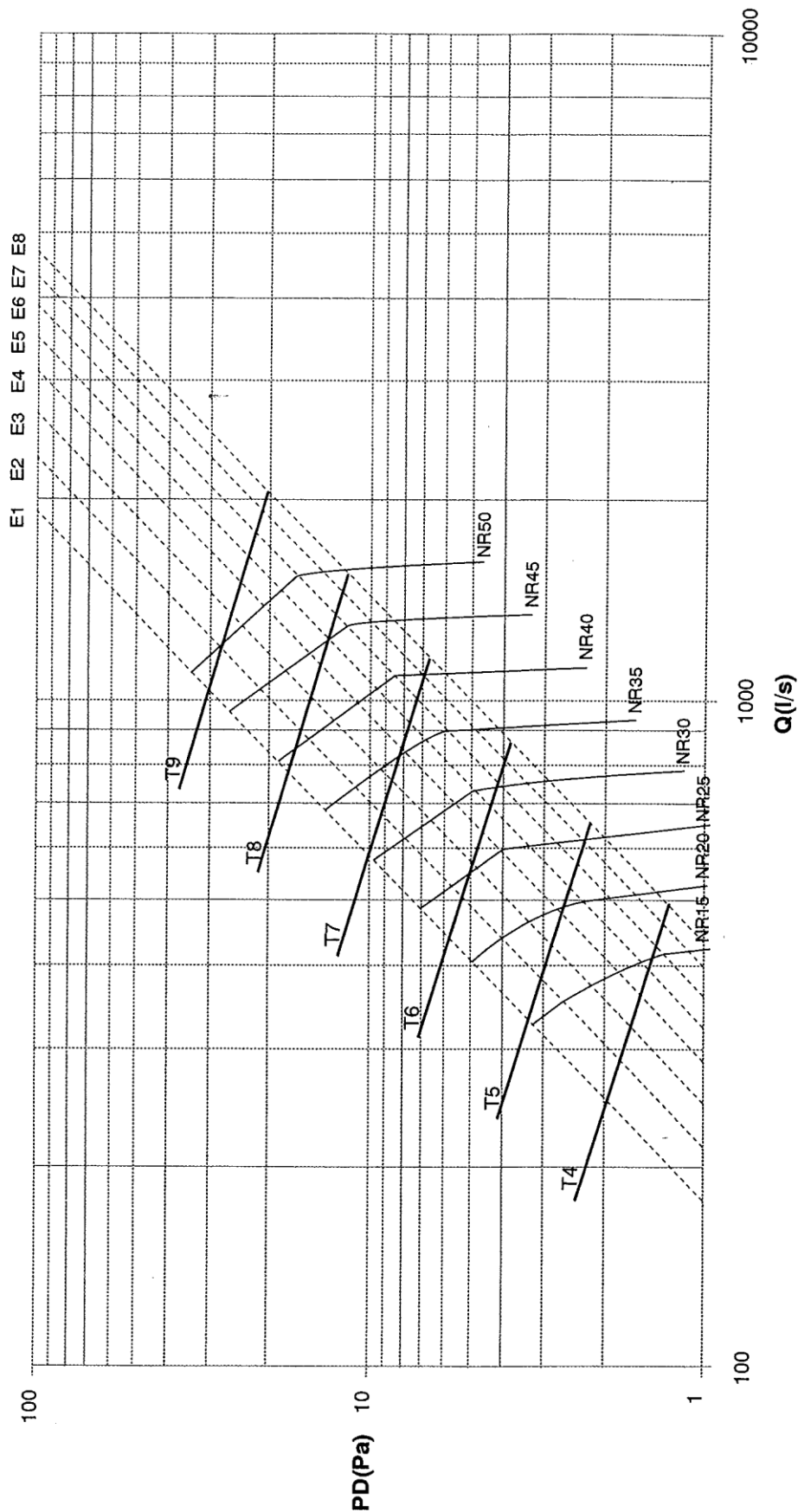

WONG BROTHERS

SELECTION NOMOGRAM PRESSURE DROP vs FLOW vs THROW vs NR

DOUBLE DEFLECTION GRILLES

MODEL TYPES WBG-2VH & WBG-2HV (Category E)

- - - - = PD vs flow
 — = Throw, metres
 — = NR, 10-50



TECHNICAL PERFORMANCE DATA

Unit Type: DOUBLE DEFLECTION GRILLE MODELS WBG 2HV/2VH (Category F)

- NND - Nominal Neck Dimensions
- NFD - Nominal Face Dimensions

Cat.	Size (mm)	Flow (l/s)	200	225	250	275	300	325	350	375	400	425	450	475
F1	NND 590x590	Pressure Drop (Pa)	.5	1.0	1.0	1.0	1.5	1.5	2.0	2.0	2.5	2.5	3.0	3.0
	NFD 650x650	Noise Rating*	0	3	5	8	10	11	13	15	16	18	20	21
		Throw** (m)	2.0	2.6	3.0	3.2	3.6	3.8	4.2	4.4	4.6	4.8	5.0	5.2
F2	NND 590x690	Pressure Drop (Pa)	.5	.5	1.0	1.0	1.0	1.5	1.5	1.5	2.0	2.0	2.5	
	NFD 650x750	Noise Rating*		2	4	6	9	10	12	14	16	18	19	21
		Throw** (m)		2.0	2.4	2.8	3.2	3.4	3.8	4.0	4.2	4.4	4.6	4.8
F3	NND 590x790	Pressure Drop (Pa)	.5	.5	.5	.5	1.0	1.0	1.0	1.5	1.5	1.5	2.0	
	NFD 650x850	Noise Rating*		1	3	6	8	9	11	13	15	17	19	20
		Throw** (m)		1.8	2.2	2.4	2.8	3.0	3.4	3.6	3.8	4.0	4.2	4.4
F4	NND 590x890	Pressure Drop (Pa)	.5	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.5	1.5	
	NFD 650x950	Noise Rating*		0	3	5	7	9	11	13	15	17	18	20
		Throw** (m)		1.4	1.8	2.2	2.4	2.8	3.0	3.2	3.6	3.8	4.0	4.2
F5	NND 590x990	Pressure Drop (Pa)			.5	.5	.5	.5	.5	.5	1.0	1.0	1.0	1.0
	NFD 650x1050	Noise Rating*			2	4	6	9	11	13	15	16	18	20
		Throw** (m)			1.4	1.8	2.2	2.4	2.8	3.0	3.2	3.4	3.6	3.8
F6	NND 590x1090	Pressure Drop (Pa)			.5	.5	.5	.5	.5	.5	.5	1.0	1.0	1.0
	NFD 650x1150	Noise Rating*			1	3	6	8	10	12	14	16	18	19
		Throw** (m)			1.2	1.6	1.8	2.2	2.4	2.8	3.0	3.2	3.4	3.6
F7	NND 590x1190	Pressure Drop (Pa)			0.0	.5	.5	.5	.5	.5	.5	.5	.5	1.0
	NFD 650x1250	Noise Rating*			0	3	6	8	10	12	14	16	17	19
		Throw** (m)			1.0	1.4	1.6	2.0	2.2	2.4	2.8	3.0	3.2	3.4
F8	NND 590x1290	Pressure Drop (Pa)			0.0	0.0	.5	.5	.5	.5	.5	.5	.5	.5
	NFD 650x1350	Noise Rating*			0	3	5	8	10	12	14	15	17	19
		Throw** (m)			.8	1.0	1.4	1.8	2.0	2.2	2.4	2.8	3.0	3.2

* Based upon a 10 dB Room absorption

** To a terminal air velocity of 0.5 m/s

TECHNICAL PERFORMANCE DATA

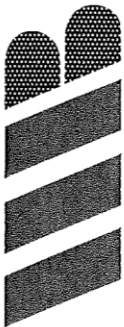
Unit Type: DOUBLE DEFLECTION GRILLE MODELS WBG 2HV/2VH (Category F)

- NND - Nominal Neck Dimensions
- NFD - Nominal Face Dimensions

Cat.	Size (mm)	Flow (l/s)	500	600	700	800	900	1000	1250	1500	1750	2000	2500	3000
F1	NND 590x590	Pressure Drop (Pa)	3.5	5.0	7.0	9.0	11.5	14.0	21.5	30.5	41.0	53.5	82.5	117.5
	NFD 650x650	Noise Rating*	23	28	32	37	41	44	51	57	62	67	75	82
		Throw** (m)	5.4	6.0	6.6	7.0	7.4	7.8	8.6	9.2	9.8	10.2	11.0	11.6
F2	NND 590x690	Pressure Drop (Pa)	2.5	4.0	5.0	6.5	8.5	10.0	15.5	22.5	30.5	39.5	60.5	86.5
	NFD 650x750	Noise Rating*	22	27	32	37	40	44	51	57	62	66	74	80
		Throw** (m)	5.0	5.6	6.2	6.6	7.0	7.4	8.2	8.8	9.4	9.8	10.6	11.2
F3	NND 590x790	Pressure Drop (Pa)	2.0	3.0	4.0	5.0	6.5	8.0	12.0	17.0	23.0	30.0	46.5	66.5
	NFD 650x850	Noise Rating*	22	27	32	36	40	44	51	57	62	66	73	79
		Throw** (m)	4.6	5.2	5.8	6.2	6.6	7.0	7.8	8.4	9.0	9.4	10.2	10.8
F4	NND 590x890	Pressure Drop (Pa)	1.5	2.5	3.0	4.0	5.0	6.0	9.5	13.5	18.5	24.0	37.0	52.5
	NFD 650x950	Noise Rating*	21	27	32	36	40	43	52	57	62	66	73	79
		Throw** (m)	4.4	5.0	5.6	6.0	6.4	6.8	7.6	8.2	8.6	9.2	9.8	10.6
F5	NND 590x990	Pressure Drop (Pa)	1.5	2.0	2.5	3.5	4.0	5.0	8.0	11.0	15.0	19.5	30.0	42.5
	NFD 650x1050	Noise Rating*	21	27	32	36	40	43	51	57	62	66	73	79
		Throw** (m)	4.0	4.6	5.2	5.6	6.2	6.4	7.2	7.8	8.4	8.8	9.6	10.2
F6	NND 590x1090	Pressure Drop (Pa)	1.0	1.5	2.0	2.5	3.5	4.0	6.5	9.0	12.5	16.0	25.0	35.5
	NFD 650x1150	Noise Rating*	21	27	32	36	40	43	50	56	61	66	73	79
		Throw** (m)	3.8	4.4	5.0	5.4	5.8	6.2	7.0	7.6	8.2	8.6	9.4	10.0
F7	NND 590x1190	Pressure Drop (Pa)	1.0	1.5	2.0	2.5	3.0	3.5	5.5	7.5	10.5	13.5	21.0	30.0
	NFD 650x1250	Noise Rating*	20	26	31	36	40	43	50	56	61	66	73	79
		Throw** (m)	3.6	4.2	4.8	5.2	5.6	6.0	6.8	7.4	7.8	8.4	9.2	9.8
F8	NND 590x1290	Pressure Drop (Pa)	1.0	1.0	1.5	2.0	2.5	3.0	4.5	6.5	9.0	11.5	18.0	25.5
	NFD 650x1350	Noise Rating*	20	26	31	36	40	43	50	56	61	66	73	79
		Throw** (m)	3.4	4.0	4.6	5.0	5.4	5.8	6.6	7.2	7.6	8.2	8.8	9.6

* Based upon a 10 dB Room absorption

** To a terminal air velocity of 0.5 m/s



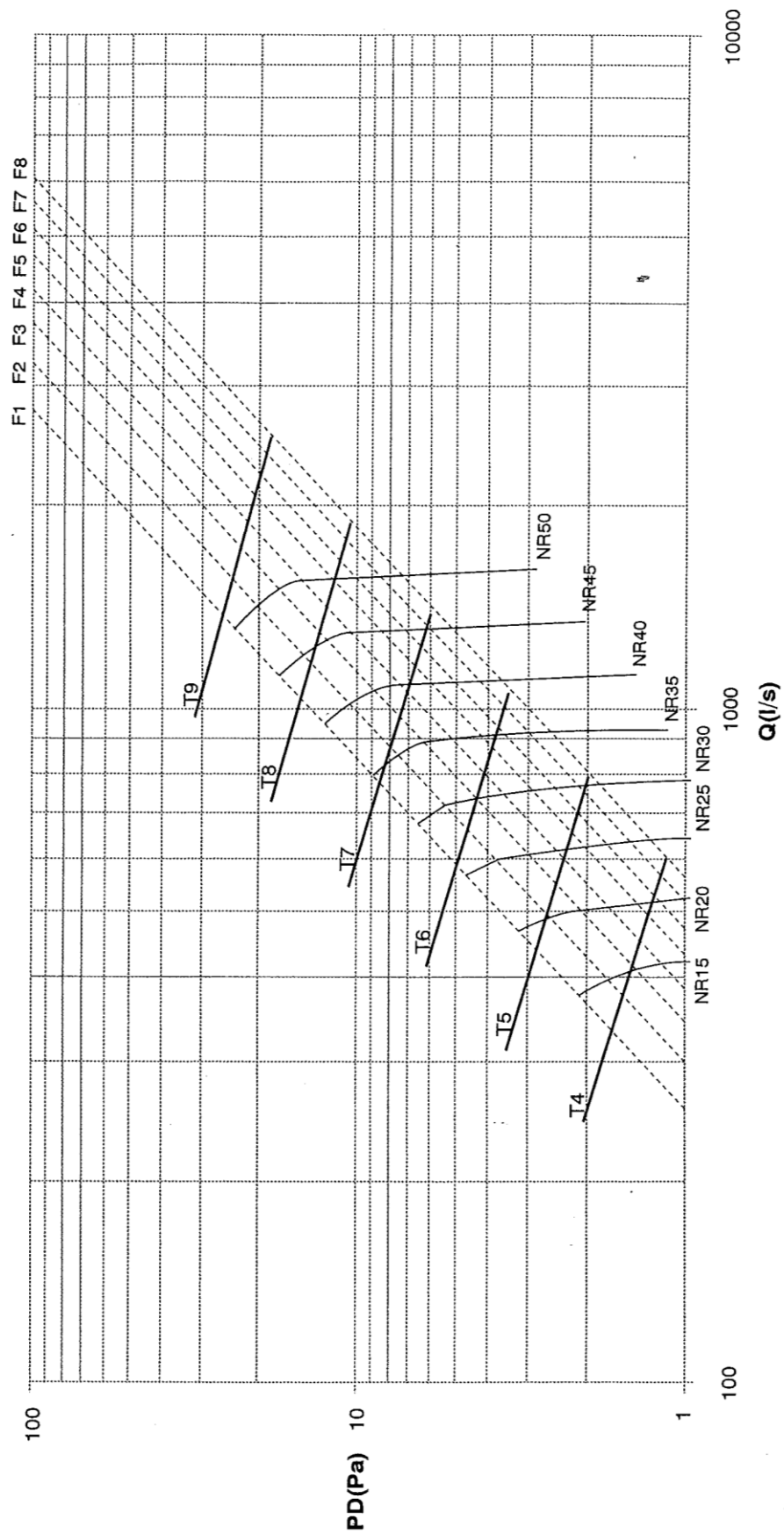
WONG BROTHERS

**SELECTION NOMOGRAM
PRESSURE DROP VS FLOW VS THROW VS NR**

DOUBLE DEFLECTION GRILLES

MODEL TYPES WBG-2VH & WBG-2HV (Category F)

- = PD vs flow
- = Throw, metres
- = NR, 10-50



TECHNICAL PERFORMANCE DATA

Unit Type: DOUBLE DEFLECTION GRILLE MODELS WBG 2HV/2VH (Category G)

• NND - Nominal Neck Dimensions

• NFD - Nominal Face Dimensions

Size Cat. (mm)	Flow (l/s)		225	250	275	300	325	350	375	400	425	450	475	500
G1	NND 690x690	Pressure Drop (Pa)	.5	.5	.5	.5	1.0	1.0	1.0	1.5	1.5	1.5	2.0	2.0
	NFD 750x750	Noise Rating*	1	3	5	7	9	11	13	15	17	19	20	22
		Throw** (m)	1.6	2.0	2.4	2.8	3.0	3.2	3.6	3.8	4.0	4.2	4.4	4.6
G2	NND 690x790	Pressure Drop (Pa)		.5	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.5	1.5
	NFD 750x850	Noise Rating*		2	4	7	9	11	13	15	17	18	20	21
		Throw** (m)		1.6	2.0	2.4	2.6	3.0	3.2	3.4	3.6	3.8	4.0	4.2
G3	NND 690x890	Pressure Drop (Pa)		.5	.5	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.0
	NFD 750x950	Noise Rating*		1	4	6	8	11	13	14	16	18	19	21
		Throw** (m)		1.4	1.6	2.0	2.4	2.6	2.8	3.0	3.4	3.6	3.8	3.8
G4	NND 690x990	Pressure Drop (Pa)		0.0	.5	.5	.5	.5	.5	.5	.5	1.0	1.0	1.0
	NFD 750x1050	Noise Rating*		0.0	.5	.5	.5	.5	.5	.5	.5	1.0	1.0	1.0
		Throw** (m)		1.0	1.4	1.8	2.0	2.2	2.6	2.8	3.0	3.2	3.4	3.6
G5	NND 690x1090	Pressure Drop (Pa)		0.0	0.0	.5	.5	.5	.5	.5	.5	.5	.5	1.0
	NFD 750x1150	Noise Rating*		0	3	5	8	10	12	14	15	17	19	20
		Throw** (m)		.8	1.2	1.4	1.8	2.0	2.2	2.6	2.8	3.0	3.2	3.4
G6	NND 690x1190	Pressure Drop (Pa)			0.0	0.0	.5	.5	.5	.5	.5	.5	.5	.5
	NFD 750x1250	Noise Rating*			3	5	7	10	12	13	15	17	19	20
		Throw** (m)			.8	1.2	1.6	1.8	2.0	2.2	2.6	2.8	3.0	3.2
G7	NND 690x1290	Pressure Drop (Pa)			0.0	0.0	0.0	.5	.5	.5	.5	.5	.5	.5
	NFD 750x1350	Noise Rating*			2	5	7	9	11	13	15	17	18	20
		Throw** (m)			.6	1.0	1.2	1.6	1.8	2.0	2.2	2.6	2.8	2.8
G8	NND 690x1390	Pressure Drop (Pa)			0.0	0.0	0.0	0.0	.5	.5	.5	.5	.5	.5
	NFD 750x1450	Noise Rating*			2	5	7	9	11	13	15	17	18	20
		Throw** (m)			.4	.8	1.0	1.4	1.6	1.8	2.0	2.2	2.4	2.6

* Based upon a 10 dB Room absorption

** To a terminal air velocity of 0.5 m/s



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