ADL APPENDAGES

GAS PRESSURE REGULATOR 1 BAR ATEX ND 15 TO 100 – FRG 2MC

FEATURES

The FRG 2MC gas pressure regulator is intended to depress the pressure of non-corrosive combustible gas, from the network pressure (max 1 bar) maximum to the downstream equipment pressure. Of the static type, it remains tight at zero flow, with no balancing of upstream / downstream pressures, it is featuring a double diaphragm for security.
This model is compatible for installation in ATEX areas 1 & 21 (II 2G - II 2D)
These pressure regulators are featuring built-in filters.



AVAILABLE MODELS

Threaded connections from 1/2" to 2"
PN16 flanges from ND65 to ND100
Downstream pressure setting ranges: see table page 5

OPTIONAL FEATURES

NPT threaded connections
#150 flanged connections
BIOGAZ execution

LIMITS OF USE

Pressure rating: PS	0,5 to 1 bar
Ambient temperature: TS	-15°C / +60°C
Max allowable surface temperature	+60°C

WETTED PARTS

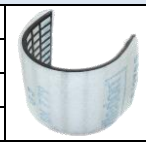
ND	**15 - 25**	**32 - 50**	**65 - 100**
Body	Aluminium EN AB 46100		
Cover & bottom	Aluminium EN AB 46100		
Shutter	Aluminium 11S	Aluminium 11S + Hostaform POM C 9021	Aluminium 11S
Seals & diaphragm	NBR (NBR & FKM in biogas execution)		
Pressure taps	CW614N brass (aluminium or steel in biogas execution)		

DIRECTIVES AND MANUFACTURING STANDARDS

Subject	**Standard**	**Subject**	**Standard**
Gas regulation UE	2016/426	PED directive	2014/68/UE
Product reference regulation	CE 90/396 (EN 88-2)	ATEX directive	2014/34/UE
Gas standard	EN 13611 (Gr 2)	Threaded connections	EN 10226
Accuracy class	AC 10 (P2 ± 10%)	Flanged connections	EN 1092-1

SPARE PARTS

ND
ND 15 à 25
ND 32 à 50
ND 65 & 80
ND 100

Filtration	**Filtering element**	
50 µm	980921M	
	980922M	
	980923M	
	980924M	

Diaphragm kit	
KIT-ME2MC 25	
KIT-ME2MC 50	
KIT-ME2MC 80*	
KIT-ME2MC 100*	

*Standard diaphragm
Reinforced diaphragm: on request

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ATEX PROTECTION

The FRG 2MC pressure regulators has no power source, they are approved for installation in zones 1, 21, 2 & 22 in accordance with the rules of the art (grounding).

Interventions that can be carried out in place are limited to adjustment, any other intervention must be carried out in the workshop by qualified personnel (change of filter, diaphragm).

ATEX marking
CE Ex II2G II2D

FUNCTIONING

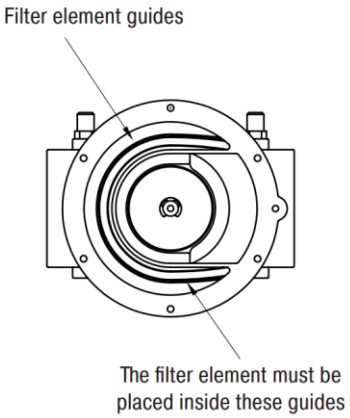
The FRG 2MC regulator is used to reduce and stabilize the gas pressure before use, the pressure adjustment is made by acting on a screw accessible inside the upper tube of the device, it can be controlled by connecting a pressure gauge to the downstream 1/8" pressure tap:

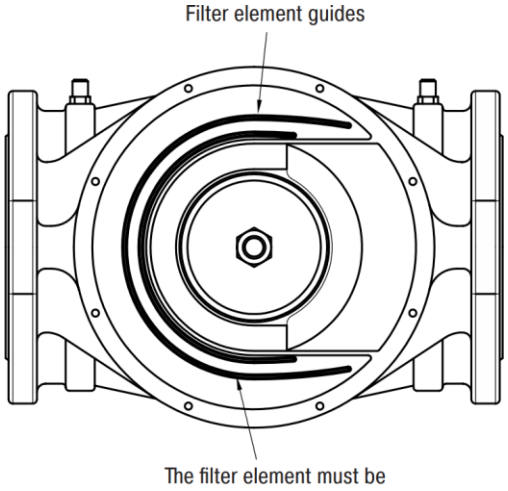
- Close the upstream and downstream valves
- Connect a pressure gauge to the downstream pressure tap equipped with a nipple
- Remove the protective cap from the adjustment device
- Depending on the ND, use the recommended tool to adjust the desired pressure.
- Slowly open the upstream shut-off valve
- Ensure the stabilization of the downstream pressure, adjust if necessary
- (A reduction in the pressure setting may require purging of the downstream piping)
- Slowly open the downstream valve
- Check the seals, disconnect the pressure gauge, replace the adjustment protection

FILTER REPLACEMENT

The filter must be replaced in the workshop:

- Remove the lower cover (bottom)
- Remove the filter element
- Insert a new original filter between the guides (see diagram)
- Refit the lower cover with a new O-ring
- Check the tightness of the lower cover



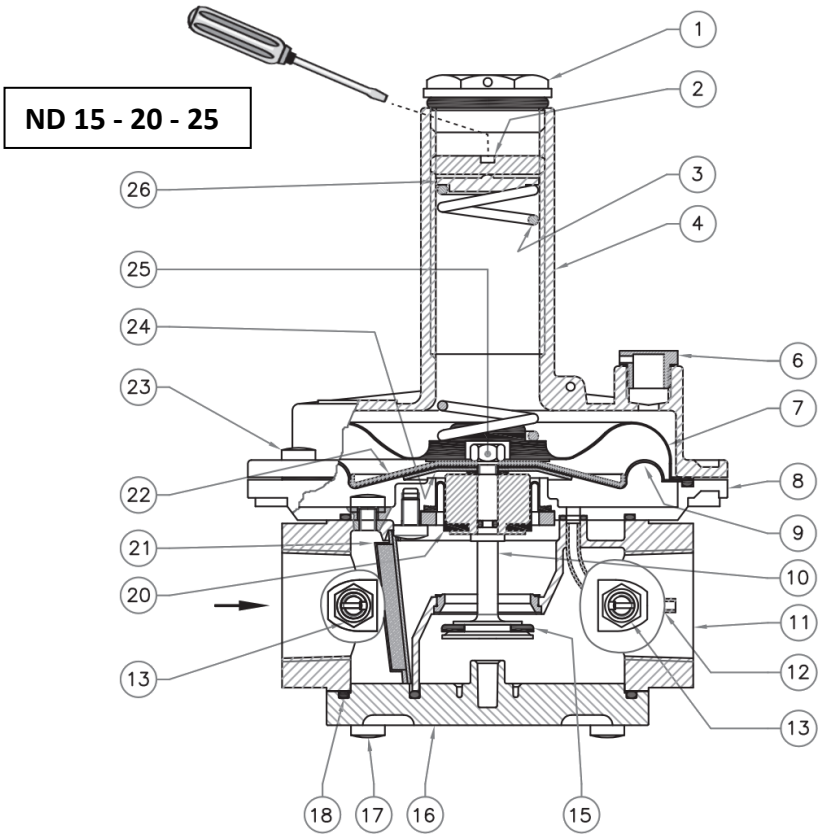


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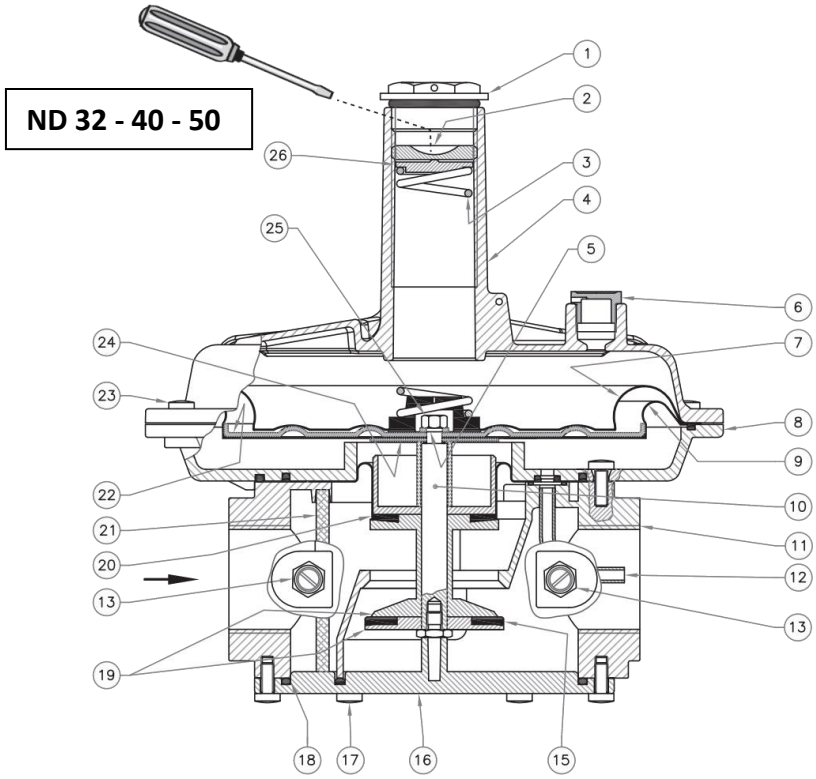
CONSTRUCTION - ND 15 TO 50

N°	Item
1	Setting device cap
2	Downstream pressure setting
3	Calibration spring
4	Top cover
5	Toothed washer
6	Dust cap
7	Safety diaphragm
8	Flange
9	Working diaphragm
10	Centre pin
11	Body
12	Sensor tube
13	Pressure test nipple
15	Sealing washer
16	Bottom cover
17	Bottom cover screws
18	Bottom cover sealing O-Ring
19	Shutter
20	Compensation diaphragm
21	Filter element
22	Top disk for diaphragm
23	Top cover screws
24	Bottom disk for diaphragm
25	Diaphragm/disc fixing nut
26	Spring washer

ND 15 - 20 - 25



ND 32 - 40 - 50

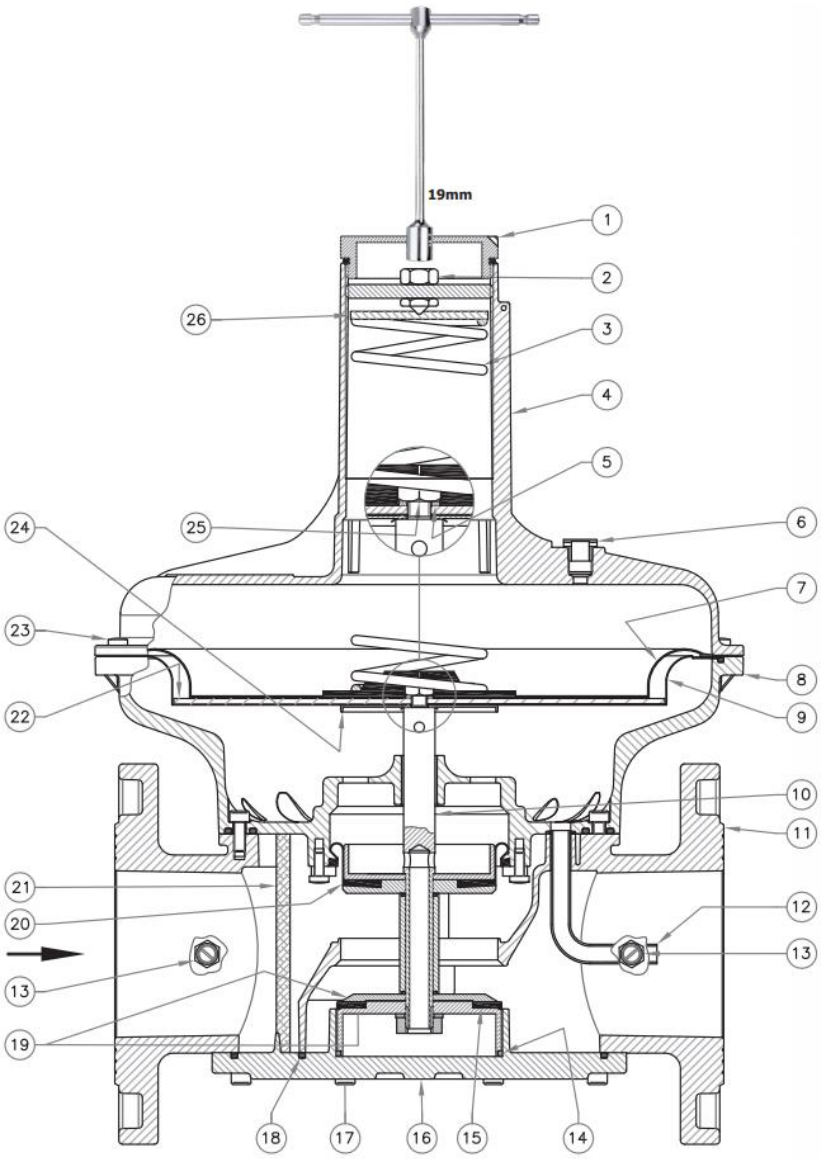


Gegevens ter indicatie, wijzigingen voorbehouden.

GAS PRESSURE REGULATOR 1 BAR ATEX ND 15 TO 100 – FRG 2MC

CONSTRUCTION - ND 65 TO 100

N°	Item
1	Setting device cap
2	Downstream pressure setting
3	Calibration spring
4	Top cover
5	Toothed washer
6	Dust cap
7	Safety diaphragm
8	Flange
9	Working diaphragm
10	Centre pin
11	Body
12	Sensor tube
13	Pressure test nipple
14	Teflon ring
15	Sealing washer
16	Bottom cover
17	Bottom cover screws
18	Bottom cover sealing O-Ring
19	Shutter
20	Compensation diaphragm
21	Filter element
22	Top disk for diaphragm
23	Top cover screws
24	Bottom disk for diaphragm
25	Diaphragm/disc fixing nut
26	Spring washer

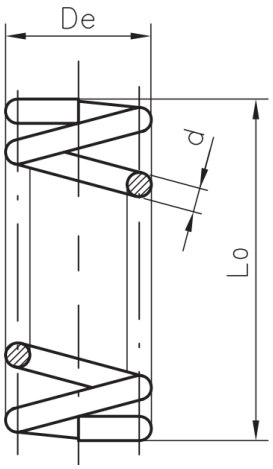


GAS PRESSURE REGULATOR 1 BAR ATEX ND 15 TO 100 – FRG 2MC

SETTING RANGES AND FLOW RATES

ND	Setting ranges mbar	Spring code	Spring dimensions d x De x Lo x it	P1 mini mbar	Flow rate m³/h of air
ND 15	10 ÷ 28	MO-0402	1,5 x 29 x 85 x 10	50	1 ÷ 10
	18 ÷ 40	MO-0500	1,6 x 29 x 115 x 12	55	
	40 ÷ 110	MO-0825	2,2 x 29 x 100 x 12	115	
	110 ÷ 150	MO-0900	2,5 x 29 x 140 x 18,5	160	
	150 ÷ 200	MO-0975	2,5 x 29 x 155 x 16	220	
ND 20	10 ÷ 28	MO-0402	1,5 x 29 x 85 x 10	50	2 ÷ 20
	18 ÷ 40	MO-0500	1,6 x 29 x 115 x 12	50	
	40 ÷ 110	MO-0825	2,2 x 29 x 100 x 12	115	
	110 ÷ 150	MO-0900	2,5 x 29 x 140 x 18,5	160	
	150 ÷ 200	MO-0975	2,5 x 29 x 155 x 16	220	
ND 25	10 ÷ 28	MO-0402	1,5 x 29 x 85 x 10	70	3 ÷ 30
	18 ÷ 40	MO-0500	1,6 x 29 x 115 x 12	70	
	40 ÷ 110	MO-0825	2,2 x 29 x 100 x 12	120	
	110 ÷ 150	MO-0900	2,5 x 29 x 140 x 18,5	160	
	150 ÷ 200	MO-0975	2,5 x 29 x 155 x 16	220	
32 – 40 - 50	13 ÷ 23	MO-0800	2 x 29 x 140 x 16	44	10 ÷ 100
	20 ÷ 36	MO-0850	2,2 x 29 x 140 x 18	55	
	33 ÷ 58	MO-0970	2,5 x 29 x 155 x 16	64	
	55 ÷ 100	MO-1000	3,2 x 29 x 123 x 15,5	120	
	90 ÷ 190	MO-1370	3,5 x 29 x 125 x 14	200	
	190 ÷ 400 (1)	MO-2550	4 x 29 x 98 x 8	500	
65 - 80	13 ÷ 27	MO-1100	4,5 x 70 x 200 x 15,5	47	30 ÷ 300
	22 ÷ 50	MO-1200	5 x 70 x 205 x 9,5	62	
	50 ÷ 130	MO-1400\ZN	6 x 70 x 214 x 10,5	140	
	100 ÷ 200	MO-1400\ZN + MO-1800\ZN	6 x 70 x 214 x 10,5 + 5,5 x 54,5 x 195 x 12,5	215	
	200 ÷ 600 (1)	MO-1305 #	3,5 x 29,8 x 98 x 11,5	700	
ND 100	15 ÷ 27	MO-1100	4,5 x 70 x 200 x 15,5	40	40 ÷ 400
	27 ÷ 55	MO-1200	5 x 70 x 205 x 9,5	68	
	55 ÷ 130	MO-1400\ZN	6 x 70 x 200 x 10,5	143	
	130 ÷ 200	MO-1400\ZN + MO-800\ZN	6 x 70 x 214 x 10,5 + 5,5 x 54,5 x 195 x 12,5	213	
	200 ÷ 600 (1)	MO-1305 #	3,5x29,8x98x11,5	700	

it : total number of turns



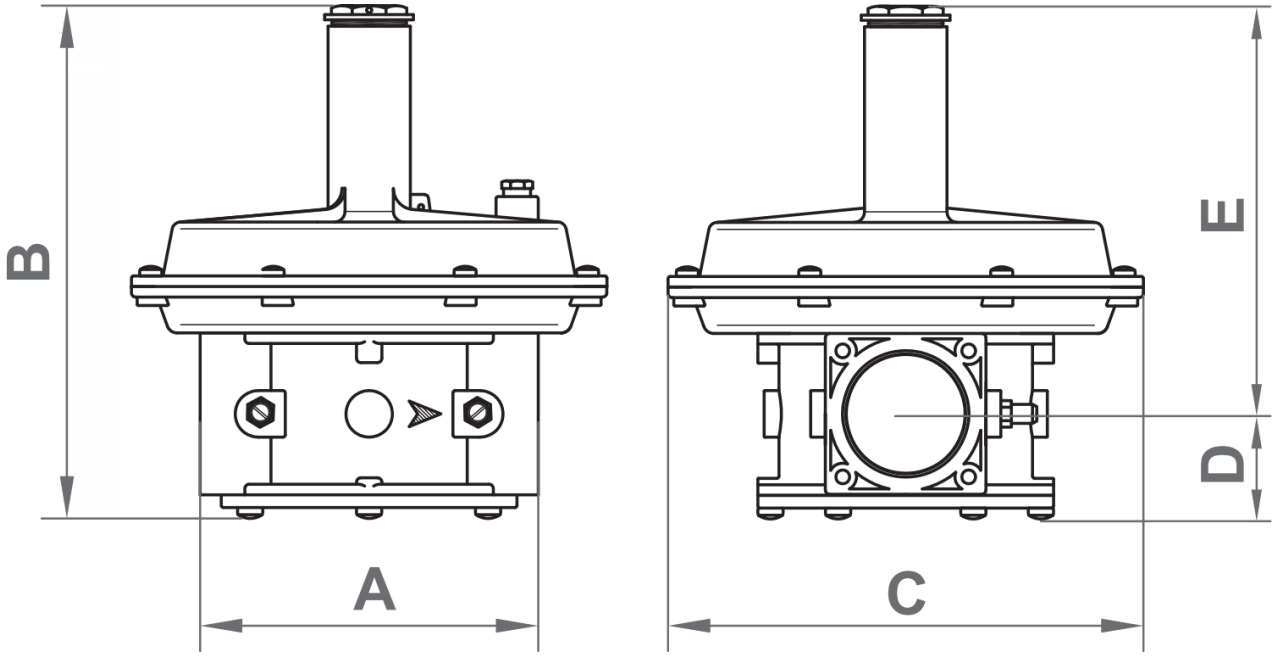
(1) Special execution

* Reinforced diaphragm

\# Piloted version

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DIMENSIONS (mm)

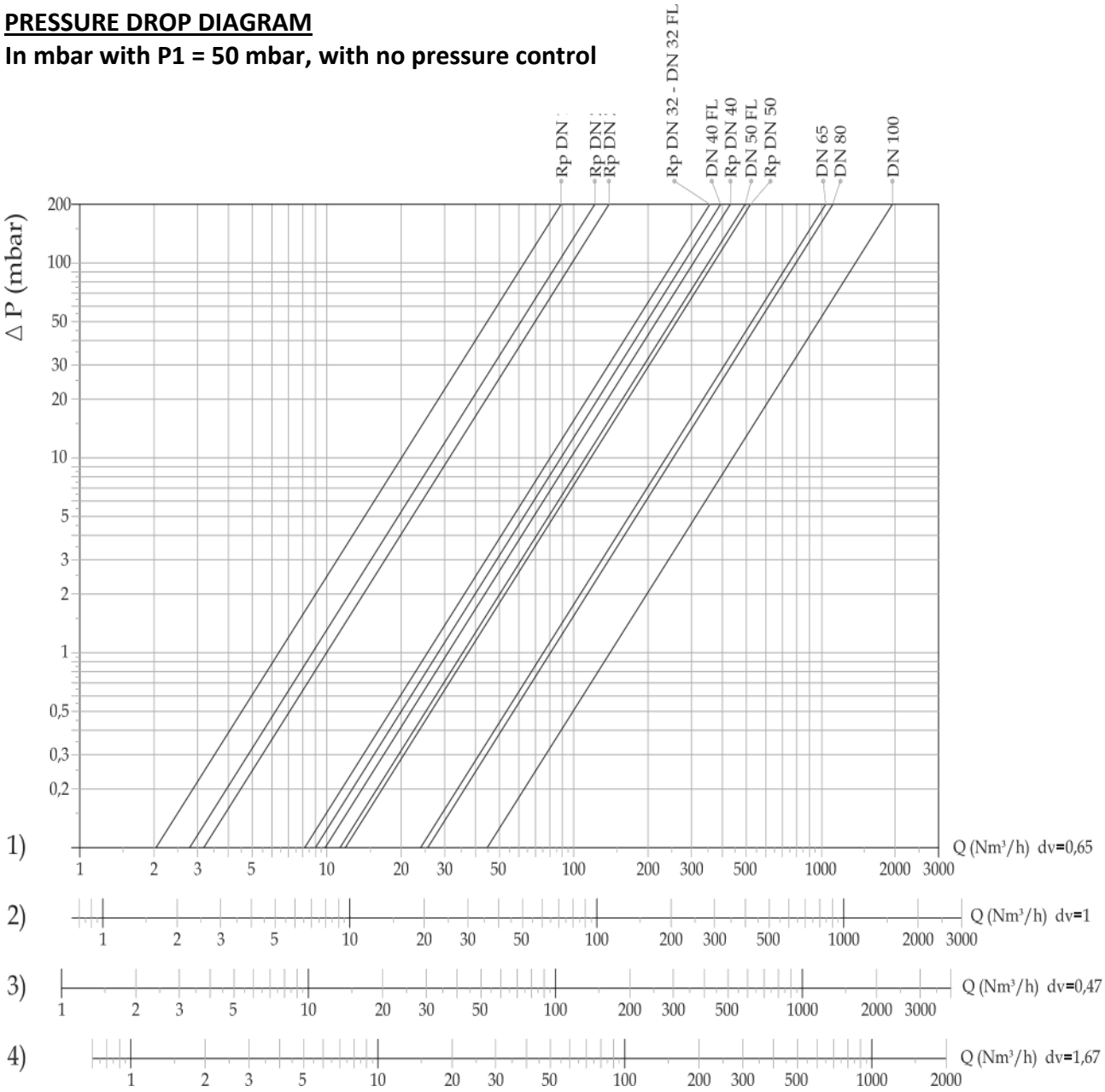


BSP	PN16 flanges	Holes	A	B (=D+E)	C	D	E
1/2"	-	-	120	194	140	38,5	155,5
3/4"	-	-	120	194	140	38,5	155,5
1"	-	-	120	194	140	38,5	155,5
1"1/4	-	-	160	242	225	48,5	193,5
1"1/2	-	-	160	242	225	48,5	193,5
2"	-	-	160	242	225	48,5	193,5
	32	4	230	285	225	67,5	217,5
	40	4	230	285	225	67,5	217,5
	50	4	230	285	225	67,5	217,5
	65	4	290	508	330	90	418
	80	8	310	515	330	97	418
	100	8	350	551	330	106	445

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PRESSURE DROP DIAGRAM

In mbar with P1 = 50 mbar, with no pressure control



1) Methane (natural gas)
2) Air
3) Town gas
4) LPG (butane – propane)

dv = density relative to air