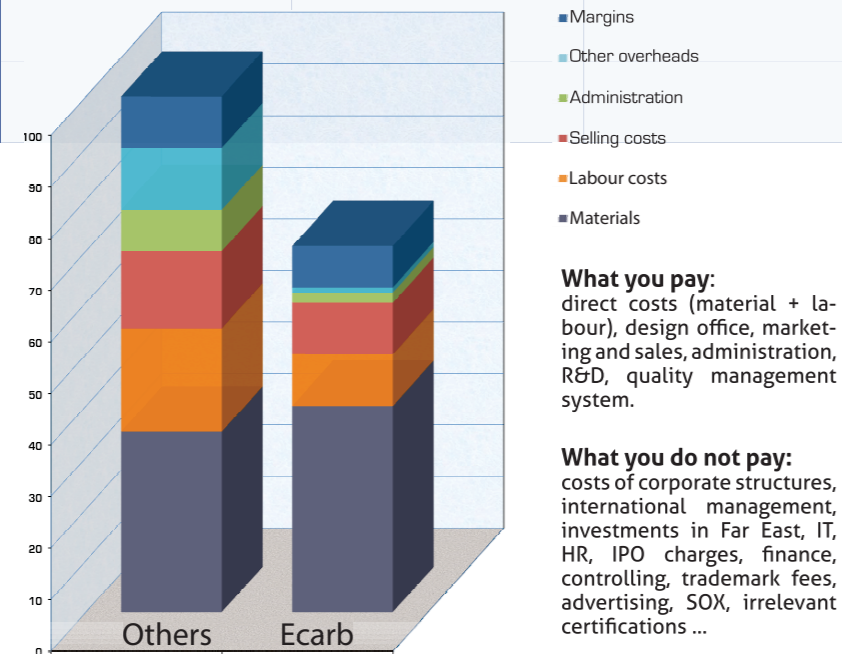


Price: technology, nothing else!



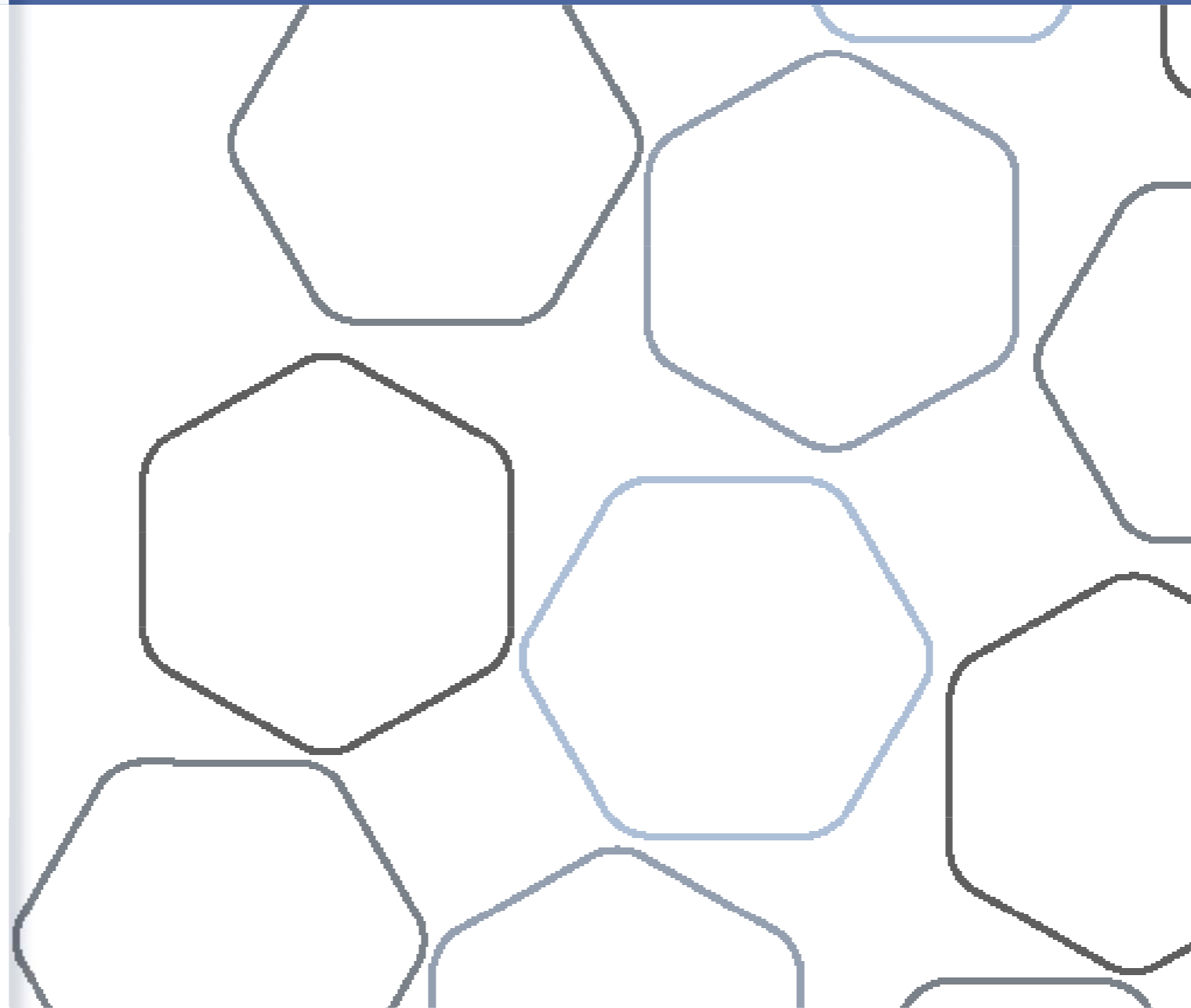
Quality by passion

Ecarb Quality Management System is certified according to ISO 9001:2008. Each single procedure was inspired by our core values: **engineering excellence and customer satisfaction**. Graphec Safety Disks are designed in order to ensure a safe and regular behaviour. Rupture tests are performed according to most safe industrial standards. Ecarb's safety disks are certified acc. to European Pressure Directive (97/23/EG) by TÜV Sud. ISPEL certificate is available on demand.



References

Graphec safety disks are installed to protect items working with aggressive media on the most severe conditions. They can be used also in pharmaceutical and food industry, as clean PTFE membrane may be installed to avoid contamination. Detailed references are available on demand.





Graphec® safety disks ensure safe and reliable behaviour, protecting your equipment from over-pressure, pressure fluctuations or unpredicted vacuum conditions.

Graphite has unique chemical and physical features. It is impervious and inert to a wide range of aggressive substances.

Graphite safety disks provide important advantages versus metallic ones:

- **superior corrosion resistance:** graphite is immune from phenomena, like pitting and tunnel etching, which locally damage metals. Thereby graphite offers no trigger point for improper breakages.
- **larger discharge section:** when bursting pressure is reached, graphite membrane breaks suddenly and its fragmentation makes the whole section available for gas discharge. Higher free section allows engineers to design smaller (and cheaper) safety disks and flanges.
- **thermal stability:** graphite rupture disks behaviour is not significantly affected by temperature.

Maintenance and operation

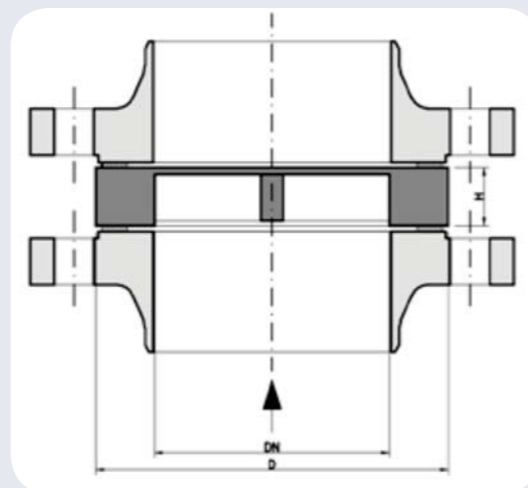
Graphec® safety disks burst when calibration pressure is reached. Accuracy of calibration may have a tolerance of +/- 5%, actually less than many our competitors can do.

Graphec® safety disks can be easily installed between UNI or ASA flanges. Our user manual is brief and clear to ensure that disks are put in operation respecting few important safety instructions. Flow direction and disks features are always indicated on a metallic tag.

Model selection: the best solution in a wide range

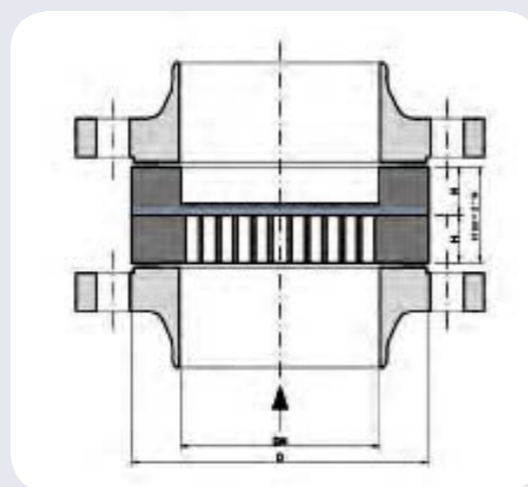
Graphec® product line includes three disk models, available up to ND600 (24").

Graphec® MB: standard graphite monolithic disks, usable from - 60°C up to 150°C provide reliability and ease.



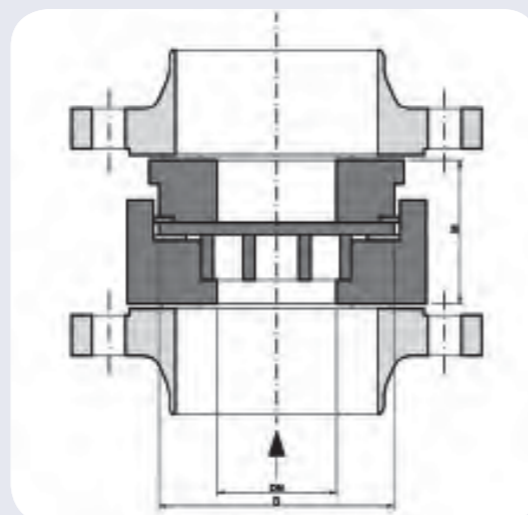
Nominal Diameter (Internal)		Ex. Diameter D	Height H	Bursting Pressure	
mm	Inches	mm	mm	Min, bar	Max, bar
25	1	64	20	0,6	20
40	1 1/2	82	20	0,49	20
50	2	100	20	0,4	20
65	2 1/2	120	23	0,4	20
80	3	130	23	0,4	20
100	4	160	25	0,3	14
125	5	190	27	0,3	12
150	6	214	30	0,2	8
200	8	274	35	0,2	5
250	10	328	40	0,1	4
300	12	378	45	0,1	4
350	14	438	50	0,1	3
400	16	490	50	0,1	3
500	20	590	50	0,1	2

Graphec® eMB: graphite monolithic disks for high temperature applications (up to 300°C). Bursting pressure does not depend on temperature. A clean PTFE membrane may be used for pharmaceutical or food applications.



Nominal Diameter (Internal)		Ex. Diameter D	Height H	Bursting Pressure	
mm	Inches	mm	mm	Min, bar	Max, bar
25	1	64	20	1	20
40	1 1/2	82	20	0,7	20
50	2	100	20	0,49	20
65	2 1/2	120	23	0,49	14
80	3	130	23	0,3	12
100	4	160	25	0,3	10
125	5	190	27	0,3	8
150	6	214	30	0,3	6
200	8	274	35	0,2	5
250	10	328	40	0,2	3
300	12	378	45	0,1	2
350	14	438	50	0,1	2
400	16	490	50	0,1	1,5
500	20	590	50	0,1	1

Graphec® 3B: disks made of three graphite components: a graphite membrane and a reusable holder in two parts. Only membrane must be changed after bursting, reducing maintenance costs.



Nominal Diameter (Internal)		Ex. Diameter D	Height H	Bursting Pressure	
mm	Inches	mm	mm	Min, bar	Max, bar
25	1	64	25 - 27	0,49	20
40	1 1/2	82	27 - 30	0,49	20
50	2	100	28 - 33	0,3	14
65	2 1/2	120	32 - 37	0,3	10
80	3	130	36 - 42	0,3	10
100	4	160	42 - 50	0,3	8
125	5	190	50 - 58	0,3	6
150	6	214	56 - 65	0,3	5
200	8	274	74 - 85	0,3	4
250	10	328	95 - 115	0,3	3
300	12	378	108 - 135	0,3	2
350	14	445	122 - 150	0,3	2
400	16	500	148 - 175	0,3	1,5
500	20	620	200 - 225	0,3	1

Vacuum resistance

Every safety disk may be produced to resist to full vacuum conditions. Vacuum resistance is due to a vacuum support which avoids implosion of membrane in case it is solicited along the direction opposite to discharge flow. Vacuum support is embedded in the disk main body for model MB. eMB and 3B disks have a separate reusable vacuum support (sieved plate), which can be made of graphite or PTFE.

Test and calibration

Each single lot is rigorously tested, bursting at least two further identical pieces. PED certification is available for disks with bursting pressure equal or higher than 0,5 bar. Disks with bursting pressure lower than 0,5 bar are factory tested. Third part inspection (i.e. ISPE/SL) during bursting test may be required on demand.

Gaskets

Graphec® safety disks are supplied with gaskets necessary for installation. Standard gaskets are made of expanded graphite. 3B disks have a cork soft ring to support stand-alone membrane.

Customer care

Ecarb is able to deliver small lot of MB disks in few hours, in case of emergency. Our engineers will select for you the optimal disk, on the basis of process parameters (media, volume, temperature, pressure). We propose open order to reduce cost and simplify procurement procedure.

Ecarb product designation

Our nomenclature facilitates identification of the required device, providing all data necessary to manufacture the lot.

Model	ND	Bursting Pressure	Calibration temperature	Vacuum Resistant								
Example: monolithic disk ND50 (UNI), bursting at 15 bar / 100°C, without vacuum support:												
-	M	B	0	5	0	-	1	5	1	0	0	-
Example: monolithic disk for high temperature ND125 (UNI), bursting at 0,49 bar, with vacuum support:												
e	M	B	1	2	5	0	4	9	-	-	-	V
Example: 3 pieces disk ND1 1/2" (ASA), bursting at 1,5 bar / 25°C, with vacuum support:												
-	3	B	0	1	1/2	-	1	5	0	2	5	V

