

Type HSM-IMO2-2374

(magnet guided – for special application)

High Velocity Vent



High Velocity Pressure/vacuum valves
Type HSM-IMO2

The non-hammering high velocity pressure/vacuum relief vent type HSM-IMO2 is based on more than twenty years of experience with different types of magnet operated valves, the best of which is now combined and used in the magnet guided non-hammering high velocity vent type HSM-IMO2. This type is specifically intended for applications calling for instant, high relief capacity without dynamic pressure drop and applications where narrow vent piping does not allow for anything but a marginal pressure drop. Due to the relatively short stroke and a carefully designed blow down-value, the HSM valve will relieve overpressure in the tank without hammering at the critical, small flow rates. The entire magnet assembly is located outside the pressure chamber and therefore not subjected to cargo vapor. The magnet, which can be PTFE encapsulated on special request and made in various materials, is always resting and non-moving, whereby physical damage over time is avoided. Further, bellows and stuffing arrangements are avoided. Resetting is done without special tools due to the design of the spacing elements between magnet and counter plate. Re-calibration can easily be carried out by means of a pull-meter or verification of the magnet distance to the counter-plate.

Type HSM-IMO2 provides protection from fire and explosion and automatically controls the tank pressure and vacuum during loading, discharge, voyage and ballasting without manual operation and provides safe operation regardless of flow volume. It operates under freezing conditions without heating arrangements according to the restrictions listed in the accompanying certification. Discharge velocity is constantly above 30 m/sec due to the controlled opening and closing phase. The valve is manufactured and tested in accordance with IMO MSC/Circ. 677 and approved by the Danish Maritime Authority, which approval is endorsed by the leading classification societies.

Features of type HSM-IMO2:

- Complies with IMO regulations as per 1.1.95
- Non-hammering
- Instant full capacity
- Insignificant pressure drop (allows the use of less diameter vent pipe)
- Adjustable blow-down value
- Adjustable setting
- Easy re-setting/re-calibration (without use of tools or rig)
- Few moving parts
- Self-closing check-lifts
- Low maintenance costs
- Available in all standard materials
- Magnet outside cargo vapor area
- No bellows nor stuffing arrangements
- Self-draining to tank

Options: See specification

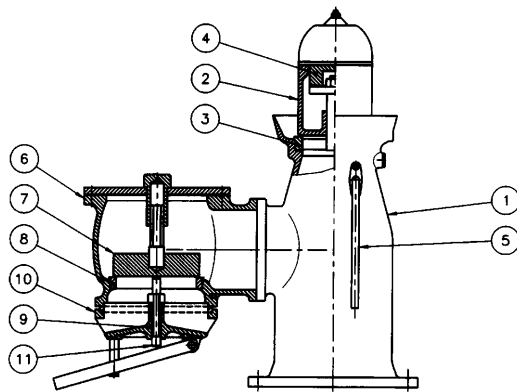
High velocity pressure/ vacuum relief vent

Specifications	
Type:	HSM-IMO2
Dimensions:	See drawing No. 2374
Settings:	See certification
Accuracy:	± 4%
Capacities:	Up to 11,000 Nm ³ /h
Installation:	See certification for applicable restrictions
Efflux velocity:	Minimum 30 m/sec
Checklifts:	Self-closing (full travel)
Pressure rise:	None, due to magnet controlled operation.
Valve type:	Full lifting
Materials:	Cast iron, nodular iron, bronze, stainless steel
Ice-layer:	5 mm
Net clearance:	30-55 mm

Nominal sizes:	ND50 - 400
Options:	Proximity switches, desiccator, gas-freeing piping, heating jacket*, anti-water ingress unit - vacuum side, flushing arrangement.

Certification:	Certified by the Danish Government's Maritime Authority according to MSC/Circ. 677. Installation to be in accordance with MSC/Circ. 731 and maximum allowable vent pipe configurations approved by the Danish Maritime Administration.
	Approved for gas groups II A, II B-1, II B-2 and II B-3. Approved for ADN R vessels and by USCG. Meets European standard.

*With separate approval.



Type HSM-IMO2

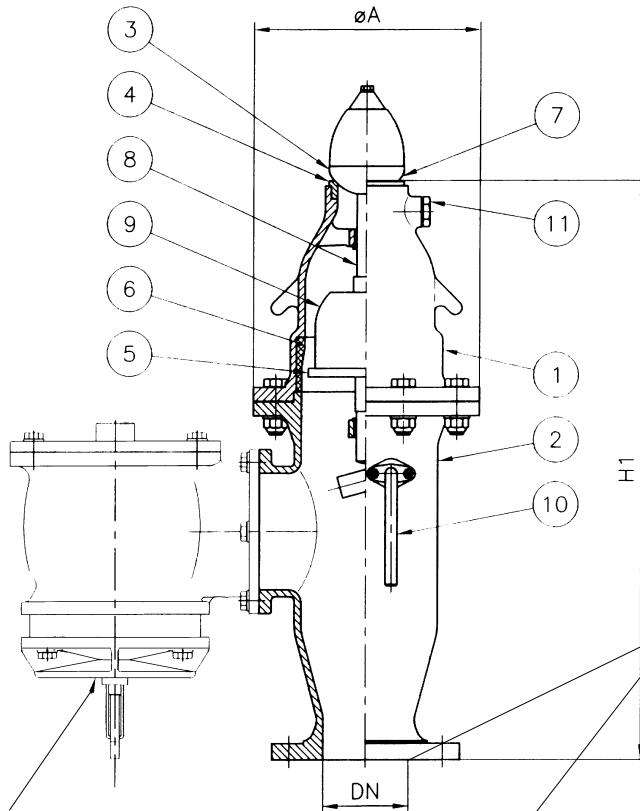
Item	Description
1	House
2	Pressure disc
3	Pressure Seat
4	Magnet
5	Check-lift
6	Vacuum house
7	Vacuum disc
8	Vacuum Seat
9	Flame screen
10	Venting cover
11	Check-lift

Available with any connection and in any material requested. Please ask for detail drawing and performance data sheets for any specific model and type.

drwg. no.:	2374
	page 1 of 6
date:	980219
model:	scale:
drw. rev.:	19
	material:

Type HS-IM02, HSE-IM02, HSM-IM02

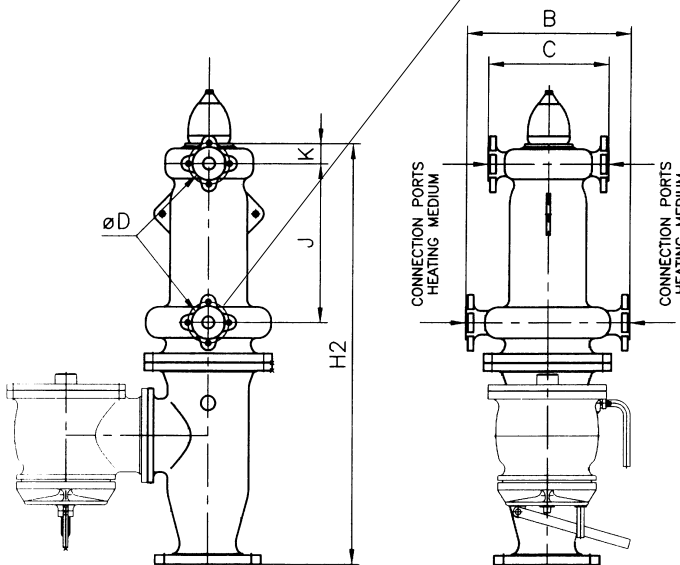
High velocity valve



Vacuum unit
Drawing only schematic. Refer to separate drawing

Approved in accordance with IMO MSC/Circ. 677. Service restrictions must be observed in regards of cargo type, vent pipe length, coefficient of resistance and diameter. Please refer to certified flow curves for each size of each type as per Circ. 677.

• Flange standard according to ISO 2084 PN 10 unless otherwise specified



Heating arrangement option

This drawing is for guidance only. Other sizes, materials, flange standards, settings, and versions are available. Request a specific quotation or approval drawing before implementing data.

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date:	980219
model:	-
drw. rev.:	19
drwg.:	-
scale:	-
material:	-

Type HS-IM02, HSE-IM02, HSM-IM02 *High velocity valve*

This drawing is for guidance only. Other sizes, materials, flange standards, settings, and versions are available. Request a specific quotation or approval drawing before implementing data.

HS-IM02-2374-I-090-82-95-250-150-1455-160	150	6	315	770						
HS-IM02-2374-I-090-68-105-250-150-950-205	150	6	310	750						
HS-IM02-2374-I-090-68-105-250-150-975-135	150	6	310	665						
HS-IM02-2374-N-065-68-105-250-125-945-135	125	5	265	665						
HS-IM02-2374-N-065-68-105-250-125-1070-116	125	5	265	630						
HS-IM02-2374-N-065-68-350-700-100-1300-135	100	4	265	867						
HS-IM02-2374-N-065-68-350-700-100-1300-135	100	4	265	867						
HS-IM02-2374-N-065-68-105-250-100-1050-135	100	4	265	672						
HS-IM02-2374-N-065-68-200-250-100-710-135	100	4	265	672						
HS-IM02-2374-N-065-68-105-250-100-910-116	100	4	310	626						
HS-IM02-2374-N-065-68-105-250-100-910-90	100	4	310	630						
HS-IM02-2374-N-065-60-100-250-100-810-116	100	4	260	600						
HS-IM02-2374-N-065-60-100-250-100-795-90	100	4	260	600						
HS-IM02-2374-N-065-50-100-250-100-590-160	100	4	225	680						
HS-IM02-2374-N-065-50-350-700-100-1015-116	100	4	225	820						
HS-IM02-2374-N-065-50-350-700-100-1020-90	100	4	225	820						
HS-IM02-2374-N-065-50-100-250-100-585-90	100	4	225	575						
HS-IM02-2374-N-065-50-100-250-100-605-0	100	4	225	500						
HS-IM02-2374-N-065-68-105-250-80-1070-116	80	3	265	626						
HS-IM02-2374-N-065-68-100-250-80-925-90	80	3	310	630						
HS-IM02-2374-N-065-60-100-250-80-810-90	80	3	260	600						
HS-IM02-2374-N-065-50-350-700-80-1110-116	80	3	225	827						
HS-IM02-2374-N-065-50-100-250-80-545-116	80	3	225	577						
HS-IM02-2374-N-065-50-350-700-80-1060-90	80	3	225	820						
HS-IM02-2374-N-065-50-100-250-80-600-90	80	3	225	570						
HS-IM02-2374-N-065-35-100-250-80-305-50	80	3	180	392						
HS-IM02-2374-N-065-50-100-250-65-610-90	65	2 1/2	225	570						
HS-IM02-2374-N-065-50-100-250-65-595-90	65	2 1/2	225	570						
HS-IM02-2374-N-065-50-100-250-65-570-50	65	2 1/2	225	440						
HS-IM02-2374-N-065-35-100-250-65-300-50	65	2 1/2	180	385						
HS-IM02-2374-N-065-50-350-700-50-1165-116	50	2	225	827						
HS-IM02-2374-N-065-50-100-250-50-535-116	50	2	225	577						
HS-IM02-2374-N-065-50-350-700-50-1165-90	50	2	225	827						
HS-IM02-2374-N-065-50-100-250-50-495-90	50	2	225	577						
HS-IM02-2374-N-065-50-100-250-50-630-50	50	2	225	450						
HS-IM02-2374-N-065-35-100-250-50-315-50	50	2	180	385						
Code No.	DN	DN	°A	H1	H2	J	K	B	C	°D
	mm	inch	mm	mm	mm	mm	mm	mm	mm	mm

drwg. no.:	2374	drwg.:	-
	page 3 of 6		
date:	980219	scale:	-
model:	-	material:	-
drw. rev.:	19		

Type HS-IM02, HSE-IM02, HSM-IM02

High velocity valve

HS-IM02-2374-I-090-225-105-175-350-8900-0	350	14	670	1350						
HS-IM02-2374-I-090-200-100-175-350-7000-250	350	14	600	1170						
HS-IM02-2374-I-090-164-100-200-250-7575-250	250	10	475	870						
HS-IM02-2374-I-090-150-100-200-250-5250-250	250	10	475	870						
HS-IM02-2374-I-090-150-100-200-250-5220-205	250	10	475	870						
HS-IM02-2374-I-090-150-100-200-250-5300-160	250	10	475	870						
HS-IM02-2374-I-090-150-100-200-200-6360-205	200	8	475	870						
HS-IM02-2374-I-090-150-100-200-200-4050-205	200	8	475	870						
HS-IM02-2374-I-090-150-100-200-200-4220-160	200	8	475	870						
HS-IM02-2374-I-090-100-105-250-200-2260-205	200	8	355	840						
HS-IM02-2374-I-090-100-105-250-200-2300-116	200	8	355	755						
HS-IM02-2374-I-090-125-105-250-175-3580-180	175	7	420	875						
Code No.	DN	DN	°A	H1	H2	J	K	B	C	°D
	mm	inch	mm	mm	mm	mm	mm	mm	mm	mm

Parts list

Item	Description	Spec. 1	Spec. 2	Spec. 3
1	House	Stainless steel	Cast iron	Cast iron
2	Adapter	Stainless steel	Cast iron	Cast iron
3	Pressure disc	Stainless steel	Stainless steel	Bronze
4	Pressure seat	Stainless steel	Stainless steel	Bronze
5	Variable booster	Stainless steel	Stainless steel	Stainless steel
6	Variable sleeve *	Stainless steel	Stainless steel	Bronze
7	Variable outlet	Stainless steel	Stainless steel	Bronze
8	Stem	Stainless steel	Stainless steel	Stainless steel
9	Weight loading	Stainless steel	Stainless steel	Stainless steel
10	Check lift, self-closing	Stainless steel	Stainless steel	Stainless steel
11	Flushing port, optional	Stainless steel	Stainless steel	Stainless steel

*Optional: Bronze or stainless steel sleeve along booster plate stroke line

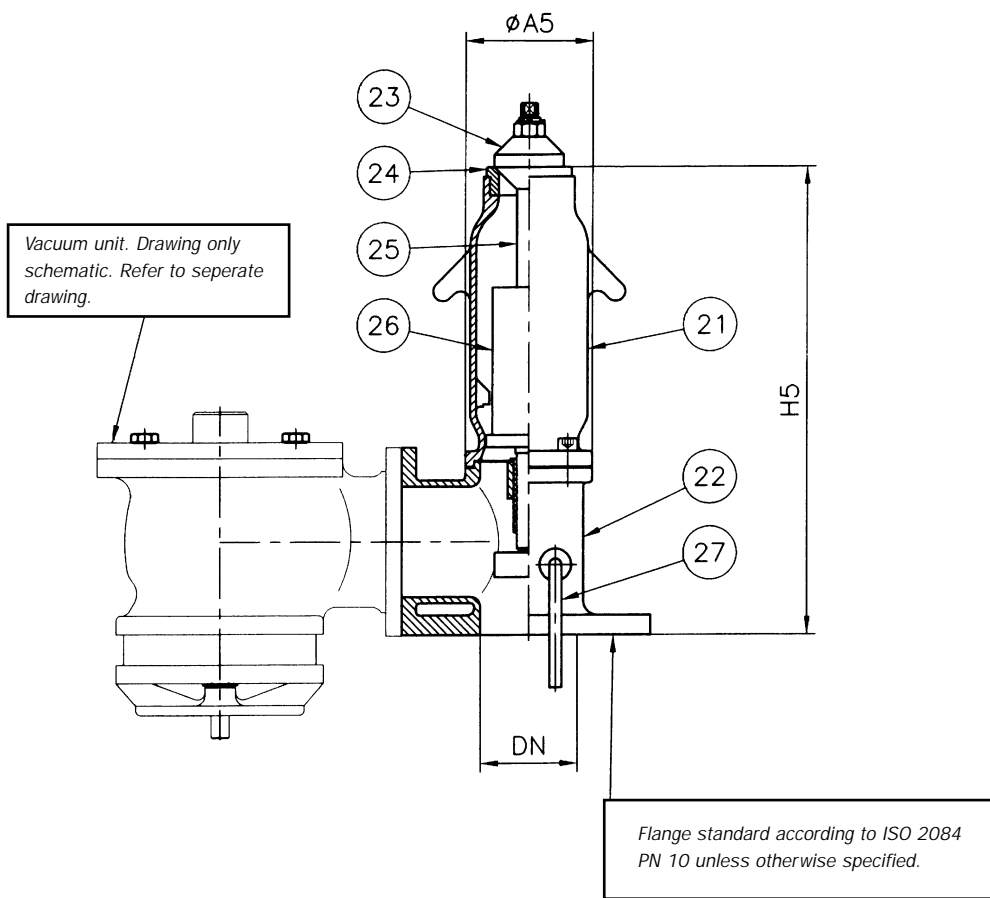
This drawing is for guidance only. Other sizes, materials, flange standards, settings, and versions are available. Request a specific quotation or approval drawing before implementing data.

drwg. no.:	2374	drwg.:	-
	page 4 of 6		
date:	980219	scale:	-
model:	-	material:	-
drw. rev.:	19		

Type HS-IM02, HSE-IM02, HSM-IM02

High velocity valve

HSE-IM02-2374-N-065-50-100-200-80-770-90	80	3	140	375
HSE-IM02-2374-N-065-35-350-600-80-725-90	80	3	140	475
Code No.	DN	DN	°A5	H5
	mm	inch	mm	mm



Parts list

Item	Description	Spec. 1
21	House	Stainless steel
22	Adapter	Stainless steel
23	Pressure disc	Stainless steel
24	Pressure seat	Stainless steel
25	Stem	Stainless steel
26	Weight loading	Stainless steel
27	Check lift	Stainless steel

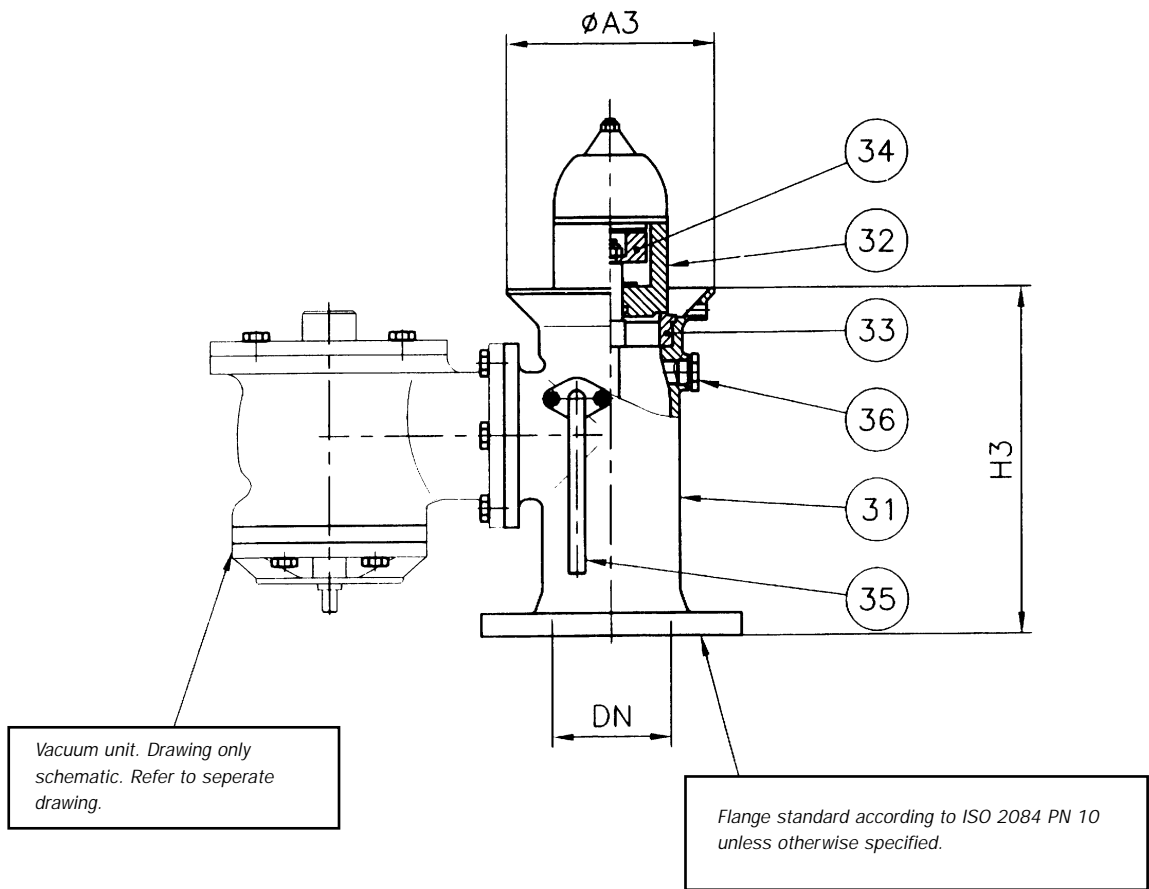
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drwg. no.:	2374	drwg.:	-
	page 5 of 6	date:	980219
model:	-	scale:	-
drw. rev.:	19	material:	-

Type HS-IM02, HSE-IM02, HSM-IM02

High velocity valve

HSM-IM02-2374-N-065-80-100-250-100-2145-90	100	4	175	290
Code No.	DN	DN	°A3	H3
		mm	inch	mm



Parts list

Item	Description	Spec. 1	Spec. 2
31	House	Stainless steel	Cast iron
32	Pressure disc/weight loading	Stainless steel	Stainless steel
33	Pressure seat	Stainless steel	Stainless steel
34	Blowdown control magnet	PTFE encapsulated	PTFE encapsulated
35	Check lift, self-closing	Stainless steel	Stainless steel
36	Flushing port, optional	Stainless steel	Stainless steel

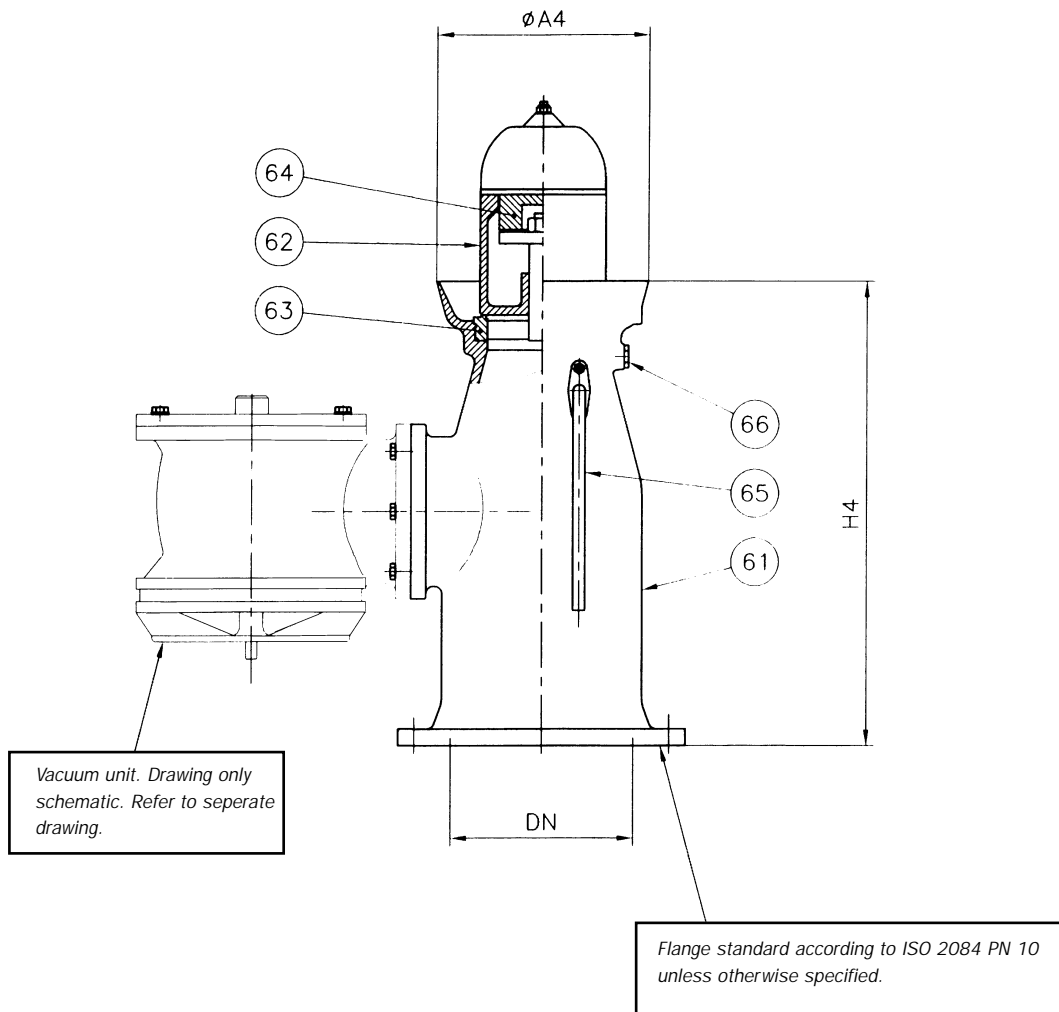
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drwg. no.:	2374
	page 6 of 6
date:	980219
model:	-
drw. rev.:	19
material:	-

Type HS-IM02, HSE-IM02, HSM-IM02

High velocity valve

HSM-IM02-2374-I-090-155-100-200-200-6565-180	200	8	295	660
Code No.	DN	DN	°A4	H4
	mm	inch	mm	mm



Parts list

Item	Description	Spec. 1	Spec. 2
61	House	Stainless steel	Cast iron
62	Pressure disc/weight loading	Stainless steel	Stainless steel
63	Pressure seat	Stainless steel	Stainless steel
64	Blowdown control magnet		
65	Check lift, self-closing	Stainless steel	Stainless steel
66	Flushing port, optional	Stainless steel	Stainless steel

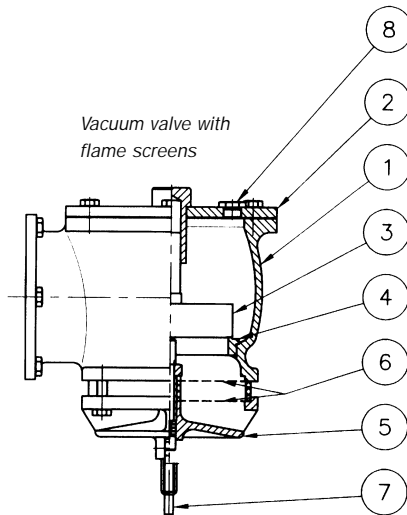
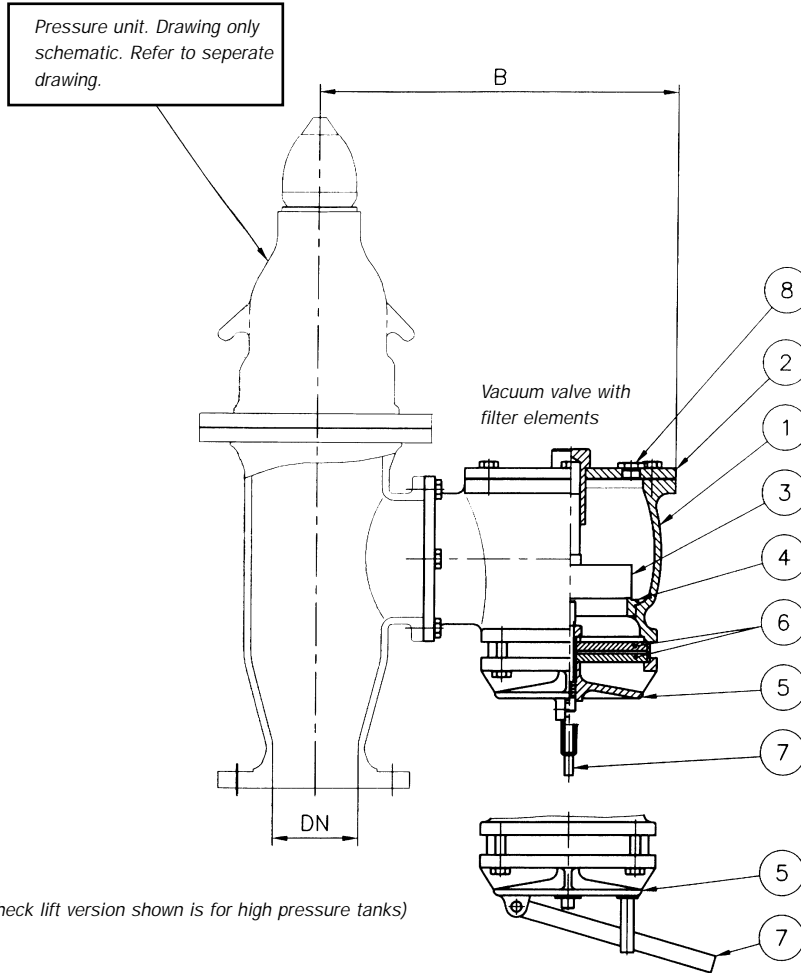
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drwg. no.:	2376
	page 1 of 6
date:	981209
model:	scale:
drw. rev.:	12
	material:

Type IMO2-VAC

Vacuum valve

This drawing is for guidance only. Other sizes, materials, flange standards, settings, and versions are available. Request a specific quotation or approval drawing before implementing data.



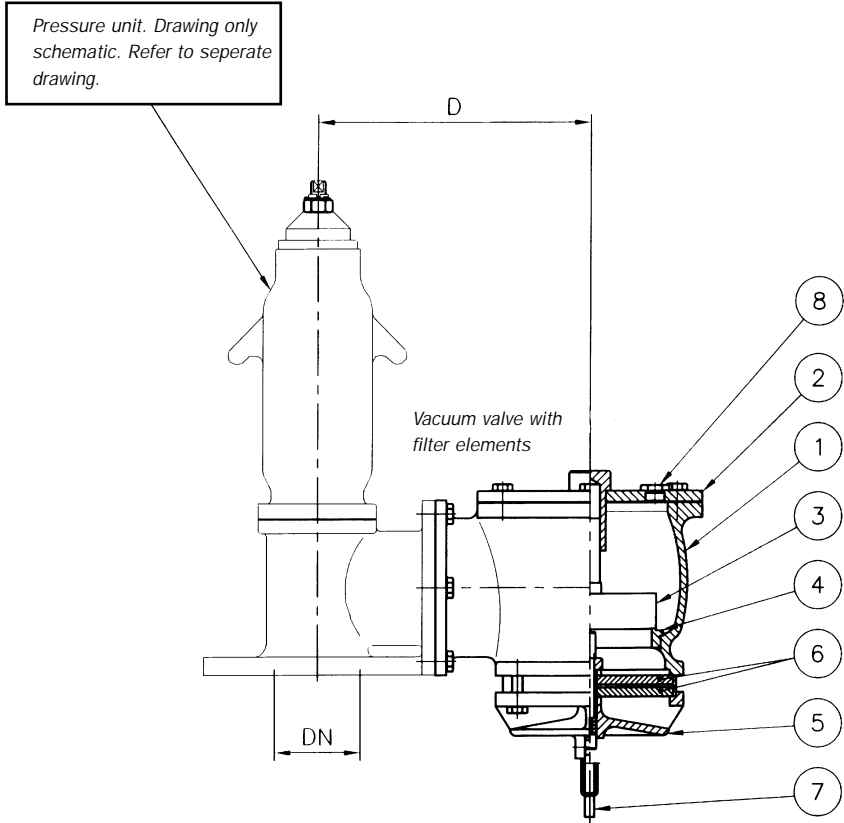
Approved in accordance with IMO MSC/Circ. 677. Please refer to certified flow curves for each size of each type as per Circ. 677.

drwg. no.: 2376	page 3 of 6
date: 981209	drwg.: -
model: -	scale: -
drw. rev.: 12	material: -

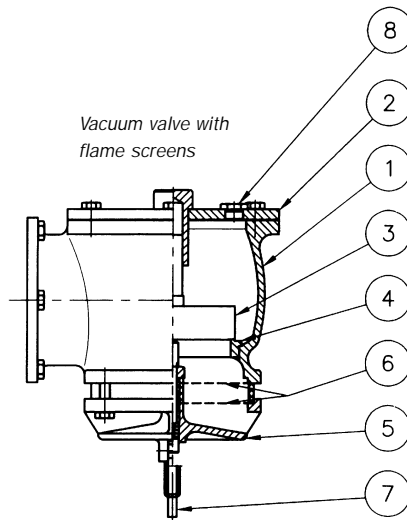
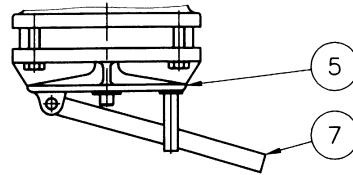
Type IMO2-VAC

Vacuum valve

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(Check lift version shown is for high pressure tanks)



Approved in accordance with IMO MSC/Circ. 677. Please refer to certified flow curves for each size of each type as per Circ. 677.

drwg. no.:	2376 page 4 of 6
date:	981209
model:	-
drw. rev.:	12
drwg.:	-
scale:	-
material:	-

Type IM02-VAC

Vacuum valve

IM02-VAC-2376-090-90-35-35-80-500-50E	80	3	355
IM02-VAC-2376-065-90-35-35-80-420-50E	80	3	355
IM02-VAC-2376-090-90-35-35-80-495-36E	80	3	355
IM02-VAC-2376-065-90-35-35-80-425-36E	80	3	355
Code No.	DN mm	DN inch	D mm

This drawing is for guidance only. Other sizes, materials, flange standards, settings, and versions are available. Request a specific quotation or approval drawing before implementing data.

Parts list

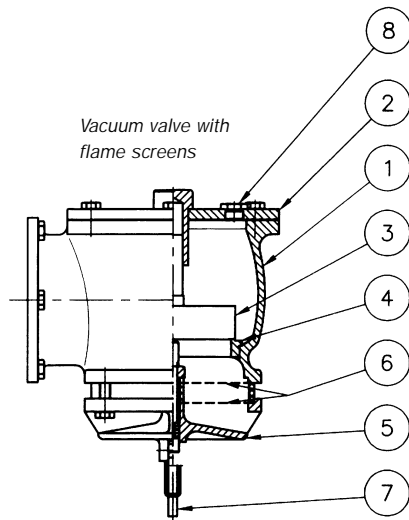
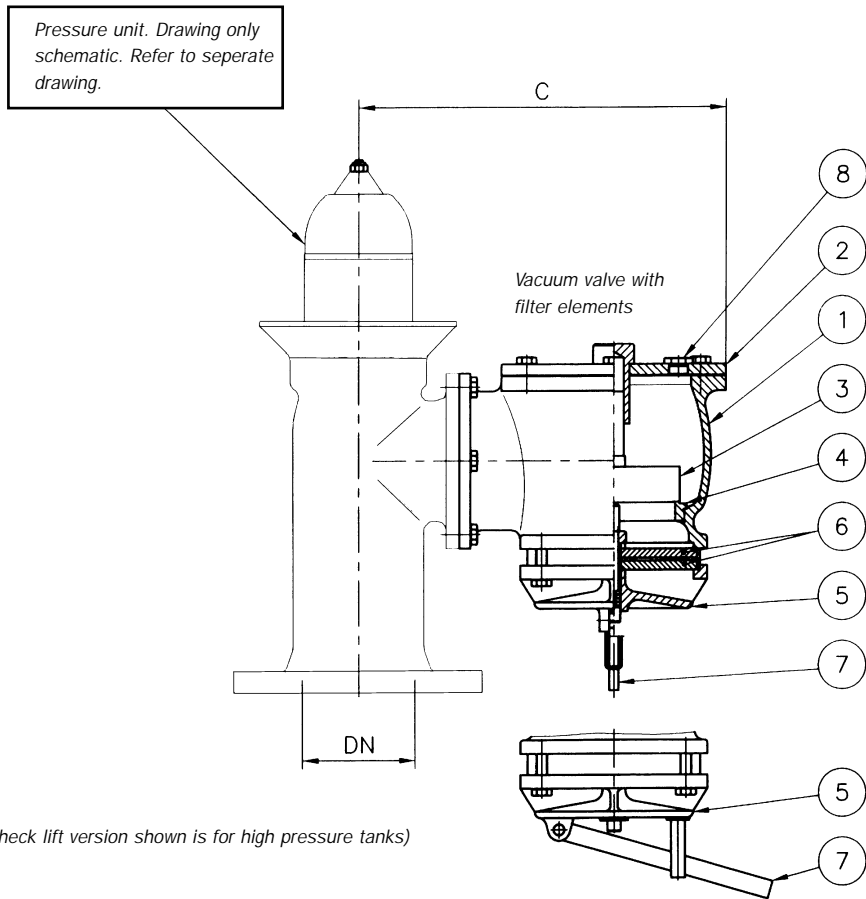
Item	Description	Spec. 1	Spec. 2	Spec. 3
1	House	Stainless steel	Cast iron	Cast iron
2	Cover	Stainless steel	Steel	Steel
3	Vacuum disc	Stainless steel	Stainless steel	Bronze
4	Pressure seat	Stainless steel	Stainless steel	Bronze
5	Net cover	Stainless steel	Stainless steel	Bronze
6	Filter element/ flame screen	Stainless steel	Stainless steel	Stainless steel
7	Check lift, self-closing	Stainless steel	Stainless steel	Stainless steel
8	Flushing port, optional	Stainless steel	Stainless steel	Stainless steel

drwg. no.:	2376
	page 5 of 6
date:	981209
model:	scale:
drw. rev.:	material:
12	-

Type IMO2-VAC

Vacuum valve

This drawing is for guidance only. Other sizes, materials, flange standards, settings, and versions are available. Request a specific quotation or approval drawing before implementing data.



Approved in accordance with IMO MSC/Circ. 677. Please refer to certified flow curves for each size of each type as per Circ. 677.

drwg. no.:	2376 page 6 of 6
date:	981209
model:	-
drw. rev.:	12
drwg.:	-
scale:	-
material:	-

Type IM02-VAC

Vacuum valve

This drawing is for guidance only. Other sizes, materials, flange standards, settings, and versions are available. Request a specific quotation or approval drawing before implementing data.

IM02-VAC-2376-090-180-35-35-200-2900-155	200	8	560
IM02-VAC-2376-090-116-35-35-150-1210-106	150	6	400
IM02-VAC-2376-090-90-35-35-100-685-80	100	4	340
IM02-VAC-2376-065-90-35-35-100-480-80	100	4	340
Code No.	DN mm	DN inch	C mm

Parts list

Item	Description	Spec. 1	Spec. 2	Spec. 3
1	House	Stainless steel	Cast iron	Cast iron
2	Cover	Stainless steel	Steel	Steel
3	Vacuum disc	Stainless steel	Stainless steel	Bronze
4	Vacuum seat	Stainless steel	Stainless steel	Bronze
5	Net cover	Stainless steel	Stainless steel	Bronze
6	Filter element/ flame screen	Stainless steel	Stainless steel	Stainless steel
7	Check lift, self-closing	Stainless steel	Stainless steel	Stainless steel
8	Flushing port, optional	Stainless steel	Stainless steel	Stainless steel