

BLB 300 Orifice Plate with Carrier Ring Single Bore Pressure Taps

Application

For differential-pressure flow-rate measurement in aggressive and non-aggressive gaseous and liquid media.

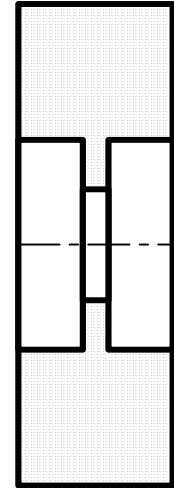
Construction

Carrier-ring with single bore according to DIN 19205 and fixed orifice plate. It can be delivered as an orifice according to ISO 5167-2, as cylindrical orifice, as quarter circle nozzle or as a segmental orifice or double coned orifice according to appropriate conditions of use.

The orifice plate may either be welded or screwed into the carrier-ring or may be manufactured as single piece. When using mild steel the bore is reinforced with stainless steel (1.4571). When using special materials the orifice plate is screwed into carrier-ring.

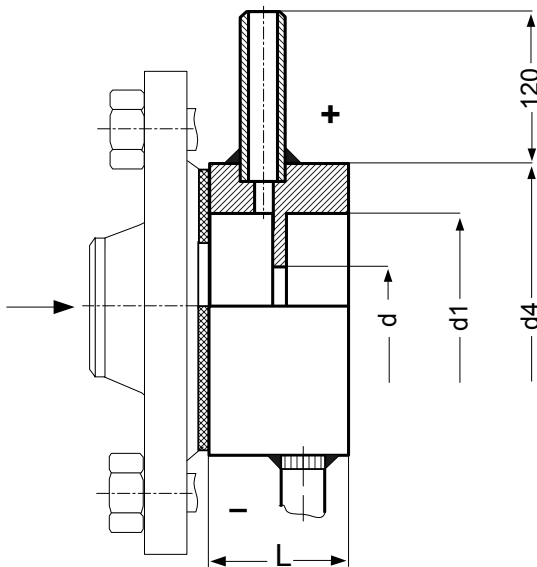
Advantages

A compact and economical construction for use with small installation lengths. The orifice plate is easy to clean and thus suitable for media that become resinous, accumulate. Also they suit the needs for not constantly operating plants.



Technical Details

Nominal pressure:	PN 6 up to PN 320 (ANSI PN 150 lbs up to 1500[2500] lbs)
Nominal diameter:	DN 50 (2") up to DN 1600 (64") up to PN 16 (150 lbs) DN 50 (2") up to DN 500 (20") up to PN 40 (900 lbs) DN 50 (2") up to DN 350 (14") up to PN 160 (1500 lbs) DN 50 (2") up to DN 250 (10") up to PN 320 (2500 lbs) Special nominal diameters are possible.
Outer-Ø d₄:	The outer- Ø of the carrier rings is a result of (with a smooth-faced sealing surface) by subtracting the bolts bore-Ø of the pipe flanges from the hole- Ø. For DIN-flanges you may find the data of the outer- Ø on sheet A8. For tongue and groove arrangements the outer- Ø is d ₄ plus 10mm; for ring seal the outer- Ø is d ₄ plus 16mm
Installation length L:	Depending on seal type: 25mm, 40mm, 65mm; special lengths are possible
Bore- Ø d:	The bore- Ø is carefully calculated by us from the data supplied considering the relevant standards and regulations and is part of the scope of delivery.
Pressure loss:	The remaining pressure loss depends on the nozzle opening ratio d ² :D ² and is approx. 30-80% of dP; you will find this information in the data-sheet.
Pressure taps:	The form and arrangement of pressure taps are described on sheet A6 and A7. If required more than 2 pressure taps can be supplied.
Installation:	Between flanges on horizontal, vertical or diagonal pipelines. Flanges, screws and seals are not part of scope of delivery but may be ordered separately. Concerning the seals you have to consider the regulations regarding the media and conditions of use.
Sealing face type:	RF/ LT/ LG/ SG/ RTJ



Dimensional Sketch BLB 300

Inner- Ø d1 of carrier ring

From DN 50 up to DN 100: $D + 1 \text{ mm}$
 Above DN100 up to DN 400: $D + 2 \text{ mm}$
 Above DN 400: $D + 4 \text{ mm}$
 $D = \text{measured-up pipe-}\varnothing$

Identification

Orifice plate number, PN, D, d, material, flow-direction and identification of pressure taps via + and -.

Quality assurance

Production and check go along with the relevant guidelines such as TRD, "AD-Merkblatt" and customer-specifications.

Material certificates according to EN 10204 3.1 A and B.

Materials

The table below shows the customary materials for carrier-rings and orifices. The choice is according to medium, pressure and temperature. The given temperature-scopes are guiding data. Especially for aggressive media you have to consider the individual application.

This table is only valid if they are welded or screwed into the carrier-rings.

CARRIER RINGS				ORIFICE PLATES			
Category	Abbreviation	W-No.	Application	Category	Abbreviation	W-No.	Application
Common mild steel acc. to EN 10025/ EN 10028T2	ST 37-2	1.0114	-10 ... +350 °C	Stainless steel acc. to EN 10222-5	X6CrNiTi1810	1.4541	-190 ... +300 °C
	H II	1.0425	-10 ... +390 °C		X6CrNiMoTi17122	1.4571	-60 ... +400 °C
Quality carbon steel	C 22.8	1.0460	-10 ... +490 °C	Heat resistant steel	X10CrAl7	1.4713	up to max. 900 °C
Heat resistant steel	16Mo3	1.5415	up to 530 °C	Corrosion resistant alloys	Hastelloy C Titanium Monel Tantal	2.4602	up to max. 400 °C
	13CrMo45	1.7335	up to 560 °C			3.7035	up to max. 300 °C
Stainless steel acc. to EN 10222-5	X6CrNiTi1810	1.4541	-190 ... +300 °C			2.4360	up to max. 400 °C
	X6CrNiMoTi17122	1.4571	-60 ... +400 °C			Ta	-200 ... +1800 °C
Plastics	PVC PP PE PTFE PVDF		up to max. 70 °C up to max. 90 °C up to max. 80 °C up to max. 150 °C up to max. 130 °C	PRESSURE TAPS			
				Category	Abbreviation	W-No.	Application
				Seamless precision steel tube	St 35	1.0308	-10 ... +300 °C
				Seamless boiler tube acc. to DIN 17175	ST35.8	1.0305	up to max. 500 °C
16Mo3	1.5415	up to 530 °C					
Stainless steel acc. to EN 10222-2	13CrMo45	1.7335	up to 560 °C	Stainless steel acc. to EN 10222-2	X6CrNiTi1810	1.4541	-190 ... +300 °C
	X6CrNiMoTi17122	1.4571	-60 ... +400 °C		X6CrNiMoTi17122	1.4571	-60 ... +400 °C

BLB 300 K standard aperture with point withdrawal in compact design

Application

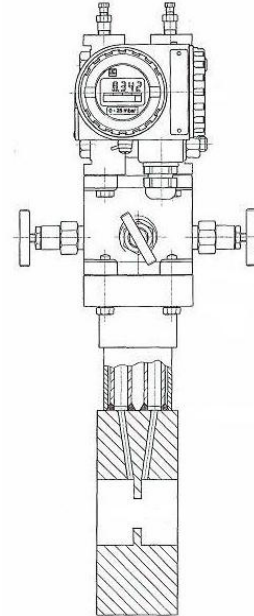
As a pressure difference sensor for measuring the flow of aggressive and non-aggressive gas vapours and liquids up to temperatures of a maximum of 300°C

Construction

Single-piece socket ring with individual borings to DIN 19205 with a non-replaceable gauge slide with a constructed withdrawal tower and mounted 3-fold or 5-fold valve block. A pressure difference transmitter is constructed directly onto the valve block.

Preferences

The withdrawal tower substitutes the differential pressure pipes; external influences, as for example temperature, vibration, different geodetic height differences are avoided. The installation costs are decreased by discontinuing the assembly of differential pressure pipes and transmitter.



Technical characteristics

Nominal pressure: PN 6 to PN 100

Nominal bore:

DN 50 to DN 1000 to PN	16
DN 50 to DN 500 to PN	40
DN 50 to DN 350 to PN	100

Installation length L: 65 mms, special lengths are possible.

Materials: compact apertures are only available in materials C22.8 and 1.4571 (316L), on account of the compact construction design. In special cases also in Hastelloy or Monel

Technical details: for further technical details see aperture BLB 300

Vapour applications: the construction form shown below has been selected for vapour.

