

Figure 1 Multiport Throttle SSD 1

## Application

Multiport Throttles are used to reduce the pressure and flow rate of fluids in pipe systems.

- Power Stations, Nuclear Power Stations
- Chemical industry
- Petrochemical industry
- Off-Shore-Industries
- Steel works
- Paper industry
- Fire fighting systems
- Snow producing systems
- In the potable water supply and backwater disposal

## Design and Operation

The Multiport Throttles are available in various versions (see description of versions).

Following different types of installation are obtainable:

- Multiport Throttle with Inlet and Outlet flange (flange version)
- Multiport Throttle with welding end (weld-in version)
- Multiport Throttle for installation between two existing flanges (sandwich version)

The different types of installation are available with or without an additional casing.

A fluid passing through an orifice constriction will experience a drop in pressure across the orifice.

The medium is passing through a defined constriction inside the Multiport Throttle. This engenders an increased flow resistance and consequently a reduction of the pressure and the flow rate.

To avoid cavitations and noises the reduction takes place with a fluidic optimized throttle system. According to the required pressure difference between inlet and outlet the pressure will be reduced with one or more throttle stages.

The pressure difference between inlet and outlet is engendered only if the fluid passes the Multiport Throttle in accordance with the design data.

## Advantage and Utility

- Limiting of flow rates in pipelines
- Pressure reduction with multistage throttling
- Working of low noise level
- Pressurizer in pipelines (impact pressure)

## Special Features

- Special of low noise throttle design
- Dimensioning specific for application
- Multistage reduction of the pressure and flow rate - low cavitations
- Without additional auxiliary energy and measuring technique
- Any position of installation
- Throttle stages made out of stainless steel
- No moving parts

## Technical Data

<b>Medium</b>	
Fluids	Liquids without solids
Viscosity	≤ 150 cSt
Temperature	-270 °C up to +300 °C* -454 °F up to +572 °F*
<b>Engineering Specification</b>	
Nominal width DN	20 up to 500 mm; (1" up to 20")*
Pressure rate	PN 10 up to PN 400* ANSI 150 up to ANSI 2500 lbs*
Material casing parts	1.0460 (A105)* ASME in ( ) 1.0566 (A350-LF2); 1.4301 (A182-F304); 1.4541 (A276-321); 1.4571 (A276-316TI); 1.4404 (A182-F316L); 1.4462 (A182-F51); further materials by request
Material internals	1.4581 (GX5CrNiMoNb19-11-2)*
Connection	flange according DIN / ANSI* weld ends* (Type 1 and 5) sandwich version (Sandwich, Type 4 und 6) Sealing and connection parts are not scope of supply
Mounting position	Any
<b>Operating Condition</b>	
Flow rate	0,5 m³/h up to 4500 m³/h* 2,2 USgpm up to 19800 USgpm*
Flow velocity	max. 10 m/s (flange)
* standard version, others on request	

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## Design

The construction is according to specification AD 2000. As per Pressure Equipment Directive 2014/68/EU the products are provided with the CE marking and the Declaration of Conformity if not designed in accordance to article 4 – Sound Engineering Practice (SEP).

## Installation and Connection

The Multiport Throttles can be mounted in any position and is produced and tested only for the ordered data according to the customer data sheet. Following points have to be alluded:

- Mounting has to be in compliance with the flow direction
- Pipes have to be connected free of stress, without offset, mismatch or longitudinal shifting
- The pipe system must be cleaned and free of soiling
- The pressure rate has to be the same before and after the Multiport Throttle
- Straight Inlet length before the throttle: min. 10x DN
- Straight outlet length after the throttle: min. 5x DN
- Valves and Tee pieces in front of the throttle can cause vibration and cavitation inside the pipe/throttle

### Note of Application

The operator of these fittings is responsible for suitability, proper use and corrosion resistance of the used materials with regard to the used fluid. It must be ensured that the materials selected for the fitting parts in contact with the medium are suitable for the used process media. The fitting may only be used for the application specified in the operating instructions and the data sheets. Provide a touch guard for surface temperatures of  $< -10\text{ °C}$  or  $> +50\text{ °C}$ . This touch guard must be designed in a way that the max. allowable ambient temperature on the unit is not exceeded. Before replacing the Multiport Throttle, check that the unit is free of hazardous media and pressures.

### Type Designation of the Valves

The designation of the Multiport Throttles specifies the type, nominal width, pressure rate and the flange sizes.

Example:

	SSD	1	-	50	/	160	-	50	/	50
	SSD	1	-	2"	ANSI900	-	2	/	2	
<b>Type of Throttle</b>	↑		↑		↑		↑		↑	
Type 1 with casing and weld ends		1*								
Type 2 with casing and flanges			2*							
Type 3 with casing and flanges				3**						
Type 4 with casing in Sandwich version					4*					
Type 5 without casing and with weld ends						5*				
Type 6 without casing in Sandwich version							6**			
<b>Nominal width</b>										
DN 50 mm						50				
DN 2" (ANSI)						2"				
<b>Pressure rate</b>										
160 bar							160			
900 lbs. (ANSI)							ANSI900			
<b>Flange sizes</b>										
Inlet DN <sub>1</sub> 50 mm									50	
Inlet DN <sub>1</sub> 2" (ANSI)									2	
Outlet DN <sub>2</sub> 50 mm										50
Outlet DN <sub>2</sub> 2" (ANSI)										2

\* welded throttles

\*\* loose throttles

### Marking of the Multiport Throttle

The Multiport Throttles are stamped with the type of designation, manufacturer-no., material, pressure rate and CE-Marking

### Representation of the Multiport Throttles

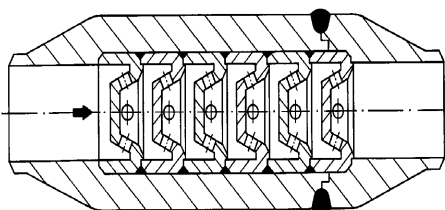


Figure 2 Multiport Throttle SSD 1

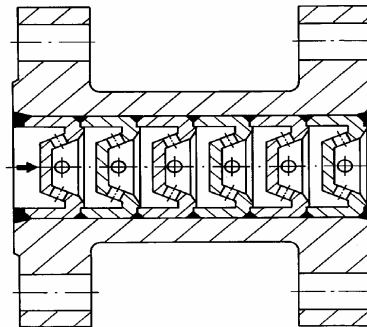


Figure 3 Multiport Throttle SSD 2

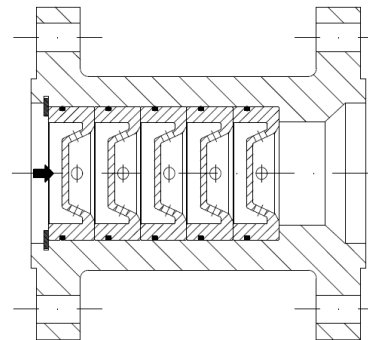


Figure 4 Multiport Throttle SSD 3

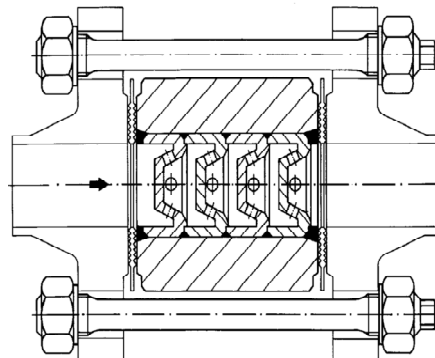


Figure 5 Multiport Throttle SSD 4

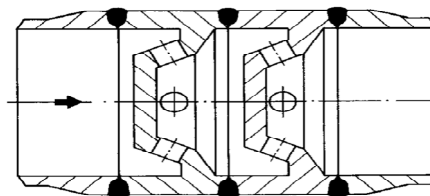


Figure 6 Multiport Throttle SSD 5

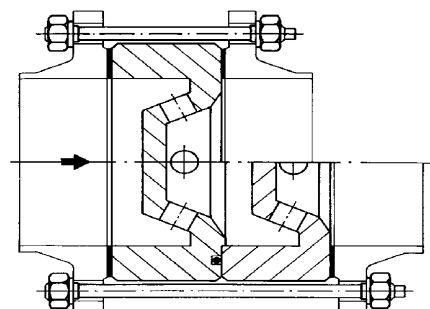


Figure 7 Multiport Throttle SSD 6