

# Intake Valve

Type: HAK / HDK / HPK / HK  
50 / 65 / 85 / 120 / 140 / 160 / 200

Technical Data Sheet



## Application

For oil- & water-injected screw compressors, which can be pressurized with full discharge pressure at shut-down.

## Function

Control intake flow with integrated non return function.

## Installation

At inlet line between air filter and the suction flange of the air end.

## Maintenance

For maintenance follow the recommendation and instruction of the compressor manufacturer.

## Operation

Straight throughflow valve with butterfly type control disc and swing type non-return valve for two point or stepless capacity control.

### Operation of the butterfly type control disc:

Butterfly disc actuated by servo cylinder. Regulation mode on/off or step-less.

### Operation of the swing type non-return valve:

The suction line is closed quickly, automatically and independent of any other components when air flow stops.

### Options:

Valves available as normally closed or normally open version. Although pure non return function possible.

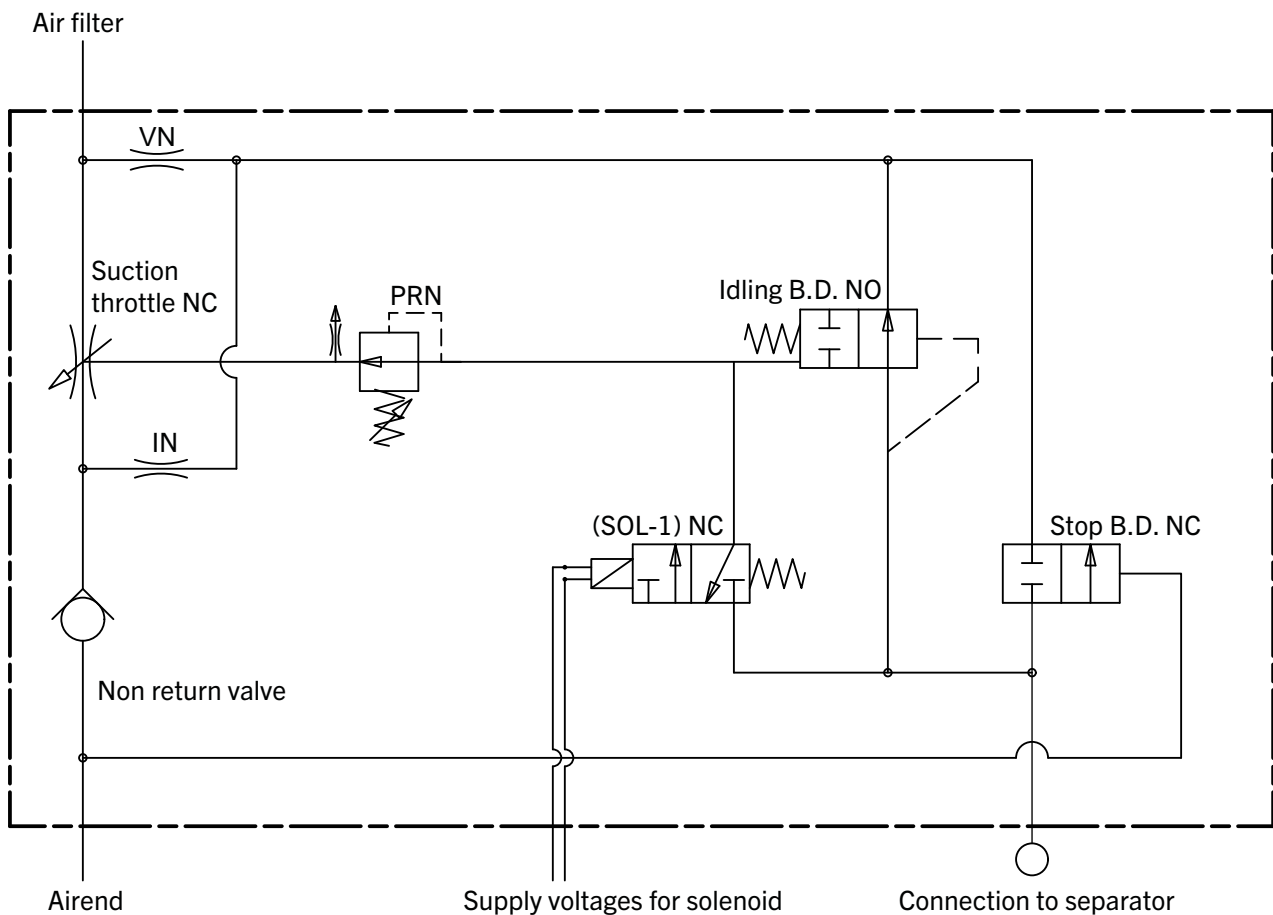
### Optional add-on valves for regulation circle:

- Proportional controller
- Venting valve (VVF incl. solenoid)



**Attention! Never attempt to disassemble a valve whilst under pressure!**

## Schematic for suction control valve (stepless regulation)



## Technical details

Nominal diameter	mm	50	65	85	120	140	160	200
Type		H_G for start-up with suction control valve closed H_O for start-up with suction control valve open						
Max. working pressure	barg psig	16 232						
Temperature range	°C °F	-20 to +120 -4 to +248						
Kv value <sup>1)</sup>	m <sup>3</sup> /h	64	128	210	440	676	740	940
Volume air flow		Pressure drop at fully opened control valve and proposed range of application, see diagram						
Idling bypass		In coordination with compressor manufacturer						
Dimensions		Refer to component drawing						
Connections		Refer to component drawing for flange dimensions. Additional ports above and/or below non return valve on request						
Installation		Intake flange of air end in horizontal direction (+/- 30 degree)						
Servocylinder		Springs for different signal levels available						
Control signal pneumatic	barg psig	Max. 13 Max. 190						
Control signal electric		24, 110, 120, 230, 240 VAC 12, 24, 72-74 VDC						
Medium		Oily pressurized air, filtered. Recommended compressed air quality according to DIN ISO 8573-1, class 5. Compressor oil compatible with HOERBIGER reference oil list.						
Materials		Aluminum alloy, steel (stainless), brass, FKM, PTFE						
Weight	kg	3.5	4	6	13	15	30	37

1) The Kv value represents the volume of water at 5 to 30°C flowing through the valve at a differential pressure of 1 bar.

## Main dimensions

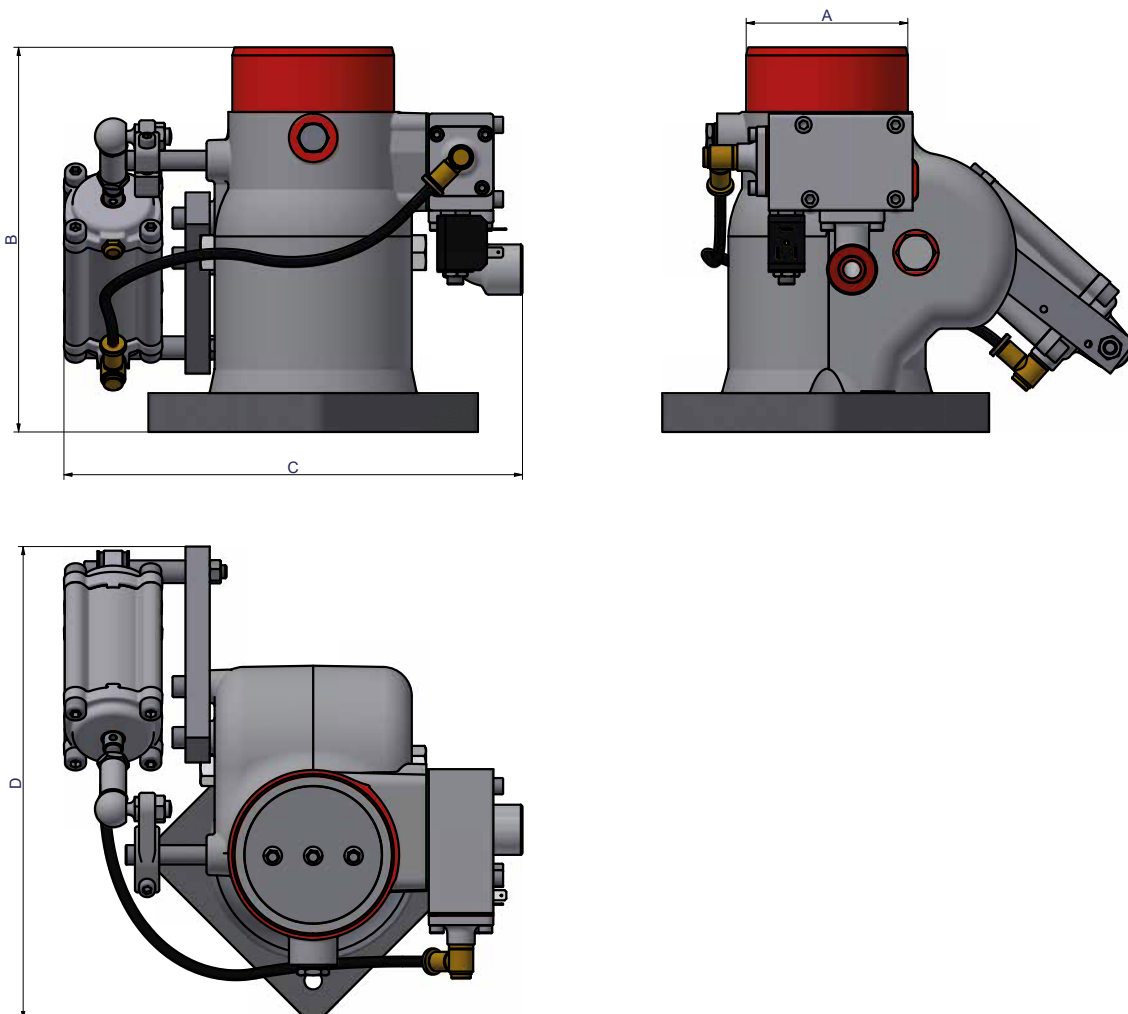
Refer figures below

Nominal diameter	mm	50	65	85	120	140	160	200
Filter diameter A	mm	60	85	100	150	160	201	230
	inch	2.4	3.3	3.9	5.9	6.3	7.9	9.0
Total height B	mm	149	153	238	308	229	381	435
	inch	5.9	6.0	9.4	12.1	9.0	15.0	17.1
Total width C	mm	222	250	284	341	343	379	435
	inch	8.7	9.8	11.2	13.4	13.5	14.9	17.1
Total depth D	mm	316	325	293	363	372	433	496
	inch	12.4	12.8	11.5	14.3	14.6	17.0	19.5

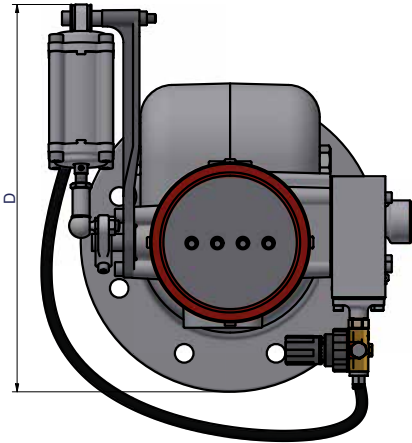
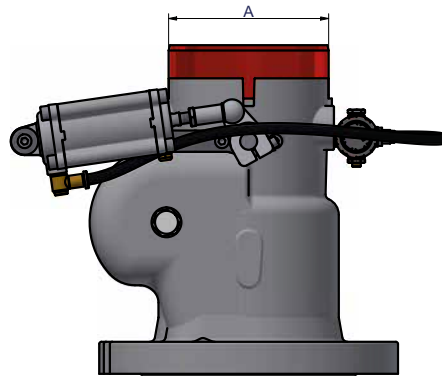
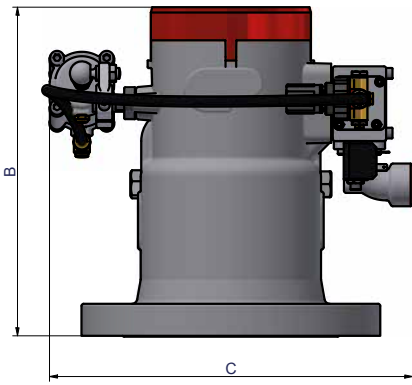
Note: Other flange sizes and bolt patterns upon request.

## Figures

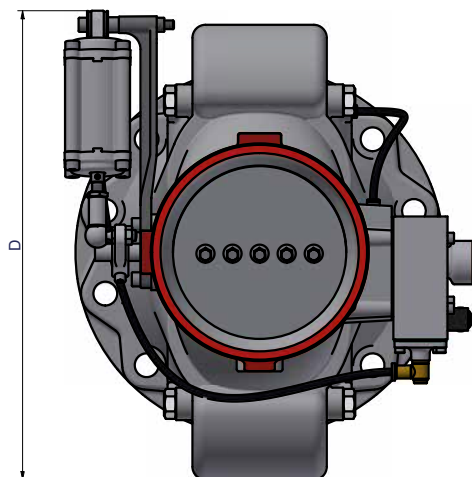
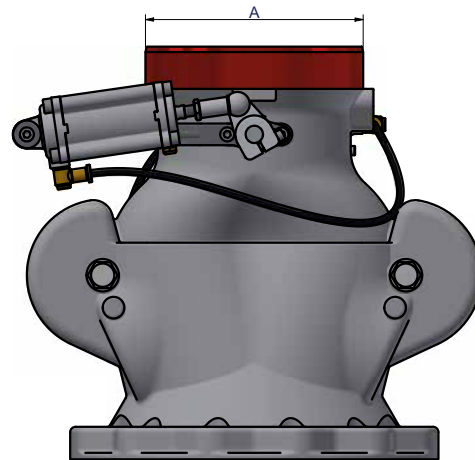
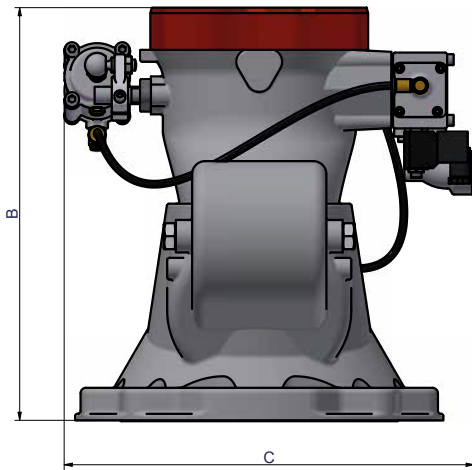
Nominal diameter 50 / 65 / 85



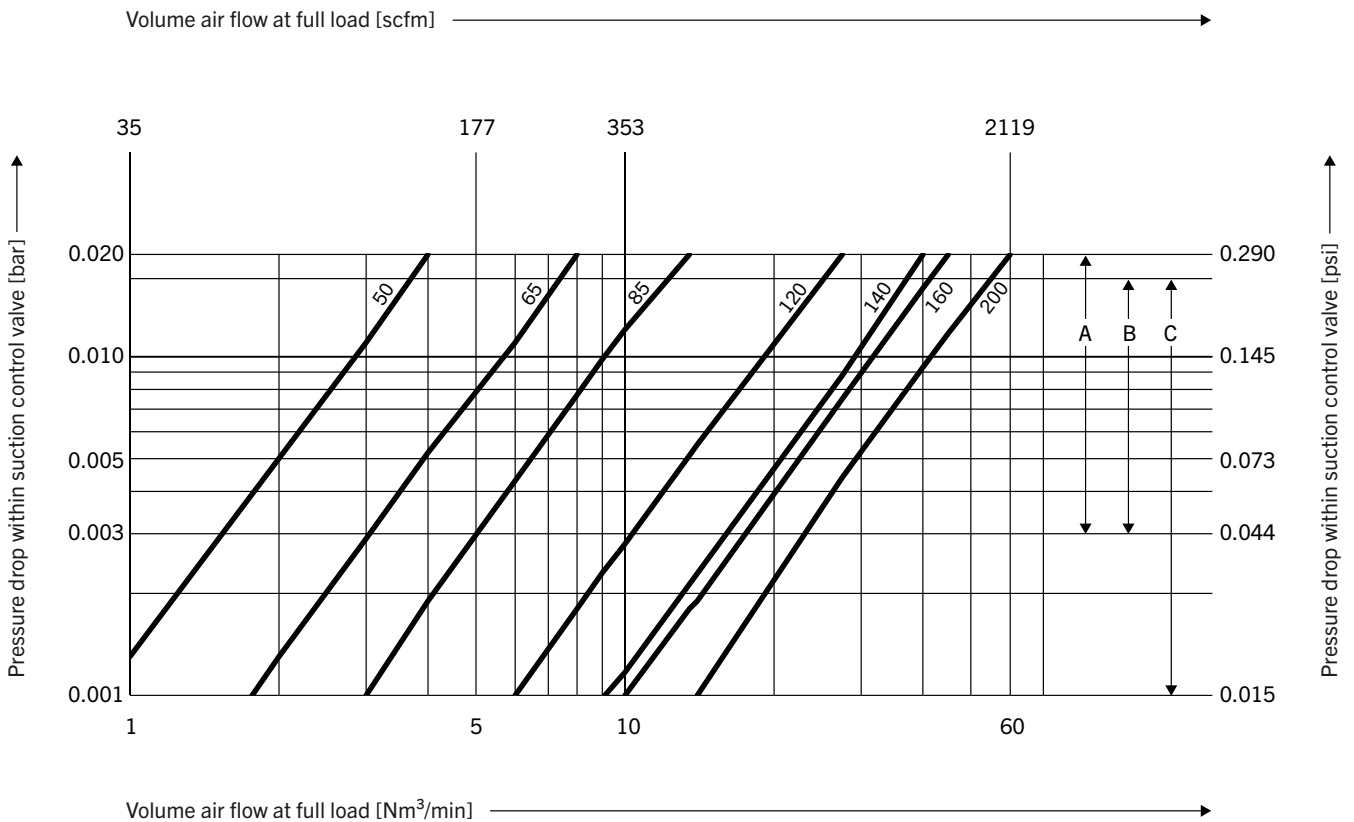
Nominal diameter 120 / 140



Nominal diameter 160 / 200



## Pressure drop in dependence of volume air flow <sup>2)</sup>



### Pressure drop $\Delta P$

	$\Delta P$ (bar)	$\Delta P$ (psi)
Range A	0.003 to 0.020	0.044 to 0.290
Range B	0.003 to 0.018	0.044 to 0.261
Range C	0.001 to 0.018	0.015 to 0.261

### Recommended application

- Range A: Portable compressors with stepless capacity control from full load to idling
- Range B: Stationary compressors with stepless control from full load to minimum (approx. 70%), two point control at low air demand.
- Range C: Two point control, either full load or idling

2) The diagram shows the pressure drop  $\Delta P$  within the suction control valve at full load, including the pressure loss caused by accelerating ambient air to intake velocity. Pressure drop caused by intake air filters and adjacent air lines are not included, since they are dependent on designs selected by the compressor manufacturer. The plotted values are calculated at 20°C (68°F) and suction pressure of 0.95 bara (13.77 psi) (absolute).



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