

Control Unit



Nominal size 6
 Air-gap sensing and blow-off function
 Modular design
 Operating pressure 4 to 8 bar
 (inlet pressure p_e)

Catalog Register
P20

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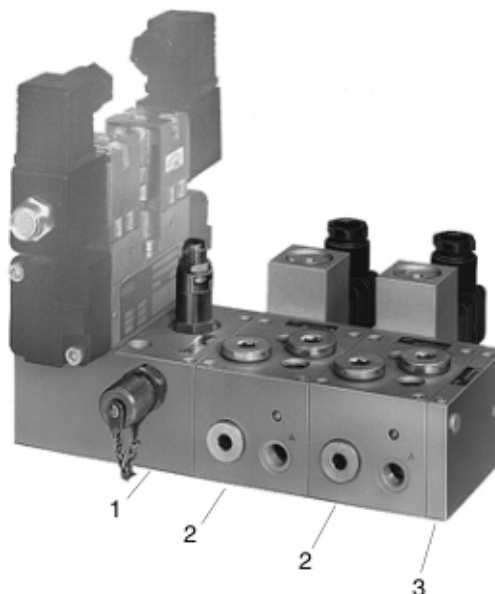


Description

This control unit is used to provide an air-gap sensing function during the machining of workpieces, ensuring that a work operation can be initiated only when both the workpiece and tool are correctly positioned. This position is monitored pneumatically. After the workpiece contact surface has been released, a higher blow-off pressure is applied to the sensing nozzles to free them of chips and other contamination.

The position and number of the sensing nozzles can be varied as desired. A control unit consists of an input module, up to six function modules and an end plate.

Fluid: Filtered compressed air
 Function: Low/high pressure system to provide air-gap sensing and blow-off function
 Back-pressure nozzles: Variable dimensions, at variable distance from control unit



- 1 Input module
- 2 Function module
- 3 End plate

Directional control valve and test connection supplied to separate order.

Features

- Air-gap sensing unit of variable modular design
- Positioning accuracy of ≤ 0.02 mm possible ¹⁾
- Well-proven components ensure reliable operation
- Compact dimensions
- Operates with workpieces of any size and material

Characteristic data

Description	Nominal size	Connection	Operating pressure [bar]		Cat. No.
			min.	max.	
Control unit (input module)	6	G 3/8	4	8	0540628
Control unit (function module)	6 Supply 4 Function	Manifold	1	8	0540629
End plate complete	—	—	—	—	0540630
5/3 directional control valve ISO size 1	—	—	—	—	2531736.0247

¹⁾ Depends on viscosity of cooling fluid

Function

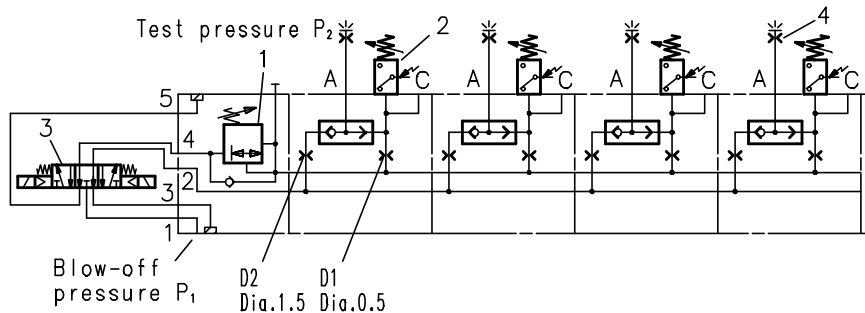
Air-gap sensing

The test pressure P_2 (1 ... 3 bar) is adjusted by means of the pressure regulator (1) and monitored by the pressure sensors (2). When a workpiece is present in the correct position, a back pressure builds up to the level of the test pressure and actuates the pressure sensors. The machining of the workpiece is enabled.

Blow-off

After the workpiece contact surface has been released, the 5/3 directional control valve, size 1 (3), switches to a higher blow-off pressure P_1 (p max. 8 bar). This keeps the sensing nozzles (4) free of contamination.

Schematic circuit diagram



- Nozzle D 2
(high pressure) 1.5 mm dia.
Cat. No. **0541353**
- Nozzle D 1
(measuring air) 0.5 to 0.8 mm dia.
Standard dia. = 0.5 mm
Cat. No. **0540642**
- Available to separate order
as required:

0.6 mm dia.	Cat. No. 0541337
0.7 mm dia.	Cat. No. 0541338
0.8 mm dia.	Cat. No. 0541339

HERION recommendation:

The tubing between connection "A" of the function module and the sensing nozzle should be no longer than 5 m. A maximum of 2 air-gap sensing nozzles 2.0 mm dia. x 2 mm should be used with each module. The sensing gap depends on the viscosity of the cooling fluid.

Dimensional drawing [mm]

