

6. Hydrogen circulation system test bench



Fig.7 Picture of hydrogen circulation system test bench

Using forward design technology, various media and their component concentrations (customization) can be tested. The advanced control method is used to realize high dynamic control of flow rate and pressure. In a single-component gas test, it can display a working point for 4 seconds to test a working point, which greatly reduces the test time, improves the test efficiency, and saves the amount of the gas during test.

Table 7 General technical data of hydrogen circulation system test bench

Item	Specification	Note
Types of tested gases	H2, N2, H2O, He, Air	
Range of tested gas temperature	[-30°C-80°C]	
Maximum pressure in inlet	20 bar	
Maximum flow rate in inlet	2000 SLPM	
Maximum flow rate of suction	2000 SLPM	
Power of tested hydrogen circulation system	40-150 KW	Customized according to requirements;
Maximum working pressure (in ner test bench)	10 bar	
Maximum flow resistance of return flow	12KPa (@1500 SLPM 2.5bar 25°C)	
Accuracy of measurement	0.50%	
Response time (to steady state)	≤4 s	
Accuracy of pressure control	≤1 KPa	
Accuracy of flow rate control	≤1 SLPM	
Specification of controller	Automotive grade ECU module;	
Data processing	Real-time display of important data, real-time storage of all data;	Customized according to requirements;
Dimensions(L*W*H)	800*710*1900 mm	