



銓大科技工程股份有限公司

CHUAN TA TECHNOLOGY CORPORATION

Test methods and principles

1. Introduction to gas pipeline testing
2. Introduction to gas pipeline testing principles
3. Gas pipeline acceptance criteria



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1. Test introduction

Test items and instruments used

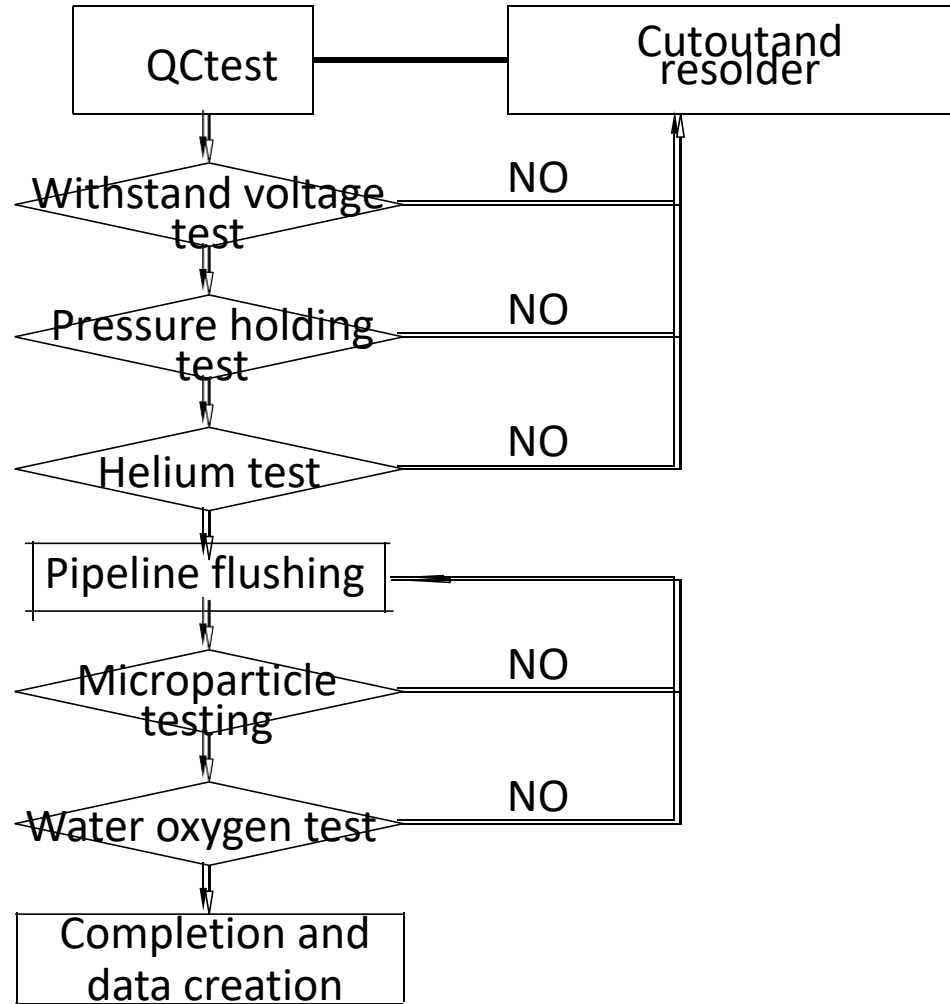
1. Pressure Holding - Oil-free self-recording pressure recorder (Pressure Recorder).
2. Helium Leak Detection - Alctel or INFICON.
3. Particle - PMS Particle Counter.
4. Moisture - MEECO TRACER.
5. Microaerobic - Delta F.



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Test process



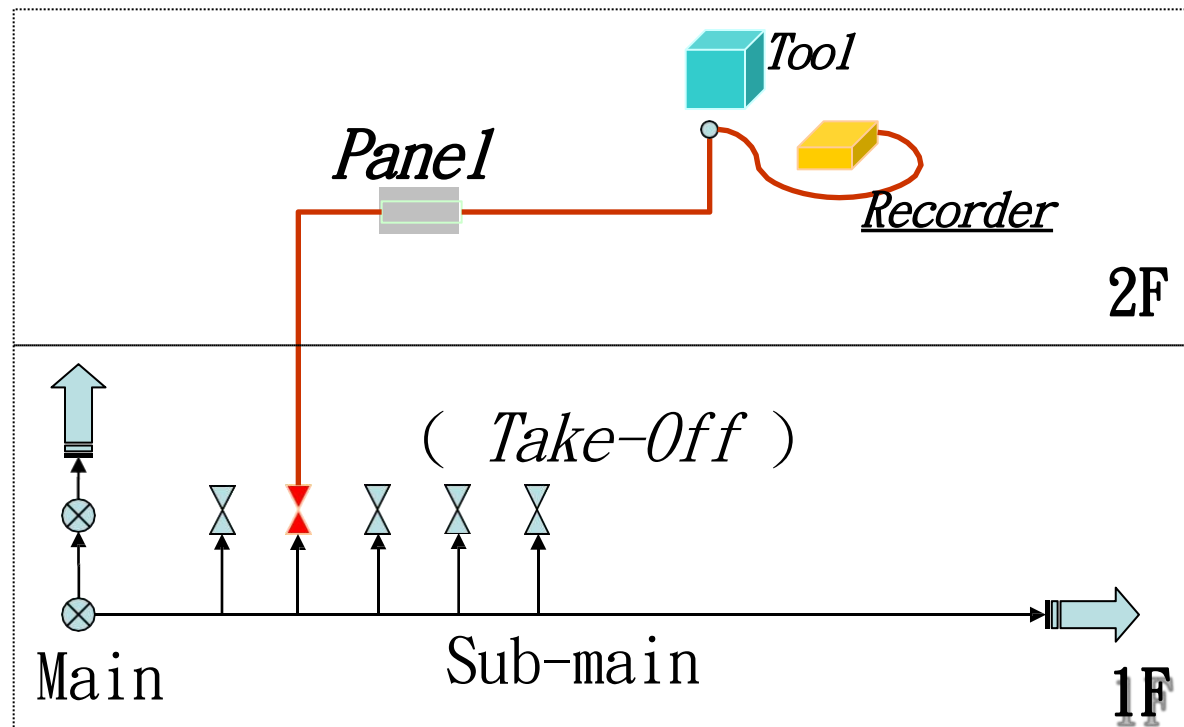


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Test introduction

Maintaining pressure: Temporary pressure with PN2 greater than 7 Kg/cm² (1.2 times the operating pressure) must be maintained for 24 hours without leakage.



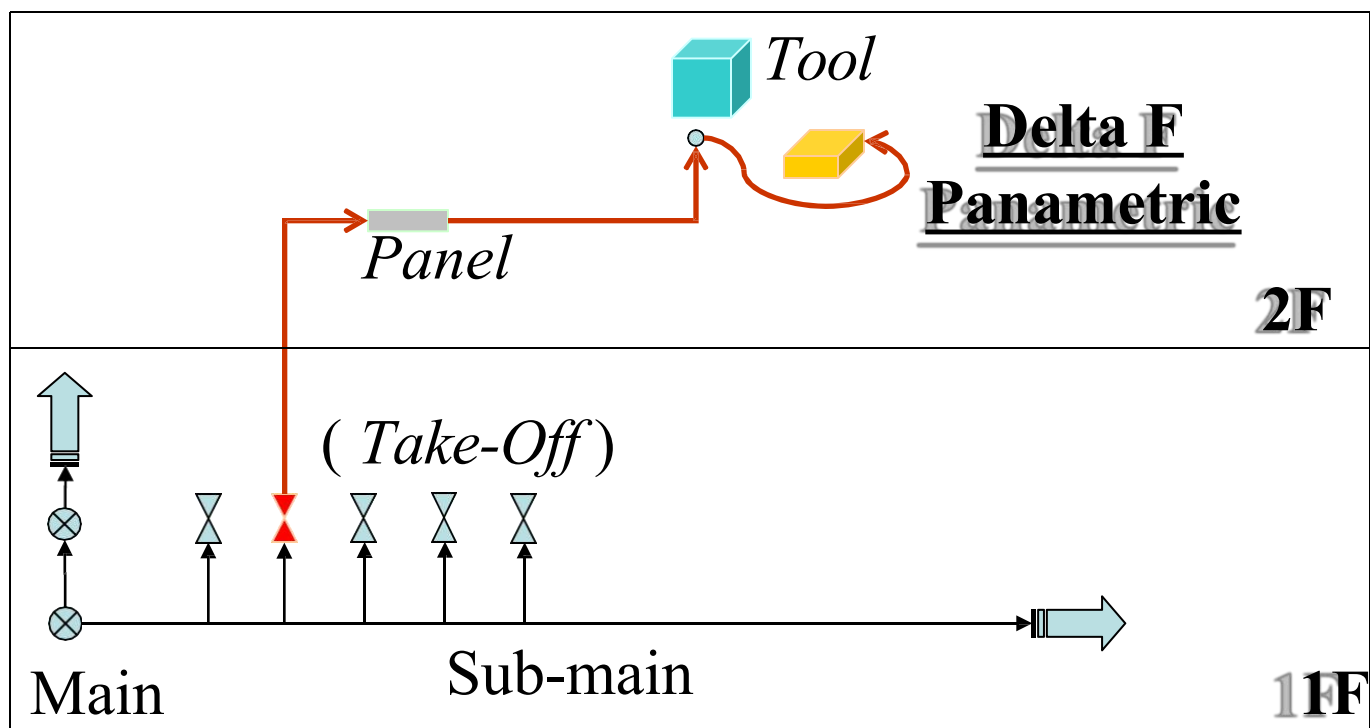


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Test introduction

Moisture and micro-oxygen - compared with the Purify outlet, must be less than 5ppb.



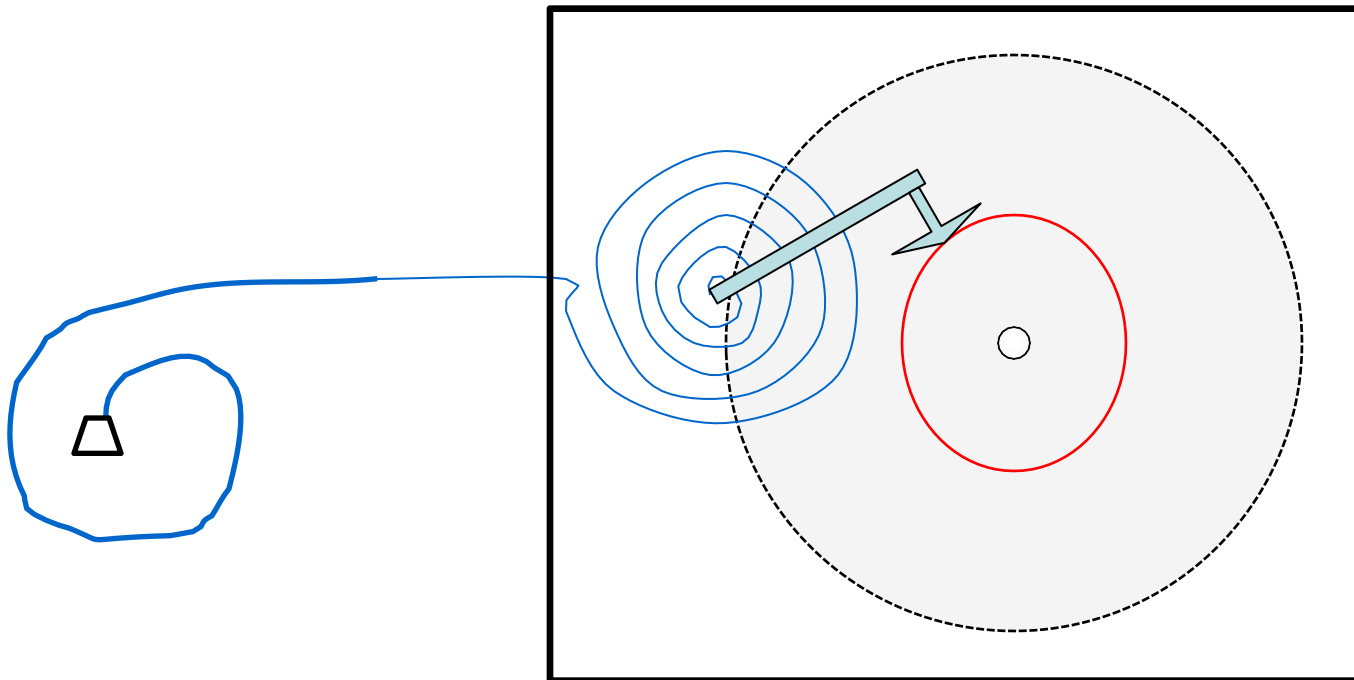


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2. Test principles

Pressure Holding - The gas pressure causes the deformation of the scroll tube, and the pressure in the system can be obtained from the deformation.



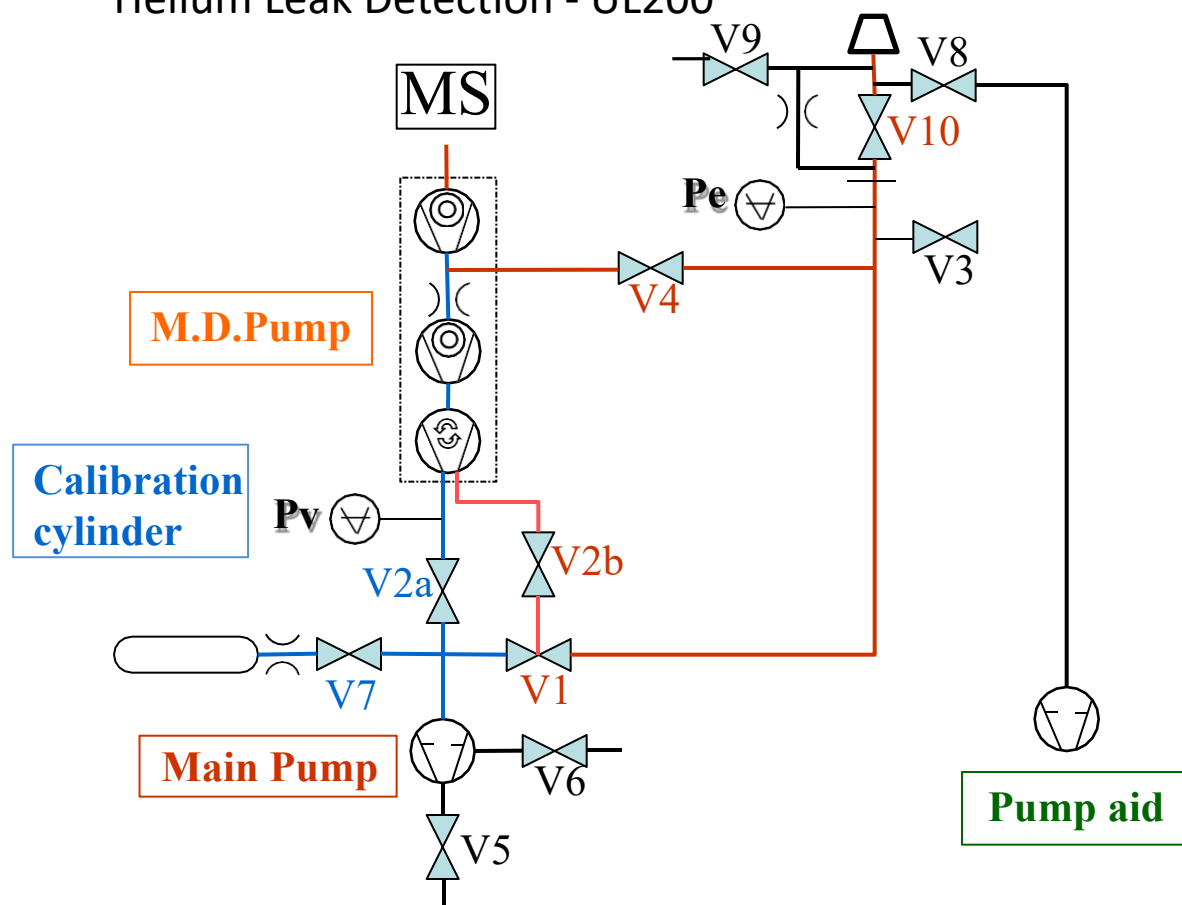


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Test principles

Helium Leak Detection - UL200

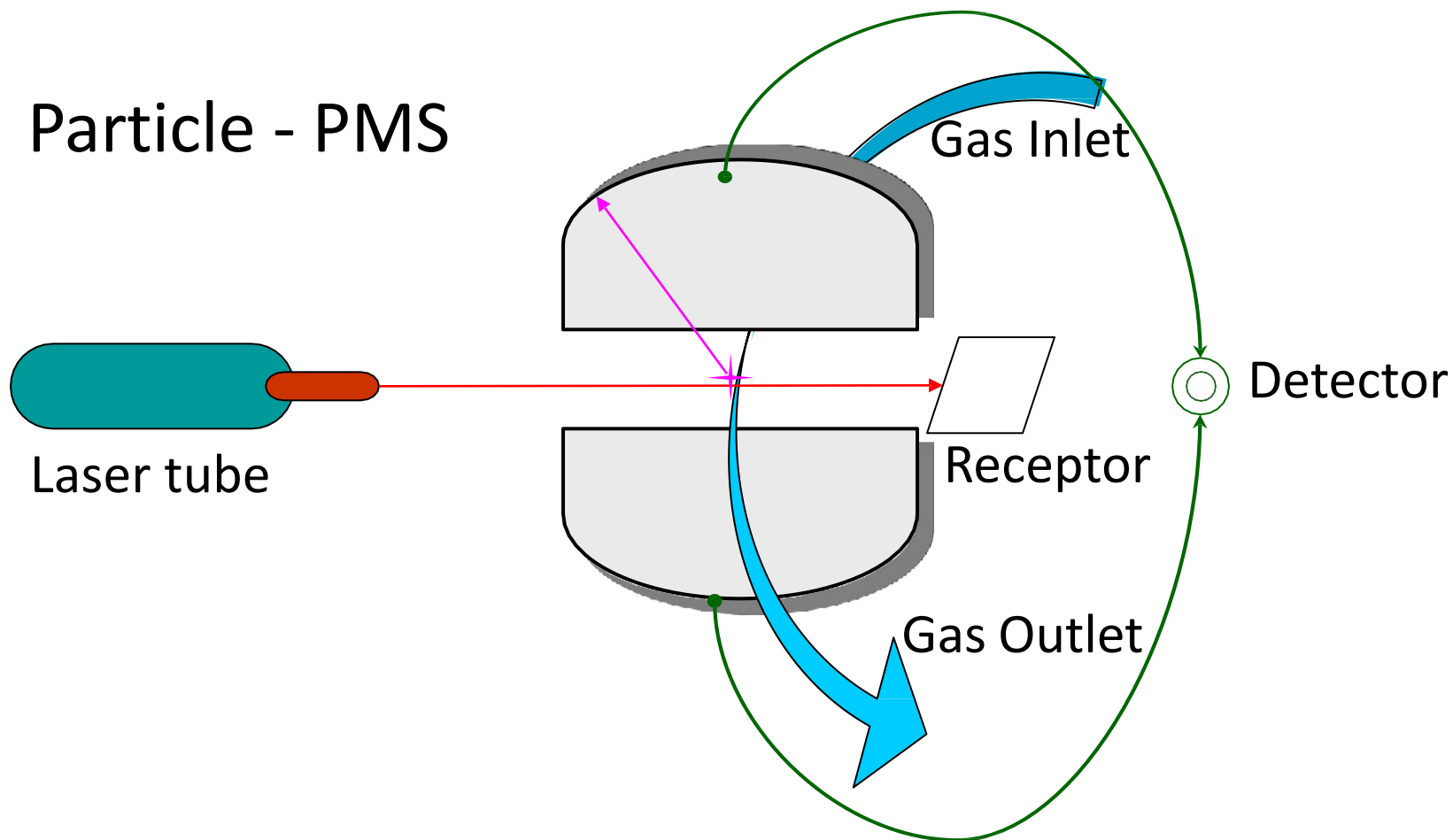




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Test principles



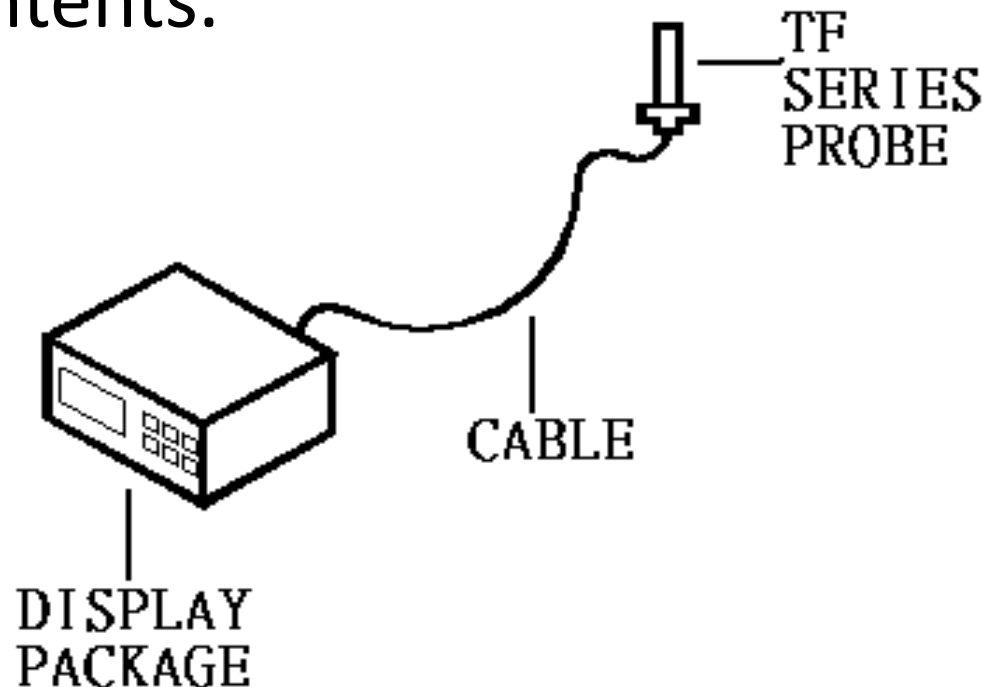


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Gas pipeline test principles

Moisture - The resistance value of Panametric moisture heads changes due to different moisture contents.



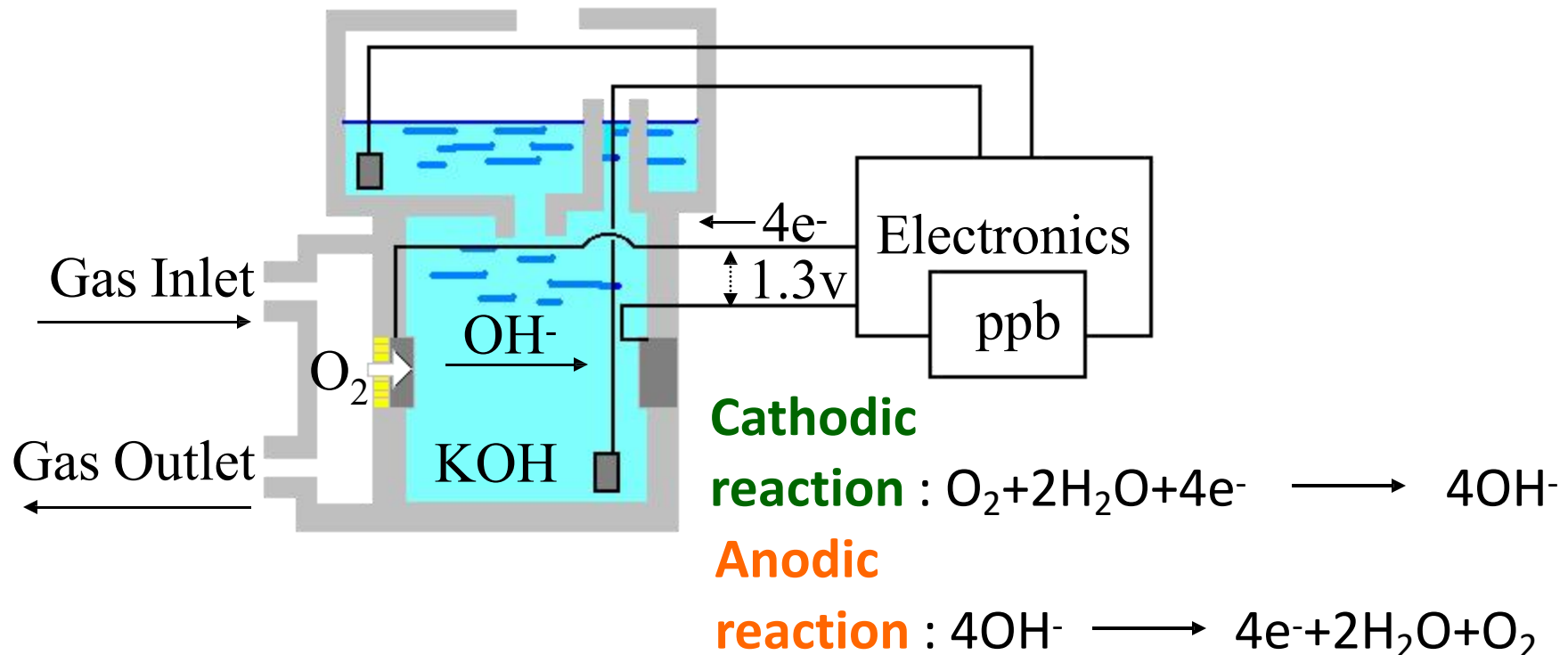


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Test principles

Micro-oxygen - Delta F detects O₂ content through oxidation-reduction reaction.





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3. Acceptance standards

	GN ₂	CDA	PN ₂	PO ₂	PHe	PAr	PH ₂	SPG
Keep pressure (24Hr)	≧ 10 (kg/cm ²) main system ≧ 7 (kg/cm ²) Hook-up						≧ 7	
Helium leak detection-Inboard	N/A		≧ 1×10 ⁻⁹ (m.bar.l/s)					
Particle(≦0.1μm)	Total of three sheets≧ 10		0,0,0; 1,0,0; 0,1,0					
Moisture (main system)	N/A	≧ 1000	≧ 5 (ppb)					
Microaerobic (main system)	≧ 100	N/A	≧ 5 (ppb)					



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