

## OPERATING PRINCIPLE FOR SENSOREX® ELECTRODES

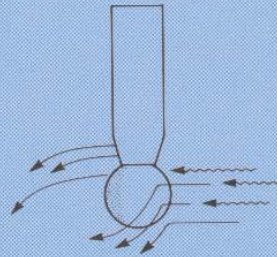
Rugged combination electrodes which have flat measuring surfaces are available for pH and for REDOX (ORP) applications. In both coating and abrasive applications these cartridge-type electrodes can improve measurement accuracy, reduce maintenance, prolong electrode life and virtually eliminate breakage.

### USES INCLUDE:

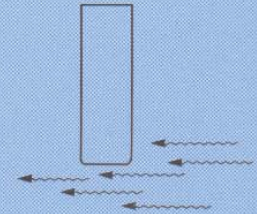
- ◆ oily waste water
- ◆ lime slurries
- ◆ sugar refining
- ◆ head box pulp pH
- ◆ emulsions
- ◆ gas wet scrubbers
- ◆ flocculant coagulation
- ◆ and many more

### ◆ SELF-CLEANING OPERATION ◆

This simple but effective system has no moving parts and requires no power. When the electrode's flat measuring surface is exposed to turbulent flow, the resulting scrubbing action provides a self-cleaning effect in most applications.



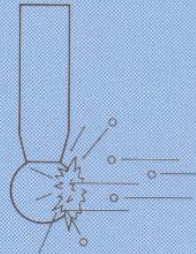
**SPHERICAL ELECTRODE**  
Downstream side is shielded from flow, coating forms on this "dead" flow area.



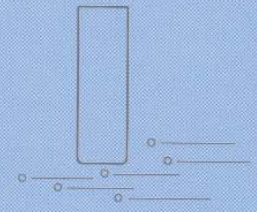
**FLAT ELECTRODE**  
Turbulent flow scurbs entire measuring surface, there is no "dead" flow area.

### ◆ ABRASION-FREE OPERATION ◆

Particles sweep by the electrode's flat, non-protruding surface without impinging on or abrading it. Also, the electrode's non-protruding design virtually eliminates electrode breakage.



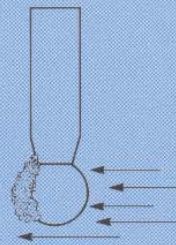
**SPHERICAL ELECTRODE**  
Particles impinge on upstream side causing abrasion, calibration shift and short life.



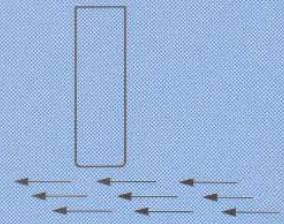
**FLAT SURFACE**  
Particles sweep by flat measuring surface to minimize abrasion and extend electrode life.

### ◆ VISCOUS MATERIAL OPERATION ◆

Viscous materials flow by the electrode's flat measuring surface in shear. Flow in shear causes new material to uniformly displace the old material. Having fresh material at the electrode's surface is essential for measurement accuracy.



**SPHERICAL ELECTRODE**  
Downstream side is shielded from flow, old sample is not displaced.



**FLAT SURFACE**  
Flow in shear uniformly displaces sample from electrode's measuring surface.

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