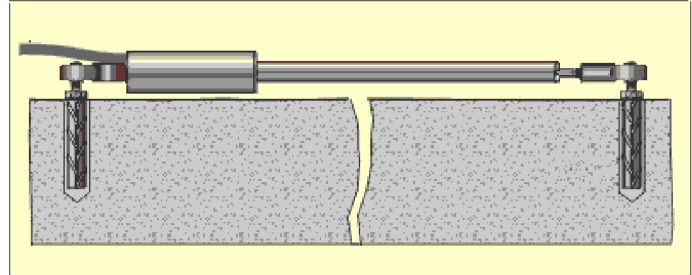
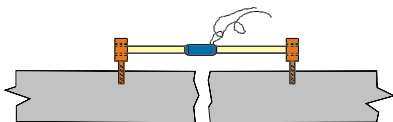


## Monitoring Structures using Vibrating Wire Technology

Tekron Services uses vibrating wire technology on many of its monitoring systems. The advantage of these types of instruments lies mainly in the use of a frequency to transmit a signal from a sensor, permitting long (>2000 meters) cable lengths without appreciable signal degradation. This factor, coupled with their rugged design and hermetically sealed construction, enables us to monitor many structural conditions by obtaining long term measurements, often in adverse environments. Types of parameters measured include



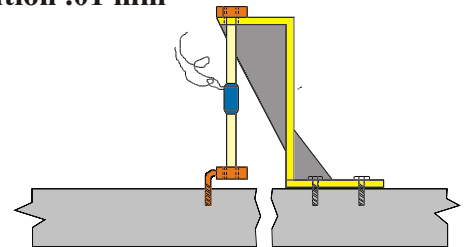
**VW Crackmeter**  
Range 50 mm  
Resolution .01 mm



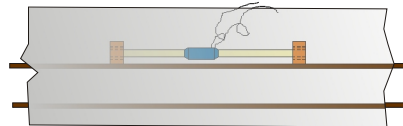
**VW Strain gauge positioned across a crack to measure crack movement**



**Vibrating Wire (VW) Strain Gauge**  
Range 3000 microns ( approx. 0.5 mm)  
Resolution 1 microstrain (0.00016 mm)



**VW Strain gauge positioned to measure vertical movement**



**VW Strain gauge welded to reinforcing steel and embedded in concrete to measure reinforcing steel stress**

underwater crack movement, reinforcing steel stress, joint movement between two structural members, minute rotational movement of structural members and measurement of tiny changes in water pressure to detect small changes in depth of water. Stress and very small movements are measured by strain gauges while larger movements are monitored using crack or joint meters. While some of our projects only require manual readout units to obtain data, other projects require a more detailed record of events. In the latter case single or multichannel vibrating wire data loggers are used. Depending on the nature of the project, collecting the data is sometimes completed manually on site, or direct to office by using a land telephone line, and where no line is available, a cellular phone connection can be used.

**Typical Vibrating Wire Sensor**

A piano wire is stretched between two points, a fixed end and an end which is free to move. An electrical signal is sent to the sensor which vibrates the wire. The resultant resonant vibration of the piano wire can be measured by a reader or data logger thus accurately determining the extent of stretching or relaxation of the wire



**Manual readout unit**



**Single Point Data Logger**

**Specialists in NDT and Computer Monitoring of Structures**

For Further Information Contact