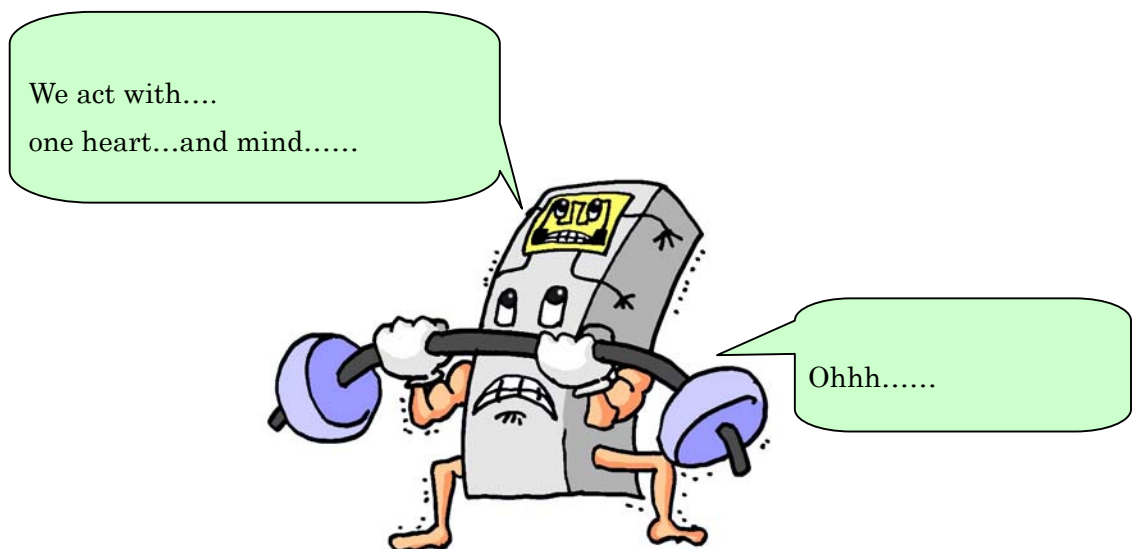


## 2. Characteristics of the Strain Gauge Load Cell

The characteristics of the strain gauge load cell are as follows:

1. Highly precise measurements with little influence due to temperature changes
2. Long distance communication or command is possible as the output is an electrical signal. Easy to do calculations and processing with a computer.
3. Small size given its capacity compared with other types of load cells.
4. The deflection due to the deformation of the spring material is small, and the spring material's natural frequency is high. Thus, it is possible to shorten the measurement time. Also, measurement of dynamic phenomena is possible.
5. Maintenance is easy and it has a long operating life because there are no moving parts or any parts that generate friction.
6. Production is easy because of the sensor's simple operation principle and small number of components.
7. Excellent fatigue characteristics as long as the device is not overloaded, and its performance can be maintained semipermanently.
8. The strain gauge load cell was once very difficult to manage because it had a miniscule electrical output of  $\mu\text{V}$ . However, this problem has been solved thanks to advances in electronic technologies.



\* Spring material and strain gauge

Figure 1.2