Industrial kneading machines are widely used in food, medicine, rubber, paper and other industries. They can realize stirring for a variety of raw materials and can also achieve heating at the same time.

The kneading machine in this system is based on the machines that are commonly used in the food industry.

With reference to the actual teaching needs, the system includes the PLC control, variable frequency control, temperature control and touch screen control that are commonly used in industry, and covers the experimental trainings in sensor detection technology, food process control, power distribution technology and other subjects.

**TRAINING OBJECTIVES**

By performing the integrated experiments with this didactic system, students can master the following contents:

- Working principle and usage for industrial kneading machine;
- PLC principle and applications;
- PLC programming and communications;
- The basic principle and initial use of frequency converter;
- AC motor control technology;
- Temperature control theory and applications;
- Turbo motor theory and applications;
- Principle and application of industrial sensors;
- Industrial electrical power distribution cabinet layout and alignment;
- PLC control cabinet.

**GENERAL FEATURES**

The trainer is composed of three independent modules:

- the main electrical cabinet,
- the kneading machine,
- the control cabinet.

The main electrical cabinet unit is mainly used to provide the power supply and protection for all devices. Its inside has a range of industrial devices such as air switch, AC contactor, thermal relay, frequency converter, etc.

The control cabinet is mainly used to achieve automatic control and monitoring for technological processes. It mainly includes the PLC, touch screen and other industrial devices.

The three units are installed with movable wheels, which make them independent in structure.

Power supply and distribution as well as electrical control between each unit are realized with the connection of cables.