

# Energy Saving Products Company - Energy-saving Products



## ESE-CYJ Range Hood Energy Saving System

### **About the Product:**

The major equipment for oilfield extraction production is the range hood. The larger the oilfield production is, the more range hood is needed. Therefore, the energy saving of the oilfield is the key of energy saving and consumption reduction.

The range hood is a typical heavy start and large inertia equipment. It is hard to start with normal operation power. Thus, in most cases, the motor of the range hood has large reserve with the actual load rate below 60%, power factor less than 0.6 or below. It is a big waste.

ESE-CYJ Series are of specialized range hood energy saving system with electric saving rate of 15%~40%.

### **System Features**

several control of range hood: empty pump control, timed start and stop control, excess load stoppage control, spraying with pumping control, remote control for start and stop.

It has automatic function of adjusting motor parameters and measuring features of the motor as well as set related parameters.

It provides multi-signal input and output modes, which include temperature detection signal, analog, digital signal and pulse signal input as well as the relay failure alarm output.

Monitoring functions: set the frequency, frequency rewritten, the voltage and current outputs, and so on.

Control functions: running, downtime and failure reset, etc.

High efficiency, energy saving, production increase

The control procedure of the energy saving system can automatically judge the

up and down impact distances during the operation of the range hood. According to the practical situation of the oilfield, it can adjust its speed so as to increase the amount each time and improve the production without changing the pumping time per minute.

### **Energy saving principle**

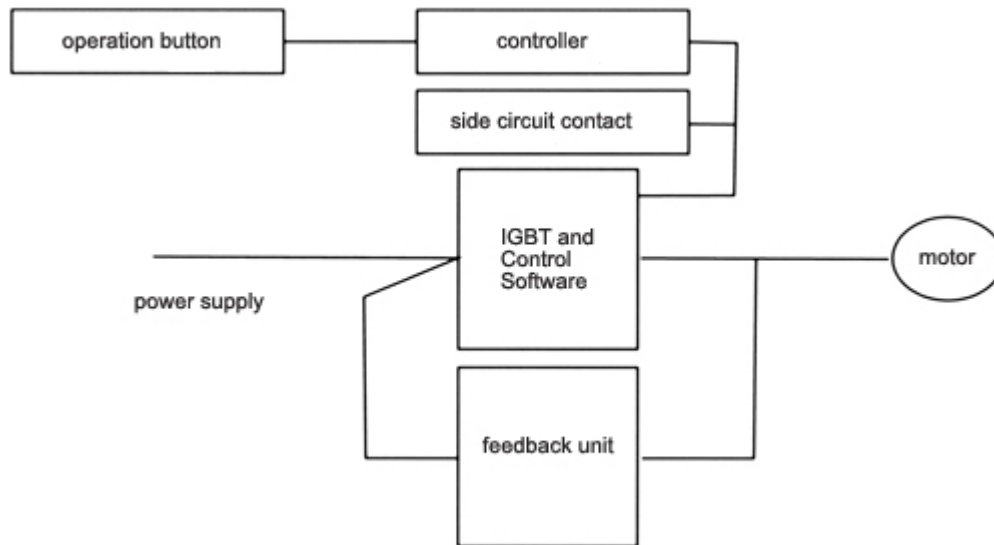
the working principle of the range hood and its composition

During the operation, the load of the range hood is changing continuously. The operation is composed of two impact processes. During the up impact process, horse head hanging points have to lift the range hood bar and liquid bar. If the range hood is in imbalance, the motor has to produce huge power. It is under driven state. During the down impact process, the range hood bar works on the motor, which enables the motor to work like a generator.

If the range hood is not balanced, the up and down loads are extremely uneven, this would seriously affect the electrical efficiency and life of linkage mechanism, slowdown box and, the motor as well as deteriorate working conditions of the pump rod and increase its fracture possibility. In order to remove these defects, we usually add balance weight at the rear of pumping beam or the crank or both. As a result, during the hanging points downward impact process, the balance weight should be lifted from the lower position to a higher height to increase the potential energy. In order to raise the balance of weight, in addition to rely on the potential energy released by the falling range hood rod, the motor also have to give part of energy.

During the upward impact, the balance weight falls from the top which releases the potential energy saved during the downward movement to help the motor to raise the range hood rod and liquid rod. It reduces required energy during the upward movement of the motor. At present, the frequently used floating beam range hood adopts adding balance weight operation mode. Thus, there are a motor operation state and a generator operation state.

ESE-CYJ series range hood energy saving system can automatically judge the up and down impact distances during the operation of the range hood. According to the practical situation of the oilfield, it can adjust its speed so as to increase the amount each time and improve the production without changing the pumping time per minute. Meanwhile, it return the electrical energy to the grid through the feedback unit during the downward impact process.



### Technical Parameters

- rated input voltage: three-phase 380VAC , 50Hz
- allowed working scope of the voltage: 380V±15%
- allowed voltage fluctuations: 380V±15% frequency: 50Hz±5%
- output voltage: 0~380V
- overload capability: 5.5KW~132KW: 120% rated current 1 minute
- 160KW and above: 110% rated current 1 minute
- 150% rated current 1s
- terms of use: indoor; not exposed to the sun light; no corrosion gas, flammable gas, oil mist or steam.
- altitude: lower than 1000m
- environmental temperature: -10 ~+40 ( please reduce use frequency at the temperature of 40 -50 ) .
- Temperature: 20~90%RH (without dew)
- protection rank: IP20~IP44
- control mode: automatic, manual remote control
- cooling: forced wind cooling, fan control, water cooling on explosive occasions