

Electromechanical A●B adjustment essentials

(1) Electromechanical adjustment

Electromechanical adjustments must be made when the following parts are replaced and the multi-function display is shown below.

Occasion of Electromechanical Adjustment

- ① Electric regulating controller
- ② Stepper motor
- ③ CPU ROM data is displayed in multifunction display
- ④ Alternate show in multifunction display

CPL ROM data and CPU electromechanical adjustment is not good.




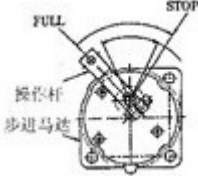




(2) Preparation

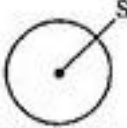


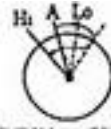
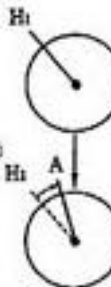
- ① Implement engine warm-up operation.
- ② Set the air conditioner switch at OFF.
- ③ Start switch is off, turn off the engine.

Note: please check whether the pull wire is pushed in with the engine emergency stop knob and alarm speed. Under the state of knob pulling out, the engine speed cannot be set correctly.

(3) Adjustment

A. Adjustment

Order	Multi-function display	The motion of the stepper motor
<p>① Choose the switch according to operating model of the meter group, and put the starting switch ON the side, and then leave after 5-10 seconds.</p>		
<p>② The starting point of the stepper motor is processed so that it stops at the position corresponding to the throttle knob.</p>		 <p>在油门旋钮的位置停止</p>
<p>③ Press the buzzer switch of the instrument group for about 5-10 seconds. After the finger is released, the display of "STEP 1" will appear on the multi-function display. It needs to wait until the display of "STEP 2" is switched out.</p>		 <p>向引擎停止 (S) 位置自定</p>

<p>④After confirming the display of "STEP2", move to the engine room and adjust the connecting rod to the reference length "Bmm", so that the clearance between the stepping speed regulating block and the engine stop setting screw is"A0.1m ". When the stepper motor is replaced, "STEP 2" is displayed and the connecting rod is inserted.</p> <ul style="list-style-type: none"> ● B Size: SK200 6L.....288- 304 mm SK230..... 	<p>STEP 2 CPU间隙调整</p>	 <p>在S位置停止 【工具】● 扳手 13mm×14mm ● 扳手 6mm ● 量规</p>
<p>⑤Press the buzzer stopping switch once until the display is switched to "STEP-3".</p>	<p>STEP 3 CPU引擎可启动</p>	 <p>自走到可启动的（A）位置</p>
<p>⑥After confirming the display of "STEP 3", start the engine. At this time, throttle knob position can be anywhere.</p>	<p>STEP 3 CPU引擎可启动</p>	 <p>在A位置停止</p>
<p>⑦Press the buzzer stop switch once and switch to the display of "step-4". The controller once returns to low speed idling from position A of the stepper motor, and then automatically reads the engine speed until idling at high speed.(takes about 2 minutes)</p>	<p>STEP 4 CPU调整中</p>	 <p>由A位置降到比Lo稍低的位置，然后直自走到高速空转（H）位置</p>
<p>⑧End of reading. The multi-function display should wait until the switch to "end of adjustment". After display switching, engine rotation automatically reverts to any initial position on the speed dial.</p> <p>Note: if the display of the end of adjustment can't appear, it means that the adjustment fails. The starter switch should be OFF to make the adjustment again.</p>	<p>调整終了 CPU 2000rpm</p>	 <p>(约5秒钟)</p>

B Adjustment

<p>⑨After the end of engine adjustment, "end of adjustment" screen is displayed, automatically display "STEP5 adjustment".The engine can be shifted to idling at high speed. Add the load to the pump again, continue high-speed idling for about 1 minute, and "end of adjustment Orpm" will appear, end.</p>	 <pre> graph TD A[STEP 5 调整中] --> B[调整終了] </pre>	
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Note:

1. After the end of A adjustment, the electromechanical controller automatically undergoes B adjustment.

2. In order to adjust the normal output, the temperature management of hydraulic oil is very important and must be paid attention to. (to the E/GOil, hydraulic oil fully heating)

(4) End of adjustment (reconfirm the revolution speed of E/G)

①Place the START switch in the "START "position and rotate the engine at high speed.

②Press the screen switch of the instrument group once. Release the switch by engine speed display and auto power change. Lift the dynamic changeable speed mechanism.

③Choose switch according to operation mode of the instrument group, so the mode display switch is converted. On the multi-function display, please confirm whether the engine speed changes.

④Release the switch according to the automatic changing speed of the instrument group, in the automatic speed control function. Confirm to cancel the speed change and revolution speed.

⑤Press the screen switch of the instrument group twice. The display of "OK" appears, the engine stopped.

(5) Impossibility of Electromechanical Adjustment

1. The display changes from "STEP 4 adjustment" to "Impossibility of CPU adjustment", and the adjustment cannot be carried out.

1) (Display condition). Engine speed reading, above 850rpm, before and after the step of the speed motor, the occasion of latter speed than the former reduced by more than 10rpm.

(Reason) . The engine sensor was not read correctly.

(Dispose) . After measuring and adjusting the voltage of the speed sensor, implement A adjustment.(unplug sensor connector for measurement) high speed idling over 3V (AC) (controller readable voltage)

[During factory adjustment, the high speed idling is over 4V (AC)]

2) (Display condition). Abnormal rotation (out of control) at high speed idling side.

(Reason) . The connecting rod of the stepping motor is not in good contact.

(Dispose) . Make A adjustment after confirming the length of connecting rod.

[Connecting rod length 288-304mm (sk200-6e) (sk230-6e)]

✧ When adjusting again is also dissociation, the emergency treatment is to press the buzzer stop switch once before the demodulation is to occur, and temporarily idle at high speed, so the "CPU adjustment is over".



2. Display "poor mechanical and electrical adjustment of CPU" or "CPU ROM data "by "CPU adjustment is not possible", and the adjustment cannot be carried out.

(Display condition) .Engine speed below 300rpm, or more than 3000rpm occasions.....Display "CPU maladjustment ".

. Engine speed Orpm occasion...Display "CPU ROM data"

(Reason) .The engine sensor was not read correctly.

. Engine speed sensor wiring harness is broken.

(Dispose) . After measuring and adjusting the voltage of the speed sensor, implement A adjustment.

High speed idling over 3V (AC)

3. "CPU ROM data" display

1) (Display Condition) . Internal malfunctions of the electromechanical controller occur.

(Reason) . Mechanical and electrical controller internal damage may occur.

(Dispose) . Mechanical and electrical adjustment can't solve the problem when replacing the mechanical and electrical controller.

2) (Display condition). The occasion of replacing electromechanical controller.

(Reason). Electromechanical adjustment was not implemented.

(Dispose).Undergone Electromechanical adjustment

4. Enter less than "STEP 2 CPU gap adjustment" from "STEP 1 adjustment".

(Display) . The limit switch signal (ground wire) in the stepping motor is not input to the electromechanical controller.

(Reason) . The limit switch in the stepping motor is bad.

. The connector in the step motor section is not in good contact, or the wire harness is broken.

(Dispose) . Verify the limit switch of the stepping motor is ON or OFF.

. Check connector and wiring harness for adjustment.

5.Others

Instrument set shows engine oil pressure, engine stop.

It can be considered that the engine oil pressure switch and wiring harness short circuit.