

ZD310 Actuator Operation Instruction

● Overview

ZD310 electromagnetic actuator is designed for speed governing device directly mounted on the injection pump, featuring of such advantages as good control performance, compactness, long life of permanence, airproof and leakproof together with pump. Actuator is equipped with manual control stop mechanism. It can replace conventional mechanism governor to increase governing index mark of diesel engine and to realize automated control and protection. This kind of actuator is suitable for “A” and “P” type pump.

● Main Technical Parameters

Working voltage: 24VDC

Working current: 2.8A

DC resistance: 2.5~4.5Ω

Working stroke: 23mm

Maximum torque: 1.3Nm

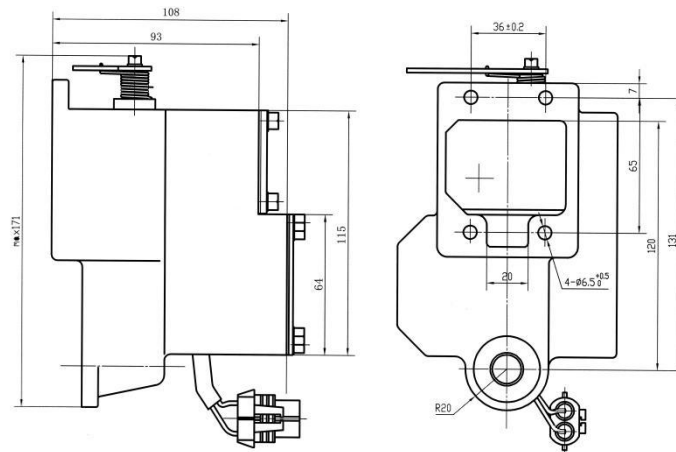
Shock: 20G

Vibration: <500Hz

Environmental temperature: -45℃~+120℃

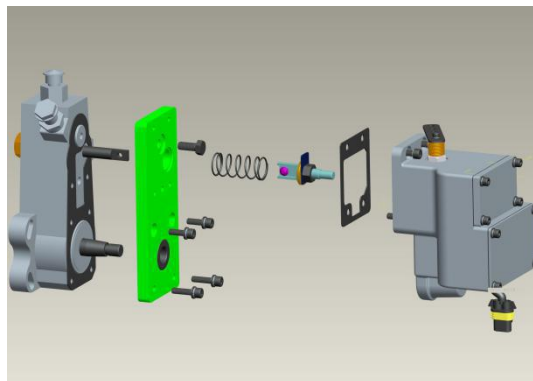
Relative humidity: <95%

● Actuator overall dimension drawing



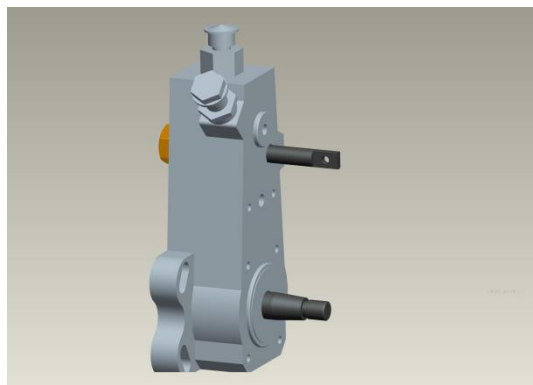
Actuator system installation diagram

Take ASIMCO Hengyang for example

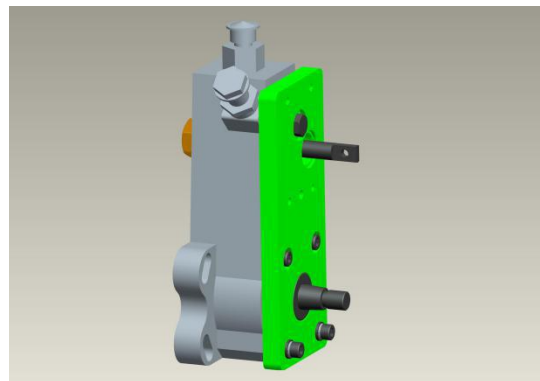
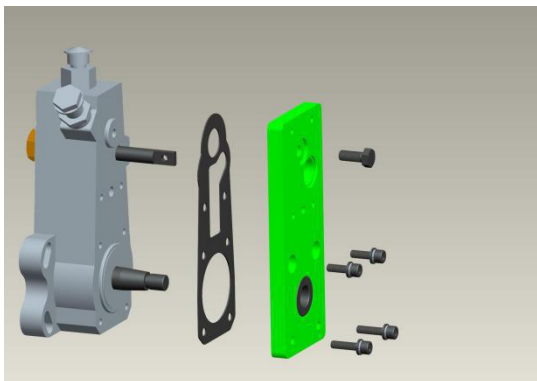


● Installation method and step

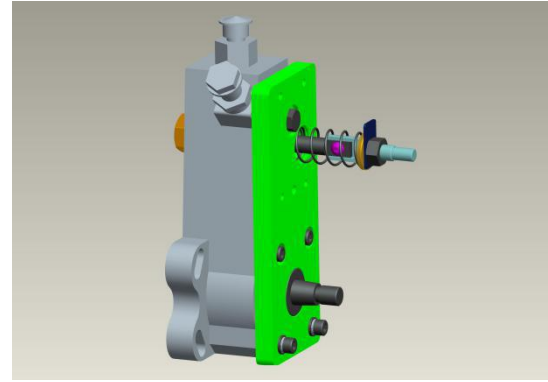
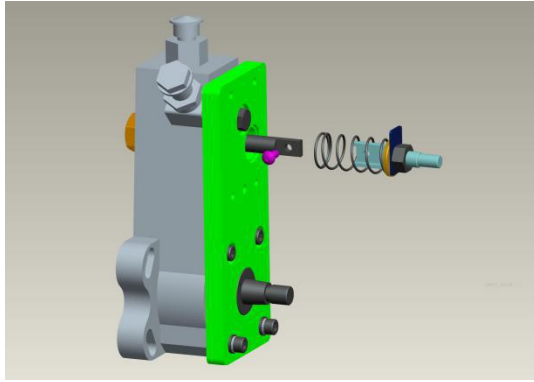
1. When installing, all fastening screws need to be coated with standard thread fastening glue when fastening. It is recommended to use Le Thai 242 thread adhesive.
2. Completely remove the original mechanical governor on the diesel oil pump. Demolition should notice: Do not damage the fuel pump rod. After removal, check the flexibility of the push rod between the oil supply zero and the maximum oil supply position. The resistance should be uniform and $< 2N$. If the oil supply rod is not flexible it should be adjusted flexible before assembly. The status of the oil pump after disassembly is as follows:



3. Install the sealing pad(1) and a connecting plate(2).

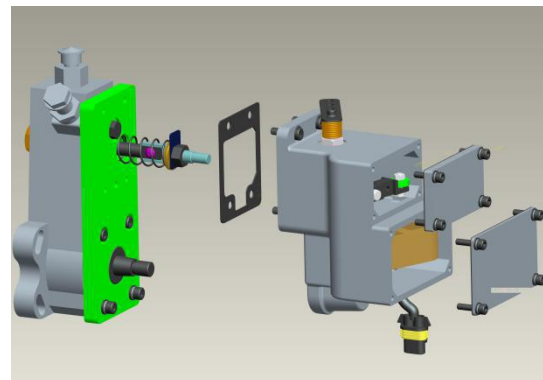
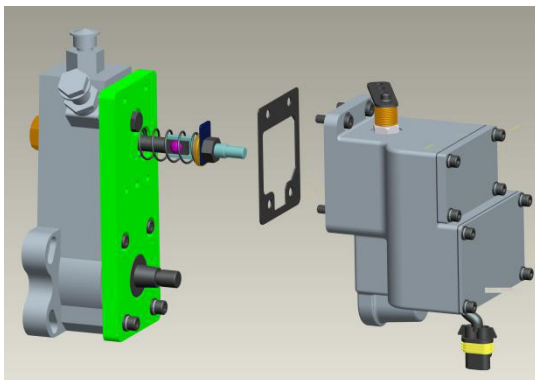


4. The installation rod connection kit(9), and a reset spring set(10).
Note: when installing, make sure both ends of spring come into the spring seat on the connecting plate and inside the spring seat of the oil bar assembly. Make sure the connection, reliable fastening screw(8). Then check the oil pole zero to the maximum oil level between the push-pull should be flexible.



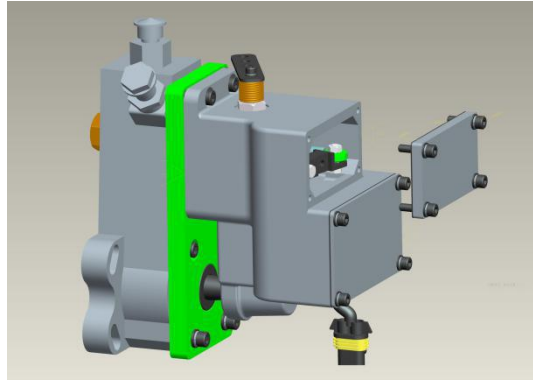
5. Install actuator:

①. Note: when installing, you must open the upper and lower cover of the actuator at the same time. You should first install the actuator bore screw. The upper part of the actuator is slightly tilted forward to a certain angle. When the inner screw is smooth, with a few buckles, the actuator is righting, and then the external screw is installed. Fastening the internal and external cavity screws separately, which makes the installation process easy:

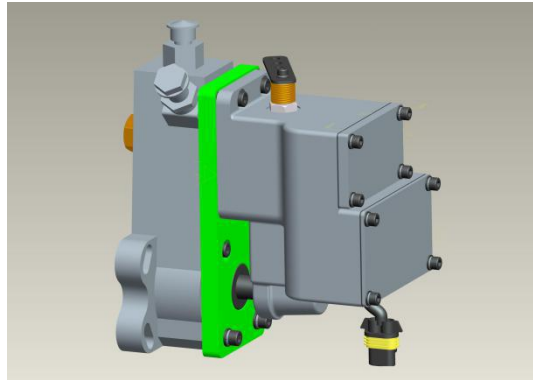


②. In the case of the lower cover of the actuator:

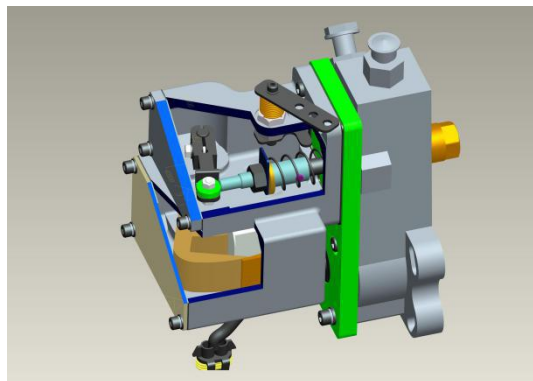
- a. Adjust the oil level zero and maximum oil position of the rod in the upper actuator. If not correct, it shall be ensured by adjusting the angle of the swivel arm or the position of the upper bearing.
- b. Check the center height of the push rod bearing should be 1mm lower than the center of the end of the oil bar. If not correct, it should be adjusted by adjusting the level of the arm assembly to make sure.



③. The upper chamber of the actuator is communicated with the main oil passage of the oil pump, and the upper cover shall be reliably sealed to prevent oil leakage. The status of the actuator after installation is shown as Fig. :



- **After the actuator is installed, the internal structure is shown below:**



The position of the arm and the bearing is adjusted according to the structure size of different injection pumps when leaving the factory , and the user generally does not need to adjust. Under special circumstances, the 0 oil supply does not match, the user can make appropriate adjustments.

Assembly parts list

| No | name | Specifications | unit | quantity |
|----|----------------------|----------------|-------|----------|
| 1 | seal | | piece | 1 |
| 2 | Connection plate | | piece | 1 |
| 3 | Outer six side screw | M8*20 | piece | 1 |
| 4 | Inter six side screw | M6*20 | piece | 6 |
| 5 | Flat washer | GB848-85 | piece | 4 |
| 6 | Spring washer | GB859-87 | piece | 4 |
| 7 | Inter six side screw | M6*25 | piece | 2 |
| 8 | screw | M5*10 | piece | 1 |
| 9 | Rod kits | | piece | 1 |
| 10 | spring | | piece | 1 |
| 11 | seal | | piece | 1 |
| 12 | Saddle washer | GB/T860-87 | piece | 4 |
| 13 | actuator | ZD310 | piece | 1 |