

Why did hydraulic cylinders for plows strain?

[Hydraulic cylinders for plows](#) are the actuating elements of the hydraulic system, but also the most problematic parts, so what are the reasons when the cylinder is strained? And how to solve it? Today I will tell you:

1. Strain causes

(1) If the cylinder is installed, its concentricity, perpendicularity and straightness of these three aspects are not coordinated, or not dealt with, then it will also make the cylinder strained phenomenon. Installation error is the primary causative factor, when the cylinder assembly coaxiality deviation exceeds 0.05mm/m, or piston rod and guide sleeve verticality deviation breaks through the 0.1mm/m critical value, the formation of bias wear effect. A construction machinery enterprises measured data show that 75% of the early strain cases directly related to the installation tolerance exceeds the standard. Design defects should not be ignored, the guide sleeve length is insufficient, the lack of buffer devices and other design omissions, will make the cylinder in the limit of the working conditions to withstand excessive lateral force, resulting in cylinder cylinder wall spiral scratches.

(2) the machine device is not designed, or the design of the error, then it will also damage hydraulic cylinders for plows. high quality cylinder cylinder cylinder wall roughness should be controlled in Ra0.4μm below, and poor quality products are often due to honing process defects lead to the surface roughness exceeds the standard, the formation of high pressure under the action of the stress concentration point, so that it is easy to appear damage.

(3) The piston rod is subject to radial force, so that it is friction with the guide sleeve, which makes the hydraulic system cylinder strain phenomenon.

(4) The quality of the cylinder itself has problems, such as the concentricity of the problem. If the concentricity exceeds the required standard, then the piston rod will be damaged, thus making the cylinder strain phenomenon.

(5) Due to foreign objects and other factors, the surface of the piston rod is damaged, when it reciprocates, it will strain [hydraulic cylinders for plows](#).

(6) The quality of the dust ring is not satisfactory, which allows dust or foreign matter to enter the cylinder, thus making the hydraulic system cylinder strained. When the IP protection level of the dust ring is lower than the actual need, particles with a diameter of more than 50μm will invade the system. These hard particles act as abrasive grains when the piston moves, forming a dense network of scratches on the cylinder wall. Even more alarmingly, when the cleanliness level of the hydraulic fluid is lower than NAS 1638's Class 9 standard, metal powders in the fluid form an abrasive medium that accelerates the surface wear process.

2. Solution For these reasons above, it is recommended to take the following measures:

(1) A three-level prevention and control system needs to be established for strain repair. At the source control level, a laser alignment instrument should be used for precision assembly to ensure coaxiality, perpendicularity and straightness.

(2) Process protection needs to build a double barrier: in the sealing system upgrade, the use of dust ring to meet the requirements, to prevent foreign objects from entering the cylinder.

(3) For the damaged parts, the repair strategy needs to be formulated according to the depth of strain. When the depth of the scratch is less than 0.2mm, the honing process can be used with the brush plating technology to restore the surface quality; if the damage is more than 0.5mm, it is necessary to implement the bore set treatment.

When your [Hydraulic cylinders for plows](#) occur strain failure, through the above methods can basically solve the problem. If the above measures still can not solve the problem, please contact a professional maintenance personnel.

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