Roller Chain Maintenance

■ Maintenance for Roller Chain Drive

It's very practical to illustrate the conventional maintenance of roller chain drives because of its wide application in industry. Better quality maintenance, less failure. Following simple maintenance principals, can easily save costs and extend its service life.

1. Each sprocket in the driving system should have good coplanarity and the chain path should always be smooth.

2. The sagging of chain on the loose side should be suitable and for the adjustable center distance and angle drive, the sagging should be 1%~2% of the center distance. For conditions of vertical drive and under vibration load, reverse drive and dynamic brake, the sagging should be considerably smaller. It's very important to check and adjust the loose side sagging frequently in the chain drive maintenance.

3. Good lubrication is critical. Whichever lubrication method you choose, the most important thing is to make the lubricating grease distribution even in each chain joint clearance. If possible, avoid selecting viscous heavy oil or lubricating grease as it will jam the clearances with dust after a period of time. Periodically clean the roller chain and check its lubrication condition frequently. If the friction surface is brown or dusty, it may be caused by insufficient lubrication.

4. Chains and sprockets must be maintained and in good condition.

5. Frequently check the working surface of sprocket teeth, adjust or replace it when it's worn.

Troubleshooting Instructions

Failure Symptom	Possible Causes	Actions
Increase Chain Noise	1. Unalignment of sprockets. 2. Unsuitable loose side sagging. 3. Bad lubrication. 4. Chain box or bearing loose. 5. Excessive wear of chain or sprocket. 6. Incorrect selection of chain type and pitch. 7. Too small number of sprocket teeth.	1. Realignment of sprockets. 2. Make suitable adjustment of chain loose side sagging. 3. Improve lubrication conditions. 4. Fasten chain box or bearing. 5. Replace worn chains or sprockets. 6. Reselect chain type and adopt smaller pitch. 7. Add chain teeth.
Chain Jumps Off Sprocket Teeth	1. Chain is very loose (sagging). 2. Excessive wear of chain or sprocket. 3. Excessive overloading.	1. Make suitable tensioning adjustment. 2. Replace the chain or sprocket. 3. Select high strength chain to avoid overloading.
Unable to Remove Chain From Sprocket	1. Unalignment of sprocket. 2. Excessive wear of sprocket.	1. Realignment of sprocket 2. Replacement.
Dead Chain Link	1. Unalignment of sprocket. 2. With foreign bodies in chain joints. 3. Bad lubrication. 4. Too big load. 5. The corrosion of chain. 6. The interferences between plates or attachments.	1. Realignment of sprockets. 2. Remove the foreign bodies of joints. 3. Improve lubrication conditions. 4. Reduce the load or adopt suitable chain. 5. Choose anticorrosion chain. 6. Check the interferences of chain.

Roller Chain Maintenance

Failure Symptom	Possible Causes	Actions
Roller Chain Cracked or Deformed	1. Chain pitch too large or insufficient number of sprocket teeth. 2. Sprocket teeth have foreign bodies. 3. The chain climbs onto sprocket teeth too high. 4. Excessive chain impact load.	1. Select a smaller pitch chain or increase quantity of sprocket teeth. 2. Remove all the foreign bodies or replace chain. 3. Replace the chain and ensure correct tensioning. 4. Reduce the impact of chain.
Pin Rotates or Plate Hole Drawn Long	1. Chain overloaded.	1. Eliminate the overloading causes or adopt large specification chain.
Pin/Plate Broken Along The Hole Connecting Line	1. Excessive overloading.	1. Eliminate the overloading causes or a higher strength chain; if sprocket failure symptom found, replace it.
Broken Plates 	1. The load above chain dynamic capacity.	1.Selecting a larger pitch chain or reduce dynamic load.
Excessive Side-wear of Plates or Sprocket Teeth	1. Sprocket not coplanar. 2. Bad bearing stiffness of sprocket. 3. Severe twist of chain.	1. Increase machining and installation precision. 2. Increase bearing parts stiffness. 3. Replace chain.
Outer Link Worn	1. Chain not tensioned. Jumping and colliding with adjacent bodies. 2. Chain box deformed or with foreign bodies inside.	1. Make appropriate chain tensioning 2. Eliminate chain box deformation and remove foreign bodies.
Pin Worn or Bush Bonded With Pin	1. Incorrect lubrication. 2. Chain speed too high or chain overloaded.	1. Supply suitable lubrication system. 2. Lower the speed or reduce the load.
Excessive Wear of Sprocket	1. Incorrect lubrication. 2. Inferior material of sprocket and insuffi-cient teeth surface hardness.	1. Improve lubrication conditions. 2. Improve sprocket material quality and its teeth surface hardness.
Locking Parts (Spring Clip & Cotter Pin etc) loose.	1. Chain wobbling heavily. 2. Knock with obstructions. 3. Locking parts wrong installed.	1. Make suitable tensioning or consider adding supporting board for guide plate. 2. Remove all obstructions. 3. Improve the installation quality of locking parts.