

# Warning



## WARNING

Serious injury or property damage could result if the chain breaks due to incorrect selection of chain, chain installed improperly, or chain run without the safe-guard. Please read the instruction manual thoroughly prior to any attempt at installation.

## Ultimate Tensile Strength

This is the point at which, the roller chain will break with a load applied one time. Note that the Ultimate Tensile Strength is not the allowable working load. Safety factor must be considered when selecting the roller chain. This catalog shows most of the Maximum Allowable Load for your convenience. As a rule of thumb, a roller chain should never be loaded above 50% of Ultimate Tensile Strength for even one cycle. For a multiple-strand roller chain, consult the multiple-strand factor chart.

## Guarding

The chain can break in normal service due to the effect of wear, fatigue, or unexpected overloads. Therefore, a roller chain drive should have adequate guarding to prevent personal injury or property damage.

## Connecting Link

A traditional slip-fit connecting link is for ease of assembly. However, this type of connecting link is 20% lower in fatigue strength than the chain itself. SY new standard connecting link with specially designed slip-fit cover plate provides almost the same strength as chain itself.

## Offset Link

Standard One-Pitch Offset Link is handy to work with an odd number of chain links. The pin and two plates are slip fit. However, it is at least 35% lower in fatigue strength than the chain itself. It is not recommended to use in the application where frequent, impact loads at high speed driving are required.

Two-pitch offset link is available for that application. The Two-Pitch offset link consists of an offset link and a roller link connected with a riveted pin.

## Cotter Pin, Spring Clip

Maintain 60-degree angle for the prongs of the cotter pin. Do not re-use the cotter pin. Do not use the cotter pin commercially available in the market, as it is different from our custom made pins. Be sure to insert the spring clip properly in the groove of the pin. Install the spring clip's solid end side pointing to the direction chain runs.

## Rust Corrosion

Generally, the chain is lubricated for its flexibility and rust prevention. However, lack of maintenance and/or a corrosive environment could cause the chain to rust. If the chain is corroded, its capacity is dramatically reduced and the link plates could break even with the slightest load applied.

# Caution

- 1) Always lock out machinery power switch before attempting removal , installation, or any servicing of chain
- 2) Wear eye and face protection when grinding, driving, or disassembling pins.
- 3) Always wear gloves, protective clothing and safety shoes with steel toe when working with chains.
- 4) Make absolutely sure that chain is properly supported to prevent uncontrolled movement of chain and parts.
- 5) Chain pressers and breaking tools are recommended to be in good working order and to be used according to instructions.
- 6) Avoid plating or welding assembled chains or components.
- 7) Never repair damaged chains by replacing only the component parts.
- 8) Damaged chain may be yielded and therefore should not be reworked.

## MAINTENANCE CHECK LIST

Inspect on regularly scheduled basis for worn, damaged or broken parts ,possible interference by other systems components, and proper lubrication. Normal maintenance procedures can prevent most of the conditions described below. Carefully inspect roller chain drives on the same schedule as associated equipment.

### Sprocket Misalignment

Wear on the sides of sprocket teeth generally indicates improper installation of sprockets and/or shafts. If shafts are out of parallel or not in the same plane, non-symmetrical wear will appear on sprockets or chain rollers. After proper alignment is made retighten set screws in sprocket hubs.

### Chain Wear and Elongation

Normal wear will cause some increase in chain length. However, if a sudden increase in elongation occurs, look for severe wear on the tips of sprocket teeth. This may be caused by any of the following : excessive loading or shock loading, displacement and/or wear in bearings, displacement of take-up ,or under-designed drives. Excessive elongation may be an indication that chain and/or sprockets should be replaced. Before replacing chain or sprockets recalculate initial drive design. Check chain tension if there is too much accumulated slack in the drive.

### Broken Chain Parts

Generally caused by an overloaded drive ; extreme misalignment ; excessive elongation causing chain to jump sprocket teeth; heavy shock; improper drive design geometry; foreign objects. Recalculate initial drive design and make necessary correction. Inspect sprockets and shafts for proper alignment or looseness.

### Link Plate Wear

Wear on inside of the link plates and on one side of sprocket teeth may be caused by a misalignment of sprockets. Realign sprockets and shafts. Inspect chain carefully, readjust chain properly or replace.

### Removing Chain

Turn the drive until a connecting link is fully engaged with one of the sprockets so as to relieve the tension on the connecting pin. The connecting link may then be removed.

### Excessive Noise

Can be caused by broken links and chain rollers,extreme misalignment, elongation, chain jumping sprocket teeth, loose sprockets, broken teeth ,accumulation of dirt packed into the chain or sprockets teeth, interference by foreign objects, contacting a fixed object. Check for worn broken or missing parts. Check alignment of shafts and/or sprockets.

### Lubrication

On slow speed drives, where manual lubrication is used, if drip lubrication is used check for adequate oil flow and proper application to the chain. With bath or pump lubrication, check oil level and add oil if needed. Check oil for contamination and change oil if needed. If pump lubrication is used, check each orifice to be sure it is clear and is directing oil onto the chain properly.

### Recommended Replacement

Measure the chain wear elongation and if elongation exceeds functional limits or is greater than 1.5% (0.18 inch in one foot) replace the entire chain. Do not connect a new section of chain to a worn chain because it may run roughly and damage the drive. Do not continue to run a chain worn beyond 3% elongation because the chain will not engage the sprockets properly and it may damage the sprockets.

### Cutting Riveted Chain

The two pins of a pin link must be driven out of the link plate. Strike the pins alternately to avoid distortion of the roller link plates as well as the plates of the adjacent links. Chain cutting tools can also be used. Follow their instruction carefully.

### Inserting New Links

Insert only on new roller chain. Pitch variance between a new link and an old link, especially one which is elongated due to wear, will cause shock when the new link engages the sprockets.

### Installing New Chain

Chain and/or related parts should be visually inspected for damage, which could have occurred during shipping prior to installation. Never install new chain on worn sprockets as this will permanently damage chain. With new chain and sprockets installed check for proper and sprockets installed, check for proper tension and alignment.