



If misselected, misinstalled and missafe-guard Chain will break and serious injury or property damage can result. Please read an instruction manual carefully before installation.

Roller Chain Application Information

Please select the chain (compare with Technical Data) when you use.

If the chain abused through improper installation, operating or maintenance procedures, failure can lead to personal injury or property damage.

Ultimate Tensile Strength

Ultimate tensile strength is the one time pull required to break the chain therefore these are not the allowable working load.

Safety factor must be considered when selecting roller chain.

A roller chain should never be loaded above 50% of Ultimate strength for even one cycle. When to use a multiple-strand roller chain, please consider the multiple-strand factor.

Guarding

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

Connecting Link

When a slip-fit connecting link coverside for ease of assembly is used, a chain's working capacity is reduced as much as 20% on some models. SUGIYAMA CHAIN offered New Connecting Links with slip-fit coverside as strong as the base chain. Recommend this New Connecting Link to use.

Offset Link

One-pitch offset links are very handy, pin and offset linkplates have to be slip-fitted.

It's allowable working load is approximately 30% less.

Therefore one-pitch offset links are not recommended especially frequent, impact load and high speed driving.

The two-pitch offset link is combination of a roller link and an offset link connected with a riveted pin.

So two-pitch offset link can be used in high speed or heavy duty applications.

Cotter Pin, Spring Clip

Keep angle 90° approx. to spread out prongs of cotter pin. Do not reuse the cotter and do not use the commercial cotters on the market.

Be sure to insert spring clip properly into and seat in the groove on the end of Pin after installation of Connecting Link cover plate onto pins, and do not spring one leg of the clip over the pin end to avoid breakdown of the leg.

Do not spread out clip's legs too much to prevent falling spring clip off and unexpected accident.

Install spring clips with solid end pointing in the direction of chain travel.

Rust Corrosion

If a chain is corroded, its capacity is reduced.

If corrosion is severe, the link plates may crack even though the chain is not under load.

In view this, carbon steel chain should not be exposed to corrosive conditions, acid fumes, salt spray sea water.

Chain corrosion from normal atmospheric conditions may be minimized by proper lubrication.

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 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 3% (0.36 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.