

THERMOFORMING CHAIN MAINTENANCE AND LUBRICATION

Lubrication schedules, wear limits, pin replacement procedures, and preventative maintenance checklist for thermoforming chains.

THERMOFORMING CHAIN MAINTENANCE & LUBRICATION GUIDE

1. Maintenance Schedule

FREQUENCY	TASK
Daily	Visual inspection, remove debris, check for broken grippers
Weekly	Inspect gripper finger tightness, clean chain surfaces, check tension
Monthly	Lubricate pins (if applicable), measure elongation, inspect sprockets
Quarterly	Deep clean chain, inspect all pins and bushings, replace worn grippers
Annually	Complete chain measurement, sprocket inspection, full gripper replacement

2. Lubrication Guidelines

Lubrication Type by Chain Material

CHAIN MATERIAL	LUBRICANT TYPE	FREQUENCY
Carbon Steel	Light machine oil or dry film lubricant	Monthly
Stainless Steel	Food-grade grease (if food application) or dry film	Monthly
POM Polymer	No lubrication required – self-lubricating	N/A
High-temp zone	High-temperature chain lubricant (up to 200°C)	Bi-weekly

FOOD-GRADE CRITICAL

If the thermoforming line produces food-grade packaging, only use NSF H1-rated food-grade lubricants. Never use standard industrial lubricants on food-contact chains.

3. Wear Limits & Replacement

COMPONENT	MEASUREMENT	REPLACE AT
Chain elongation	Measure 10 pitches	1.5% max (precision application)
Pin diameter	Caliper at wear point	3% reduction
Gripper finger	Visual + height measurement	When tip is worn flat or rounded

Gripper finger	Looseness test	If finger moves more than 0.5mm laterally
Sprocket teeth	Visual + profile gauge	When tooth profile shows 15% wear
Side plates	Thickness at wear point	10% thickness loss

4. Pin Replacement Procedure

1. Remove chain from conveyor and place on clean work surface
2. Identify pins for replacement (based on wear measurement)
3. Remove cotter pin or retaining clip from pin to be replaced
4. Drive out worn pin using a pin punch and hammer
5. Inspect bushing bore — clean and deburr if necessary
6. Install new pin through chain links and bushing
7. Install new cotter pin or retaining clip
8. Verify smooth articulation — link should flex freely
9. Re-measure chain elongation after pin replacement

5. Gripper Finger Replacement

1. Identify worn or damaged gripper fingers
2. Remove fastening bolt or screw securing the finger
3. Remove old finger — inspect mounting hole for wear
4. Clean mounting surface and hole
5. Install new finger — ensure correct orientation (pointing in product travel direction)
6. Tighten to specified torque
7. Verify finger spacing matches adjacent fingers
8. Test by running chain at low speed and checking sheet grip

6. Preventative Maintenance Checklist

- ☐ Daily: Check for broken or missing gripper fingers
- ☐ Daily: Listen for unusual noise (indicates pin wear or sprocket damage)
- ☐ Daily: Remove plastic debris from chain and sprocket area
- ☐ Weekly: Check chain tension — adjust if elongated
- ☐ Weekly: Inspect all visible gripper fingers for wear or loosening
- ☐ Monthly: Lubricate per material specification
- ☐ Monthly: Measure chain elongation on accessible sections
- ☐ Quarterly: Deep clean entire chain (use appropriate solvent for application)
- ☐ Quarterly: Inspect sprocket teeth for wear pattern
- ☐ Annually: Complete measurement and replacement planning

MAINTENANCE SUPPORT

Uniking Canada supplies replacement pins, gripper fingers, and complete chains for all thermoforming applications.

info@unikingcanada.com