

MAINTENANCE AND LUBRICATION

General Information

Occasional adjustment and lubrication of Hydro Gate slide gate components will be required. The frequency will depend upon how often the gate is used, location, and operating conditions. Periodic inspection, adjusting, and cleaning are recommended as conditions at the site permit.

Lift and Stem Maintenance

Maintenance of the threaded operating portion of the gate stem is critical and should be performed as frequently as the operating environment requires.

IMPORTANT: Failure to maintain stem thread lubrication causes operating difficulties and premature failure of the lift nut and stem threads.

Recommended inspection frequency and procedures are listed on the maintenance schedule:

- Initial inspection at the time of installation and again at the date of commissioning.

A “cycle” of gate operation is operation of the gate slide from closed to open to closed position. At each inspection, verify the following items:

- Inspect the stem threads and lift nut threads for wear and verify the trueness and dimension of the thread form. See wear checking procedure.
- Check the amount and condition (diary and day) of lubricant remaining and add if necessary.

- Relubricate if necessary – threads should be cleaned and relubricated with fresh lubricant.

More severe conditions or operating modes require a slightly different schedule of inspection and service. For example: Modulating gates with electric motor operators may make position changes several times a day but seldom go full stroke. There is a portion of the stem that gets a lot of use. These stems should be inspected at least weekly. The lubricant on the stem threads should be monitored closely. As the lubricant is depleted and becomes contaminated, it should be cleaned and replenished.

When excess dried grease or other foreign material is carried into the threads of the lift nut, extremely hard operation will result. If serious binding occurs, the only way to correct it is to remove the threaded stem from the lift nut and clean the thread interior. If this foreign material is not cleaned from the interior threads of the lift nut, heavy pulls on the handcrank or seizure will result.

Stem threads may be cleaned with solvent, rags, and brushes. Run the gate open. While in the process of opening (running the stem out above the lift nut), clean off the old grease. Inspect the threads for roughness. If the threads are rough, they may be filed and polished. Be careful to keep filings and grit out of the lift nut. Rough stem threads accelerate the wear of the lift nut threads.

Relubricate stem threads by brushing or smearing grease

onto/into the threads as the gate is closing (the stem is going into the lift). This puts fresh lubricant into the lift nut and carries out the old contaminated grease. It is recommended that the contaminated grease be cleaned from the stem as it exits underneath the lift where the stem is accessible from below. Replenish grease on the underside stem.

The recommended stem thread lubricant is Schaeffer’s 238 ultra-supreme.

Recommended for potable water is a vegetable-based lubricant, Shaeffer’s (XXXXXX).

Lifts may be furnished with a stem lubricator Zerk Fitting which is located in the “stem cover adapter” to facilitate lubrication of stem threads with pressure greasing equipment. To be effective, lubricant should be injected while the stem is moving through the lift.

Manual crank lifts have sealed thrust bearing and do not require lubrication.

Exercise of infrequently operated lifts and gates is recommended. A Semi-annual (every 6 months) exercise will ensure the gate is operable when needed and the lubrication condition will be maintained.

HG561 FABRICATED SLIDE GATE

Maintenance

Removal of the stem nuts for thread inspection or check with the wear checking procedure of frequently modulated gates is recommended.

Replacement or spare nuts can be ordered from us. Spare parts are usually not needed or recommended, because they are readily available on short notice

from us. In those cases where equipment operation or downtime is critical and the gate is operated extremely often, a spare lift nut may be pertinent to have on hand.

TABLE 2. Maintenance Schedule and Lubrication Summary –HG561 Fabricated Slide Gates and Manual Lifts

Activity	Frequency	Lubricant
General Cleaning and Inspection	As often as conditions require or permit, or every 6 months.	N/A
Stem Thread and Lift Nut Wafer Inspection	Initial inspection after 10 cycles. Subsequent inspection after 25 cycles. Operational inspection after each 50 cycles, or every 6 months.	N/A
Stem Thread Lubricant and Cleaning Inspection	Every 3 months, quarterly, or 6 months. Clean grease if dried or contains foreign material every 6 months. More frequent intervals required for modulating duty.	Schaeffer's 238 Ultra-Supreme

Lubrication Equivalents

We consider any of the following greases/lubricants to be acceptable:

- Fiske Brothers “Lubriplate” No. 630 AAA or AA
- Sta-Lube “Sta-Lube” No. 3121
- Conoco “All Purpose Superlube”
- Texaco “Multi Fak Heavy Duty” No. 2
- Shell Gadus Grease (formerly known as Alvania)
- Mobil “Mobilux EP2”
- BP Energrease LS 2

We recommend the following pipe thread sealants with Teflon:

- La-Co Slic-Tite Paste
- Dayton Pipe Thread Sealant with Teflon
- McMaster-Carr Pipe Thread Sealant with Teflon
- Any other commercially available pipe thread sealants containing Teflon

For potable water treatment plants, we recommends using a vegetable-based lubricant such as:

- Lubriplate Super FML-2
- Rocol Foodlube Multi-Paste (European product)
- Petro-Canada Purity-FG