

Increase the Reliability of In-Ground Lifts.

BALTIMORE • CHICAGO • LOS ANGELES

*“outperformed everyone’s expectations”*

# ZL<sup>TM</sup>T

Zero Leak Technology

*“performed absolutely phenomenal”*



In-Ground Lift  
Upgrade Program  
*for Rotary*

AN



EXCLUSIVE

call 800-321-8173

*Outperform your own expectations.*



ZLT™

BH-9773-12 Upper Bearing Kit for Rotary  
Pictured with wiper and ZLT seal installed

# overview

## ZERO LEAK TECHNOLOGY

The answer to leak-free lifting is here.

SVI has engineered to help owners of lifts by offering **Zero Leak Technology (ZLT™)**—a sealing system upgrade that retrofits the common Rotary in-ground lifts used for vehicle repair and service. Frustrations with previously unsolvable leaking problems and all the costs associated have caused many a lift owner to give up on their investment. Rather, they opt for costly and unnecessary lift replacement at taxpayer expense. ZLT retrofit kits are specifically designed for lifts still widely found that were once constructed using fixed-style Babbitt bearings and the dated technology of spring energized soft one-piece Buna (nitrile) seals.

Important—this is not a one-piece seal system like the original. Zero Leak Technology utilizes a separate seal and wiper to allow optimum contamination exclusion and clean, unimpeded seal performance.

Now, new **high performance polymer sealing components** are combined with a **specially designed gland/upper bearing** offering long-term, leak-free sealing. These retrofit kits have been field tested and proven to address the leaking seal performance issues typically associated with some in-ground lifts.

Each seal kit includes a separate wiper and plunger seal, a wear ring, o-ring and ATF spacer strips all designed to fit the custom designed gland. Packing kits and glands have been designed for three popular sizes: **8-1/2", 10-5/8" and 12-5/8"**



### SVI Zero Leak Technology Upgrade Program

- One-time custom Gland / Upper Bearing purchase gets the leaking stopped!
- Gland / Upper Bearing is precision machined.
- Seal Designs can accommodate plunger size variations.
- Wiper design incorporates a static seal ridge to prevent debris from entering through the back side of the wiper groove.
- Glass-filled nylon wear ring along with SVI exclusive Adjust-to-Fit spacer strips assures plunger stability and won't compression set or delaminate under side-load conditions.
- Plunger seal and wiper are made from proprietary 95D thermoset urethane, which is specially formulated for high abrasion and cut resistance, low compression set, and unlimited shelf life.
- Flange mounted o-ring designed to keep the static seal tight and prevent contamination from entering around the gland/upper bearing.

upgrade today. ask for ZLT™

Size	Rotary Models	SVI P/N (ZLT Seal Kit Only)	SVI P/N (ZLT Gland and Seals)
8-1/2"	DTO28, FP28, AC60, AP52	BH-9773-08SK	BH-9773-08
10-5/8"	FP46, AT70, AT1012, AT10210, AT101210, T110, T210, T1010	BH-9773-10SK	BH-9773-10
12-5/8"	AT1012, AT1212, T112, T212	BH-9773-12SK	BH-9773-12

Contact SVI for sealing applications on other makes and models!

call **800-321-8173**



SVI International, Inc.  
155 Harvestore Drive • DeKalb, IL 60115

# features & benefits

## Exclusive Materials – ZLT – Zero Leak Technology

The **proprietary seal material** is made from a special polymer that offers superior memory, excellent abrasion resistance and includes a special blend of molybdenum disulfide to minimize frictional drag. The superior memory enables the seal to automatically adjust and compensate for plunger size deviations and does not rely on a spring or springs to keep the seal and wiper in contact with the plunger.

The **wear ring material** is made from glass-filled heat stabilized nylon offering superior load bearing capabilities and is designed to help stabilize the plunger (reduce rock) and keep it in constant contact with the seal and the wiper.

The **SVI exclusive gland/upper bearing** is manufactured from steel and precision machined to incorporate use of SVI's exclusive Adjust-to-Fit wear ring system allowing for easy and accurate field fit.

## Innovative Designs – ZLT – Zero Leak Technology

The **seals** are custom designed to meet the specific need of this lifting application. The plunger seal profile is designed to allow ease of installation, increased stability and excellent sealing characteristics.

The **wiper** incorporates a positive flared lip design that ensures the plunger is wiped clean with each stroke and prevents further system contamination.

The **wear ring** is designed to prevent metal-to-metal contact of moving parts and offer additional support thus extending the useful service life of the lift.

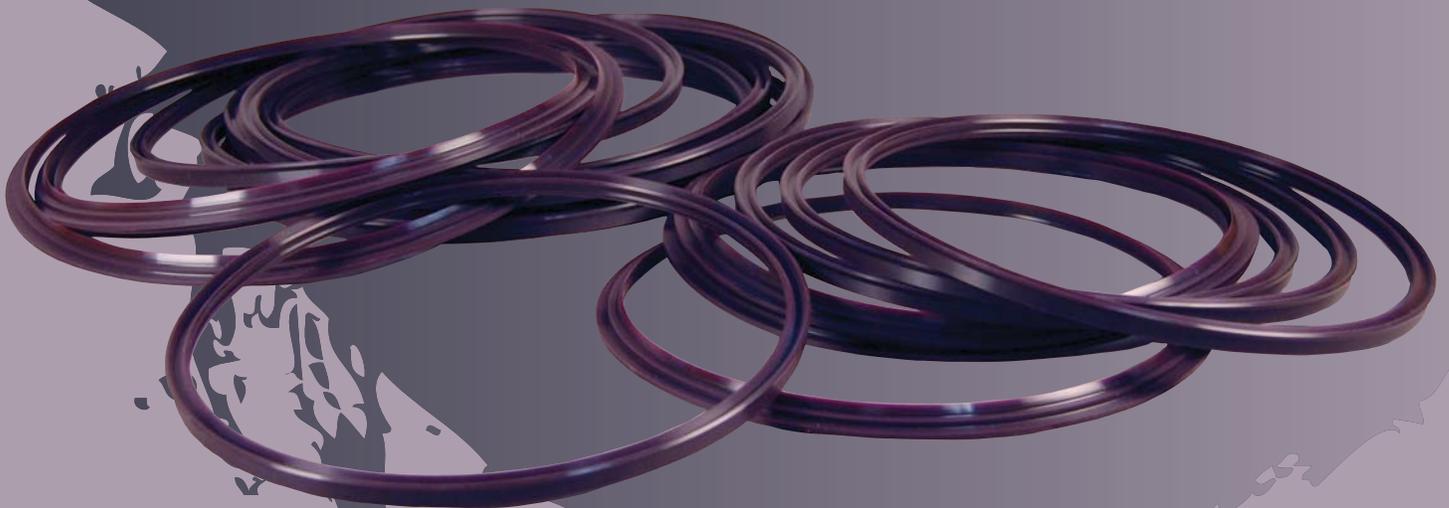
The **SVI exclusive gland/upper bearing** is an upgrade from the original die cast or iron gland and is intended as a one-time purchase item. The gland design incorporates a wiper groove, rod seal groove, o-ring cavity and wear ring groove with clearance for use with SVI's exclusive adjust-to-fit wear ring spacer strips for easy retrofit and correctness of fit for long term field service life. All of this adds up to the best sealing situation and least amount of plunger rock possible.

ZLT™ ADVANTAGES	ZLT™ BENEFITS
<b>Proprietary material</b>	<ul style="list-style-type: none"> <li>• High performance thermoset materials with built-in molybdenum disulfide lubrication</li> <li>• Extends average time between repairs and improves daily productivity</li> <li>• Outperforms Buna (nitrile) material</li> <li>• No springs required</li> </ul>
<b>Exclusive material</b>	<ul style="list-style-type: none"> <li>• Glass-filled heat stabilized nylon with superior load capabilities</li> <li>• Provides improved plunger stability</li> <li>• Compressive strength &gt; Original Babbitt bearing</li> </ul>
<b>Complete retrofit kit</b>	<ul style="list-style-type: none"> <li>• Minimizes downtime for in-field service</li> <li>• Reduces inventory</li> <li>• No searching for individual components</li> </ul>
<b>Custom seal design</b>	<ul style="list-style-type: none"> <li>• Offers leak-free, high performance sealing</li> <li>• Eliminates oil loss and associated costs</li> <li>• Accommodates plunger size deviations</li> </ul>
<b>Innovative gland/upper bearing design</b>	<ul style="list-style-type: none"> <li>• Specifically designed to maximize performance</li> <li>• Machined to allow for use of SVI-exclusive adjust-to-fit spacer strips for correctness of fit to reduce plunger rock</li> <li>• Ease of removal with use of jack-up screw holes</li> <li>• One-time purchase</li> </ul>
<b>Static seal o-ring groove</b>	<ul style="list-style-type: none"> <li>• Prevents contamination from entering around the gland into the system</li> </ul>



performance.  
perfected.  
precision.

**ZLT**<sup>TM</sup>  
Zero Leak Technology



# past & present facts

SVI's **Zero Leak Technology** system retrofit kits are specifically designed for lifts still widely found that were once constructed by Rotary lift using fixed-style Babbitt bearings and the dated technology of spring energized soft one-piece Buna (nitrile) seals. This SVI retrofit solution focuses on their once most popular models of which there remains a large population of still in use today.

## Materials & Designs

For these particular lifts, Rotary offers what they refer to as a Hydra-Seal. This seal design combines a wiper and rod seal into one seal. The plunger seal portion of this style seal is spring-loaded to ensure the seal is pre-energized prior to pressure being applied at start up. The wiper lip is a blunt lip design that can allow contaminants to enter from the outside by not properly wiping the plunger during the lift's descent. As contaminants enter the cylinder they can cause excessive wear to both the wiping and seal lips eventually leading to premature seal failure and bearing wear.

## Original Seal Material

Seal material is a Buna (nitrile) based rubber. The advantages of rubber seals include low cost (due to its availability), temperatures range (250°F / 120°C), is soft (conforms to worn surfaces) and it is relatively easy to install (flexible). However, for all its advantages it has some inherent flaws as a sealing element for use in these systems. Some of the weaknesses that Buna has in comparison to other sealing materials include its poor durometer rating (limiting its extrusion capability), high friction or slip-sticking (causing excessive drag), limited shelf life (dries and hardens in storage), compression sets (poor memory) and is subject to rolling (pressure spikes).

Additionally, this soft material can be easily displaced or worn when exposed to surface irregularities or contaminants as the result of poor housekeeping practices. Buna seals are well known throughout industry to have poor pre-load capabilities. These characteristics limit its ability to provide proper sealing force to the dynamic surface prior to the lift being pressurized. Due to the inherent drawbacks of Buna, a single or multiple coil spring is commonly used to provide additional sealing force to the dynamic lip and in the case of the 12-5/8" style the spring is also used on the wiper side of the one-piece seal. This sealing force is critical in lower pressure applications (such as vehicle lifts) and over time the loss of spring load and rapid wearing of the seal lip can eventually lead to premature leakage.

It is not uncommon to hear from lift users that the Hydra-Seal style seals leak sometimes after initial installation and usually are replaced after no more than 4 to 6 months.

## Additional Data

Traditional in-ground lifts operate via a pressure source and hydraulic oil. These lifts are subject to leakage as seals wear and are not promptly replaced. While traditional in-ground lifts have been permanently exempted from regulation by the EPA, oil spills into the soil can become a real problem. One facility in Wisconsin has a preventative maintenance program and replaces their seals every month due to the excessive leakage caused by the original sealing design. This can now be a thing of the past for taxpayers. Utilizing SVI's Zero Leak Technology seals known as ZLT's lift owners can put the brakes on constant weeping and frequent seal replacement.

A two stage Babbitt bearing system is located below the one piece seal for plunger support. Babbitt bearings wear on a regular basis, are not repairable and with time the plunger will side-load putting additional stress on the one piece seal, thus increasing the likelihood for premature seal failure. This side load also allows for loss of contact with the wiper and in some cases with the seal lip which allows debris to enter the seal and the system, damaging the seal lip and causing seal failure.

## Plunger Sizes

Plunger sizes are nominally specified as 8-1/2", 10-5/8" and 12-5/8" but it is not uncommon to find actual measurements vary from 10.581" to 10.589" on the 10-5/8" size while the larger size can vary from 12.587" to 12.573". This should not be a concern because our seal profiles (wiper & rod seal) were specifically designed to compensate for these variances and can handle these deviations due to their unique designs. Through use of SVI's exclusive Adjust-to-Fit bearing system, it is typically not necessary for plungers to be precisely measured in the field prior to ordering. In extreme cases of plunger size variance, it may be recommended that the subject plunger be measured with an outside Micrometer or a P.I. Tape to check dimensions along the plunger and ensure proper sizing before placing an order.

# installation guidelines

*These guidelines are not intended to replace the OEM instruction manual.*

## SVI Seal Upgrade System Guidelines

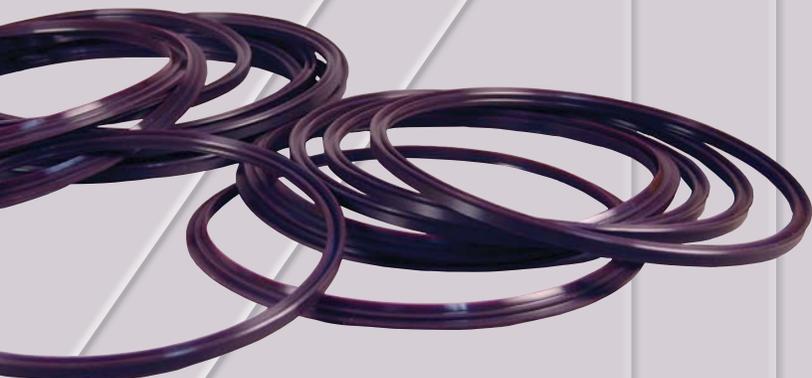
- Prior to initiating the seal replacement process, first raise the plunger to full stroke and dress the plunger, removing nicks, dings and scratches. This ensures much better seal performance. More detailed instructions are included with ZLT kit.
- Follow OEM instructions for raising and lowering the lift and seal removal and replacement. During the replacement step, just install this kit instead of what was removed.
- Remove Rotary top flange and Hydra-Seal.
- Clean stuffing box thoroughly.
- Clean and/or remove any nicks, cuts or burrs from lead-in edge of plunger.
- Wipe plunger clean, removing any dirt or debris.
- Install SVI seals into the special SVI gland/ upper bearing.
- Lightly lubricate seals and wear ring in gland.
- Slip gland/upper bearing over the plunger and into upper casing and bolt down.
- Take precaution to follow OEM specifications prior to start-up.



*(Pictured with Wiper and ZLT™ Seal)*

**Note:** While rare, abnormalities in plunger size do occur. Never try to force the wear ring bearing over the plunger. If you have already removed all the Adjust-To-Fit spacer strips and the wear ring still will not fit over the plunger, stop immediately and call SVI.

**Note:** If the plunger does not have a lead chamfer (taper) allowing for easy seal installation, there is a seal starter installation tool available. Call for details.



# who needs the ZLT™ solution now?

It has been our experience that the appropriate people to discuss leaking vehicle lifts with are the Building and Grounds Supervisor, the Maintenance Supervisor, or those in Environmental. They are well aware of the common issues related to under performing leaking lifts and will welcome someone with an actual solution to their leaking problems. For instance, it is not uncommon to receive an order for one or two SVI ZLT™ systems during your initial visit. Once the program has proven its value, a larger order typically follows a few months later.

- Transit Authorities
- Municipal Garages
- City Garages
- School Bus Garages
- Any in-ground Rotary lift in need of a leak-free solution!

no one likes a potential leaker...

## insist on ZLT™

A new gland/upper bearing must be purchased with the initial seal kit because all seals were custom designed to fit the SVI exclusive Adjust-to-Fit ZLT gland and not the aluminum or steel OEM gland.

Determine size and model number of the lift and choose appropriate kit.

### **Kits are offered two separate ways:**

- Complete with a custom gland along with the new ZLT™ seals, wiper, wear ring and adjust-to-fit spacer strips.
- Replacement seal kit only.



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