



Stanadyne GX Pump Installation Guide

Specification 70640

Preload Measurement and Installation Guide

Prepared for	Installation of High-Performance Fuel Pump with GM Style Roller Lifter Tappet
Scope	Stanadyne GX pump preload measurement, shim selection, and final installation checks

Important: This guide does not cover intake removal or fuel system disassembly. Finalized installation numbers must be submitted through the Stanadyne website to complete the registration of the product. After reviewing this installation guide, please visit <https://www.stanadyne.com/rgx-installation-validation/> or scan the QR code below using your mobile device to submit the installation parameters:



WARRANTY NOTICE: This pump is sold subject to Stanadyne's Standard Terms and Conditions of Sale. This guide is intended to supplement, and does not modify or expand, the terms of Stanadyne's Standard Terms and Conditions of Sale. Warranty coverage, if any, is provided through the authorized distributor from whom this pump was purchased. End users should contact their distributor for warranty inquiries. Stanadyne makes no direct warranty to end users.

PRODUCT REGISTRATION: Submission of required installation measurements through the Stanadyne online portal (accessible at <https://www.stanadyne.com/rgx-installation-validation/> or via the QR code provided above) constitutes registration of this product. Submission of accurate installation data is required for any warranty claim to be considered. Failure to submit required measurements may result in denial of warranty coverage in accordance with Stanadyne's Standard Terms and Conditions of Sale.

INSTALLATION WARNING: Failure to follow these installation instructions, including achieving the required plunger preload, constitutes improper installation and may result in denial of warranty coverage in accordance with Stanadyne's Standard Terms and Conditions of Sale.

LIMITATION OF LIABILITY: TO THE MAXIMUM EXTENT PERMITTED BY STANADYNE'S STANDARD TERMS AND CONDITIONS OF SALE AND APPLICABLE LAW, STANADYNE SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES ARISING OUT OF OR RELATED TO THIS PRODUCT OR ITS INSTALLATION, INCLUDING WITHOUT LIMITATION DAMAGE TO THE ENGINE OR VEHICLE, LOSS OF USE, LOST PROFITS, OR LABOR AND REINSTALLATION COSTS, WHETHER ARISING IN CONTRACT, TORT, OR OTHERWISE, EVEN IF STANADYNE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

1. Purpose and scope

This document explains how to measure and verify plunger preload during installation of the Stanadyne High Pressure Fuel pumps. It is intended for use by qualified, trained installers and covers preload measurement, shim selection, input form completion, and final installation checks. It does not cover intake removal, fuel system disassembly, or modification of the pump or its components. **The goal is to set the installed height correctly before final pump installation and torque of pump bolts.**

REQUIRED TOOLS:

- Calipers or dial indicator
Recommended:
SPI Digital Electronic Drop Indicator 2 Inch Max, 0.001500", MSC# 38356234
MITUTOYO 2-½ Inch Long SS Depth Gage Base, MSC# 00622449
- Torque wrench
- Preload calculation from website
- Blue thread locker (Loctite)
- Appropriate gaskets / shims
- Hand tools to rotate crankshaft

Input form: measurements / calculated value

MEASUREMENTS & CALCULATIONS (ENTER IN OR MM)

— Pump plunger height

Inches	Millimeters
<input type="text" value="1.410"/>	<input type="text" value="35.814"/>

— Valley cover to lifter @ base circle

Inches	Millimeters
<input type="text" value="1.35"/>	<input type="text" value="34.29"/>

— Fuel pump gasket thickness (total)

Inches	Millimeters
<input type="text" value=".012"/>	<input type="text" value="0.305"/>

— Fuel pump installed height (auto-calculated)

Inches	Millimeters
<input type="text" value="1.362"/>	<input type="text" value="34.595"/>

Installed plunger preload **Pass**

Inches	Millimeters
<input type="text" value="0.0480"/>	<input type="text" value="1.219 mm"/>

Acceptable range: -0.047" to -0.071" / -1.2 mm to -1.8 mm

Figure 1. Website input form.

Application limits

The maximum tested lobe lift for this GX pump is 8.2mm (42%). Recommended lobe lift is 7.85mm (38%).

WARNING - LASH CAP PROHIBITED: The use of a lash cap with this pump is strictly prohibited. Installation of a lash cap will cause immediate pump and/or engine failure. Use of a lash cap constitutes improper installation and may result in denial of warranty coverage and limitation of remedies as set forth in Stanadyne's Standard Terms and Conditions of Sale. The pump retainer is not designed to accommodate a lash cap and will not function safely with one installed.



2. Installation Measurements

Step 1 - Measure base circle and lifter height

Use a dial indicator and rotate the crankshaft until the lifter reaches its lowest position (fig. 2). **This is the maximum distance from the valley plate to the top of the lifter.** Record this value in the input form (fig. 1) "Valley cover to lifter @ base circle".

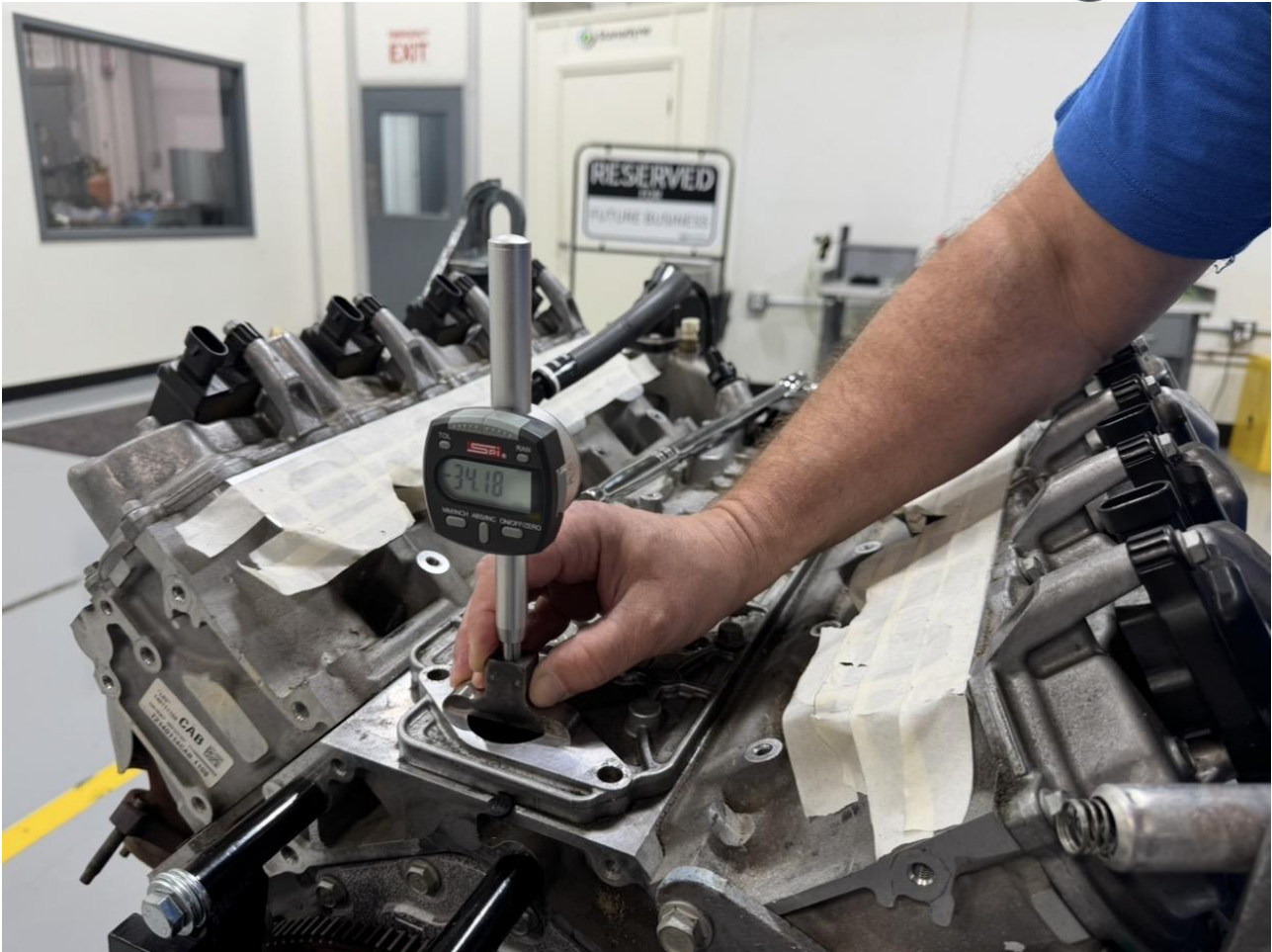


Figure 2. Measuring lifter tappet height at lowest position (base circle).

Step 2 - Measure pump plunger height

The plunger position is measured at the center of the pump plunger, between the retainer features.

- a. Measure from the retainer to the top of the plunger (fig. 3)
- b. Measure from the retainer to the pump base plate (fig. 4)
- c. Subtract the two dimensions to obtain pump plunger height. Record this as “Pump plunger height” in the input form (fig. 1)

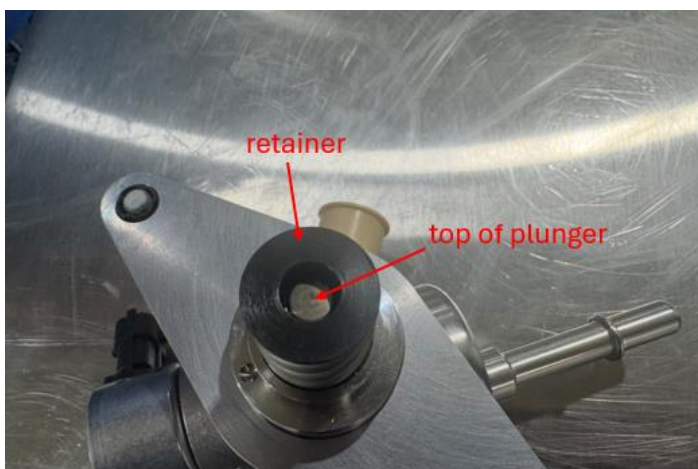


Figure 3. Measure from the retainer to the top of the plunger



Figure 4. Measure from the retainer to the base plate

Step 3 – Measure fuel pump gasket thickness

Measure gasket thickness, add total thickness if more than one gasket is used and enter the measurement into input form as Fuel pump gasket thickness (total), (values can be inputted either in inches or mm) (fig. 1).

3. Verify preload and clearance

Installed Plunger Preload Target & Adjustments:

- The input form (fig. 1) should show value for the “Installed Plunger Preload”. The Plunger Preload should be within the following range:
 - Between 1.20 to 1.80mm OK (mm)
 - Between .047-.070” OK (inches)

WARNING: Failure to achieve and verify plunger preload within the specified range (1.20-1.80mm / .047-.070”) prior to final installation constitutes improper installation. Stanadyne’s liability, if any, shall be limited as set forth in Stanadyne’s Standard Terms and Conditions of Sale for pump failure, engine damage, or any other loss resulting from installation outside the specified preload range. Contact your distributor for warranty inquiries.

- If value is $< 1.20\text{mm}$ ($< .047$ ”) this means the **PRELOAD IS TOO LOW**. Then the flange of the pump will need to be reworked by removing material from the **BOTTOM** of the flange to increase the preload to be within the acceptable range shown above.



- If value is $>1.80\text{mm}$ ($>.070''$) this means the **PRELOAD IS TOO HIGH**. Then additional gaskets need to be installed to decrease the preload to be within the acceptable range shown above. Each gasket adds 0.3mm ($.012''$).



WRONG PRELOAD WILL LEAD TO PUMP FAILURE. WARRANTY CLAIMS MUST BE SUBMITTED THROUGH YOUR AUTHORIZED DISTRIBUTOR. STANADYNE'S LIABILITY, IF ANY, SHALL BE LIMITED AS SET FORTH IN ITS STANDARD TERMS AND CONDITIONS OF SALE.

4. Final installation

- Carefully install the pump with crash bracket and verify proper alignment.
- Apply blue Loctite to the bolts.
- Torque pump bolts evenly to 25 Nm (18 ft-lb).
- Recheck the final values before signing off.

Critical checks and failure warnings

- Do not allow the plunger to bottom out. Improper preload is unacceptable.
- Low preload can allow loss of contact between the lifter tappet and pump plunger at high RPM, leading to premature pump failure.
- Excess preload can cause the piston to contact the top of the pump cavity.

- Do not use a lash cap. The retainer does not allow it, and failure will occur.
- Always verify measurements before final torque and installation sign-off.

Support

If the required measurements cannot be achieved, contact “hpsupport@stanadyne.com”.

Product Registration

Upon completing installation and verifying that preload is within the acceptable range, submit all required installation measurements through the Stanadyne portal at <https://www.stanadyne.com/rgx-installation-validation/> or via the QR code provided at the beginning of this document. Submission of this data constitutes registration of the product and is required for any warranty claim to be considered. Retain a copy of your submission confirmation for your records. For warranty inquiries, contact the authorized distributor from whom this pump was purchased.

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