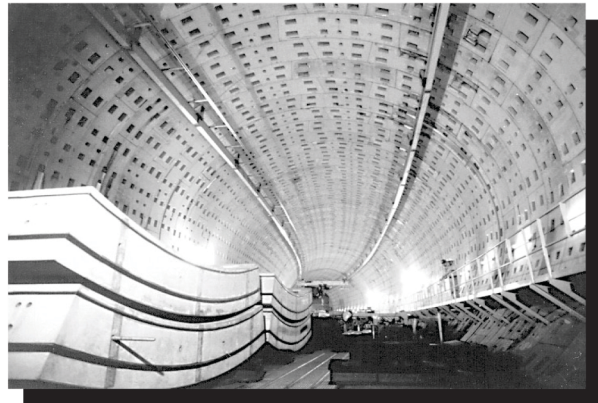
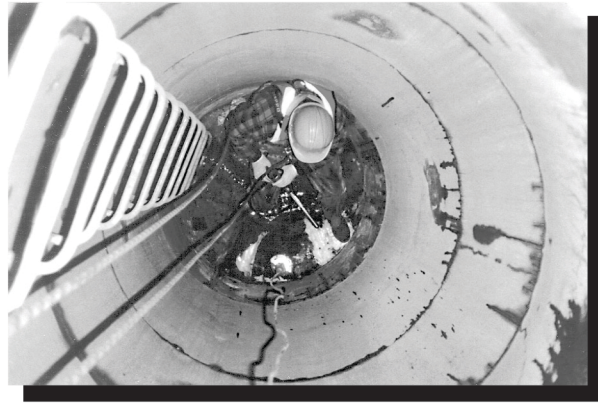




MULTIURETHANES



LEVER GUN

OPERATING & MAINTENANCE INSTRUCTIONS

INTRODUCTION **MULTIURETHANES** offers a comprehensive range of grouting materials, equipment and accessories used for soil consolidation, water cut-off and grouting of rock fissures in mining, tunnelling and geotechnical applications. In municipal and heavy utility applications, our products are used for the repair and/or waterproofing of concrete structures.

**LEVER GUN
OPERATING AND
MAINTENANCE
INSTRUCTIONS** This booklet provides detailed operating and maintenance instructions on the **LEVER GUN** as sold by **MULTIURETHANES**.

**WE'RE HERE
TO HELP** Specialist advice for your grouting projects is available from **MULTIURETHANES**. We encourage you to consider our specialists as part of your engineering team, providing technical assistance to ensure that your grouting projects are both cost effective and successful.

For groups interested in learning more about grouting operations, **MULTIURETHANES** frequently offers seminars.

**ON-SITE
EXPERTISE** Where possible, **MULTIURETHANES** provides on-site technical assessment services to determine requirements and recommend appropriate grouting materials, equipment and techniques for specific site conditions. In addition, specialists from **MULTIURETHANES** are available to provide training to those with limited grouting experience.

**CALL US
TOLL FREE**

1-800-663-6633

**VISIT OUR
WEBSITE**

multiurethanes.com



LEVER GUN

OPERATING AND MAINTENANCE INSTRUCTIONS

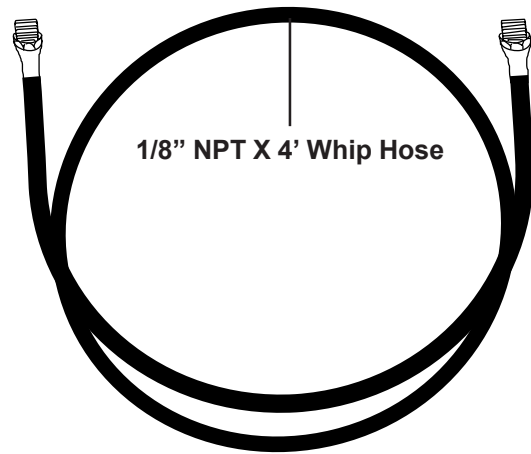
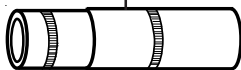


General:

The **LEVER GUN**, as sold by **MULTIURETHANES**, contains the following components:

- **LEVER GUN** c/w 769 ml. container tube
- 1/8" NPT X 4' Whip hose
- Hydraulic coupler for zero fitting (standard)

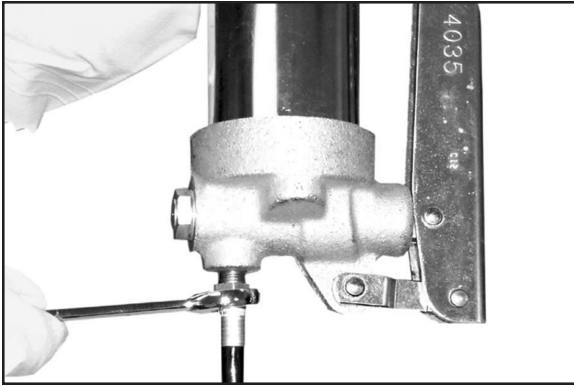
Hydraulic Coupler



1/8" NPT X 4' Whip Hose

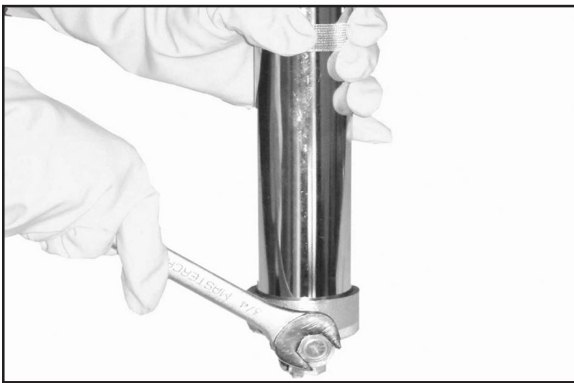
Prior to using the **LEVER GUN** for the first time, disassemble all working components to become familiar with the **LEVER GUN** as follows:

COMPLETE DISASSEMBLY



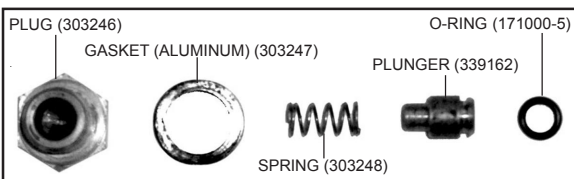
STEP 1

Remove whip hose (1/8" x 4') from the head assembly (339162) using a 1/2" open wrench.



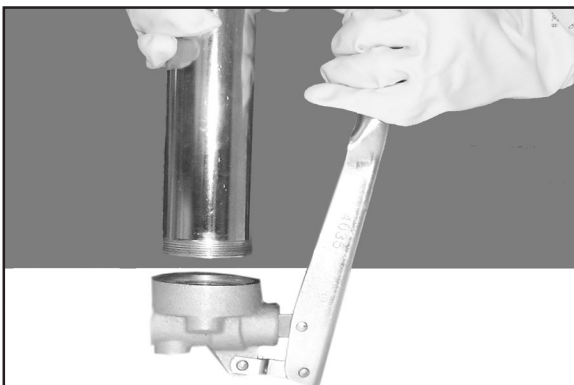
STEP 2

Unscrew the plug (303246) from the head assembly (339162) using a 3/4" wrench.



STEP 3

Remove plunger kit 9/16" plug (303246), aluminum gasket (303247), spring (303248), plunger (339165), O-ring (171000-5) from inside the head assembly (339162). Clean parts as required to remove cured polyurethane resin.



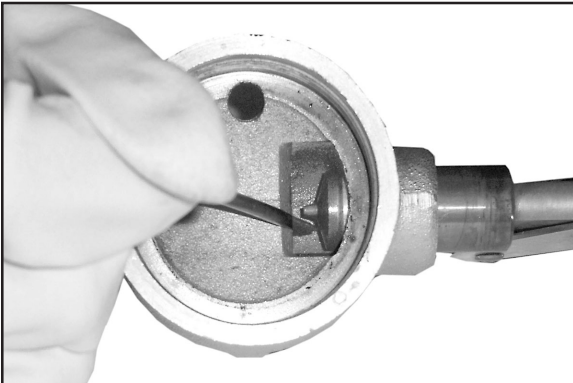
STEP 4

Unscrew the cylinder (337826-4) from the head assembly (339162). Remove any residual liquid from the cylinder (337826-4) and head assembly (339162) using heavy duty paper towel. Remove cured polyurethane resin using appropriate tools.



STEP 5

Remove rubber gasket (336523) from head assembly (339162) by gently prying off using a pointed scaler.



STEP 6

Remove cured polyurethane resin from the piston chamber using a pointed scaler.



STEP 7

Remove cured polyurethane resin from the plug chamber using a pointed scaler.



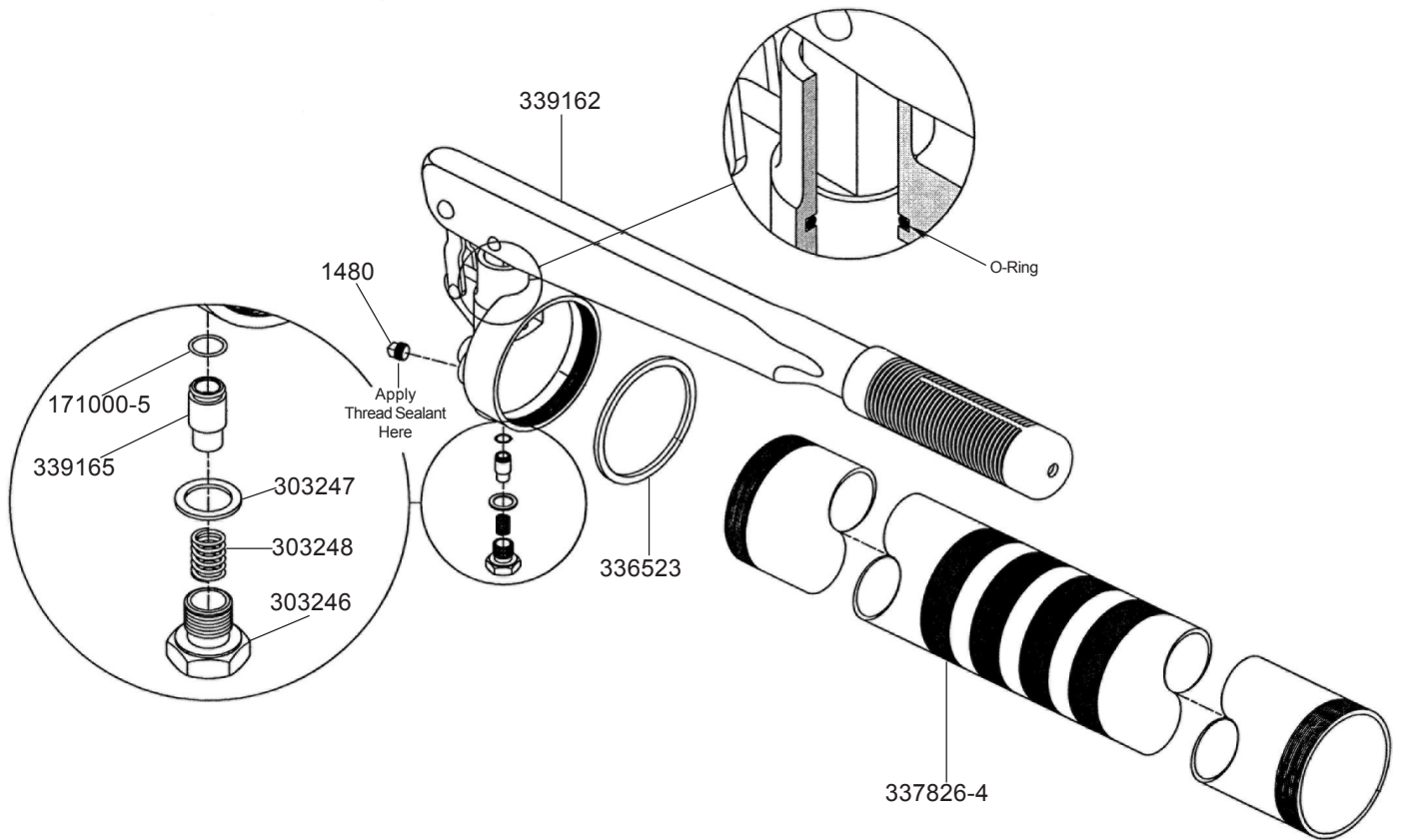
STEP 8

Remove cured polyurethane resin from the head assembly (339162), where the whip hose is attached using a pointed scaler.

Re-assemble in the reverse order.



LEVER GUN PARTS



PART #	DESCRIPTION
339162	Head Assembly
336523	Gasket
337826-4	Cylinder
303246	Plug (9/16"-20)
303248	Spring
303247	Gasket (aluminum)
339165	Plunger
171000-5	O-ring (1/4" ID x 3/8" OD)
1480	Plug, pipe
393681	Plunger Kit (incl. 303284, 303247, 339165, 171000-5)

1. Each time after reassembly, as well as prior to each use, flush the plunger mechanism and whip hose by pumping approximately 200 ml of **PUMP CLEANER** this ensures all working components have been lubricated, and helps verify that the gun is operable and has not become plugged or jammed by cured polyurethane.
2. Prior to each use, unscrew the cylinder (337826-4) from the head assembly (339162) and wipe residual **PUMP CLEANER** from the inside of the cylinder (337826-4) and head assembly (339162) using heavy duty paper towels. Reconnect the cylinder (337826-4) onto the head assembly (339162) and hold vertically with the head assembly down while using.
3. Mix up to 769 ml of **MULTIURETHANES** product according to product application instructions and pour into cylinder (337826-4). Operate the Lever handle to displace **PUMP CLEANER** from within the plunger mechanism and whip hose until a clear flow of liquid polyurethane is achieved. The **LEVER GUN** is now ready for injection work.
4. The **LEVER GUN** may be refilled several times without cleaning provided that freshly mixed resin is used to purge previously mixed resin from the **LEVER GUN** mechanism and whip hose. Never pump the **LEVER GUN** completely empty before adding freshly mixed resin.
5. Never leave the **LEVER GUN** with liquid polyurethane remaining inside, as the polyurethane may cure and jam the **LEVER GUN**. At coffee break, lunch time, at the end of the shift, or whenever injection is to be interrupted for any reason, always clean the **LEVER GUN** and purge the plunger mechanism and whip hose by flushing with clean **PUMP CLEANER**.
6. Clean the cylinder (337826-4) and head assembly (339162) by removing the cylinder (337826-4) from the head assembly (339162) and wiping both the inside of the cylinder (337826-4) and the inside of the **LEVER GUN** head assembly (339162) with heavy duty paper towels. Clean the **LEVER GUN** mechanism, hose and coupler by re-assembling the cylinder (337826-4) onto the head assembly (339162) and pumping approximately 200 ml of **PUMP CLEANER** through the **LEVER GUN** to purge the liquid polyurethane.
7. If the head assembly (339162) of the **LEVER GUN** becomes clogged, disassemble the head components as described. Remove any cured polyurethane, clean all components, lubricate with **PUMP CLEANER** and reassemble.
8. During refilling operations, remove any excess materials or spillage from the threads on the cylinder (337826-4) and the inside of the head assembly (339162). Unless the liquid polyurethane is removed, it could cure in place causing the cylinder (337826-4) to stick on the head assembly (339162).
9. The **MULTIURETHANES LEVER GUN** is a high output, low pressure **LEVER GUN** that delivers approximately 1 ounce of liquid (30 ml) per 7 strokes at operating pressures up to 1,800 psi. Conventional grease guns are low output, high pressure guns which delivers 1 ounce per 33 strokes at operating pressures up to 10,000 psi.
10. The advantages of the **MULTIURETHANES LEVER GUN** are:
 - a) Plunger operates horizontal to the cylinder so that liquid polyurethane flows in direct drive from the lever gun cylinder to delivery hose, purging plunger and spring with each stroke.
 - b) Exclusive design of toggle mechanism uses compounded leverage to develop output pressure with low effort.
 - c) **LEVER GUN** can be completely disassembled in a few minutes for cleaning.

TYPICAL JOB SITE



Hand-operated **LEVER GUN** used for small volume polyurethane injection applications such as leaking concrete basement foundations; note placement of injection packers on either side of the crack.

Leaking joints in precast concrete manholes are repaired using **MULTI-GEL** resin, a fast-curing, hydrophilic polyurethane developed specifically for this application.





MULTIURETHANES

*Suppliers of grouting materials, equipment
and engineering support services*

TECHNICAL LITERATURE

POLYURETHANE INJECTION PRODUCTS

Technical information regarding the use of polyurethane injection resins and equipment for **potable water** and other chemical grouting applications

CEMENT GROUTING PRODUCTS AND SERVICES

Technical information regarding the use of ordinary cements and microfine cements for cement grouting applications.

HYDROTITE TECHNICAL INFORMATION

Technical information regarding the use of **HYDROTITE** hydrophilic water-sealing materials for construction joint waterproofing and repair.

MULTIPASTE UTILITY SEALANT

Information regarding the use of **MULTI-PASTE** sealant for permanently sealing underground conduits for electrical cables and pipe penetrations.

INJECTABLE TUBING SYSTEMS

Information regarding the use of injectable tubing systems for grouting applications.

SUPPLEMENTARY INFORMATION

- Guidelines for Use of Polyurethane Resins in Environmentally-Sensitive Areas
- Foundation Crack Injection Techniques
- Permeable Injection Tubing Applications
- Sleeve Pipes for Soil and Rock Grouting
- Inflatable Packers for Soil and Rock Grouting

ADDITIONAL TECHNICAL INFORMATION

Please contact us anytime to obtain specific product information or technical data sheets regarding any of our grouting products or to request additional information on grouting services offered by **MULTIURETHANES**.

CALL US TOLL FREE

1-800-663-6633

CONTACT US BY E-MAIL

info@multiurethanes.com

VISIT OUR WEBSITE

multiurethanes.com

COMPANY OVERVIEW

WHO WE ARE Since 1988, **MULTIURETHANES** has offered a comprehensive range of grouting materials, equipment and accessories used for soil consolidation, water cut-off and grouting of rock fissures in mining, tunneling and geotechnical applications. In municipal and heavy utility applications, our products are used for the repair and/or waterproofing of concrete structures.

THIS DOCUMENT This booklet provides detailed operating and maintenance instructions for **MULTIURETHANES LEVER GUN**. For additional information on other products and services provided by **MULTIURETHANES**, call to obtain one of our **ENGINEERING REFERENCE MANUALS**.

WE'RE HERE TO HELP Specialist advice for your grouting projects is available from **MULTIURETHANES**. We encourage you to consider our specialists as part of your engineering team, providing technical assistance to ensure that your grouting projects are both cost effective and successful. For groups interested in learning more about grouting operations, **MULTIURETHANES** offers technical seminars on various grouting topics.

ON-SITE EXPERTISE Where possible, **MULTIURETHANES** provides on-site technical assessments to determine project requirements and recommend appropriate grouting materials, equipment and techniques for specific site conditions. Specialists from **MULTIURETHANES** are available to upgrade the grouting capabilities, productivity and safety of existing owner or contractor personnel.

CALL TOLL FREE

1-800-663-6633

VISIT OUR WEBSITE

multiurethanes.com

ACTIVITIES

- Pressure Grouting
- Cement Grouting
- Soil Stabilization
- Water Cut-Off
- Sewer Rehabilitation
- Concrete Restoration
- Crack Injection
- Waterproofing

APPLICATIONS

- Potable Water Tank
- Municipal Services
- Underground Utilities
- Hydro Dams
- Mines and Tunnels
- Geotechnical

PRODUCTS AND SERVICES

- Polyurethane Resins
- Acrylate Resins
- Microfine Cement
- Sleeve Pipes
- Grouting Equipment
- Hydrotite Waterstop
- Multi-Paste Sealant
- Injectable Tubing
- Quality Control
- Engineering Services

CANADA

5245 Creekbank Road
Mississauga, Ontario L4W 1N3
Tel: (905) 564-7650
Fax: (905) 564-7998
Toll Free: 1-800-663-6633
email: info@multiurethanes.com