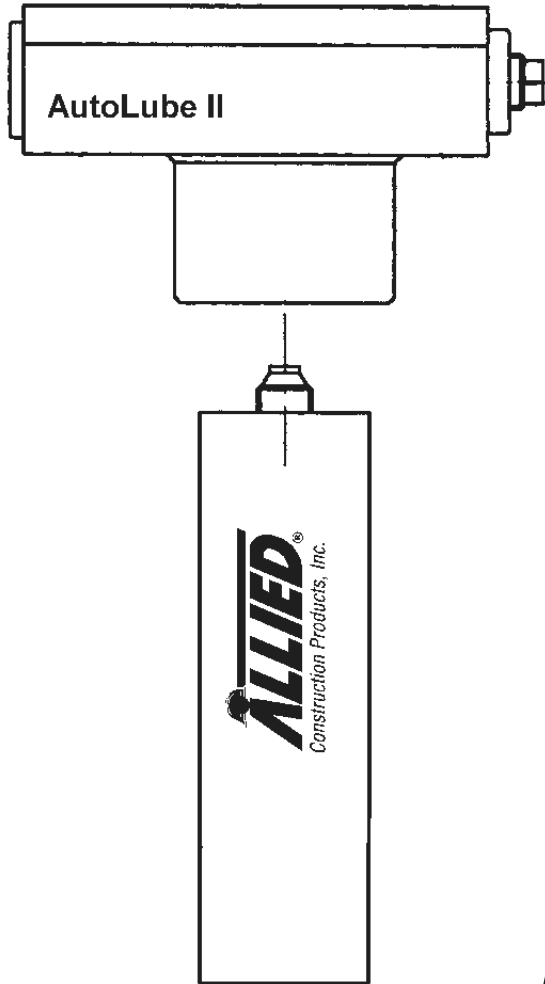


Manual Part No. 002038  
November 1, 2003



***AutoLube II  
Automated  
Lubrication  
System***

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## Allied AutoLube II Document Change Notice

<u>Date</u>	<u>Page</u>	<u>Change</u>
11-30-98	11	Added Installation Of Model 770 Series
11-30-98	19	Added Pressure Port Locations by Model
8-13-99	3	Art and Text
8-13-99	9,19	Text-Added Hammer Models
3-15-00	3,10,11	Art
3-15-00	3,9,13	Text
3-15-00	7,19	Updated Part No's.
7-19-01	throughout	Minor editing
7-19-01	19	Revised part numbers Added 797B and 805B
4-12-02	22,23	Added Seal Kit
4-12-02	9,10	Corrected JIC fitting sizes
10-23-02	9,10	Corrected JIC fitting sizes
4-16-03	19	Added parts information
11-1-03	9	Text


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## SECTION 1.0 INTRODUCTION

This manual contains important information for the safe use and maintenance of the Allied AutoLube II. Read this manual thoroughly before installing, operating or servicing the AutoLube II. This manual must be easily accessible to operators and service personnel. Store this manual in a convenient location.

 Instructions identified with this symbol are important for personnel safety and full service life of the AutoLube II. Follow them carefully.



### WARNING

Instructions given inside a WARNING box emphasize a potentially dangerous procedure which may result in injury or death to the operator or any bystanders in the work area. Please read and follow these instructions carefully and heed all decals.



### CAUTION

Instructions given inside a CAUTION box emphasize a procedure that may cause damage to the equipment if not performed properly. Read these instructions carefully before performing the procedure on the Allied AutoLube II Lubrication System.

This technical manual describes in detail the procedures needed to operate the Allied AutoLube II Lubrication System. Pay careful attention to all instructions and follow all governing regulations. Operation or service other than in accordance with these instructions may subject the AutoLube II to conditions beyond its design capability. Improper operation, service or the use of non-Allied parts may result in AutoLube II failure or personnel injury.

Responsibility for operation and safety lies at all times with the operator of the carrier. Allied takes no responsibility for the following:

- Incorrect usage of the Autolube II.
- Improper handling of the Autolube II.
- Inadequate maintenance of the Autolube II.
- Use of non-Allied spare parts.

Allied provides no warranty for the following wear parts:

- All seals
- O-rings
- Seal collar
- Hoses

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## SECTION 2.0 OVERVIEW

The Allied Autolube II Lubrication System is a maintenance unit for Allied hydraulic hammers and provides semi-continuous lubrication to the hammer demolition tool and bushings.

The Allied Autolube II Lubrication System provides the following advantages:

- Simple design - one moving part.
- Compact size - mounts on hammer.
- Replaceable or refillable grease cartridge.
- No tools required to change grease cartridge.
- Self priming.
- Adjustable output.
- Can be used with Allied Chisel Paste.
- Lubricant level can be monitored from operator's cab.

Figure 2-1 illustrates the AutoLube II main components and Figure 2-2 shows typical mounting locations of the AutoLube II on a hammer. The mounting location varies with the hammer model.

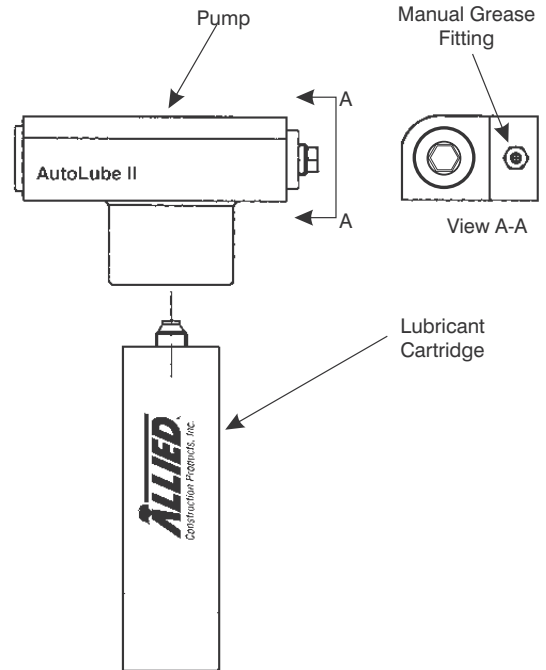


Figure 2-1. AutoLube II Main Components

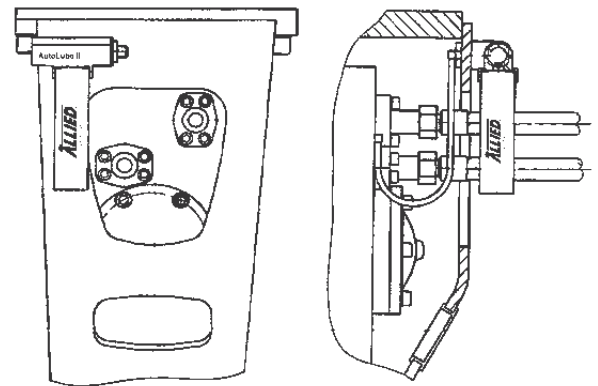


Figure 2-2. Typical AutoLube II Mounting

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## SECTION 3.0 GENERAL CONSTRUCTION SAFETY

Always follow procedures that promote safe conditions for workers and bystanders. This includes, but is not limited to: locating existing underground utility services, establishing pedestrian barriers and wearing personal protective equipment.



### CAUTION

Read and follow all equipment and machinery instructions.

Comply with all federal and local regulations regarding construction practices and public safety. Identification of and compliance to governing regulations are the responsibility of the owner and operator.

In the United States, comply with the recommendations of the Occupational Safety and Health Administration standards of the U.S. Department of Labor. For OSHA construction guidelines contact your local federal government office or write:

U.S. Government Printing Office  
Superintendent of Documents  
P.O. Box 371954  
Pittsburgh, Pa. 15250

Ask for Construction Industry OSHA  
Standards Stock #869-034-00107-6.

### 3.1 OPERATOR SAFETY RECOMMENDATIONS

- Do not run any hydraulic lines through the operator's cab; they may leak or even burst, injuring the operator.
- Relieve hydraulic oil pressure before disconnecting or removing existing lines on the carrier.
- Collect any oil which spills out and dispose of it properly.

When welding as needed to mount the AutoLube II, the following instructions must be observed:

- Disconnect all battery cables from the carrier battery.
- Protect all hydraulic hoses in the immediate vicinity of the point being welded to prevent danger of fire or damage to hoses from heat.

To avoid damage to the carrier and/or the AutoLube II, perform the following daily inspections.

- Before starting, visually inspect all hoses, fittings and fasteners for wear and looseness.
- Check lubricant level inside the cartridge. Refer to Section 6.4.

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## SECTION 4.0 TECHNICAL SPECIFICATIONS

### AutoLube II

Weight	12 lbs. ( 26 kg)
Height	3.5 in. ( 89 mm)
Width	7 in. (178 mm)
Length	12 in. (305 mm)
Oil pressure (min.)	1450 psi (100 bar)
Flow rate	Adjustable

#### Hose Inside Diameters:

Hydraulic Line	.236 in. (6 mm)
Lubricant Line	.314 in. (8 mm)

#### Connecting Threads:

Hydraulic Line	M14 x 1.5
Lubricant Line	04 BSPP

Cartridge: Allied Chisel Paste

#### **NOTE:**

The use of Allied Chisel Paste will extend bushing and tool life of the hammers. It is specially formulated with copper/graphite ingredients that distinguish it from other lubricants on the market. Allied Chisel Paste provides superior and longer lasting lubrication properties over a wide range of operating temperatures. Ordering information:

Allied Part No.	
100059	Case (12 Tubes)
100060	Box (36 Tubes)
676698	Keg (35 lbs.)
679968	Keg (120 lbs.)

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## SECTION 5.0 AUTOLUBE II INSTALLATION



### WARNING

Disconnect the battery cables to prevent electrical damage before performing any welding work.



### CAUTION

Shield all hydraulic hoses in the AutoLube II mounting vicinity during welding to avoid the risk of fire or damage to the hoses from excessive heat.

The AutoLube II is Hy-Ram Model specific for the newer Hy-Rams. Models 750 and 770 Hy-Rams have a slot burned out in the hammer box to which the AutoLube II is mounted with a clamp. All other models are mounted on a bracket that is welded to the hammer box. All accessories, hardware and hoses are included in the AutoLube II Kit. Section 9.0 lists the AutoLube II Kit part numbers. Each kit also has a drawing specific to that model.



### CAUTION

Nominal inside diameter of the hydraulic line MUST be at least .23 in. (6 mm) and nominal inside diameter of the lubricant supply line MUST be at least .16 in. (4 mm)

### 5.1 INSTALLATION

(Refer to Figure 5-1.)

1. On models with a mounting bracket, weld mounting bracket in place.
2. Remove lubricating nipple from hammer lubrication port and install adapter (1).
3. Remove plug from AutoLube II hydraulic pressure port on hammer and install adapter (2).

### NOTE

Some Hy-Ram Models have a separate pressure port for the AutoLube II on the cylinder head. This port is marked with a small **P**. Other Hy-Ram Models have a pressure port connection in the flange on the hydraulic pressure inlet port. This port is marked with a large **P**. See Section 9.0 Parts Information for specific HyRam Model pressure port type.

4. Install 90° elbows on adapters:
  - Elbow (3), #4JIC, for lubrication connection.
  - Elbow (4), #6JIC, for hydraulic connection.
5. Connect hoses to elbows (refer to Section 5.2 for retrofit kit instructions):
  - Hose (5), 1/4-inch, for lubrication connection.
  - Hose (6), 3/8-inch, for hydraulic connection.

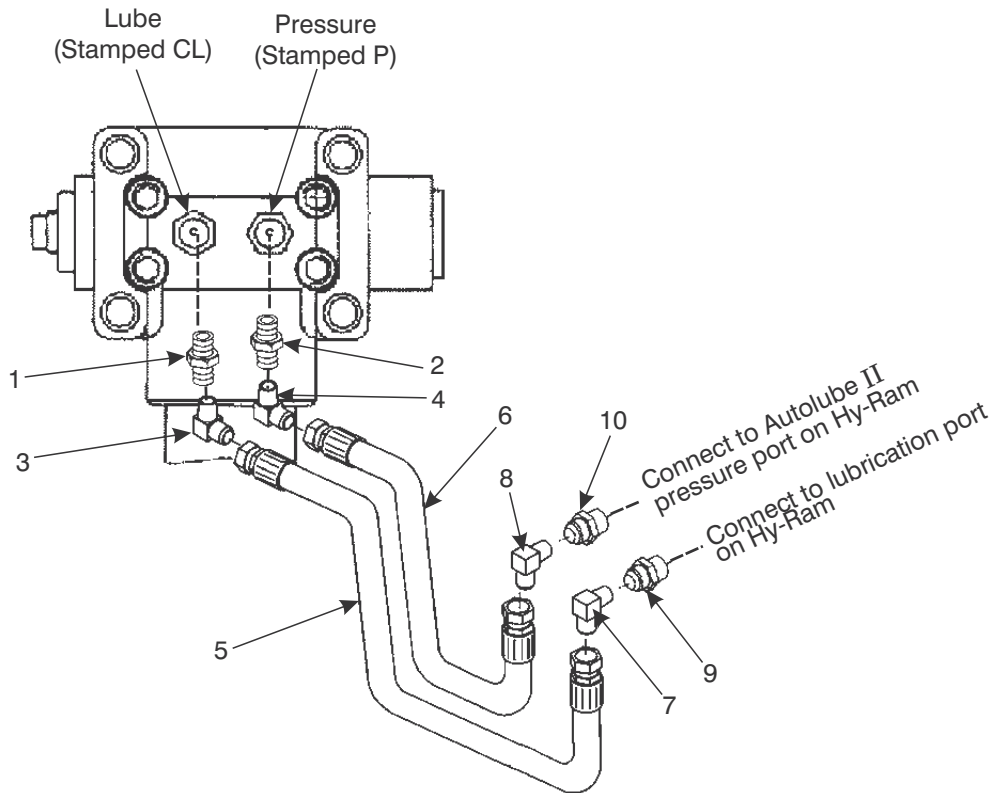


Figure 5-1. AutoLube II Installation

6. Bolt AutoLube II to hammer with M12-1.75 bolts and M12 lock washers:

- On models with bracket, bolt AutoLube II to bracket.
- On models with slot in hammer box, slide clamp plate over hoses and position clamp plate on the inside of the box aligning it with the slot. Install bolts through clamp plate, box, and AutoLube II.

7. Connect hoses to AutoLube II pump with adapters and 90° elbows:

- Elbow (7), #4JIC, for lubrication connection.
- Elbow (8), #6JIC, for hydraulic connection.
- Adapter (9), #4JIC, for lubrication connection.
- Adapter (10), #6JIC, for hydraulic connection.

8. Prime AutoLube II pump with a hand-held grease gun at lubrication fitting on pump.

9. Screw Allied Chisel Paste cartridge into AutoLube II pump. The cartridge can be refilled and re-used.

## 5.2 RETROFIT KIT

1. On retrofit kit installations, cut hose to length and install re-usable fittings (not shown).

2. Install #4JIC re-usable fitting into elbow (7) for lubrication connection.

3. Install #6JIC re-usable fitting into elbow (8) for pressure connection.

4. Install adapter (10) into hammer hydraulic pressure hose. A check valve is supplied in the hose for this connection.

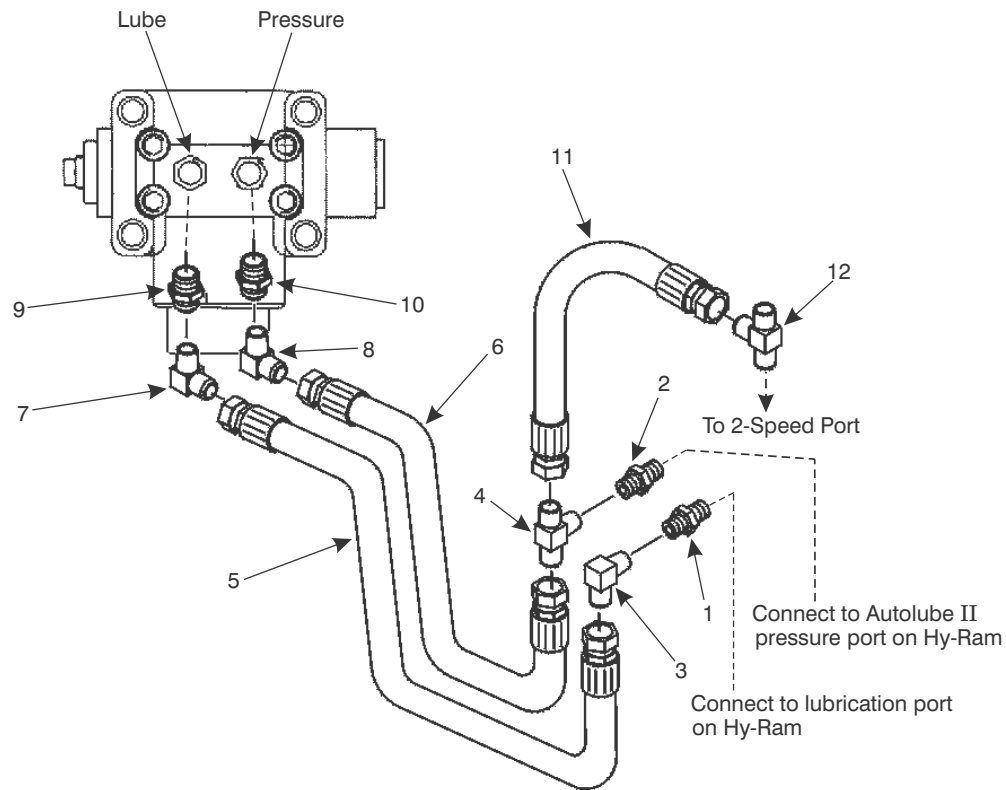


Figure 5-2. AutoLube II Installation on Model 770CS

### 5.3 MODEL 770CS INSTALLATION

Model 770CS Hy-Ram does not have a pressure-reducing circuit. When the AutoLube II is installed, additional fittings and a third hose must be installed to reduce pressure, as follows:

1. The lubrication fittings and mounting configurations are installed the same as described in Section 5.1.
2. Remove plug from AutoLube II hydraulic pressure port on hammer, marked with a small **P** on the cylinder head, and install adapter (2), M14-1.5 x 4BSPP.
3. Install side port of tee fitting (4) on adapter (2), 04JIC.
4. Connect small hose (6), 04JIC, ¼ inch, for hydraulic connection to AutoLube II on the bottom port of tee fitting (4), 04JIC.
5. Connect hose (11), 04-06JIC, to top port of tee fitting (4), 04JIC..
6. Install tee fitting (12), 04BSPP-06 male JIC, bottom port, on Connection F, two-speed connection, on cylinder head.
7. Cap the top port of the tee fitting (12), 04BSPP-06 male JIC or install two-speed line.
8. Install hose (11), 04-06JIC on orifice side of tee fitting (12), 04BSPP-06 male JIC.
9. Proceed with installation at Step 6 in Section 5.1.

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## SECTION 6.0 AUTOLUBE II OPERATION

### 6.1 THEORY OF OPERATION

The AutoLube II is used on a hydraulic hammer to lubricate the wear bushings and demolition tool automatically every time the hammer is started.

Each time the hammer is activated, the pressure from the carrier's hydraulic system acts on the slide piston in the pump housing. A vacuum is created by the slide piston which pulls lubricant from the cartridge into the pump housing where it fills the pump chamber between the slide piston and the check valve.

The stroke of the slide piston presses the lubricant through the check valve into the lubricant line.

When the hammer is stopped, the slide piston is pushed back into its initial position by the spring. Once again, the vacuum that is created pulls lubricant into the pump chamber. This process is repeated every time the hammer is started and stopped.

### 6.2 LOADING A CARTRIDGE IN AUTOLUBE II

1. Turn off hammer.
2. Unscrew used cartridge.
3. Screw in new or refilled cartridge.

### 6.3 PREFILLING THE LUBRICANT LINE

The lubricant line must be filled with lubricant before operation to bleed air from the line.

1. Using a hand-held grease gun, prefill the lubrication lines through the lube fitting provided on the pump housing.

2. To check that line is full, remove the hose at the hammer hydraulic connection and observe that lubricant emerges from the end of the hose.

### 6.4 MAINTENANCE BEFORE OPERATION

1. Tighten all loose fittings.
2. Replace all damaged tubes or hoses.
3. Check the lubricant level in the AutoLube II. If the cartridge piston is not visible, the cartridge is empty. Refer to Section 6.2 Loading a Cartridge in AutoLube II.
4. Adjust lock nut and adjusting stem as necessary; refer to Section 6.5 below.

### 6.5 OPERATION



#### CAUTION

The Check Valve, Lock Nut and Adjustment Stem can become loose from hammer vibration. Apply LOCTITE removable thread locking compound to the adjustment stem after the correct lubricant delivery has been established, before tightening the lock nut.

#### NOTE

**The AutoLube II is set to “lowest delivery/stroke” when shipped.**

The lubricant delivery rate can be adjusted as explained in the following paragraphs.

The amount of lubricant supplied to the lubricating point in the tool holder is controlled by the stroke setting on the slide piston. This amount of lubricant is forced into the tool holder when the hammer is

started and stopped. The length of the slide piston stroke and the amount of lubricant delivered can be adjusted with the adjustment stem as follows:

- If lubricant emerges from the lower wear bushing during operation, the AutoLube II slide piston stroke is too long and forces too much lubricant into the tool holder.

1. Loosen lock nut.
2. Screw adjustment stem IN until amount of lubricant per stroke is at the correct level.
3. Apply LOCTITE removable thread locking compound to the adjustment stem after the correct lubricant delivery has been established, before tightening the lock nut.
4. Tighten lock nut when properly set.

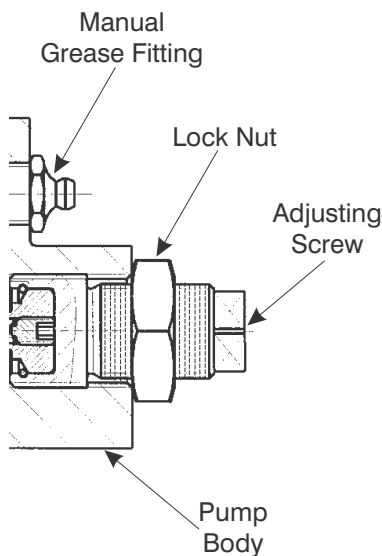


Figure 6-1. Lubricant Adjusting Stem

- If dry areas are observed on the demolition tool during operation, the AutoLube II slide piston stroke is too short, delivering too low an amount of lubricant.

1. Loosen lock nut.

2. Screw adjustment stem OUT until amount of lubricant per stroke is at the correct level.
3. Apply LOCTITE removable thread locking compound to the adjustment stem after the correct lubricant delivery has been established, before tightening the lock nut.
4. Tighten lock nut when properly set.

## 6.6 WORKING IN HIGH/LOW TEMPERATURES

The AutoLube II is powered by pressurized hydraulic oil from the carrier's hydraulic system. The oil temperature should never exceed 176°F (80°C), in accordance with the carrier manufacturer's recommendations.

When using the Autolube II with the Allied hydraulic hammer, the use of Allied Chisel Paste is recommended. This paste can be used in a temperature range of 32°F to 122°F (0°C to 50°C). If the system is to be used in temperatures below freezing, a cold weather paste must be used. In such cases, please consult your Allied authorized dealer's service department for recommended cold weather pastes.

## 6.7 WORKING UNDERWATER


The entire AutoLube II and its holder must remain above the surface of the water.

If the entire hammer is to be used underwater, the Autolube II must be positioned high on the carrier stick and the supply lines lengthened accordingly.

The fittings on the lubricant lines must be tightened with particular care to avoid leaks.

For further details on underwater operation, contact your Allied Technical Service Department.

**SECTION 7.0  
TROUBLESHOOTING**

	<p><b>WARNING</b></p>
<p>Before removing the hydraulic lines, bleed all hydraulic pressure. When rectifying faults, observe all safety regulations.</p>	

Problem	Cause	Remedy
<p>No Lubrication at Lubrication Point</p>	Lubricant cartridge empty.	Install new cartridge.
	Air in lubricant lines.	Bleed system of air (refer to Section 6.3).
	Pressure oil line to system is blocked.	Open branch from hammer pressure line (valve block on boom).
	Pressure oil line to system leaks.	Check fittings and hose: replace if necessary and tighten properly.
	Lubricant line blocked or too long.	Check hose, replace if necessary (maximum length 15 feet). Perform functional test with hose uncoupled.
	Lubricant cartridge installed incorrectly.	Reinstall cartridge correctly (refer to Section 6.2); check sealing sleeve, replace if necessary.
	Lube system draws in air.	Seal between cartridge and pump housing defective. Replace seal.
	Check valve in pump housing defective.	Replace check valve.

## TROUBLESHOOTING (cont')

Problem	Cause	Remedy
Lubricant Supply too Low.	Piston stroke set too short.	Adjust piston stroke (refer to Section 6.5).
Lubricant Supply too High	Piston stroke set too long.	Adjust piston stroke (refer to Section 6.5).
Lubricant Supply Incorrect	Wrong type of lubricant.	Observe lubricant recommendations.

### 7.1 AUTOLUBE II INOPERABLE

If the AutoLube II fails to work properly and the cause cannot be determined, contact your Allied Technical Service Department for further assistance.

### 7.2 MANUAL LUBRICATION

There are two ways to lubricate the demolition tool if the AutoLube II is out of service:

- Lubricate through the lubricating nipple using a hand-held grease gun.
- Move lubricating nipple from AutoLube II to hammer as follows:
  1. Unscrew the lubricant line from the hammer connection.
  2. Remove lubricating nipple from the AutoLube II.
  3. Screw lubricating nipple directly into hammer connection.
  4. Lubricate using a hand-held grease gun.

## **SECTION 8.0 REMOVAL AND STORAGE OF AUTOLUBE II**

### **8.1 MECHANICAL REMOVAL OF AUTOLUBE II**

1. Unscrew both hoses from the AutoLube II.
2. Plug the fittings with tapered plugs to provide protection from dirt and debris.
3. Unscrew the four attachment bolts.
4. Remove the complete AutoLube II and store in a secure place.

### **8.2 REMOVING HOSES**

Unscrew the AutoLube II hoses from the hydraulic and lubrication ports on the hammer or from the check valve in the hydraulic line on retrofit kits.

### **8.3 REATTACHING AUTOLUBE II AFTER IDLE PERIODS**

1. Clean the lubricant line, which is still connected to the hammer, and remove any blockages formed by residual lubricant.
2. Refer to SECTION 5.0 AUTOLUBE II INSTALLATION.

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**SECTION 9.0  
PARTS INFORMATION**

<b>AutoLube II Model Specific Part Numbers</b>			
<b>AUTOLUBE II PART NO.</b>	<b>HY-RAM MODEL</b>	<b>PRESSURE CONNECTION</b>	<b>MOUNTING</b>
102717	735	Autolube II Port	Welded Bracket
680846	740	AutoLube II Port	Welded Bracket
680846	745	AutoLube II Port	Welded Bracket
680850	750	AutoLube II Port	Clamp to Box Slot
100237	755	AutoLube II Port	Welded Bracket
680845	770	AutoLube II Port	Clamp to Box Slot
100221	775	AutoLube II Port	Welded Bracket
100216	785	Large Port Flange	Welded Bracket
100214	795	AutoLube II Port	Welded Bracket
100214	797	AutoLube II Port	Welded Bracket
100214	797B	AutoLube II Port	Welded Bracket
680851	805	AutoLube II Port	Welded Bracket
680851	805B	AutoLube II Port	Welded Bracket
680856	905	Large Port Flange	Welded Bracket
680856	All Older Models		Welded Bracket

Allied Hy-Ram Chisel Paste

<u>Allied Part No.</u>	<u>Description</u>
100059	Case (12 Tubes)
100060	Box (36 Tubes)
676698	Keg (35 lbs.)
679968	Keg (120 lbs.)

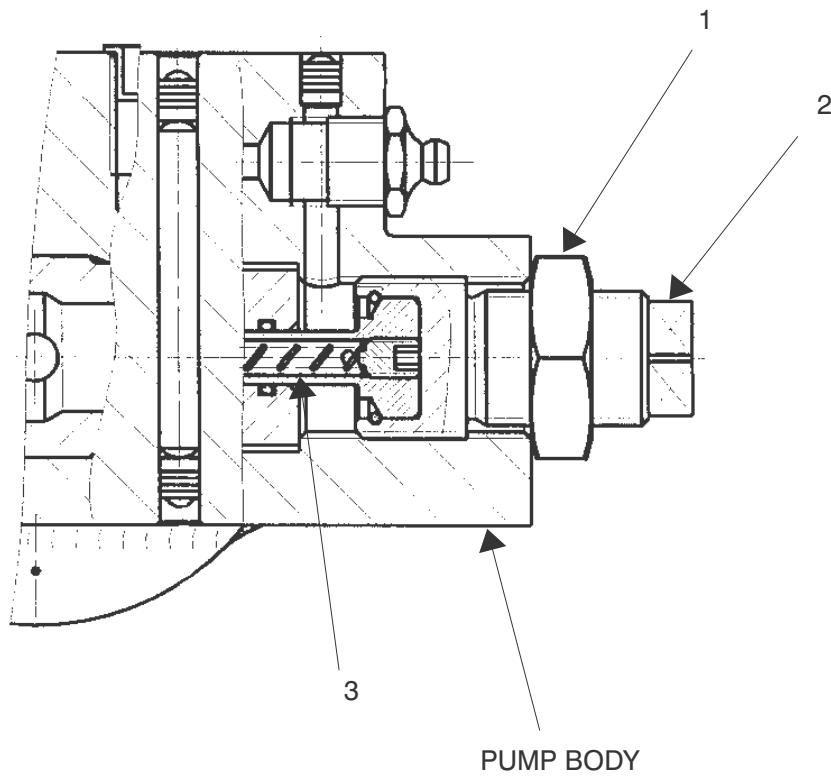


Figure 9-1. AutoLube II Replaceable Parts



The following replaceable parts are common to all the AutoLube II's listed on on page 19. These parts are shown on the opposite page.

AutoLube II Replaceable Parts			
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	100313	Lock Nut
2	1	100314	Adjustment Stem
3	1	660289	Check Valve w/Snap Ring

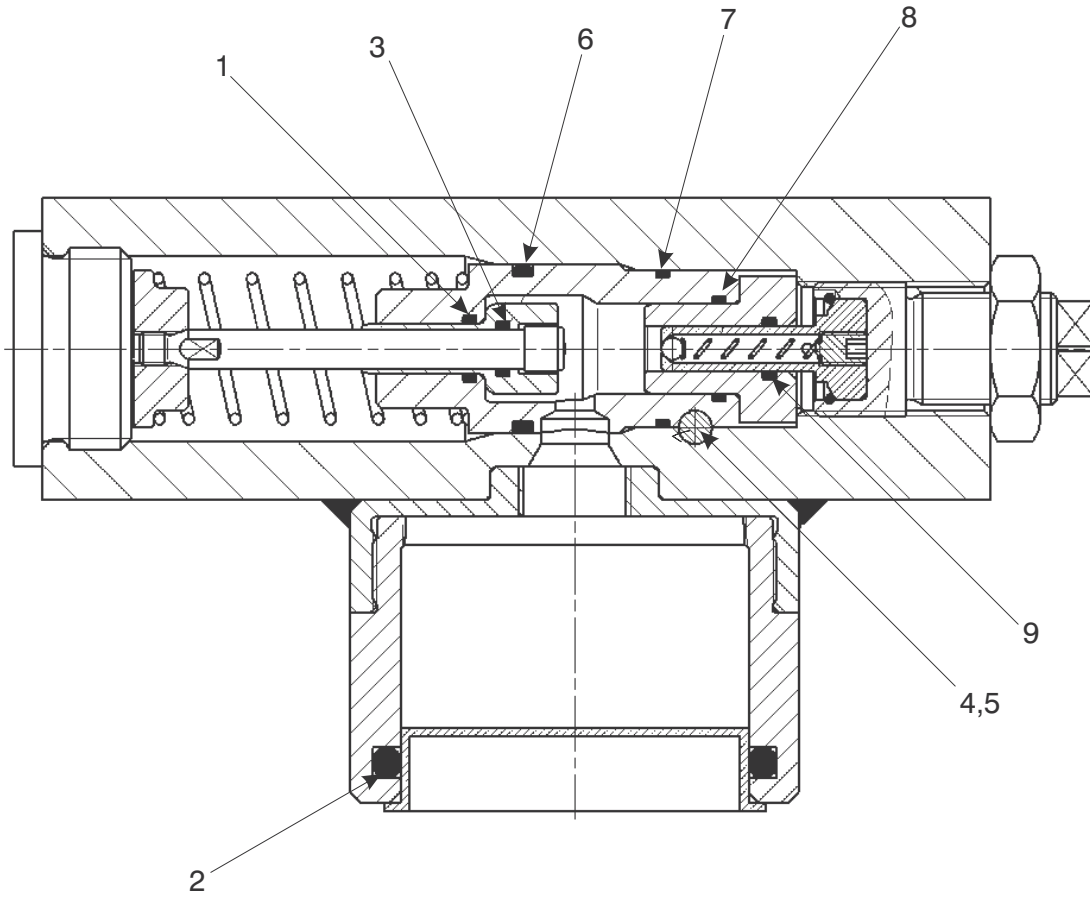


Figure 9-2. AutoLube II Seal Kit

AutoLube II Seal Kit Part Number 660288			
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	102243	O-Ring
2	1	102244	O-Ring
3	1	102245	O-Ring
4	1	102246	Locking Pin, Pump
5	2	102248	Expander Plug, Pump
6	1	667225	O-Ring
7	1	102247	O-Ring
8	1	659551	O-Ring
9	1	102249	O-Ring



3900 Kelley Avenue, Cleveland, Ohio 44114  
Tel: 216-431-2600 Fax: 216-431-2601  
e-mail: [Sales@AlliedCP.com](mailto:Sales@AlliedCP.com)  
website: <http://www.AlliedCP.com>

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