


ALLIED
Construction Products, LLC

**OPERATOR'S
MANUAL**

Manual Part Number 002064
June 1, 2003



**AS SERIES
STREET
HAMMERS**

MODELS

AS 342

AS 352

AS 362

AS 370

AS 380

**Allied Street Hammer Models AS 342, AS 352, AS 362,
AS 370 and AS 380
Document Change Notice**

<u>Date</u>	<u>Page</u>	<u>Change</u>
02-21-00	4-1,4-2,4-3	Updated Specifications, Added Dimension Chart and and Drawing
02-21-00	8-3	Added Remote Lube
05-12-00	Throughout	Additional models. General editing.
01-19-01	Chp. 7	Added skid steer procedures
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10-16-01	Chp 4	Updated Specifications
05-15-02	Chp 4	Updated Specs and Dimensions
05-15-02	Chps 1, 5, 11	Updated Safety & Warranty Info
06-01-03	4-1,4-2,11-4	Updated Specs & Torque Table

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1.3 Allied Product Policies

Allied reserves the right to make modifications to the design or changes to the specifications without prior notice.

In this manual, Allied recommends Street Hammer applications, maintenance and service consistent with industry practices. Allied takes no responsibility for the results of actions not recommended in this manual and specifically the results of:

- Operation in non-recommended applications
- Incorrect operation
- Improper maintenance
- Use of service parts not approved or supplied by Allied.

These exclusions apply to damage to the Street Hammer, associated equipment, and injury to personnel.

**SECTION 2.0
OVERVIEW**

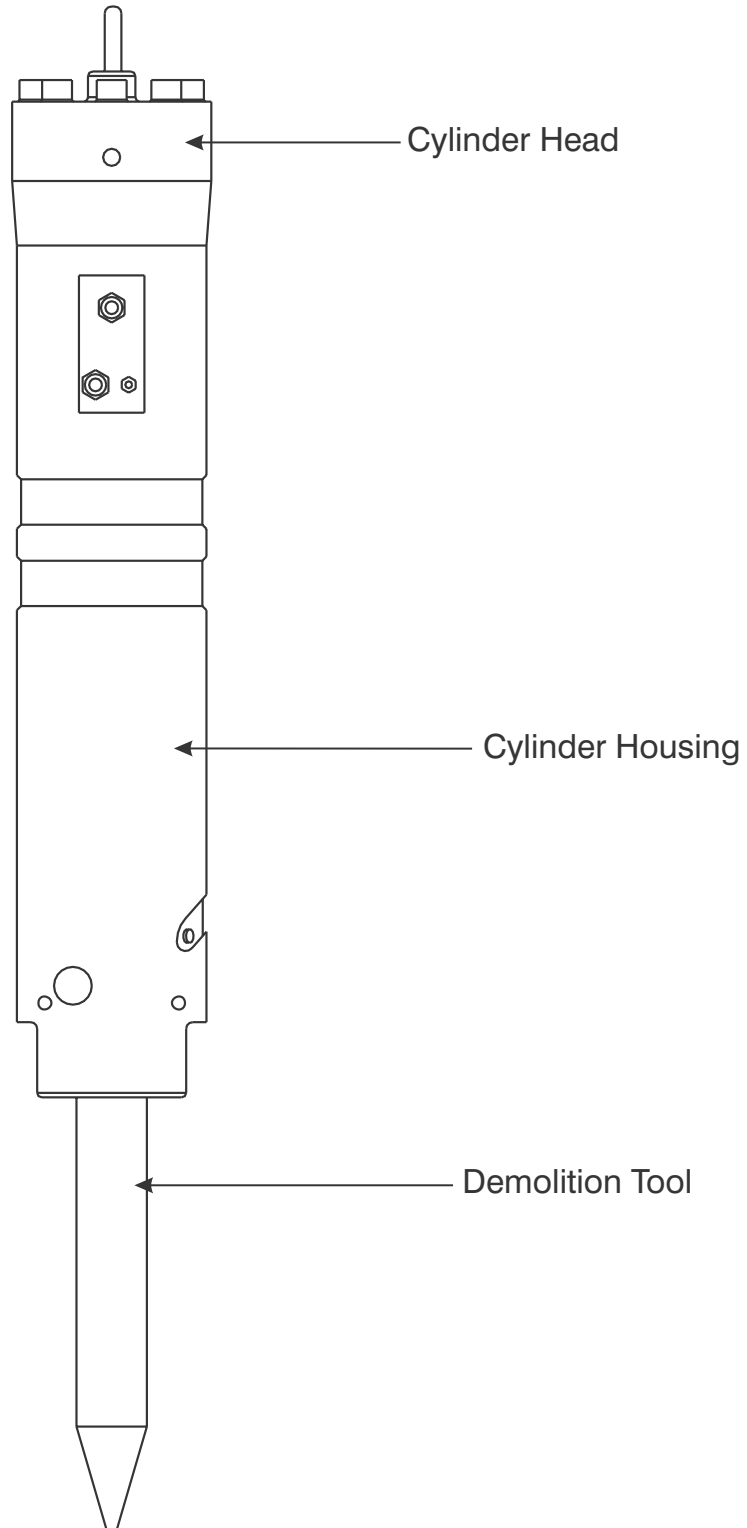


Figure 2-1. Typical Street Hammer Main Components

2.1 Introduction

The Allied Street Hammer is designed for use on backhoes, skid steers and mini-excavators. It is compatible with carriers weighing 2,000 to 30,000 lbs. (900 to 13,600 kg). The hammers can be installed on almost any hydraulic system and can be operated with pump capacities from 4 to 24 g.p.m. (15 to 90 lpm).

The maximum operating pressure is 1900 to 2200 psi (130 to 150 bar). Most of the impact energy is derived from the nitrogen gas pressure in the head rather than the hydraulic pressure. See Section 4-1 Technical Specifications for specific carrier information.

The Allied Street Hammer is an impact hammer featuring high single blow energy and long stroke design.

In place of side plates, the Allied design suspends the hammer's working body in a box enclosure. This isolates the vibration forces, allowing the hammer to work more efficiently and reduce vibration to the carrier.

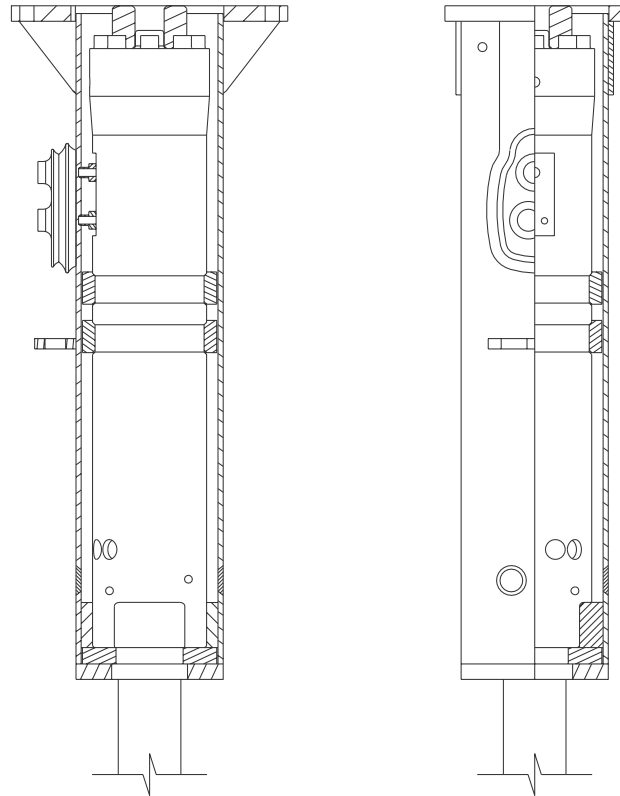


Figure 2-2. Typical Street Hammer

2.2 Description of Assembly Groups

- **Cylinder Head**

The Cylinder Head is the upper hammer section.

The nitrogen filling and measuring fitting for the precharge chamber is located on the front of the Cylinder Head. Fitting **G**.

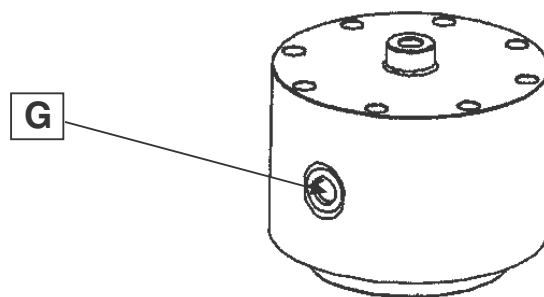


Figure 2-3. Typical Cylinder Head

• **Cylinder Body and Control Valve**

The Cylinder Body, Control Valve and upper seals fit inside the Cylinder Housing. The lower seals are contained in the bottom of the cylinder body.



Figure 2-4. Typical Cylinder Body and Control Valve

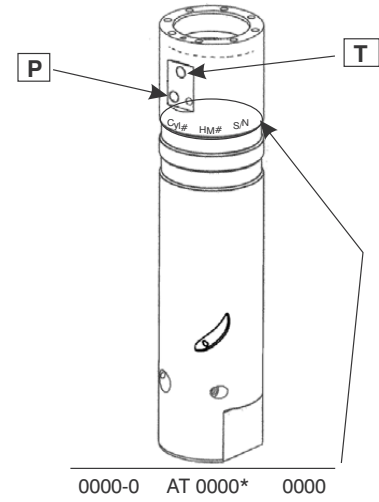
• **Cylinder Housing**

The hydraulic pressure connection is located on the front of the Cylinder Housing. Connection **P**.

The hydraulic return connection is located on the front of the Cylinder Housing. Connection **T**

The demolition tool and tool bushing are installed in the bottom of the Cylinder Housing with a retainer pin and roll pin.

The lubrication fitting is located on the Cylinder Housing. Refer to Section 8.5 for lubrication instructions.



0000-0 AT 0000* 0000

Cyl#	Model Designation	S/N
------	-------------------	-----

- *AT 20 = AS 342
- AT 70 = AS 352
- AT 120 = AS 362
- AT 170 = AS 370
- AT 220 = AS 380

Figure 2-5. Typical Cylinder Housing

• **Piston**

The piston reciprocates in the cylinder body transferring its energy to the demolition tool upon impact. The upper end of the piston has an identification number which is explained in Figure 2-6.

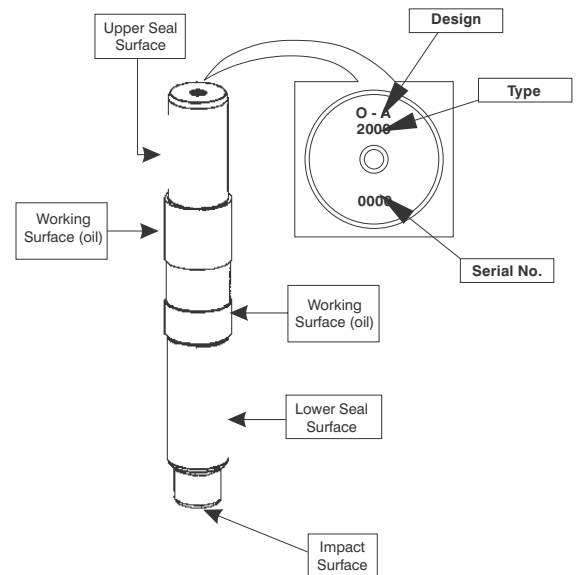


Figure 2-6. Typical Piston

SECTION 3.0 THEORY OF OPERATION

Figure 3-1 is a diagram of basic Street Hammer operation illustrating how the piston is moved up and down to impact the demolition tool.

Up and down piston travel within the cylinder is controlled by hydraulic pressure above piston surface f2.

- When the pressure above surface f2 is low, the high pressure against surface f1 forces the piston up the cylinder. This movement also compresses the nitrogen gas, increasing pressure on piston surface f3.
- The upward piston movement causes a control valve (not shown) to shift position. This shift results in a high pressure above surface f2.
- When the pressure above surface f2 is high, the piston is forced downward. The nitrogen pressure against piston surface f3 also drives the piston downward with even greater force.
- Just before tool impact, the control valve shifts again. This shift results in a low pressure above surface f2.

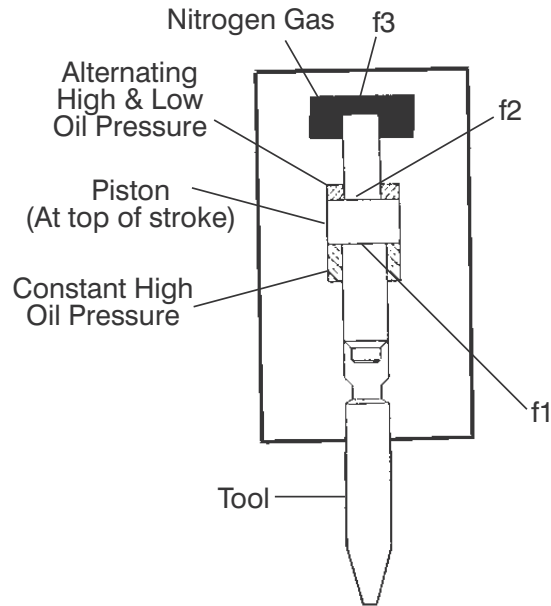


Figure 3-1. Hammer Block Diagram

SECTION 4.0 TECHNICAL INFORMATION

4.1 Technical Specifications

Table 4-1. Technical Specifications					
Street Hammer Model		AS 342	AS 352	AS 362	
Frequency Range	blows per minute	560 - 1700	670 - 1450	520 - 1150	
Hydraulic Flow	g.p.m. (lpm)	4 - 9 (15 - 35)	8 - 13 (30 - 50)	9 - 16 (35 - 60)	
Hydraulic Operating Pressure	psi (bar)	1600 - 1900 (110 - 130)	1600 - 2000 (110 - 140)	1600 - 2000 (110 - 140)	
Hydraulic Relief Pressure	psi (bar)	2200 (152)	2300 (159)	2300 (159)	
Pressure in Nitrogen Precharge Chamber	psi(bar) psi(bar) Note 1	233 (16.1) 270 (18.6)	259 (17.9) 300 (20.5)	237 (16.3) 275 (19.0)	
Weight* Backhoe Excavator Skid Steer - 1-Pos Skid Steer - 2 Pos	lbs. (kg)	265 (120) 600 (272) 580 (263)	XCS - 360 (163)) 700 (318) 710 (322)	535 (243) 835 (379) 880 (399)	
Working Length** Backhoe Excavator Skid Steer - 1 Position Skid Steer - 2 Position	ins. (mm)	51.4 (1306) 42.9 (1090) 46.0 (1168)	57.3 (1455) N/A 52.1 (1323)	56.7 (1440) 52.5 (1334) 49.8 (1265)	
Demolition Tool Diameter Working Length	Std. in. (mm) in. (mm)	Conical 1.65 (42) 13 (330)	Conical 2.05 (52) 14 (356)	Cross-Cut 2.44 (62) 14 (355)	
Carrier Weight Class Backhoe Excavator Skid Steer	1000 lbs. (1000 kg)	2 - 7 (1 - 32) 3 - 6 (13 - 27)	4 - 10 (2 - 5) 4 - 6 (2 - 3)	9 - 12 (4 - 5) 6 - 14 (3 - 7) 5 - 8 (2 - 4)	
Hydraulic Hose Size	in. (mm)	½ (13)	½ (13)	¾ (19)	

Note 1: First value at 70°F (21°C), second value at 150°F (65°C).

NOTE

For decal descriptions and locations, refer to the Parts Manual for each individual model covered in this operator's manual.

Table 4-1. Technical Specifications (continued)

Street Hammer Model		AS370	AS 380
Frequency Range	blows per minute	530 - 1150	550 - 1000
Hydraulic Flow	g.p.m. (lpm)	12 - 20 (45 - 75)	16 - 24 (60 - 90)
Hydraulic Operating Pressure	psi (bar)	1450 - 2000 (100 - 140)	1750 - 2200 (120 - 150)
Hydraulic Relief Pressure	psi (bar)	2300 (159)	2500 (172)
Pressure in Nitrogen Precharge Chamber	psi(bar)	185 (13)	207 (14.3)
	psi(bar) Note 1	215 (15)	240 (16.5)
Weight* Backhoe Excavator Skid Steer - 1-Position	lbs.	660 (299)	985 (447)
	(kg)	660 (299)	985 (447)
		915 (415)	1370 (621) approx.
Working Length** Backhoe Excavator Skid Steer - 1 Position	ins. (mm)	62.2 (1579)	68.0 (1725)
		62.2 (1579)	68.0 (1725)
		57.8 (1468)	64.3 (1632)
Demolition Tool Diameter	Std. in. (mm)	Cross-Cut 2.76 (70)	Cross-Cut 3.15 (80)
	Working Length	in. (mm)	17.0 (432)
Carrier Weight Class Backhoe Excavator Skid Steer	1000 lbs.	11 - 18 (5 - 8)	12 - 25 (5 - 11)
	1000 kg	11 - 25 (5 - 11)	15 - 30 (7 - 14)
		8 & Up (4 & Up)	8 & Up (4 & Up)
Hydraulic Hose Size	in. (mm)	3/4 (19)	3/4 (19)

Note 1: First value at 70°F (21°C), second value at 150°F (65°C).

* With average mounting bracket.

** Dimension D on Dimension Diagram

4.2 DIMENSIONS

The dimensions listed in Table 4-2 below and continued on the next page are illustrated in the corresponding drawing, Figure 4-1. Each dimension is indicated by a letter on the drawing. Table 4-2 lists these letters, each dimension and an explanation of the dimension.

Table 4-2. Street Hammer Dimensions XCS (Mini-Excavator Compact Series)/BCS (Backhoe Compact Series)				
Letter	Dimensions in Inches (mm)			Description
	AS 342 - XCS	AS 352 - XCS	AS 362 BCS/XCS	
A	53.4 (1355)	59.3 (1506)	58.8 (1493)	Hammer length
B	10.7 (271)	10.7 (271)	13.0 (330)	Hammer width
C	13.0 (330)	14.0 (356)	14.0 (355)	Tool length
D	51.4 (1306)	57.3 (1455)	56.7 (1440)	Hammer working length - stick pin to tool tip.
E	6.67 (169)	6.67 (169)	10.3 (260)	Mounting width
F	16.4 (416)	16.4 (416)	19.0 (482)	Hammer depth
G	9.00 (229)	9.00 (229)	14.0 (356)	Stick pin to link pin length
H	1.65 (42)	2.05 (52)	2.44 (62)	Tool diameter
J	10.7 (271)	10.7 (271)	6.75 (171)	Bracket mounting height
K	27.7 (703)	32.6 (828)	36.0 (913)	Box length

Note: Dimensions are for XCS/BCS Universal Mounting Brackets. Dimensions may vary with other brackets.

Table 4-2. Street Hammer Dimensions (continued) BCS (Backhoe Compact Series)			
Letter	Dimensions in Inches (mm)		Description
	AS 370 - BCS	AS 380 - BCS	
A	64.3 (1633)	70.0 (1779)	Hammer length
B	13.0 (330)	13.0 (330)	Hammer width
C	17.0 (432)	18.0 (457)	Tool length
D	62.2 (1579)	68.0 (1725)	Hammer working length - stick pin to tool tip.
E	10.3 (262)	10.3 (260)	Mounting width
F	19.0 (482)	19.0 (482)	Hammer depth
G	14.0 (356)	14.0 (356)	Stick pin to link pin length
H	2.76 (70)	3.15 (80)	Tool diameter
J	6.75 (171)	6.75 (171)	Bracket mounting height
K	38.4 (974)	43.2 (1097)	Box height

Note: Dimensions are for XCS/BCS Universal Mounting Brackets. Dimensions may vary with other brackets.

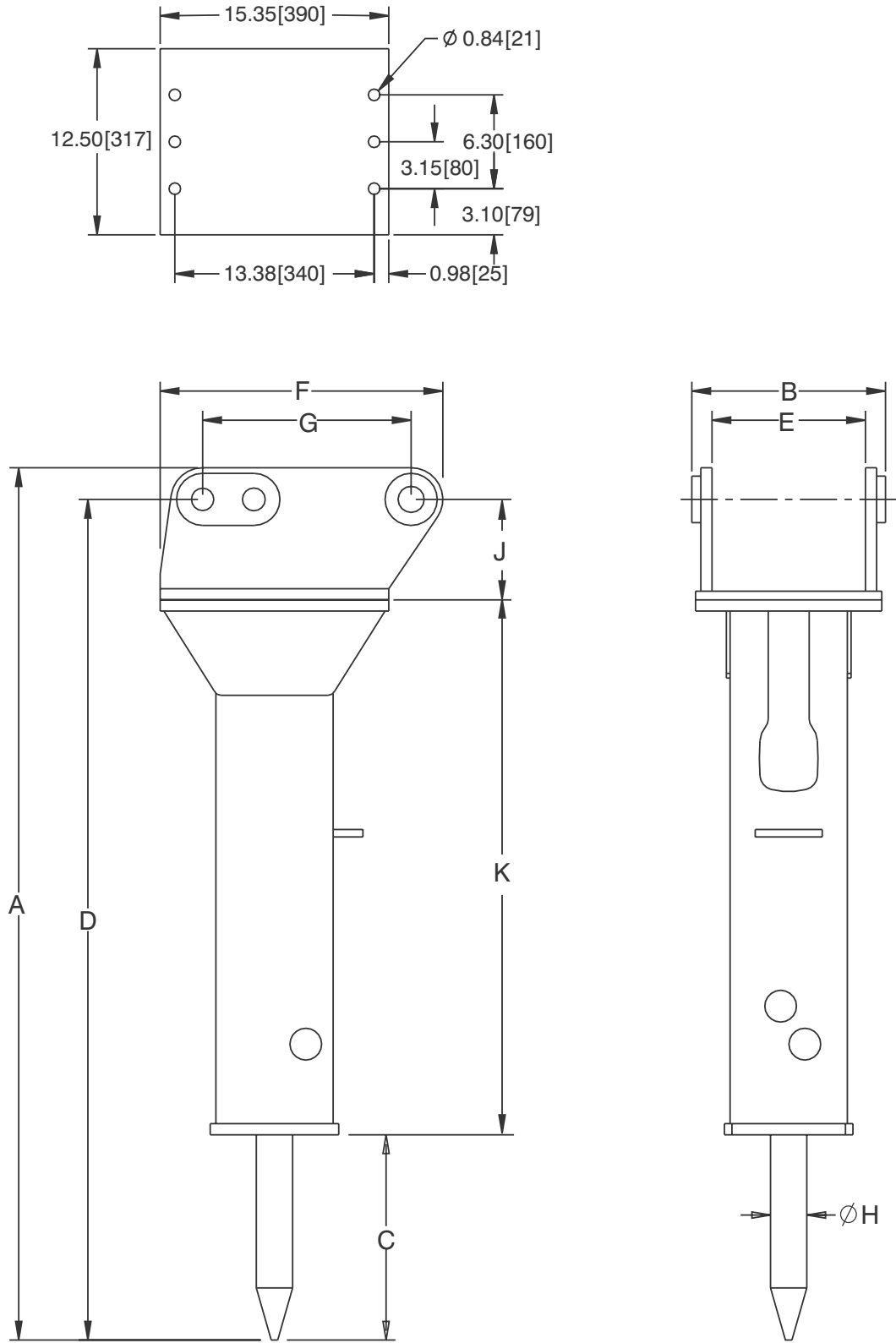


Figure 4-1. Typical Street Hammer Dimension Drawing Shown with BCS Universal Mounting Configuration

The dimensions listed in Table 4-3 below are illustrated in the corresponding drawing, Figure 4-2. Each dimension is indicated by a letter on the drawing. Table 4-2 lists these letters, each dimension and an explanation of the dimension.

Table 4-3. Street Hammer Dimensions SSU 2-Position (Skid Steer Universal 2-Position)				
Letter	Dimensions in Inches (mm)			Description
	AS 342 - SSU 2-Position	AS 352 - SSU 2-Position	AS 362 - SSU 2-Position	
A	50.2 (1275)	56.4 (1432)	55.6 (1438)	Hammer length
B	48.5 (1232)	48.5 (1232)	48.5 (1232)	Hammer width
C	12.0 (305)	14.0 (355)	14.0 (355)	Tool length
D	46.0 (1168)	52.1 (1323)	49.8 (1265)	Hammer working length
E	39°	39°	39°	Hammer rotation angle
F	20.2 (512)	21.5 (545)	28.3 (719)	Hammer depth
G	1.65 (42)	2.05 (52)	2.44 (62)	Tool diameter

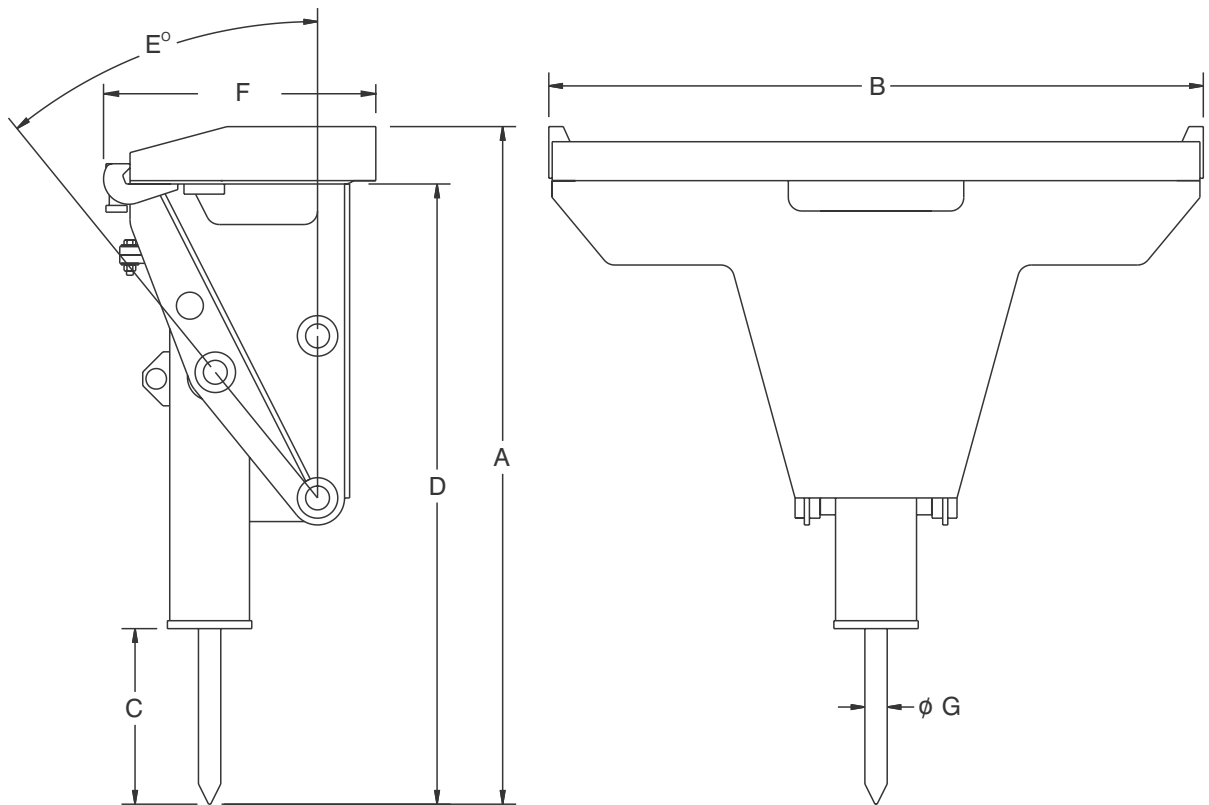


Figure 4-2. Typical Street Hammer Dimension Drawing
Shown with 2-Position Skid Steer Mounting Configuration

The dimensions listed in Table 4-4 below are illustrated in the corresponding drawing, Figure 4-3. Each dimension is indicated by a letter on the drawing. Table 4-2 lists these letters, each dimension and an explanation of the dimension.

Table 4-4. Street Hammer Dimensions (continued) SSU 1-Position (Skid Steer Universal 1-Position)						
Letter	Dimensions in Inches (mm)					Description
	AS 342 SSU 1-Position	AS 352 SSU 1-Position	AS 362 SSU 1-Position	AS 370 SSU 1-Position	AS 380 SSU 1-Position	
A	47.0 (1200)	53.5 (1359)	57.0 (1448)	62.3 (1654)	68.8 (1746)	Hammer length
B	48.8 (1240)	48.8 (1240)	48.5 (1232)	48.5 (1232)	48.5 (1232)	Hammer width
C	12.0 (305)	14.0 (356)	14.0 (355)	17.0 (432)	18.0 (457)	Tool length
D	42.9 (1090)	N/A	52.5 (1334)	57.8 (1468)	64.3 (1632)	Hammer working length
E	24.6 (625)	24.6 (626)	24.8 (630)	24.8 (630)	24.8 (630)	Hammer depth
F	1.7 (43)	2.05 (52)	2.44 (62)	2.76 (70)	3.15 (80)	Tool diameter

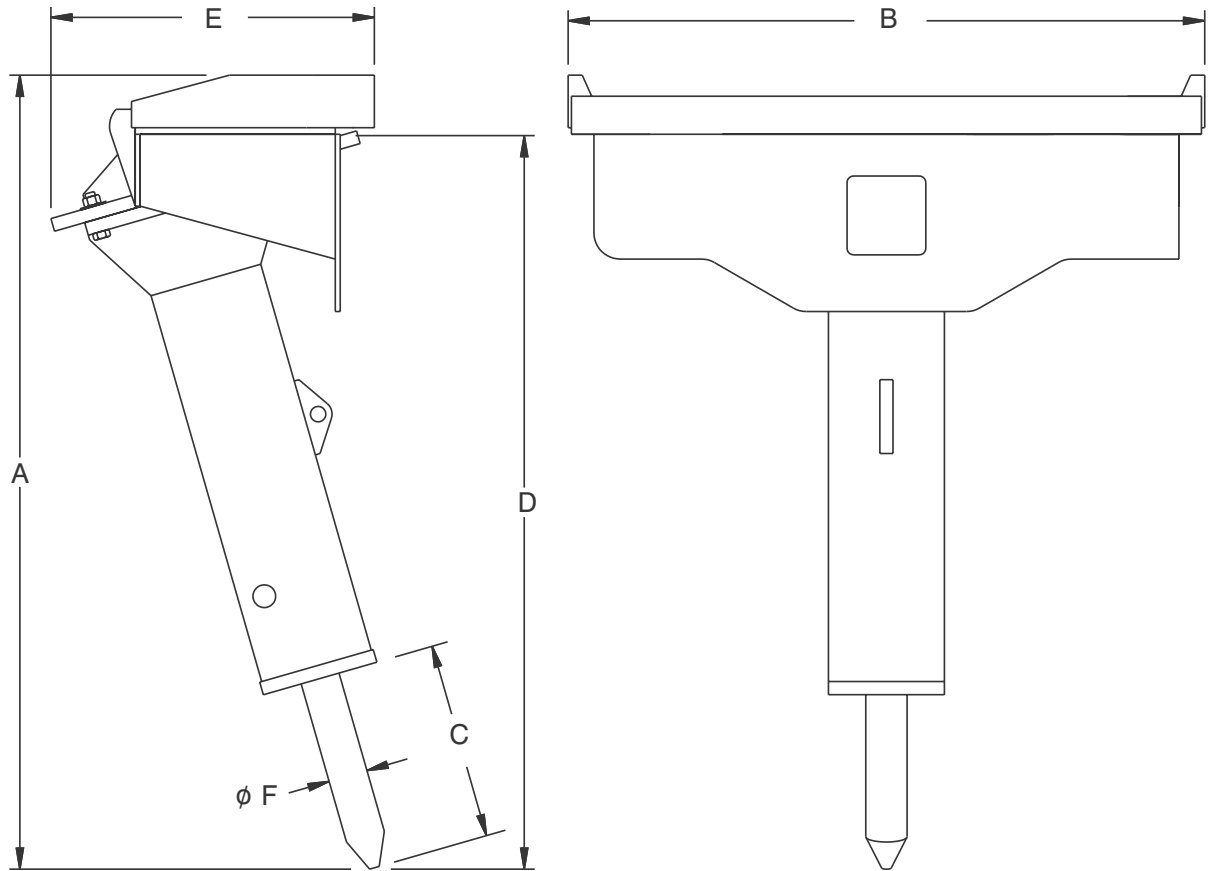


Figure 4-3. Typical Street Hammer Dimension Drawing
Shown with 1-Position Skid Steer Mounting Configuration

SECTION 5.0 GENERAL CONSTRUCTION SAFETY

5.1 Owner's Responsibilities

The equipment owner shall:

- Provide this technical manual to the Street Hammer operators.
- Train all operating personnel and enforce the procedures explained in this manual, especially regarding safety to personnel and equipment.
- Adapt these general instructions to specific applications.

5.2 General Construction Safety

Follow standard safety precautions expected and required of those working in construction, including but not limited to: locating existing underground service and utility lines, establishing pedestrian barriers and using personnel protection equipment, etc.

5.3 Federal, State, Local and OSHA Construction Guidelines and Regulations

Use the Street Hammer in accordance with all federal, state 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. Bo 371954
Pittsburgh, PA 15250

Ask for Construction Industry OSHA Standards 29 CFR 1926/1910.



5.4 General Safety Summary

The safe and effective use of any heavy construction equipment depends upon proper installation, operation, maintenance and repair. Operational safety must encompass all of these factors. This section includes minimum safety policies the Street Hammer owner shall establish for all Street Hammer installations. The operational safety program must be tailored by the Street Hammer owner to the specific site and application. Such a program will result in increased equipment life and performance and reduced downtime. Most importantly, it will reduce the risk of equipment damage and personnel injuries.



5.4.1 CAUTIONS and WARNINGS

Throughout this manual detailed CAUTIONS and WARNINGS are included with instructions and procedures. Even experienced service technicians are to review these CAUTIONS and WARNINGS prior to performing a procedure. CAUTIONS and WARNINGS are highlighted by the symbol shown here and explained as follows:



 **WARNING** 

Instructions preceded by this symbol identify hazards to personnel. WARNING instructions must be followed to ensure safe handling and operation. These instructions shall be followed at all times. Improper operation or servicing can result in personal injury. Read this manual thoroughly before operating or maintaining the Ho-Pac.

 **CAUTION** 

Instructions identified with this symbol are important to prevent damage to equipment and to maintain full service life of the Ho-Pac. Follow them carefully. Operation or service not in accordance with these instructions may subject the Ho-Pac to conditions beyond its design capability. Read this manual thoroughly before operating or maintaining the Ho-Pac.

5.4.2 Initial Operating Precautions

Some pre-operational checks and scheduled maintenance must be performed more frequently on a new Street Hammer installation. Refer to the Operator Checklist in Section 9.0 and the Care and Maintenance Schedule in Section 11.0 of this manual.

5.4.3 Carrier Precautions

- To assure stable carrier operation, the carrier load capacity must meet or exceed the Street Hammer requirements listed in the Table 4-1. Technical Specifications.
- To protect the operator from hot, high pressure hydraulic fluid, do not run any hydraulic lines through the operator’s cab.
- Follow the carrier manufacturer’s guidelines regarding filtration of return fluid from the Street Hammer. The carrier oil filter must be cleaned according to the Care and Maintenance Schedule.
- To protect the operator from injury from flying rock splinters, the operator’s cab must have a protective shield. The shield must be closed during hammer operation.
- Refer to the carrier manufacturer’s manuals for proper carrier operation, service and maintenance procedures.
- Never lift or move loads with the Street Hammer.
- Operate the Street Hammer only from the carrier operator’s seat; and only after the carrier and Street Hammer are correctly positioned.

5.4.4 Personnel Precautions

- The carrier operator shall perform some Street Hammer procedures with an assistant. Both the operator and assistant must be experienced and thoroughly trained in these procedures.
- Always wear safety glasses and protective clothing when operating or handling the Street Hammer.
- All personnel in the immediate area, including the carrier operator and the assistant, must wear ear protection.
- Avoid pinch points.

- Never put fingers in mounting bores or locking bars.
- Keep personnel away from the demolition tool while:
 - The demolition tool is jammed in the cylinder housing; it may release suddenly.
 - Technicians service the hydraulic system.
 - Technicians service the nitrogen precharge chamber.

5.4.5 Hydraulic Pressure Precautions

- Before disconnecting any hydraulic lines, properly bleed all hydraulic system pressure.
- Make sure the Street Hammer and carrier hydraulic systems are compatible, especially regarding:
 - Flow rate and pressure
 - Pressure relief valve setting
 - Hydraulic fluid compatibility
 - Heat exchanger if required

5.4.6 Nitrogen Gas Precautions


- To avoid an explosion and equipment damage, use only 99.8% pure nitrogen gas in the precharge chamber.
- Do not allow anyone into the service area while the service technicians are testing, measuring, filling or bleeding the nitrogen chamber.

5.4.7 Hoisting and Lifting Precautions

- The Street Hammer weight is listed in the Technical Specifications table, Section 4.1. Before starting a procedure that requires hoisting, prepare the required lifting equipment.
- When hoisting the assembled Street Hammer, use the designated lifting eyes on the hammer box.
- Keep hands clear of any bores or fittings when moving, removing, attaching, or hoisting the Street Hammer.


5.4.8 Maintenance Precautions

- Do not start maintenance on the Street Hammer until it has cooled. The Street Hammer is heated during operation and some components become very hot.



WARNING

Bodily injury and equipment damage could result if the Street Hammer falls. After detaching it from the carrier, block the Street Hammer securely.



WARNING

Clearing a jammed demolition tool is hazardous. Properly protect personnel against sudden release.

- Jamming the demolition tool in the housing can damage internal hammer components and shorten Street Hammer service life. To reduce the risk of jamming, carefully follow the Operator Checklist in Section 9.0 and the Care and Maintenance Schedule, Section 11.0, especially:
 - Lubricating the demolition tool. (See Section 8-5.)
 - Checking tool bushing wear. (See Section 11.2.3.)
 - Checking piston impact surface wear (See Section 11.2.4.)
 - Checking demolition tool wear. (See Section 11.2.6.)

5.4.9 Site Precautions

- The danger area around the carrier is greater for hammer operation than for carrier operation due to the risk of flying rock splinters and debris. Immediately cease operation of the Street Hammer if personnel without protective glasses or protective clothing enter the danger

area.

- Never use the Street Hammer in or underwater. These models are not designed or built for underwater use.
- When work site temperatures are below minus 4°F [-20°C], follow the carrier manufacturer's low temperature operating instructions. Refer to Section 9.13 Working in Low Outside Temperatures.

SECTION 6.0 STREET HAMMER APPLICATIONS

The Street Hammer is suited for many types of light duty construction and mining applications. The following examples are typical and suggest the variety and limitations of standard applications. The Street Hammer is not designed for use in or underwater. Typical surface applications are:

Clearance Work: Light concrete and brick breaking; curb and gutter, sidewalk and driveway work. Cutting asphalt*.

Trenching: Trench compaction*; sheet, pipe and pile driving*. Trench rock excavation.

*in certain applications

Mining: Descaling in mines; horizontal breaking in tunnels.


Demolition: Concrete road and structural demolition.

Safety regulations for the hammer and the carrier must be observed at all times.

SECTION 7.0 STREET HAMMER ATTACHMENT & REMOVAL

7.1 Carrier Requirements

Refer to Table 4.1 Technical Specifications to determine the carrier weight required to adequately maneuver and handle the Street Hammer.



CAUTION

Do not attempt to set the Street Hammer operating pressure or flow without first consulting the installation instructions for your machine. Refer to Table 4-1. Technical Specifications for the maximum operating pressure for the Street Hammer model being used. **DO NOT** exceed this value.

The hydraulic pressure and flow must be adequate for operation of both the carrier and the hammer simultaneously. Hydraulic pressure and flow requirements for the Street Hammer model being used are given in Section 4.1 Technical Specifications.

The carrier must have an oil temperature gauge. Operating temperature range of the hydraulic oil is 140° F.(60°C.) to 176° F. [80°C.]. If the ambient temperature is low, warm the oil to a minimum of 32° F. (0° C.) by running the carrier (see paragraph 9.13 for operating at low temperature).

7.2 Installation Kits

Proper mounting hardware must be used to mount the Street Hammer to the carrier. Allied installation kits are recommended; if others are used, they must satisfy the minimum requirements listed under Section 7.6 Attaching the Street Hammer.

Allied Installation Kits are designed for most carrier makes and models and contain the parts required for the mechanical and hydraulic hookup.

7.3 Mounting Brackets

Several different mounting brackets are available for the Street Hammer: top mounting brackets: Backhoe Compact Series (BCS) and Mini-Ex Compact Series (XCS), a 1-Position Skid Steer Universal (SSU), and a 2-Position SSU. Bracket hardware, such as spacers and bushings may be provided.

7.4 Heat Exchanger

In some working environments with a high ambient temperature, a heat exchanger may be necessary to maintain a safe operating oil temperature. The oil temperature shall never exceed 176° F. [80°C.]. There are several operating problems that could cause oil to overheat. **DO NOT** install a heat exchanger before inspecting and correcting Street Hammer or carrier malfunctions. Refer to Section 10.0 Troubleshooting, and also carrier troubleshooting.

7.5 Tools Required to Attach Street Hammer

No special tools are required, but the following tools are recommended:

- safety glasses & gloves
- sledge hammer
- drift pin
- 3/4-inch drive socket wrench
- 3/4-inch square drive socket set
- grease gun
- open end wrenches
- pry bar

7.6 Attaching the Street Hammer to the Carrier

WARNING
 The Street Hammer shall only be attached to a carrier with sufficient load carrying capacity. If the carrier is too light, it may become unstable.

WARNING
 When an assistant is required to attach and remove the carrier attachments, all directions and signals must be agreed upon before beginning attachment or removal.

WARNING
 Keep hands away from bores and pin areas when attaching the Street Hammer. Do not touch any parts when the boom is moving. Never put fingers in bores to check alignment; use drift pin.

WARNING
 Always wear safety glasses during attachment, operation, and removal of the Street Hammer.

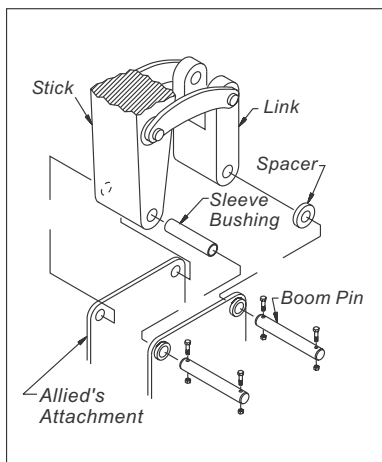
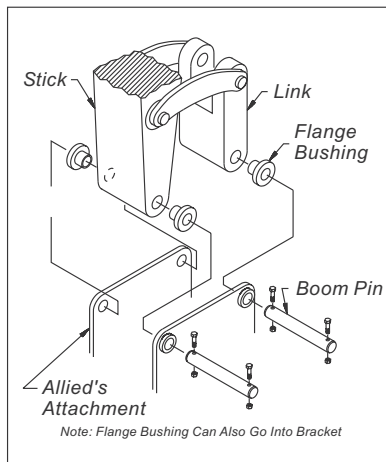


Figure 7-1. Attaching the Street Hammer to a Backhoe or Mini-Excavator

7.6.1 Attaching the Street Hammer to a Backhoe

(Refer to Figure 7-1.)

NOTE

The backhoe installation described below is typical; installation procedures may vary. Consult carrier attachment installation instructions for specific details.

1. Before attaching the Street Hammer, remove the bucket or tool attached to the stick of the carrier.
2. Maneuver the stick into the hammer at the front (hose side) and align mounting holes. The front (hose side) of the hammer should face the operator in the carrier cab.
3. Push the stick pin into holes through the hammer, spacer, if required, and the stick. Tap stick pin through holes with a hammer if necessary. Note that a spacer may go between the stick and hammer on both sides.
4. Install stick pin bolts and nuts or klik pins.
5. Maneuver the stick until the link lines up with the holes on the back (non-hose side) of the hammer.
6. Install the spacers and link pin through the link and hammer.
7. Install nuts and bolts or klik pin in link pin.
8. Refer to Section 7-7 to connect hydraulic lines.

7.6.2 Attaching the Street Hammer to a Mini-Excavator

NOTE

The installation described is typical; installation procedures may vary. Consult carrier attachment installation instructions for specific details.

The hammer is attached to the Mini-Excavator the same way it is attached to the Backhoe. Refer to Section 7.6.1

7.6.3 Attaching the Street Hammer to a Skid Steer

NOTE

The skid steer installation described below is typical; installation procedures may vary. Consult carrier attachment installation instructions for specific details.

1. If the skid steer hammer is already attached to its mounting bracket, proceed to step 3; otherwise, see step 2.
2. Attach the hammer to the skid steer mounting bracket with the hoses facing down toward the ground.
 - 1-Position Bracket: Use a 1-1/8-inch wrench to tighten 3/4-inch bolts and lock nuts; torque to 380 ft.lbs. Use a 15/16-inch wrench to tighten 5/8-inch bolts and lock nuts; torque to 220 ft.lbs. Refer to Figures 7-2 and 7-3.
 - 2-Position Bracket: Use mounting pins designed for 2-position bracket to attach the hammer to the bracket. Refer to Figure 7-4.

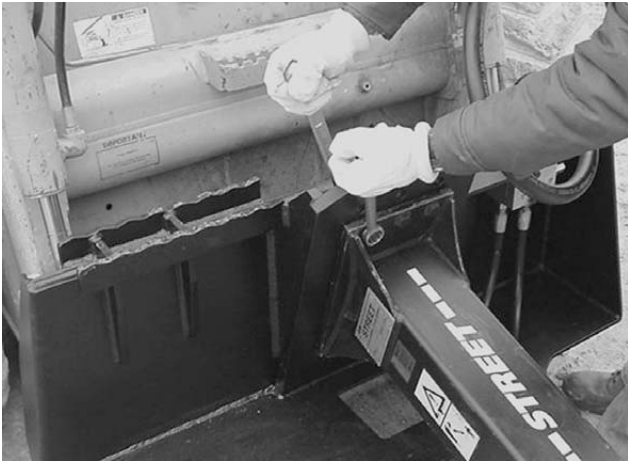



Figure 7-2.

3. Make sure skid steer attaching clamps are open. The locking pins should be retracted. Refer to carrier operator's manual for detailed attachment instructions.
4. Maneuver the skid steer to the mounting bracket. Operate the skid steer hydraulic controls to engage the mounting coupler under the flange at the top of the mounting bracket.
5. Using the skid steer hydraulic cylinders, slowly lift the mounting bracket until the bottom of the mounting bracket is flush with bottom of the mounting coupler.



Figure 7-3.

 **WARNING**

In Step 6, make sure the mounting pins are through the holes in the bottom of the mounting bracket. If pins are not fully engaged, there is danger of hammer and bracket falling off the carrier. This could result in equipment damage and personal injury. Refer to Figure 7-5.

6. Engage the skid steer attachment locking assembly so the locking pins protrude through the holes in the bottom of the mounting plate. Refer to Figure 7-5.

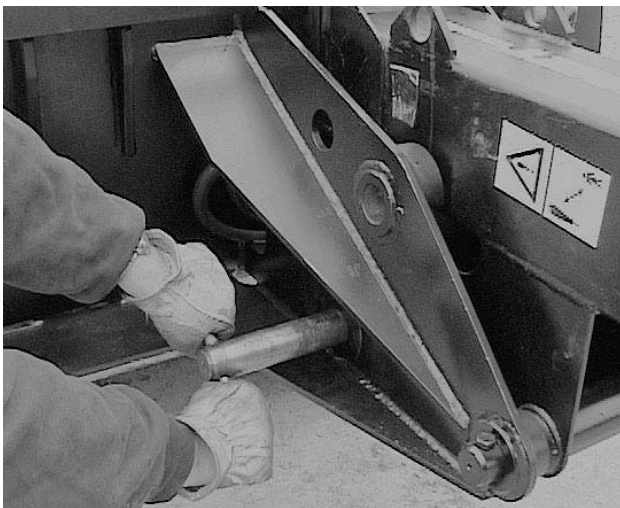


Figure 7-4.

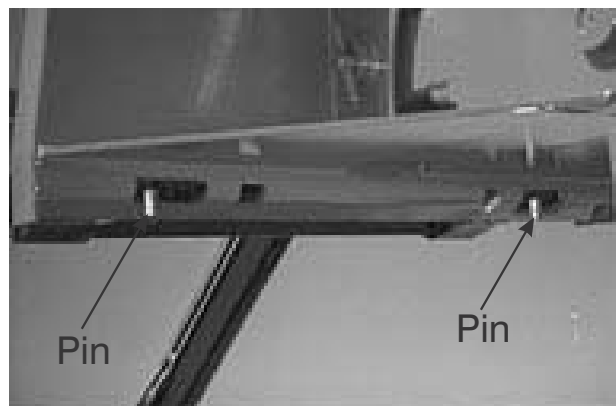




Figure 7-5.

8. Refer to Section 7-7 to connect hydraulic lines.

 **CAUTION**
 Be sure that the hammer is always perpendicular to the work. Refer to Figures 7-6 and 7-7.

 **WARNING**
 Secure the hammer before changing pin location so it does not swing. Damage to hammer and injury to personnel could result if hammer is not secure.

9. The orientation of the hammer can be changed on the 2-Position Skid Steer bracket by pivoting the hammer in the bracket to help keep the hammer perpendicular to the work. Refer to Figures 7-8 thru 7-11. On the skid steer 2-position bracket:

1. Remove the retainer pin closest to the top of the hammer.
2. Pivot the hammer up or down in the mounting bracket.
3. Insert the pin in the corresponding hole.



Figure 7-6.

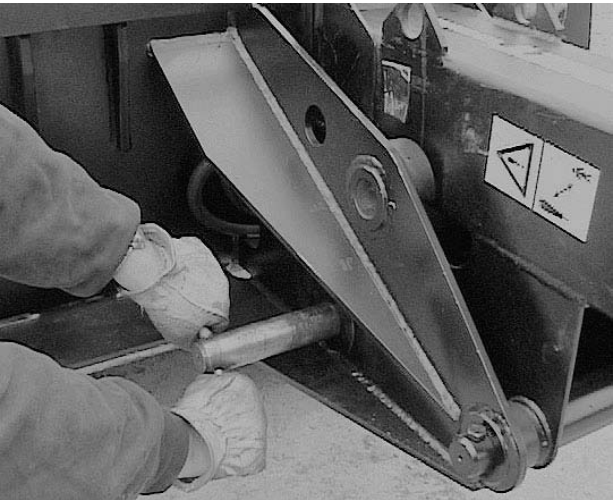


Figure 7-8.



Figure 7-7.

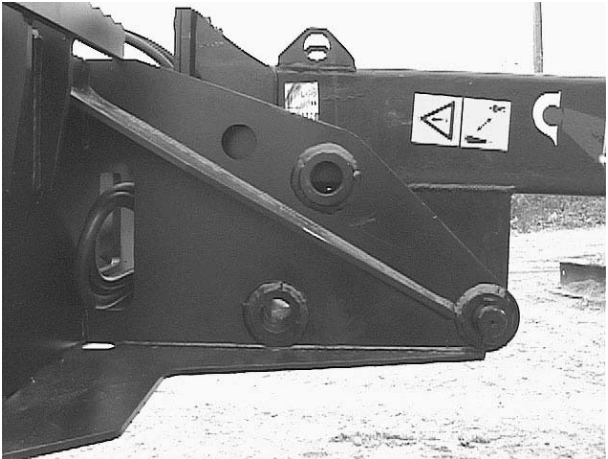


Figure 7-9.



Figure 7-10.

NOTE



Figure 7-11.

Allied manufactures other brackets to mount LTS or Mini-Ex hammers to a Skid Steer. Contact Allied Customer Service.



CAUTION

Contaminated hydraulic oil is harmful to attachments and carriers. Clean connection areas and hose ends before and after removing protective caps so hose fittings are clean when attached to hammer and carrier.

7.7 Connecting the Street Hammer Hydraulic Lines

Connect the hydraulic lines to the Street Hammer as follows:

1. Clean dirt from connection areas.
2. Unscrew the cap nuts from Street Hammer ports **P (pressure)** and **T (tank/return)**. Refer to Figure 7-12.
3. Wrap the cap nuts in clean plastic or cloth to protect them from dirt. Place the cap nuts in the tool box for safekeeping.

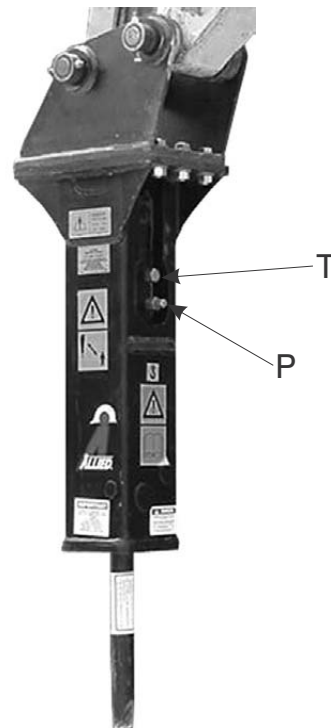



Figure 7-12. Street Hammer Ports

4. Remove the plugs from the ends of the hydraulic lines that connect to the Street Hammer.



WARNING

Do not run any hydraulic lines through the operator's cab; they may leak or burst. The hydraulic oil becomes very hot during operation.

5. Check all hose connecting threads. The threads must be undamaged and free of contamination.

NOTE

Hammers with 16 gpm or less are supplied with a flow valve which is mounted on the bracket. Two sets of hoses are supplied: one set of hoses connects from the hammer to the valve; the other set connects from the valve to the skid steer.

6. Connect the hydraulic lines as follows.
 - Hammers without a flow regulator valve. Refer to Figures 7-13 and 7-15:
 - a. Connect the pressure hose to the hammer port marked "P".
 - b. Connect the return line to the port marked "T".
 - c. Connect the pressure and return lines to their corresponding carrier quick disconnects.
 - Hammers with a flow regulator valve. Refer to Figures 7-14 and 7-15.
 - a. Connect the hammer-to-valve pressure hose to the hammer port marked "P" and to the port on the bottom of valve marked "P2".
 - b. Connect valve-to-carrier pressure hose to the port on the top of the valve

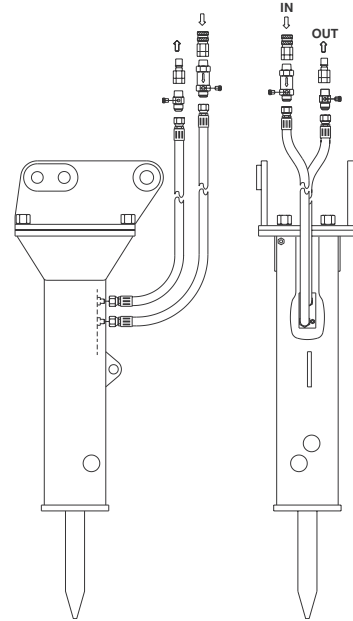


Figure 7-13. Connecting Hydraulic Lines



Figure 7-14.



Figure 7-15.

marked “P1” and to the carrier pressure quick disconnect (or pressure line).

- c. Connect the hammer-to-valve return (tank) hose to the hammer port marked “T” and to the port on the bottom of the valve marked “T1”.
- d. Connect the valve-to-carrier return hose to the port on the top of the valve marked “T2” and to the carrier return quick disconnect (or return line).
- Hammers with a union bulkhead connector. Refer to Figures 7-15 and 7-16.
 - a. Connect the hydraulic lines to the Street Hammer ports. The port marked “P” is the pressure port; the port marked “T” is the return or tank port.
 - b. Connect the two pressure hoses and the two return hoses through the bulkhead connector (Figure 7-16).
 - c. Connect the pressure and return lines to the carrier quick disconnect coupling (or corresponding carrier lines - Figure 7-15).

7.8 Removing the Street Hammer from the Carrier



WARNING

All directions and signals must be agreed upon beforehand with the assistant. Keep hands well clear of bores and boom pin areas when removing the hydraulic hammer. Do not touch any parts when the boom is moving.



CAUTION

Collect any oil which leaks out and dispose of it correctly.

Removal of the Street Hammer is done in reverse order of attachment unless otherwise stated.



Figure 7-16.

**SECTION 8.0
DEMOLITION TOOL**

8.1 Demolition Tool

Only use genuine Allied demolition tools. Use of other demolition tools may render the warranty invalid.


It is important that the demolition tools be used correctly, especially longer demolition tools which are more susceptible to damage from prying. Pay particular attention to Section 9.0 Operation.

8.2 Sharpening

Demolition tools shall only be remachined on suitable equipment. Conical and blunt demolition tools can be remachined on a lathe with carbide tooling. Chisels can be sharpened on a shaping or milling machine. During remachining, the demolition tool must be cooled thoroughly with liquid coolant.

Never attempt to burn or weld the demolition tools. The high temperatures involved can damage demolition tools.

8.3 Installing the Demolition Tool
(Refer to Figure 8-1.)




WARNING

Always wear safety glasses and gloves when installing the demolition tool.

Clear the area of bystanders.

1. Clean cylinder housing bore and upper half of tool.
2. Liberally apply Allied Chisel Paste to the tool shank and retainer pin.
3. Position hammer horizontally to allow access from below.
4. Using a hoist, lift the demolition tool and insert it into bore, turning it until the slot in the tool is in line with the retainer pin hole.
5. Insert retainer pin.
6. Insert retainer bolt to lock retainer pin in place. (Model AS 380, Serial Number 296 and Below, has an O-Ring that is inserted with the retainer bolt. Refer to the AS 380 Parts Manual for illustration and part number information.)



WARNING

The demolition tool shall only be installed as instructed in the following procedure.

A demolition tool incorrectly installed could be driven out of the cylinder housing with force possibly causing bodily injury or physical damage.

NOTE

The retainer pin also holds the tool bushing in place through a notch in the side of the bushing.

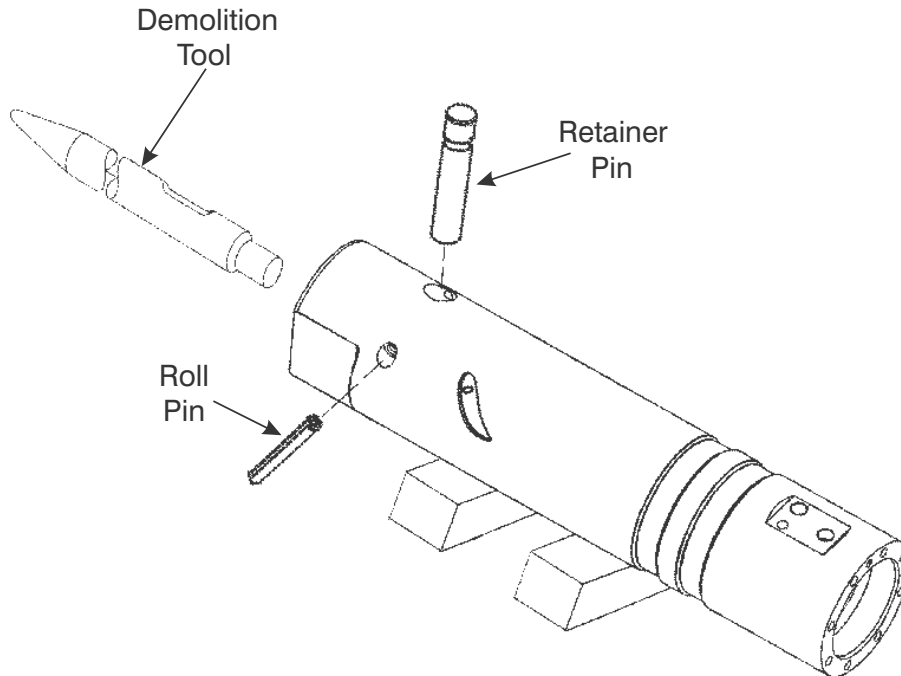


Figure 8-1. Installing the Demolition Tool

8.4 Removing the Demolition Tool
(Refer to Figure 8-1.)

Tools that may be required:

- Hand sledge
- 1/4-inch drift pin
- Large size screwdriver

1. Position the Street Hammer horizontally to allow access from below.
2. Push spring pin (newer models) or retainer bolt out with a drift pin and hand sledge.
3. Push retainer pin up with a screwdriver and pull it the rest of the way out by hand.
4. Using a hoist, remove the demolition tool from the Street Hammer. Refer to Figure 8-2.
5. Refer to Section 13.0 for storage instructions.

8.5 Manually Lubricating the Demolition Tool
(Refer to Figure 8-3.)

Allied Chisel Paste is recommended for lubrication. If Allied Chisel Paste is unavailable, a high quality, petroleum based, lubricating grease with molybdenum disulfide can be used.



WARNING

Serious injury or death could result if the hammer falls from the carrier. Make sure that all mounting hardware is secure before lubrication or any other maintenance.

On Skid Steers, be sure that attachment locking pins are securely engaged.

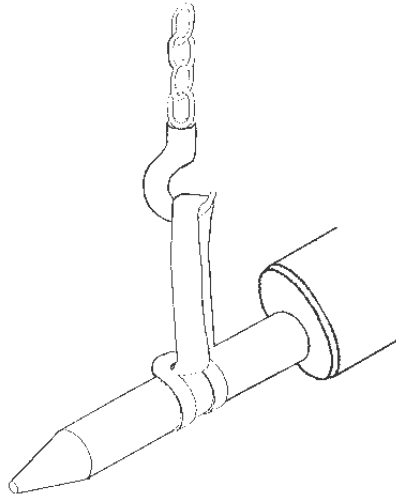



Figure 8-2. Lifting Demolition Tool

The demolition tool must be lubricated every two hours during operation as follows:


1. Check that hammer is securely mounted to carrier; on skid steers, be sure attachment locking pins are securely engaged.



CAUTION

Be sure to maintain contact pressure on the demolition tool during lubrication procedure or hammer could be damaged.


2. On level ground, stand the hammer vertically on the demolition tool and apply contact pressure. This ensures that the tool is in contact with the impact ring to prevent grease from entering piston area. Refer to Figure 8-3.



WARNING

Serious injury or death could result if carrier is not properly secured and locked when performing any carrier or hammer maintenance. Follow all safety instructions included in carrier manual and the CIMA Safety Manual supplied with hammer.

3. Block carrier wheels to ensure carrier stability.
4. Shut off carrier and engage carrier interlock. Operator shall remain in cab.



WARNING

DO NOT crawl between carrier and hammer. Serious injury could result.



Figure 8-3. Keep Contact Pressure on Tool

5. Assistant: Reach around hammer from the side, remove cover plug and attach grease gun to lubrication fitting as shown in Figure 8-4.
6. Lubricate until grease emerges from the gap between the tool bushing and the demolition tool.

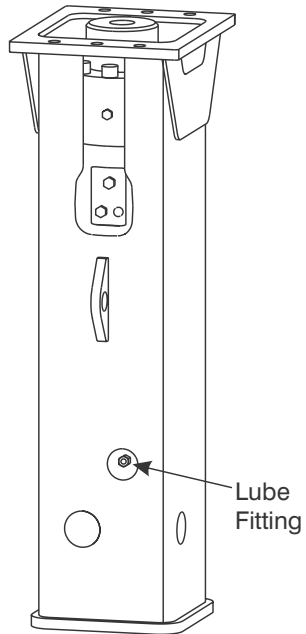


Figure 8-4. Lubricating the Demolition Tool

8.5.1. Allied AutoLube Automatic Lubrication System

The Allied AutoLube Automatic Lubrication System is not used on the hammers covered in this manual.

SECTION 9.0 OPERATION

9.1 Operator Check List

Before operating the Street Hammer, inspect the following:

- Check that hose and tube connections are secure.
- Check all fasteners for wear and tightness.
- Check all fasteners according to the maintenance schedule (see Section 11.0).
- Check that demolition tool is inserted properly.
- Be sure scheduled maintenance is performed before operating the Street Hammer.
- Frequently check the oil temperature. The temperature of the hydraulic oil must never exceed 176°F. [80°C].
- Be sure all tools that will be required for functions to be performed are available.
- Remember to lubricate the demolition tool every two hours during operation.

9.2 Tools Required By Operator

No special tools are required, but the following tools are recommended:

- safety glasses & gloves
- sledge hammer
- drift pin
- 3/4-inch drive socket wrench
- 3/4-inch square drive socket set
- grease gun
- open end wrenches
- caliper for checking tool wear

9.3 Operating the Street Hammer



WARNING

The precharge chamber shall only be filled with 99.8% pure nitrogen gas. Make sure no other gas, i.e., air or oxygen, is allowed into the precharge chamber; this could result in an explosion.



CAUTION

Check the oil temperature often to ensure it does not exceed 176°F [80°C]. If higher temperatures are measured in the tank, refer to Section 10.0 Troubleshooting.

9.4 Startup



WARNING

Close the protective shield on the operator's cab to prevent possible injury from flying rock splinters during hammer operation.

All persons in the immediate area, including the carrier operator, must wear ear protection.

The Street Hammer shall only be operated from the operator's seat and shall not be put into operation until both carrier and hammer are in the correct position.



WARNING

Immediately cease operating the Street Hammer if anyone moves into the danger area, which is greater for hammer operation than for carrier operation due to the risk of flying debris.

When working with a hydraulic hammer, operation of the carrier is governed by the carrier manufacturer's safety regulations.

9.5 Advance From Outer Edge
(Refer to Figure 9-1.)

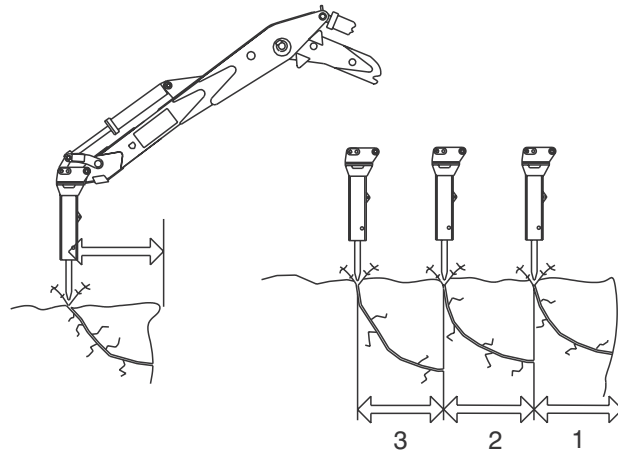


Figure 9-1. Advancing From Outer Edge

Start breaking large and hard rocks near the outer edge.

Place the tool a short distance from the edge of the material. If the rock does not break away after thirty (30) seconds (maximum), the advance must either be reduced or breaking restarted at a different point.

With contact pressure on the demolition tool, the piston in the Street Hammer is driven up to its starting position and the hammer will begin cycling the tool up and down. The stick/hammer end of the vehicle may be raised a few inches (approximately 12 centimeters) from the ground so that the weight of the carrier is exerted on the demolition tool.

9.6 Angle Of Operation
(Refer to Figure 9-2.)

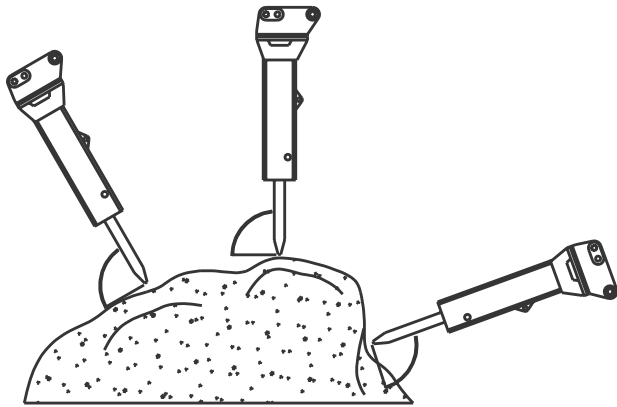


Figure 9-2. Angle Of Operation

Always place the demolition tool at right angles to the surface of the material. If not placed at right angles, the hammer will wear more quickly, leading to permanent damage.

9.7 Hammer Rocking
(Refer to Figure 9-3.)

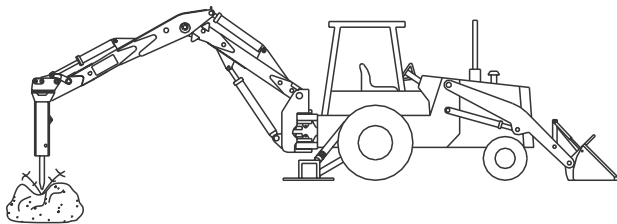


Figure 9-3. Rocking The Hammer

The hammer may be gently rocked backward and forward at a maximum of 5° to allow dust to escape which would otherwise dampen the impact power of the demolition tool. Do not rock the hammer at angles greater than 5° or bending strain will occur damaging the demolition tool and the Street Hammer.

9.8 Incorrect Use of the Hydraulic Hammer

Carefully read through this section. The following paragraphs describe functions that damage the Street Hammer or cause personal injury.

9.8.1 Never Use as a Crowbar
(Refer to Figure 9-4.)

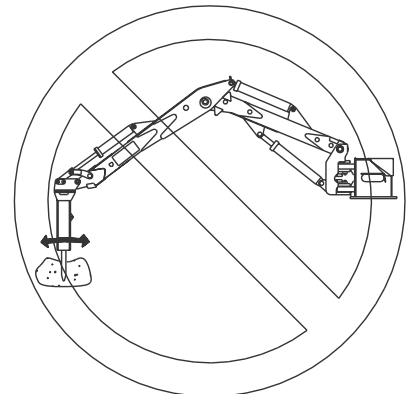


Figure 9-4. Never Use Street Hammer As A Crowbar

Using the Street Hammer as a crowbar may cause the demolition tool to break.

9.8.2 Never Drive Demolition Tool into the Material

(Refer to Figure 9-5.)

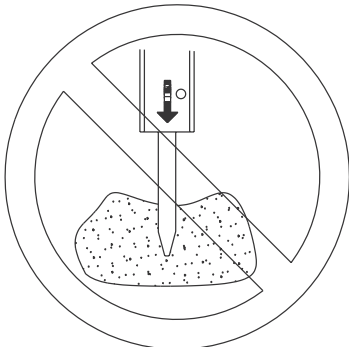


Figure 9-5. Never Drive Tool into Material

If the advance is too large and the hammer is not rocked to release the dust, the demolition tool will be driven into the material, causing the tip to glow red hot and become soft. It then could become wedged in the hole.

9.8.3 Never Pound with the Hammer and Demolition Tool

(Refer to Figure 9-6.)

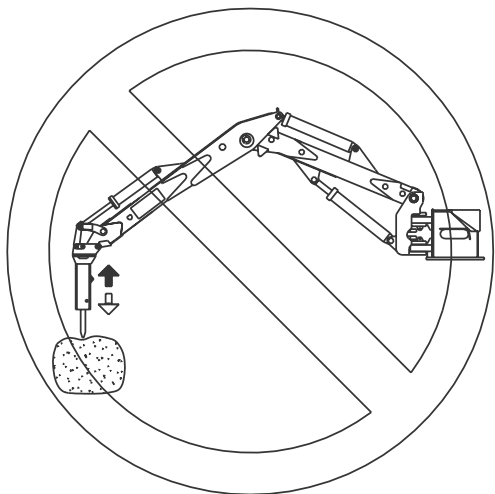


Figure 9-6. Do Not Pound With Hammer

Pounding at material with the hammer could cause damage to the Street Hammer and the carrier.



CAUTION

The Street Hammer is not designed to lift or transport loads. This practice will damage the Street Hammer.

9.8.4 Never Lift Or Transport Loads With The Hammer

(Refer to Figure 9-7.)

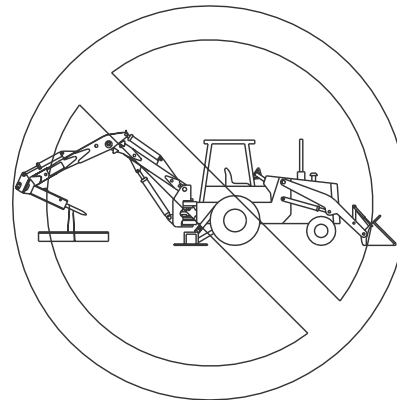


Figure 9-7. Do Not Use Hammer As Lift Or Transport

9.9 Never Use In or Underwater



WARNING

Never use a Street Hammer underwater. The Street Hammer is not built for underwater use.

9.10 Precharge Chamber

The precharge chamber is located in the cylinder head above the piston and is filled with nitrogen. As the piston moves to its upper most position, the nitrogen is compressed. The force arising from this compression is transferred to the top of the piston and helps drive the piston down.

Both the precharge chamber and the hydraulic system of the carrier provide the force for the working stroke. This design feature makes the impact energy of the hammer largely independent of fluctuations in the hydraulic system of the carrier during operation.

9.11 Special Operation Environments


9.11.1 Working Underground

When using the Street Hammer underground (tunneling or mining applications) special regulations may apply. Additional considerations include:

- use water sprays to suppress dust.
- use fire-resistant hydraulic fluids when required.

Hydraulic systems using fire resistant fluids require special engineering consideration when using the Street Hammer. With some fluids, decreased flow and/or pressure to the hammer may be necessary. Contact Allied well before installation for specific parameters for your particular fluid.

9.11.2 Working Underwater




WARNING

Never use a Street Hammer underwater. The Street Hammer is not built for underwater use.

9.12 Working In High Outside Temperatures

Check the oil temperature frequently to ensure it does not exceed 176°F [80°C]. If higher temperatures are measured in the tank, a heat exchanger must be installed. Use only hydraulic oils with adequate viscosity.



CAUTION


When working in temperature conditions below -4°F [-20°C], the hydraulic hammer shall not be put into operation while the hydraulic oil is still cold. Operating the hammer with cold hydraulic oil may cause the seals in the hammer to break. Observe the carrier manufacturer's regulations.


9.13 Working in Low Outside Temperatures

When the temperature is below -4° F. (-20° C.), warm up the oil by running the carrier before starting the Street Hammer.

Keep oil circulating in the carrier during breaks in work so that the oil does not get too cold for normal operation.

**SECTION 10.0
OPERATOR TROUBLESHOOTING CHART**

 **WARNING**
Before removing the hydraulic lines, bleed off all hydraulic pressure. When rectifying faults, observe all safety regulations.

 **CAUTION**
Before disassembling the Street Hammer, bleed off all nitrogen pressure in the precharge chamber.

Problem	Cause	Remedy
Hammer does not start.	Pressure and return lines crossed.	Reverse hoses.
	Insufficient impact pressure.	Force tool fully into cylinder housing by pushing down with the carrier. Check direction of check valve.
	Nitrogen precharge is too high.	Check and reset pressure if needed.
	Quick disconnects not opening.	Repair or replace.
	Operating pressure is too low.	Check and reset pressure if needed.
	Fault in electrical circuit.	Check for power at solenoid.
Hammer runs slow.	Insufficient flow of oil.	Increase flow if possible.
	Return oil pressure too high.	Find and repair restriction to return flow.
	Nitrogen precharge is too high.	Check and reset pressure as needed.
	Operating pressure is too low.	Check and reset pressure as needed.
	O-Ring in top of cylinder housing damaged.	Replace O-Ring.
Reduced breaking power.	Nitrogen precharge pressure is too low.	Check and reset as needed.
	Operating temperature is too high.	Correct overheating problem. See Problem: Operating temperature too high on page 10-2.
	Tool binding in bushing.	Repair or replace as needed—check for proper lubrication.
	Return line pressure is too high.	Locate and correct problem.

10.0 OPERATOR TROUBLESHOOTING CHART (cont')

Problem	Cause	Remedy
Operating pressure is too low.	Relief valve set too low.	Reset pressure, check dynamically.
	Damaged relief cartridge or seals.	Inspect and repair or replace.
	Insufficient pump delivery (low flow means low pressure at the hammer).	Check pump with flow meter (check dynamic pressure).
	Flow control not set properly.	Set flow control.
Return line pressure too high.	Failed hoses or blockage at crimp on fitting.	Replace hoses that are frayed or damaged.
	Heat exchanger and return filters.	Change filter and repair or replace plugged heat exchanger.
	Return line connected to valve bank.	Hammer return must bypass valve bank.
	Hoses or fittings too small for installation.	Always use proper hose and fitting sizes.
Operating temperature too high.	Operating pressure too high.	Adjust as needed.
	Excessive leakage through hammer.	Damaged piston. Piston or inner cylinder body were honed-excessive clearance.
	Ambient temperature is high.	A heat exchanger may be necessary — check with carrier manufacturer.
	Tool binding in bushing(s).	Repair or replace as needed. Check for proper lubrication.
	Return line pressure is too high.	Locate and correct problem.
	Damaged seals in cylinder housing top.	Replace damaged seals.
Oil leaks at bottom of cylinder housing.	Damaged seals in inner cylinder body bottom.	Replace damaged seals.

SECTION 11.0 CARE AND MAINTENANCE

11.1 Care and Maintenance Schedule

During Shift

- Lubricate demolition tool every two hours or anytime the tool appears dry. (Refer to Section 8-5.)
- Check lube fitting for damage.

Daily

- Tighten threaded connections (during first 50 hours).
- Check for leaks in hydraulic lines.
- Check that pipe clamps fit correctly.
- Check mounting bracket for wear.

Weekly

- Check threaded connections.
- Check retainer pin and roll pin in cylinder housing for tight fit.
- Check demolition tool for burrs. Pay special attention to slot area.

Every Two Weeks

- Check precharge chamber pressure.
- Check demolition tool for wear.
- Check tool bushing for wear.
- Check hammer box for wear.

Monthly

- Check piston impact surface for dents.
- Check impact surface (top) of demolition tool for chips.
- Check impact surface of tool bushing for cracks, chips, wear or looseness.

As Required

- Replace bent and damaged tubes.
- Replace any damaged hose(s).
- Clean hydraulic oil filter.

11.1.1 Warranty Protection

Maintain written records of Street Hammer maintenance, service and repair. These records will be helpful if warranty coverage is ever in question. Each record shall include :

- The date of service, maintenance or repair.
- A description of the service, maintenance or repair performed. Include part numbers if applicable.
- Copies of purchase order(s) and invoice(s) for repair parts and service.
- The name and signature of the person performing the service, maintenance or repair.

11.2 Care and Maintenance Instructions

Refer to Sections 11.2.1 thru 11.2.13.

11.2.1 Checking Hydraulic Lines for Leaks Before Starting Work

1. Visually check all hydraulic lines (tubes and hoses) from the pump to the hydraulic hammer and back into the tank.
2. Tighten any loose fasteners and hose clamps.
3. Replace any damaged tubes or hoses.

11.2.2 Daily Checking for Cracks

Check the hammer box and mounting bracket for cracks everyday.

11.2.3 Checking Wear to the Tool Bushing

(Refer to Figure 11-1.)

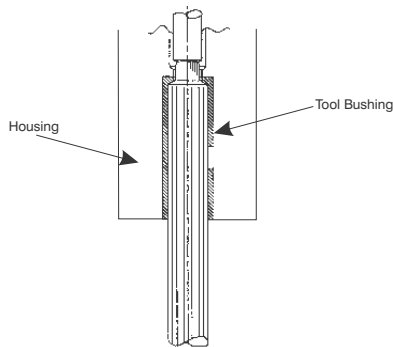


Figure 11-1. Checking Wear Of Tool Bushing

Check the inside diameter of the tool bushing every time the demolition tool is changed and at the least, every 100 operating hours. Determine the allowable diameter from the following table. If the diameter has increased to more than the specified dimension, the tool bushing must be replaced.

Tool Bushing Maximum Allowable Inside Diameter Inches (mm)				
AS 342	AS 352	AS 362	AS 370	AS 380
1.77 (45)	2.17 (55)	2.56 (65)	2.87 (73)	3.27 (83)

11.2.4 Checking Impact Face of Piston for Wear

The impact face of the piston must be checked each time the demolition tool is changed or at least once a month. After the demolition tool has been removed, proceed as follows:

1. Shine a light on the piston’s impact surface and check for dents or chipping.
2. Do not operate the Street Hammer if dents or chips are evident.
3. Contact your authorized Allied service center.

11.2.5 Checking Wear to the Retainer Pin


Check the retainer pin every time the demolition tool is changed. If the retainer pin is worn, with sharp edges, notches or dents, replace it. Carefully smooth off any burrs on the retainer pin.

11.2.6 Checking Wear to the Demolition Tool Tool

(Refer to Figure 11-2.)

Check the demolition tool diameter each time it is changed or at the least, every 100 operating hours. If the shank diameter of the demolition tool has worn to less than the dimension listed in the following table, the demolition tool must be replaced.

Burrs on the shank of the demolition tool and on the retainer pin must be smoothed off carefully. A grinder may be used observing the following CAUTION.

	<p>CAUTION</p> <p>Do not allow the shank of the tool to get too hot if using a grinder to remove burrs.</p>
---	--

Demolition Tool Minimum Allowable Outside Diameter Inches (mm)				
AS 342	AS 352	AS 362	AS 370	AS 380
1.54 (39)	1.93 (49)	2.32 (59)	2.64 (67)	3.03 (77mm)

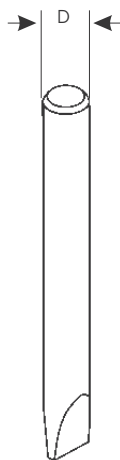


Figure 11-2. Check Wear To Demolition Tool

11.2.7 Check Tightness of Threaded Connections

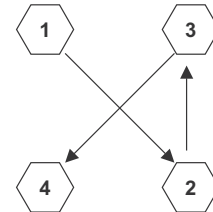
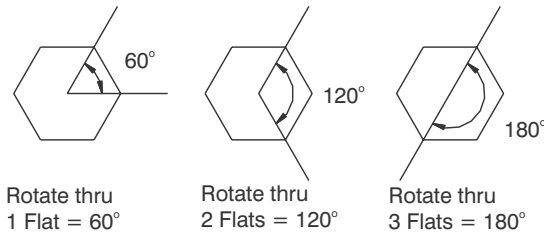
The hydraulic hammer threaded connections are subjected to high stresses. All hydraulic hammer threaded connections must be checked daily for the first 50 operating hours and thereafter once a week. Loose connections shall be tightened to the specified torque. Torques are given for lubricated fittings. Refer to the Torque Table below for applicable connections. The required torque is given in Foot Pounds and Newton Meters in parentheses. Figure 11-3 on the following page shows the item numbers referenced in the table.

Torque Table for Allied Street Hammers Torque in Ft.lbs. (N-m)									
Connection	Item No.	Interval	Tool Required	Tool Size AS342	Torque AS342	Tool Size AS352	Torque AS352	Tool Size AS362	Torque AS362
Cylinder Head Bolts*	1	As Req'd	Socket Wrench	13 mm	**11 (15) +60° (1) +30°(1/2)	17mm	**18 (25) +30° (1/2) +30° (1/2)	17mm	**18(25) +30°(1/2) +30°(1/2)
Fill Valve G	2	Weekly	Open-End Wrench Socket Wrench	22mm 5mm	95(130) 15 (20)	22mm 5mm	95 (130) 15 (20)	22mm 5mm	95 (130) 15 (20))
Connections P & T	3	Weekly	Open-End Wrench	22 mm	44 (60)	26mm	66 (90)	26mm	66 (90)
Lube Fitting	5	As Req'd	Open-End Wrench	14 mm	15 (20)	14 mm	15 (20)	14 mm	15 (20)
Hammer Bracket	6	Weekly	Socket Wrench	15/16"	170 (231)	15/16"	170 (231)	1-1/2"	250 (339)
Connection	Item No.	Interval	Tool Required	Tool Size AS370	Torque AS370	Tool Size AS380	Torque AS380		
Cylinder Head Bolts*	1	As Req'd	Socket Wrench	19 mm	**57) +30°(1/2) +30°(1/2)	19mm	**45 (61) +30°(1/2) +30°(1/2)		
Fill Valve G	2	Weekly	Open-End Wrench Socket Wrench	22 mm 5 mm	95(130) 15 (20)	22mm 5mm	95 (130) 15 (20)		
Connections P & T	3	Weekly	Open-End Wrench	26 mm	65 (90)	26mm	65 (90)		
Lube Fitting	5	As Req'd	Open-End Wrench	14 mm	15 (20)	14mm	15 (20)		
Hammer Bracket	6	Weekly	Socket Wrench	1-1/2"	250 (339)	1-1/2"	250 (339)		

*The cylinder head bolts are only accessible when the hammer is removed from the box.

**See next page.

**A flat is one of the six hexagonal edges of the top of the cylinder head bolts. The number in parentheses () indicates the number of flats that correspond to the number of degrees to be tightened.



In each of the following steps, tighten the tension bolts in a diagonal sequence as shown to the right.

- Step 1: Tighten all bolts to specified torque.
- Step 2: Tighten all bolts specified number of degrees.
- Step 3: Tighten all bolts specified number of degrees.

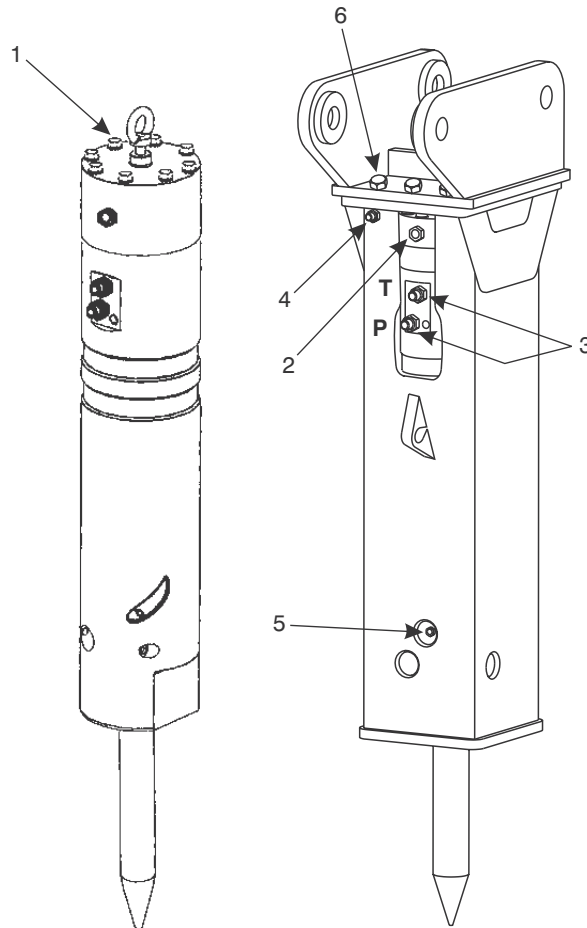



Figure 11-3. Torque Items on Street Hammer

11.2.8 Checking the Nitrogen Precharge Chamber.

(Refer to Figure 11-4.)



WARNING

When checking the chamber, make sure no one is in the vicinity of the demolition tool. If the demolition tool is jammed, an increase in pressure in the chamber may release it suddenly.

Nitrogen Precharge Chamber Pressure Pressure given in PSI (Bar)				
AS 342	AS 352	AS 362	AS 370	AS 380
70°F. (21°C.)				
233 (16.1)	259 (17.8)	237 (16.3)	185 (12.7)	207 (14.3)
150°F. (65°C.)				
270 (18.5)	300 (20.5)	275 (19)	215 (15)	240 (16.5)

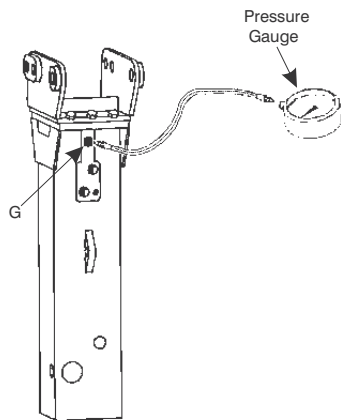



Figure 11-4. Typical Street Hammer Nitrogen Precharge Chamber

1. Clean the area around the fill valve plug **G** on cylinder head.
2. To check the pressure, lay the Street Hammer on its side with no contact pressure on the demolition tool.
3. Remove the screw plug from fill valve **G**.
4. Firmly insert test gauge hose into fill valve. Refer to Figure 11-4.
5. Read the pressure.
6. Refer to the following table for the correct pressure. A tolerance of plus 0/ minus 5 psi is acceptable. Pressures are given for temperatures at 70°F. (21°C.) and 150°F. (65°C.)


7. After pressure reading is obtained, quickly remove test gauge nozzle from fill valve **G**. The fill valve check will automatically close to seal.

8. Replace fill plug in fill valve.



WARNING

Before removing the complete fill valve **G** for repair, the precharge chamber must be totally depressurized or injury could result.




CAUTION

Use only the hose nozzle to relieve the precharge chamber pressure. Using nails, screwdrivers or similar objects will damage the fill valve.

11.2.9 Refilling the Precharge Chamber

(Refer to Figure 11-5.)



WARNING

The nitrogen precharge chamber shall only be filled with 99,8% pure nitrogen gas. Make sure no other gas, e.g. air or oxygen, is allowed into the precharge chamber: **THIS COULD RESULT IN AN EXPLOSION!**

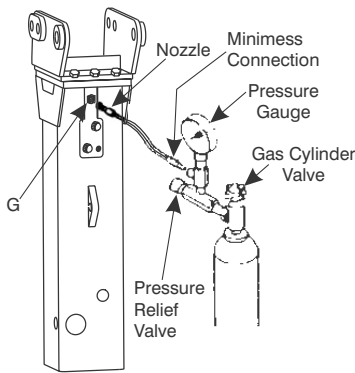



Figure 11-5. Filling the Nitrogen Precharge Chamber

When the pressure in the nitrogen precharge chamber drops more than 15 psi (1 bar) at 70°F. (21°C.) or 20 psi (1.5 bar) at 150°F. (65°C.), the chamber must be refilled as follows:

1. Connect nitrogen regulator valve to nitrogen cylinder.
2. Clean the area around fill valve plug on cylinder head.
3. Connect one nozzle of the filling hose to the nitrogen regulator valve.
4. Back out the nitrogen regulator pressure adjustment.
5. Open valve on nitrogen cylinder.
6. Remove plug from fill valve **G**.

7. Carefully blow out filler assembly to remove any internal foreign matter.
8. Press free nozzle of filling hose into fill valve **G**. Maintain in this position by applying a steady but moderate force.
9. Open the nitrogen regulator valve slowly allowing nitrogen into precharge chamber. Pressure increase can be read on the pressure gauge.
10. Allow approximately 15 seconds for gas chamber in Street Hammer to fill, or, under quiet conditions, until the gas can no longer be heard entering the cylinder head.
11. Close the nitrogen cylinder valve when the reference value has been reached. Quickly remove fill nozzle from fill valve. The fill valve check will automatically close to seal. Refer to the table on page 11-6 for the correct pressure. Pressures are given for temperatures at 70°F. (21°C.) and 150°F. (65°C.)
12. Bleed remaining gas from regulator and disconnect it from nitrogen tank. Recap tank.



CAUTION

Use only the hose nozzle to relieve the precharge chamber pressure. Using nails, screwdrivers or similar objects will damage the fill valve.

- 13 Press free nozzle of test hose into fill valve **G** and read pressure.
14. Make any adjustments necessary so that the correct pressure is set.
15. Close fill valve **G** with screw plug.

11.2.10 Checking The Pins On The Top Mounting Bracket For Wear

Visually check the top mounting bracket pins every time the hammer is removed from the carrier. If the pins show signs of excessive wear, cracks, notches or dents, they must be replaced.

11.2.11 Checking Wear to the Hammer Box

The hammer box shall be checked at least twice a month for cracks or heavy wear. Contact Allied for recommended repair or rebuild procedures.

11.2.12 Checking And Cleaning The Hydraulic Oil Filter

1. On new hydraulic hammer installations, clean the oil filter for the first time after eight (8) operating hours, and the second time after fifty (50) operating hours.
2. Thereafter, check the oil filter every 500 hours and clean if necessary.

11.2.13 Checking And Cleaning The Hydraulic Oil Filter On The Carrier

Refer to the carrier manual and change and clean the oil filter in the carrier as instructed.

11.3 Checking Seals in Cylinder Housing and Body

If the hammer is overheating or running slow, the O-ring inside the top of the cylinder housing, between the body and housing may need to be replaced. When the cylinder body is removed, check all the seals for wear. Refer to Figure 11-6.

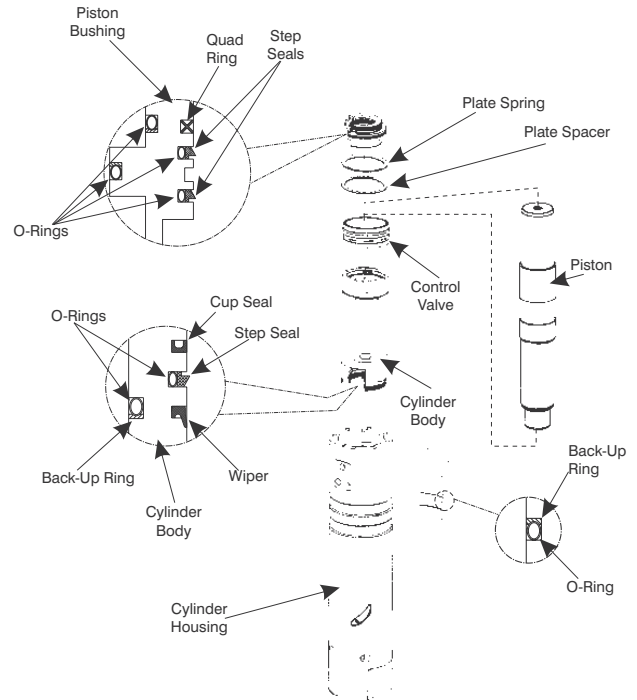


Figure 11-6. Cylinder Housing Internal Components

If the hammer is leaking at the bottom of the cylinder housing, replace the seals at the bottom of the cylinder body. Refer to Figure 11-6.

For seal part numbers, refer to the Allied Parts Manual Seal Kit for the specific model Street Hammer being used.

Use the Allied Puller Bar Assembly to remove the cylinder body from the cylinder housing. The Puller Bar Assembly is also used to install the cylinder housing internal components.

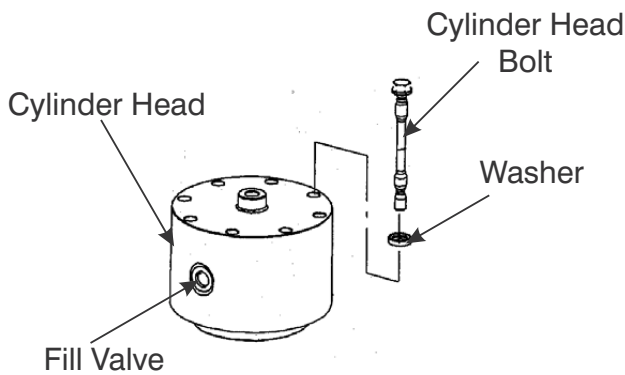


Figure 11-7. Cylinder Head Removal

11.3.1 Remove Cylinder Head

WARNING
 Before removing the Cylinder Head, the precharge chamber must be totally depressurized or injury could result.

CAUTION
 Use only test gauge hose nozzle to relieve the precharge chamber pressure. Using nails, screwdrivers or similar objects will damage the fill valve.

1. Depressurize the precharge chamber by inserting one end of the test gauge hose (supplied with Nitrogen Precharge Kit) into fill valve.
2. When nitrogen is released, it can be heard and pressure can be felt coming out of the hose. When pressure can no longer be heard or felt, the precharge chamber is empty.
3. Remove the Cylinder Head by removing

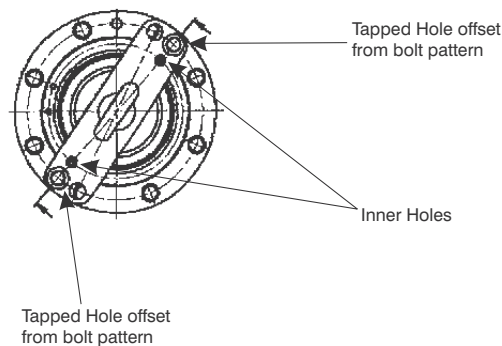
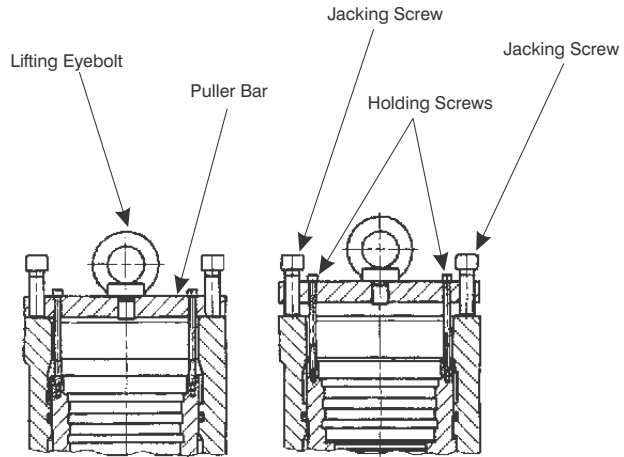


Figure 11-8. Removing Cylinder Body with Jacking Screws

eight Cylinder Head Bolts and Washers.

11.3.2 Cylinder Body Removal

Refer to Figures 11-6 and 11-8.

1. Thread Lifting Eyebolt into top of Piston and pull Piston and Piston Bushing out of Cylinder Body. Refer to Figure 11-6.
2. Remove Plate Spring and Plate Spacer from inside the top of the Cylinder Housing.
3. Remove the Control Valve from the bore in the inner cylinder body.
4. Place puller bar over the top of the Cylinder Housing with small, inner holes lined up over the holes in the Cylinder Body. Refer to Figure 11-8.
5. Insert and tighten the two holding

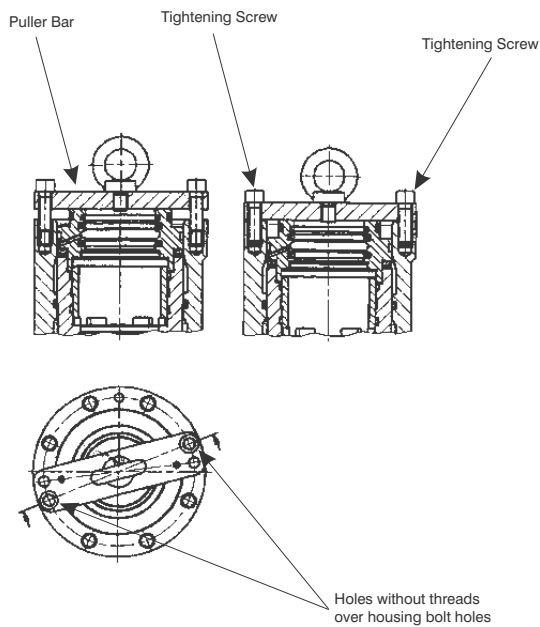


Figure 11-9. Installing Cylinder Housing Internal Components

screws through the puller bar into the tapped holes in the body.

6. Insert the jacking screws in the tapped holes of the puller bar that are offset from the bolt pattern. The jacking screws should press against the upper edge of the housing.
7. Tighten the jacking screws in an alternating pattern to raise the Cylinder Body evenly.
8. When the Cylinder Body has been loosened and raised up by the jacking screws pull it all the way out of the housing using the Lifting Eyebolt threaded into the Puller Bar.
9. Replace damaged seals.

11.3.3 Reassembly

Refer to Figures 11-6 and 11-9.

1. Install seals in bottom of Cylinder Body.
2. Install new O-Ring and Back-Up Ring inside Cylinder Housing.
3. Insert Cylinder Body into Cylinder Housing.
4. Insert Control Valve into Cylinder Body.
5. Insert Piston into Control Valve and Cylinder Body.
6. Install new seals where required on Piston Bushing.
7. Insert Piston Bushing.
8. Insert Plate Spacer, then Plate Spring.
9. Refer to Figure 11-9. Place Puller Bar over the Cylinder Housing with unthreaded holes lined up over housing bolt holes.
10. The screws that were used as jacking screws are now used to press the internal housing components securely into the housing. Tighten these tightening screws in an alternating pattern to press components in evenly.
11. Install Cylinder Head with eight Cylinder Head Bolts and Washers.
12. Fill nitrogen precharge chamber. Refer to Section 11.2.9.

**SECTION 12.0
LIFTING & TRANSPORT**


If the hammer is to be transported independently of the carrier;

1. Remove all loose debris from hammer.
2. Follow removal instructions in Section 7.9.
3. Secure hoses to unit to avoid accidental damage.
4. Lift the hammer at approved lift points only with appropriate lifting equipment. See Figure 12-1.

5. Adequately stabilize and secure the hammer for transport.

If the hammer is transported while installed on the carrier:

1. Remove all loose debris from hammer.
2. Secure hoses to unit to avoid accidental damage.
3. Inspect the mounting pins and hardware for damage and integrity.



WARNING
Do not lift the hammer by the mounting pins. The hammer may shift and cause damage or personnel injury.

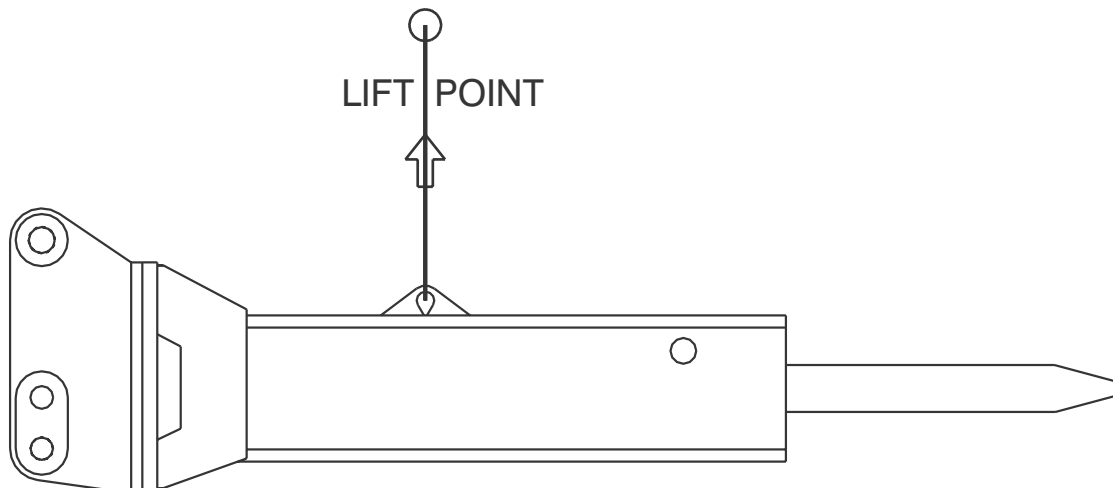


Figure 12-1. Hammer Lift Point

**SECTION 13.0
STORAGE OF THE HAMMER**

13.1 Storing Street Hammer on the Carrier


The Street Hammer shall be stored in the vertical position with the tool pushed all the way in. This lifts the piston into its uppermost position. In this position, the sliding surfaces are covered by oil.

13.2 Short Term Street Hammer Storage off the Carrier—14 Days or Less

1. The Street Hammer may be stored on or off the carrier in a vertical or horizontal position with no special storage requirements.
2. If storing the Street Hammer in a horizontal position, the top of the hammer should be higher than the tool end to prevent water from entering the cylinder housing.
3. If outside, cover with a waterproof tarp.


13.3 Long Term Street Hammer Storage off the Carrier—More than 14 Days

1. Refer to Section 8.4 and remove the demolition tool from the Street Hammer.
2. Drain the nitrogen precharge chamber.
3. Remove the hydraulic hoses.




CAUTION
Several liters of oil will run out when threaded connections **P** and **T** are opened. This oil must be collected and disposed of correctly.

4. Open threaded connections **P** and **T**.
5. Using a rod or tube, push the piston to its highest position.
6. Block the piston with a rod or tube so it cannot return to the down or out position.
7. Fill the connections on the hammer with hydraulic oil.
8. Close threaded connections **P** and **T**.
9. Close the bore for the demolition tool using either the protective plug or a clean rag.



CAUTION
The weight of the piston can cause flattening and damage to the seals and O-rings when storing a Street Hammer in the horizontal position.



CAUTION
Surface condensation on the normally exposed lower area of the piston can cause destructive rust and pitting of the piston in the lower seal contact area.

10. Store the Street Hammer blocked in an upright position or on a stand. The piston must be blocked in the upper position.

12. If possible, stand the hammer upside down. The piston will slide to the top of the hammer.

**CAUTION**

Secure the hammer so that it cannot fall over.

13. If outside, cover hammer with a water-proof tarp.



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