

Hy-Ram

**Hydraulic
Impact
Breaker**

**Model
HR270**



ALLIED

Parts Manual - HY-RAM Series

Keep this manual in a convenient location so that it is easily accessible for future reference. Contact your Allied Dealer or the Allied Customer Service Department for replacement manuals. Inquiries regarding the content of this manual must include effective date shown on inside cover.



PM575472

Contact Information



3900 Kelley Ave

Cleveland, Ohio 44114

Tel: 216-431-2600

Website: www.alliedcp.com

Fax: 216-431-2601

E-mail: sales@alliedcp.com

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Table of Revision History for Parts Manual 575472

<u>Release Date</u>	<u>Page</u>	<u>Description of Change</u>
2014, Sep		Table 6.1 BR bolt part number change 577485 was 90566.
2013, Nov	8	Fig. 5-2 Clarify seal profile to help ensure correct orientation at assembly. Table 4.1 Dimension change to wear plates – Full interchangeability old-to-new is preserved. Part numbers unchanged.
2011, Nov	15	Revise Table 5.1 Correct part numbers 575385, 575393
2011, Sep	10,11	Part number change 101334 was A0607010, 676204 was A2007110, 100097 was A0207070
2011, Aug	17	Revise Table 7.1
2011, Jun	---	Original issue of Parts Manual 575472

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1.0 Introduction

1.1 Purpose and Scope of This Manual

Table 1.1 About This Manual



Document ID.	PM575472
Type	Spare / Replacement Parts List
Current Status*	See Inside Cover
Product Name:	Mounted Hydraulic Impact Breaker
Series	Hy-Ram®
Applicable Model[s]:	HR270
Years of Manufacture:	Begin 2011
*Inquiries regarding this manual must include effective date shown on inside cover	

The material presented in this manual has been prepared in support of the product named in Table 1.1. It's intended solely for use with expressed model(s) and may be unsuitable with models unnamed.

The publication identified in Table 1.1 was created solely for information purposes and should not be considered all-inclusive. If further information is required, contact your local Allied dealer or the Allied Customer Service Department.

Parts Manuals do not include safety precautions or operating procedures. Figures depict views that are intended for parts identification and not for purposes of repair or service of the product. Material presented in this manual, including tables, figures, descriptions and captions, may show equipment that is optional.

How to use this Manual:

The Allied work tool consists of separate components and partial assemblies. Components are identified with the aid of figures, captions, item key, part name and quantity. If needed, 'remarks' and 'specifications' will further clarify the part's description or denote assignment with select unit(s) by serial number.

An order form is provided at the back of this manual. Prior to ordering parts, confirm that the information recorded on the equipment's identification label corresponds with Table 1.1. For the location of this label, refer to Section 2.0 of this manual.

The content of this document has been reviewed for accuracy. Allied Construction Products, LLC has

endeavored to deliver the highest degree of accuracy and every effort has made to provide information as complete as possible. However, continuous improvement of our products is an Allied policy. The material in this publication, including figures, captions, descriptions, remarks and specifications, describe the product at the time of its printing, and may not reflect the product in the future. A table of revision history for this document is found on the inside cover.

1.2 How To Order Replacement Publications

This manual is an integral part of this product. Keep it in a convenient location so that it is easily accessible for future reference. If replacement manuals are required, they may be ordered by contacting your Allied dealer service center. Manuals may also be viewed and downloaded at: www.alliedcp.com

1.3 Related Publications

Allied Construction Products, LLC offers the following publications for the product identified in Table 1.1.

1.3.1 Safety, Operation & Maintenance Manual

SOM577202

Applicable Models: Hy-Ram Series HR270-HR290

The Safety, Operation and Maintenance Manual has been prepared to assist the operator and maintenance personnel with the information necessary for the safe and proper use of the Allied work tool.

Material Content of Safety, Operation & Maintenance Manual includes:

Safety Information

Equipment Serial Number and Model Identification

Basic Guidelines for Installation and Set-up

Pre-Operation Inspection

How to Operate the Allied Work Tool

Maintenance Schedule

N2 Gas Charging Instructions

Tool and Guide Bushing – Lubrication, Inspection,

Wear Limits and Replacement

Troubleshooting

Removal From Carrier, Transporting, Lifting & Storage

Technical Data (Weight & Dimensions)

1.0 Introduction

1.3.2 AEM Safety Manual for Hydraulic Breakers

AEM Safety Manual for Hydraulic Breakers
The Association of Equipment Manufacturers offers a safety manual designed for operators and maintenance personnel of hydraulic mounted breakers. The manual is available in Spanish, French and English. It is published in an illustrated format of sensible do's and don'ts, featuring typical daily situations on the job site. Content includes safety tips concerning the workplace and equipment, start up and shut down guidelines and special operating and maintenance precautions.

This publication is available by contacting:
Association of Equipment Manufacturers
Toll free 1-866-AEM-0442
E-mail: aem@aem.org
Website: www.aem.org

Ask for FORM CMHB-1004, Hydraulic Mounted Breakers.

This publication is also available through Allied under part number 953076 (English). To order a copy, contact the Allied Customer Service Department.

2.0 Equipment Identification

1.1 Serial Number Location

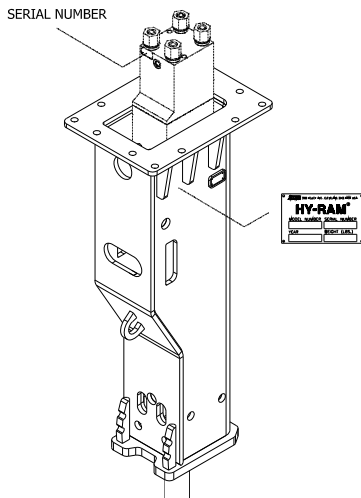


Fig 2-1 Equipment Identification

Refer to Figure 2-1. The Serial Number assigned to this equipment can be found in the following locations:

1. Stamped on the Equipment Identification Tag
2. Stamped on the back head near the N2 gas valve.

2.2 Equipment Identification Tag

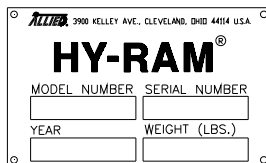


Fig 2-2 Equipment Identification Tag

The Equipment Identification Tag is affixed to the housing. It provides the following information:

- Manufacturer's name
- Address
- Product name
- Model number
- Serial number
- Year of manufacture
- Weight

Confirm that the information contained on the Tag corresponds with the information provided in Section 1, Table 1.1.

2.3 Owner's Record of the Equipment

Your local Allied dealer requires complete information about the equipment to better assist you with questions regarding parts, warranty, operation, maintenance, or repair.

- Record the equipment's serial number to the space provided below. This information may be obtained from the Equipment Identification Tag. Refer to Fig 2-1 for the location of the tag.
- Indicate the date in which the Allied equipment was placed into service.
- Indicate the date in which the Warranty Registration form was completed and returned to Allied.

Product Name: Hydraulic Breaker

Series: Hy-Ram

Model: HR270

Part Number: 575273

Serial Number: _____

In Service Date: _____

Registration Date: _____



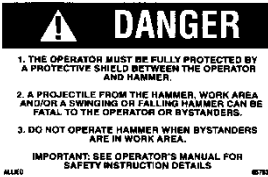
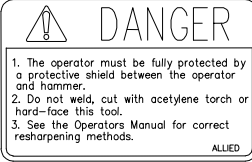

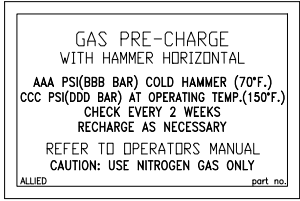
3.0 Safety, Identification & Information Labels

3.1 Label Description and Location On Equipment

Labels affixed to the Allied equipment communicate important information. Safety warnings alert of potential hazards, while other labels provide equipment identification and instructions important to operation and service.

Keep safety labels clean. Words and illustrations must be legible. Replace damaged or missing labels before operating this equipment. Refer to Figure 3-15 for their placement on the equipment. The part numbers for labels are found in Table 3.2.

Table 3.1 Label Description

Fig.	Label	Description
3-1		Read The Manual - Safety Alert Symbol with pictogram of open book. Gives notice of the importance of reading the manual(s) for information and/or instructions.
3-2		Keep Clear - Pictogram displays arrow distancing worker safely from recognized hazard which is represented by the box. Breakers, or any other work tool, pose risk of injury to workers if they are not kept at a safe distance. Never operate the work tool with workers inside the work zone.
3-3		Flying Debris Hazard – Alerts personnel to the hazard of fragments becoming projectiles. A protective guard to shield the operator must be installed before operation of the breaker. Personnel are directed to the Operator’s Manual for safety instructions. NOTE: A smaller sized version of this decal is to be displayed in a conspicuous location inside the operator’s cab.
3-4		Personal Protection Equipment / Tool Re-sharping – Alerts personnel to provide protective shielding between the operator and breaker. It also warns against welding, cutting, or hard-facing the tool. Personnel are directed to the Operator’s Manual for approved resharping methods.
3-5		Pressurized Nitrogen Accumulator – Alerts personnel to the presence of the accumulator, warning of nitrogen gas under pressure. Directs personnel to the Operation and Maintenance Manual for safe handling service instructions.
3-6		GAS PRE-CHARGE – Alerts personnel to the presence of gas under pressure inside the back head. Outlines measuring / charging procedures, including – <ul style="list-style-type: none"> • Maintenance interval – every 2 weeks • Proper position when measured / charged • Charge pressure when COLD vs. HOT • Refers personnel to the Operation and Maintenance Manual • Caution alerts personnel to use nitrogen gas only
3-7	REMOVED	

3.0 Safety, Identification & Information Labels

Table 3.1 Label Description – cont'd

<u>Fig.</u>	<u>Label</u>	<u>Description</u>
3-8		LUBRICATION – Decal provides re-lubrication frequency. Risk of equipment damage through unapproved methods. Strict attention to all procedures must be followed. Stand breaker upright with contact pressure applied at tool. OK to lube.
3-9		Lubrication Point – Pictogram of instruction manual and grease gun is used to identify lubrication points. Read the manual(s) for application instructions, grease type and re-lubrication schedule.
3-10		Lift Point – Pictogram of hook identifies approved lift points for safe handling.
3-11		OIL SUPPLY LINE "PRESSURE" I.D. TAG – A red colored cable tie marked "PRESSURE LINE" is attached to the supply hose for ease of identification between hoses.
3-12		ALLIED LOGO – This decal is the Allied brand identifier and is a registered trademark of Allied Construction Products, LLC.
3-13	HR270	MODEL – Decal identifies the series and specific model.
3-14		EQUIPMENT ID TAG - Contains identifying information about the equipment, including: Manufacturer's name, address, product name, model number, serial number, year of manufacture, and weight.

3.0 Safety, Identification & Information Labels

Table 3.1 Label Set

<u>Item</u>	<u>Description</u>	<u>Part No.</u>	<u>Qty</u>	<u>Remarks / Specifications</u>
---	Label Set	575482	1 (Set)	Set includes Items 1 thru 13
1	Decal – Read Instructions	676984	1	
2	Decal – Stay Clear	840156	2	
3	Decal – Danger (Large)	657840	1	
---	Decal – Danger (Small)	657839	1	Display in conspicuous location inside cab
4	Decal – Tool Sharpening	657838	1	
5	---	---	---	
6	Decal – Back Head N2 Pressure	676896	1	
7	Removed	---	---	Use is Discontinued
8	Decal – Lube w/ Tool In	677334	1	
9	Lubrication Point	A101725	1	
10	Decal – Lift Point	676982	1	
11	Pressure ID Tag	818676	1	Identifies oil supply line [IN]
12	Decal – Allied	676655	1	
13	Decal – Model HR270	575492	1	
14	Equipment ID Plate	658833	1	Item 14 is not included in Set

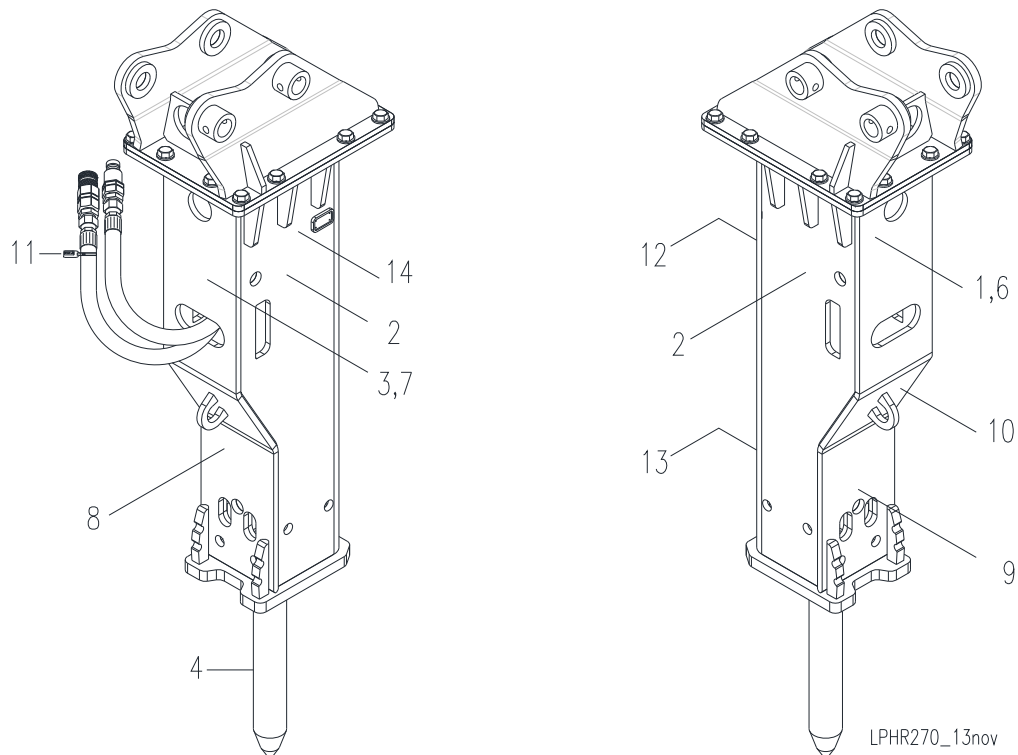


Fig. 3-15 Label Placement

4.1 Housing Box and Components

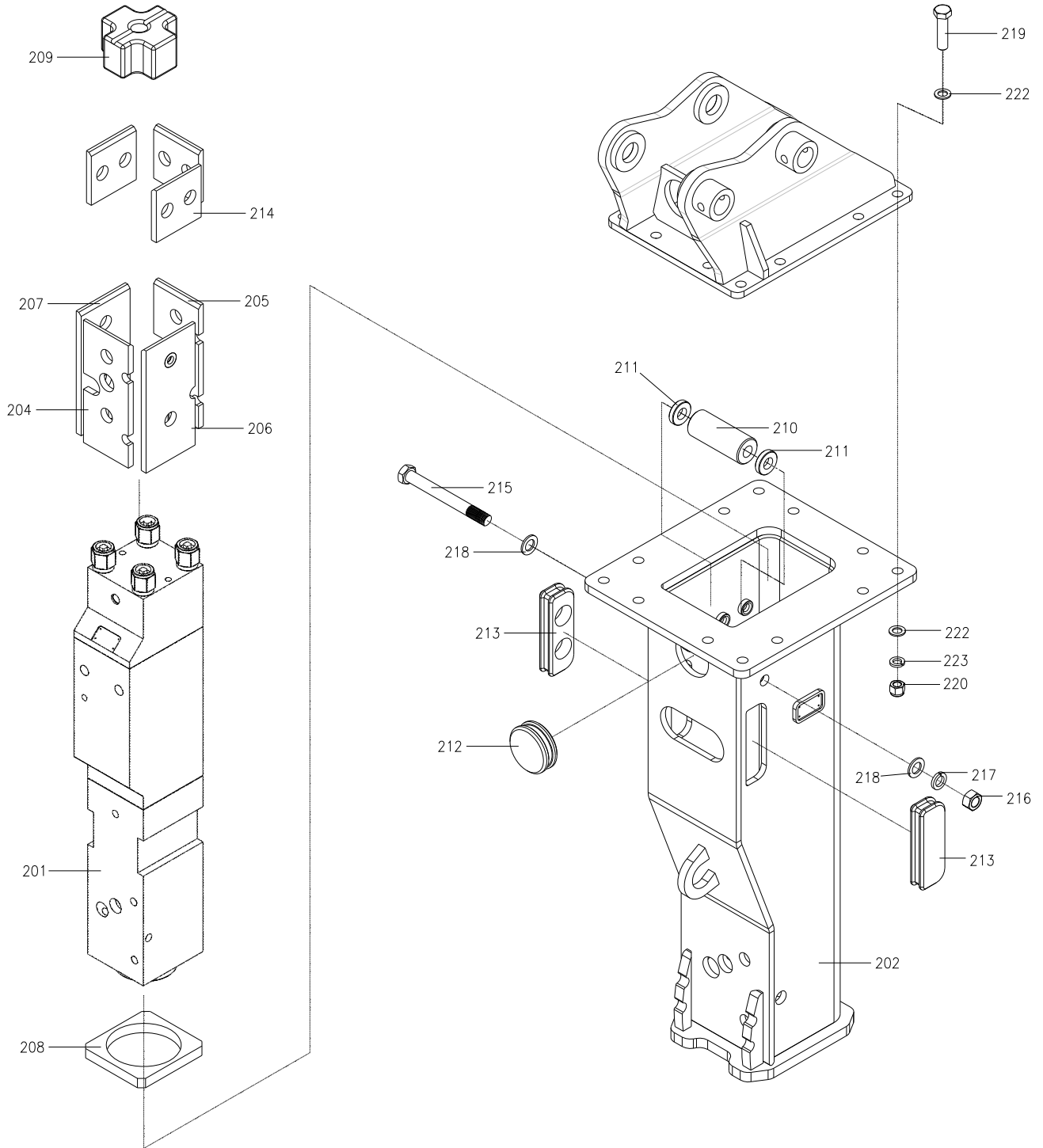


Fig. 4-1 Housing Box & Components

4.1 Housing and Components

Table 4.1 Housing & Components

<u>Item</u>	<u>Description</u>	<u>Part No.</u>	<u>Qty</u>	<u>Remarks / Specifications</u>
---	HYRAM HR270	575273	1	Standard Configuration - BR
201	Breaker Assembly	-	1	
202	Housing Box-BR	575547	1	Standard Configuration - BR
203	Mounting Bracket	Varies	---	Not included. Order separately. Section 6
204	Wear Plate	A0602100	1	¹⁾ Dimension change – interchangeable old-to-new
205	Wear Plate	A0602110	1	¹⁾ Dimension change – interchangeable old-to-new
206	Wear Plate	A0602120	1	¹⁾ Dimension change – interchangeable old-to-new
207	Wear Plate	A0602130	1	¹⁾ Dimension change – interchangeable old-to-new
208	Base Buffer	A0602140	1	
209	Top Buffer	A0602150	1	
210	Side Buffer	A0602160	1	
211	Side Washer	A0602170	2	
212	Front Rubber	A0602180	1	
213	Side Rubber	A0602190	2	
214	Wear Plate	A0602200	3	¹⁾ Dimension change – interchangeable old-to-new
215	Side Joint Bolt	HB2025235	1	
216	Hex Nut	100087	1	M20
217	Washer	100088	1	
218	Washer	667628	2	
219	Bolt	---	---	For items 219,220,222,223 Refer to Section 6
220	Nut	---	---	
222	Washer	---	---	
223	Washer	---	---	

¹⁾ Dimension change to wear plates – Full interchangeability old-to-new is preserved. Part numbers unchanged.

4.2 Breaker Assembly

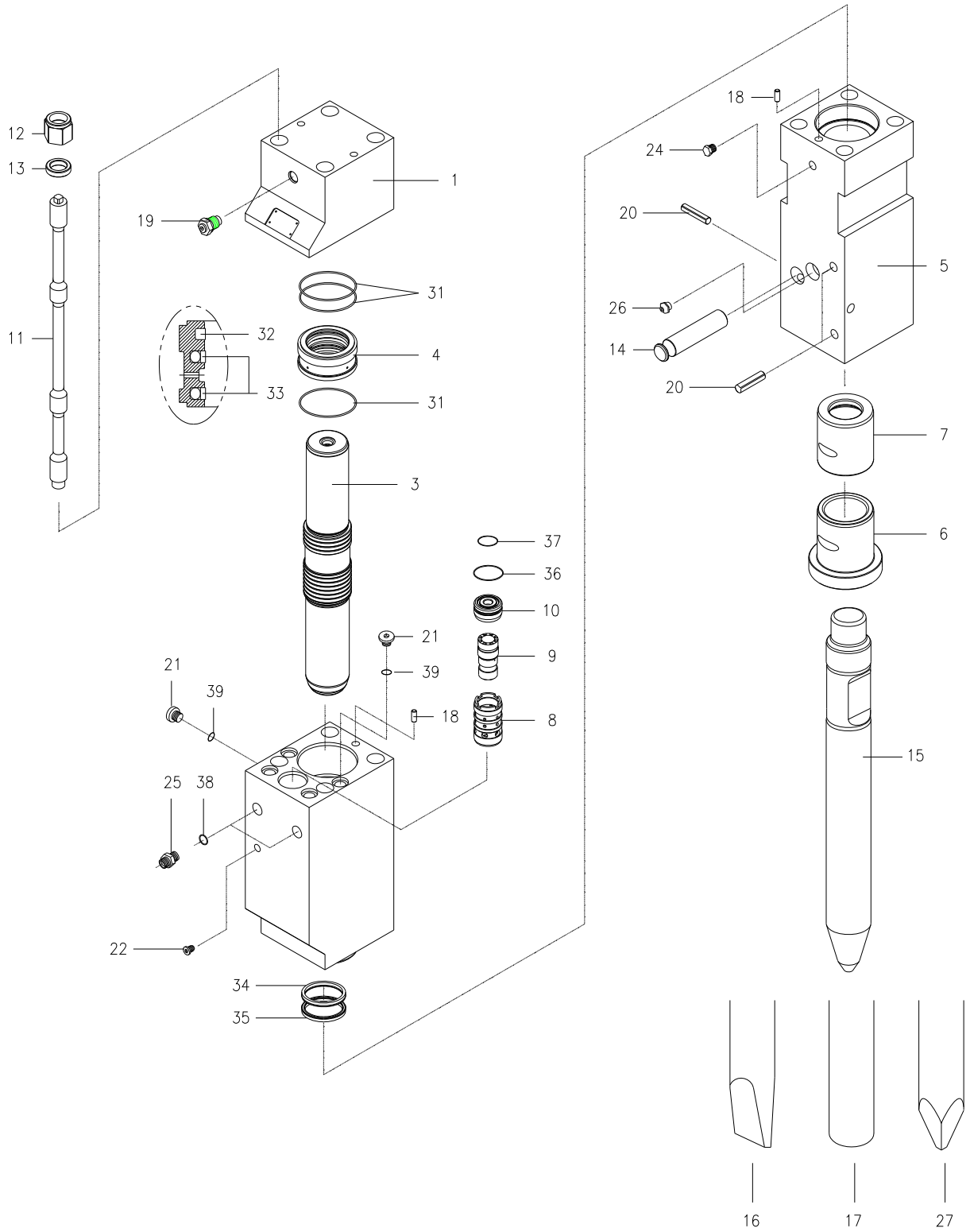


Fig. 4-2 Breaker Assembly

4.2 Breaker Assembly

Table 4.2 Breaker Assembly

<u>Item</u>	<u>Description</u>	<u>Part No.</u>	<u>Qty</u>	<u>Remarks / Specifications</u>
1	Back Head	A0606010	1	
2	Cylinder	A0606020	1	
3	Piston	A0606030	1	
4	Seal Housing	A0606040	1	
5	Front Head	A0606050	1	
6	Tool Bushing	A0606060	1	
7	Upper Bushing	A0606170	1	
8	Oper. Valve Guide	A0606070-01	1	
9	Oper. Valve Spool	A0606080-01	1	
10	Valve Plug	A0606090-01	1	
11	Side Rod	A0606100	4	
12	Side Rod Nut	A0606110	4	
13	Side Rod Washer	A0606120	4	
14	Tool Pin	A0606130	1	
15	Tool Selection	Varies	1	Items 15, 16, 17, 27 refer to Section 4.4
18	Guide Pin	676183	2	
19	Gas Charging Valve	A3006590	1	
20	Spring Pin	SP160000	3	
21	Socket Plug	A0606180	5	
22	Socket Plug	676159	1	
24	Socket Plug (Ed-Or)	102241	1	
25	Adapter	865313	2	
26	Grease Nipple	816675	1	
27	Tool Selection	Varies	1	Items 15, 16, 17, 27 refer to Section 4.4
31	O-Ring	101334	3	
32	Gas Seal	A0607020	1	
33	Step Seal	A0607030	2	
34	U - Packing	A0607110	1	
35	Wiper	A0607120	1	
36	O-Ring	571815	1	
37	O-Ring	676204	1	
38	O-Ring	100097	2	
39	O-Ring	A2507380	5	

4.3 Hydraulic Connections

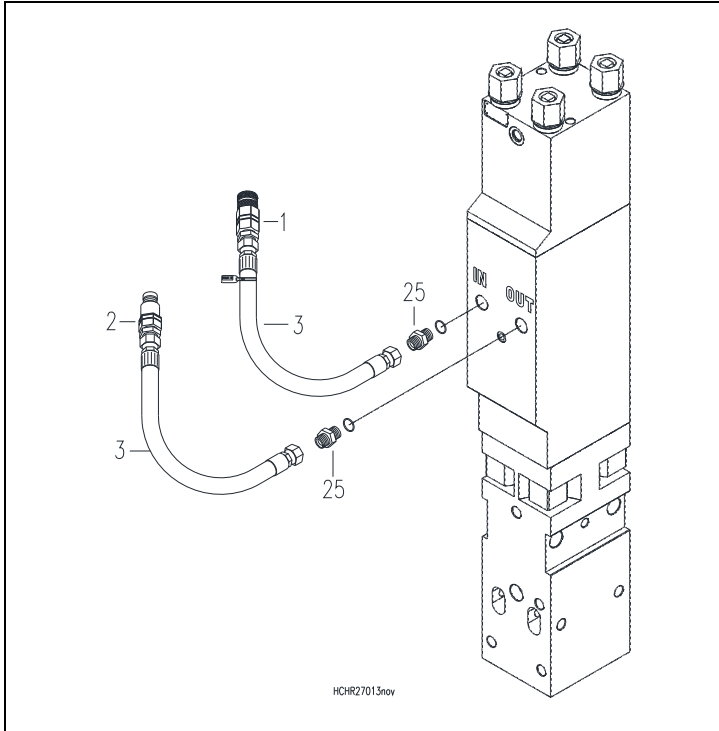


Fig. 4-3 Hydraulic Connections

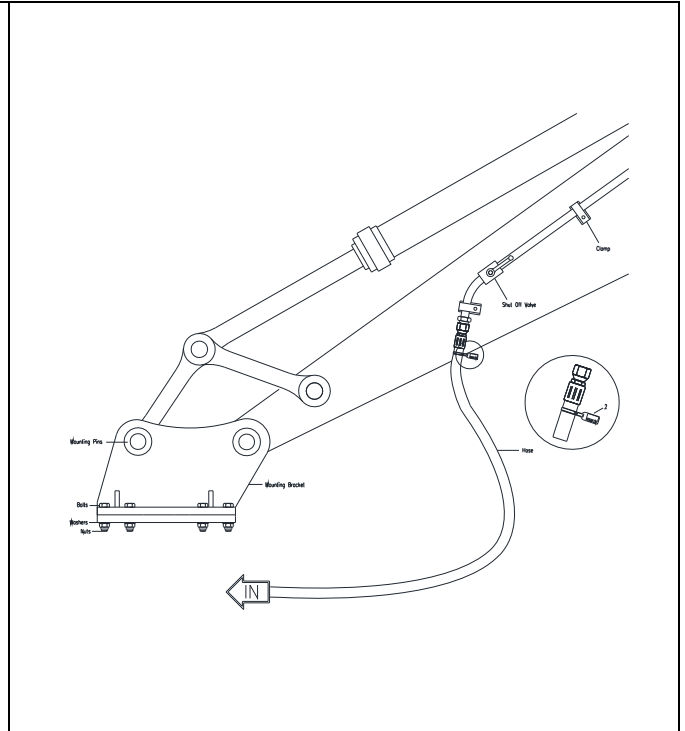


Fig. 4-4 Connections to Carrier - Typical

Table 4.3 Hydraulic Connections

<u>Item</u>	<u>Description</u>	<u>Part No.</u>	<u>Qty</u>	<u>Remarks / Specifications</u>
1	Quick Disconnect - Socket	101571	1	
2	Quick Disconnect - Plug	101570	1	
3	Hose	575533	2	
25	Adapter	865313	2	

4.4 Tool Selection

4.4.1 Tools - Standard Type

The three most commonly used tool points for concrete demolition rock cutting and boulder reduction are the Conical, Chisel and Blunt.

A. Chisel (Wedge – Cross Cut or In-Line) – Suitable applications include soft rock and general demolition of concrete. The tool penetrates into the material, forcing it to separate. Useful when cutting action is required, e.g. benching and trenching.

B. Conical Point - Same applications as the chisel. The conical point penetrates the material and its shape makes it less prone to twisting which can lead to burring of the tool's retainer pin.

C. Blunt Tool – Designed for impact breaking. The blunt tool is effective in secondary breaking of oversize rock or boulder reduction.

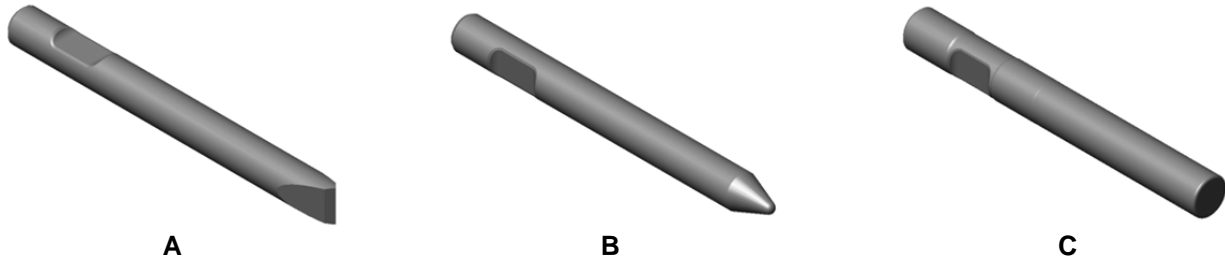


Fig. 4-5 Standard Tool Types A thru C.

4.4.2 Tools - Specialty Type

Specialty tools have a specific purpose or function designed into each tool. These tools can extend the versatility of a hammer, thus increasing productivity and eliminating the need for additional equipment.

For availability of tool types not listed, contact Allied.
*Not available for all models.

D. Post Driver – For driving posts, pipes, etc.

E. Tamper – Designed to compact loose material.

F. Frost Cutter – For cutting into frozen ground.

G. Asphalt Cutter – Designed to cut seams in asphalt for removal. Useful when removing asphalt to dig a trench. Available in Cross-Cut and In-Line configurations.

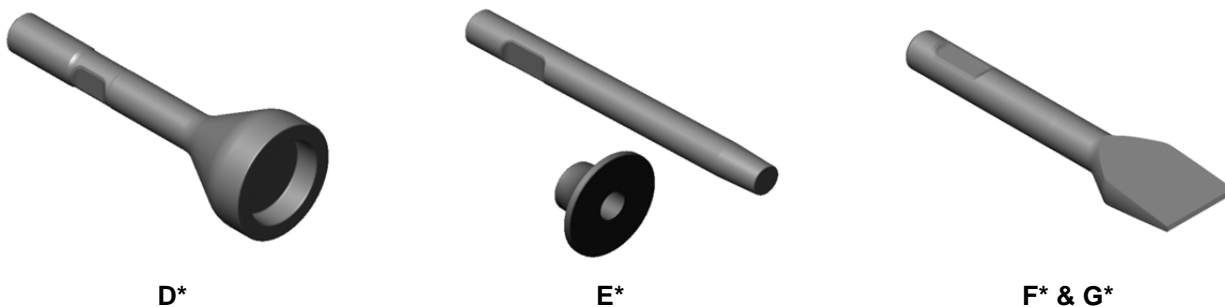


Fig 4-6 Specialty Tool Types D thru G.

General illustrations shown. Actual design may vary.

4.4 Tool Selection – [cont'd]

Table 4.4 Tool Selection

Item	Description	Part No.	TD x WL in. [mm]	Weight lbs. [kg.]
15-B	Conical Point	575383	2.68 [68] x 12.2 [310]	38.6 [17.5]
16-A¹	Chisel Cross Cut	575263	2.68 [68] x 12.2 [310]	38.6 [17.5]
---	Chisel In-Line	--- ²	---	---
17-C	Blunt End	575393	2.68 [68] x 12.2 [310]	41 [18.7]
27 ²	Pyramid (Not Pictured)	--- ²	2.68 [68] x 12.2 [310]	38.6 [17.5]

¹ **Standard tool supplied with Breaker in Bold**

² For availability of tool types not listed, contact Allied

³ TD - Tool Diameter

⁴ WL - Working Length

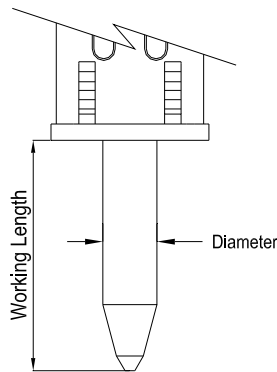


Fig. 4-7 Tool Working Length

4.5 Tool & Bushing Lubrication

4.5.1 Allied Chisel Paste

Wear costs money, sometimes lots of money. Without lubrication to prevent metal-to-metal contact, bushings and tools will quickly wear from friction related damage.

A key element in managing wear of the bushing and tool is through the regular use of a high-quality lubricant. Formulated as a 'specialty' lubricant, Allied Chisel Paste is ideally suited for use in applications requiring long-lasting protection against damage from heavy loaded, sliding motion and high heat.

Allied Chisel Paste performs exceptionally well in this application due to its 'unique blend' of liquid and dry film lubricants. Dry film lubricants, which include solids of molybdenum, graphite and copper, combine to form a highly effective layer that resists being squeezed out during periods of heavy loading (extreme pressure).

Grease labeled 'General / Multi-Purpose' will typically contain only modest amounts of solid lubricants or none at all. When the tool is loaded against the bushing, the liquid lubricant is squeezed out, leaving metal surfaces unprotected.

Table 4.5 Chisel Paste Packaging & Ordering Information

Container	Packaging	Part No.
14.5 oz Tubes*	Qty x 10	574430
14.5 oz Tubes*	Qty x 30	574431
35 lb Bucket	Qty x 1	676698
120 lb Drum	Qty x 1	679968

*14.5 oz. cartridge fits standard grease gun

Allied Chisel Paste Specifications

- NLGI Grade - No. 2
- Thickener Type – Calcium sulfonate complex
- Solids include graphite and copper
- Dropping Point ° F (° C), min. – 500 (260)
- Oil Viscosity @ 100° F (40° C) – 200-240
- Application methods include brushing, grease gun and all Allied automatic grease dispensers

IMPORTANT
Application Restriction - Chisel Paste is NOT suitable for use with roller type bearings.

5.0 Service Kits and Tools

5.1 Tune-up Kit

All breakers require regular maintenance and periodic parts replacement. Follow the recommended service schedule to maintain reliable service.

Tune-up kits can help restore performance by replacing common wear parts. Tune-up kits offer the convenience of combining parts that usually need to be replaced at the same time into a single package.

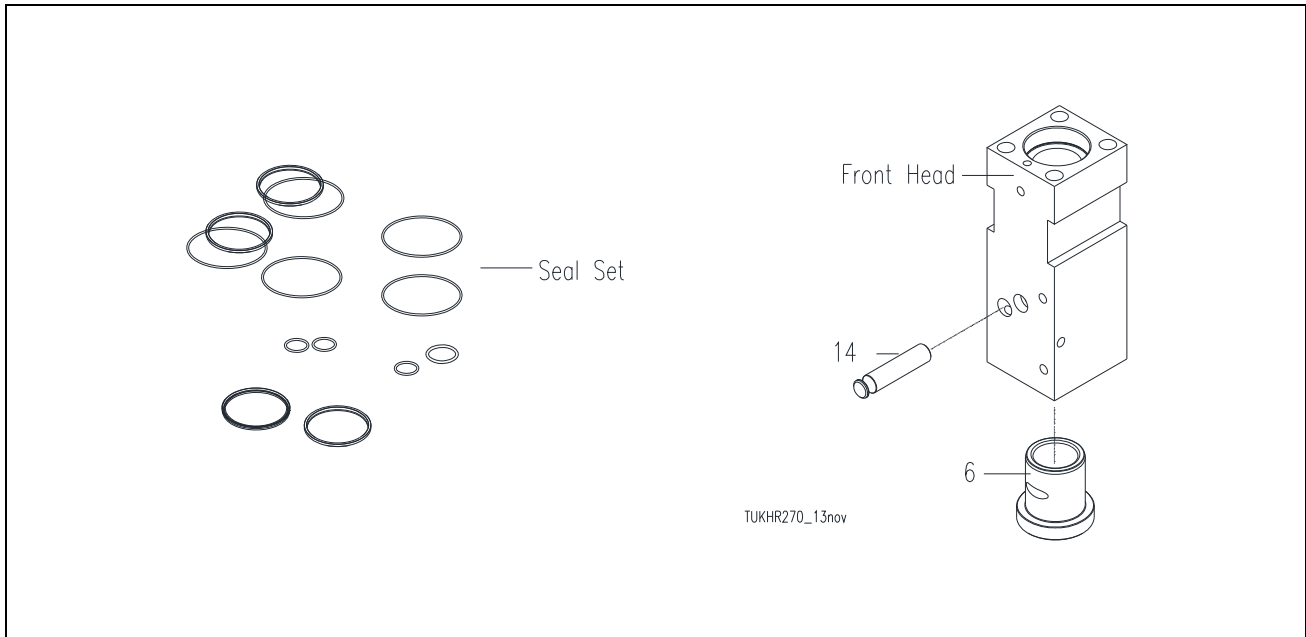


Fig. 5-1 Tune-up Kit

Table 5.1 Tune-up Kit

<u>Item</u>	<u>Description</u>	<u>Part No.</u>	<u>Qty</u>	<u>Remarks / Specifications</u>
---	Tune-up Kit	575404	1	Kit includes all items in Table 5.1
---	Seal Set	575414	1	Includes all items in Table 5.2
6	Tool Bushing	A0606060	1	
14	Tool Pin	A0606130	1	

5.1 Seal Set

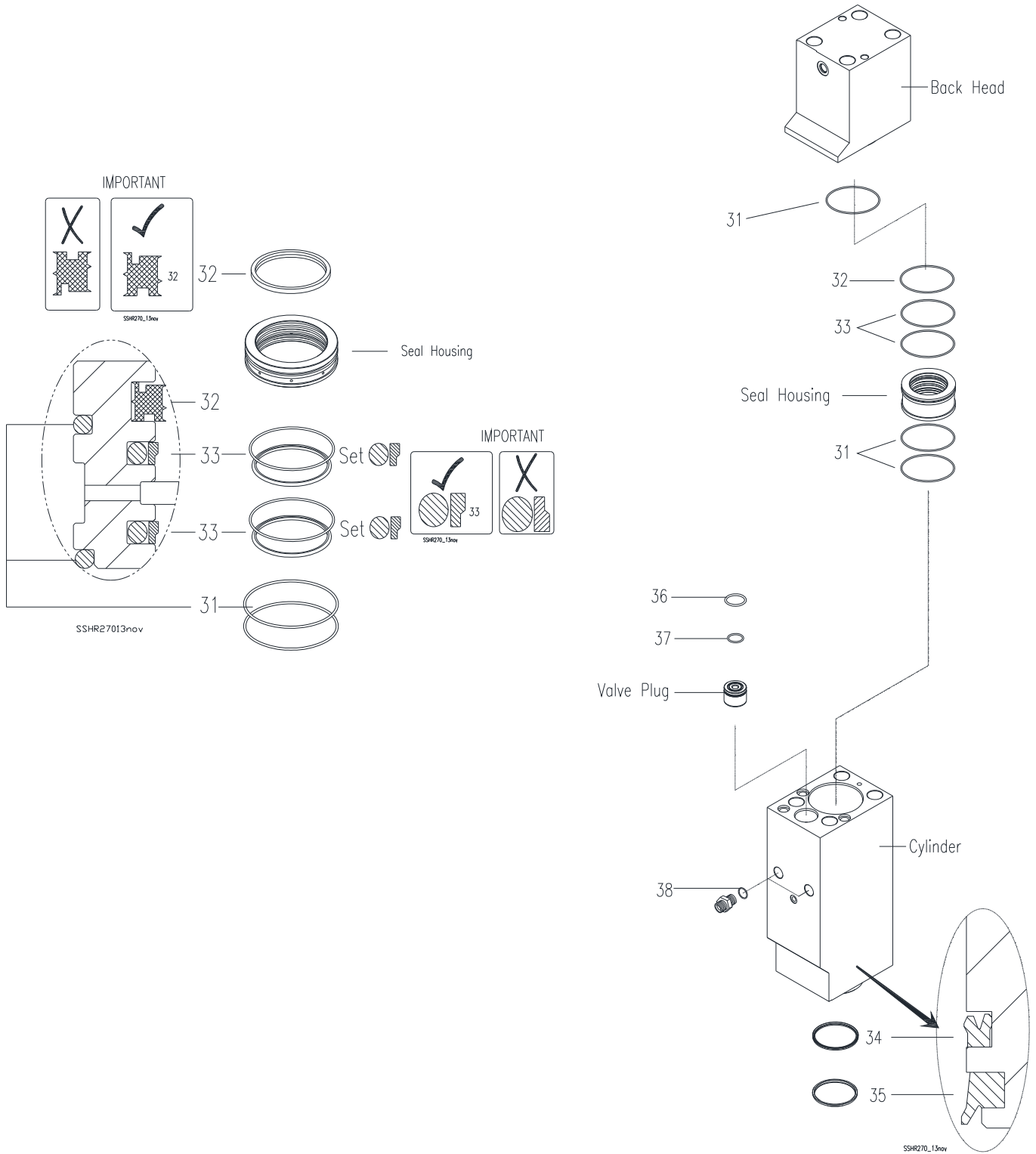


Fig. 5-2 Seal Positions - 575414



Follow Assembly Instructions

5.1 Seal Set

Table 5.2 Seal Set

Item	Description	Part No.	Qty	Remarks / Specifications
---	Seal Set	575414	1	Set includes items 31-39 & thread lube
31	O-Ring	101334	3	
32	Gas Seal	A0607020	1	
33	Step Seal	A0607030	2 Sets	Each set includes O-ring & step seal
34	U - Packing	A0607110	1	
35	Wiper	A0607120	1	
36	O-Ring	571815	1	
37	O-Ring	676204	1	
38	O-Ring	100097	2	
39	O-Ring	A2507380	5	
---	Thread Lube	676927	1	Follow application instructions

IMPORTANT

Contamination interferes with reliable operation and will shorten component life. Prevent dirt and debris from entering the hydraulic system. Always work in a clean area. Keep seals properly stored in their original, sealed package until ready for use.

IMPORTANT

Thread Lube provided with seal set is for side rod threads at time of assembly. DO NOT apply Thread Lube to seals!

5.0 Service Kits and Tools

5.3 N2 Gas Charge Tool - General Description

The back head is pressurized with nitrogen gas. Proper function of the breaker is accomplished through accurate charging. The same charging tool is used to check and fill the back head and the accumulator¹⁾. **NOTE: Source the nitrogen bottle locally.**

The accumulator¹⁾ is a self-contained pressure vessel with an elastic membrane dividing the inner chamber. The lower chamber is used to receive, store and discharge pressurized oil. Pressurized gas is stored in the upper chamber. Reliable operation of the breaker along with optimal membrane life is accomplished through proper filling of the gas charge.

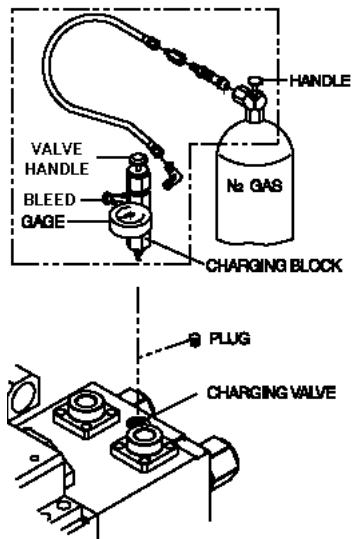


Fig. 5-3 Back Head Charge

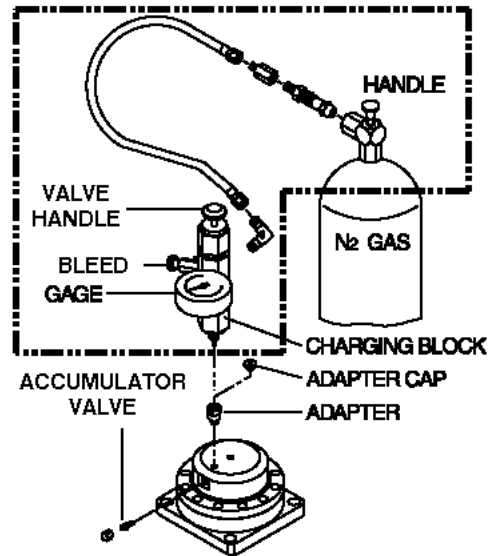


Fig. 5-4 Accumulator Charge

Table 5.3 N2 Gas Charge Tool

Item	Description	Part No.	Qty	Remarks / Specifications
1	N2 Gas Charge Kit	575427	1-Kit	Kit includes items 2,3,4,5
2	Charge Valve with Gauge	---	1	"Charging Block"
3	Extension	---	1	"Adapter"
4	Hose	---	1	
5	Adapter - Gas Bottle	---	1	
6	Gas Bottle - Nitrogen Gas N2	Not Available	1	Source Locally



For your safety, read, understand and follow all instructions given in Operation & Maintenance Manual 577202 for the safe and proper use of this tool.

¹⁾ Not all Hy-Ram models are equipped with an accumulator

6.0 Mounting Information

6.1 Mounting Bracket – Not Included

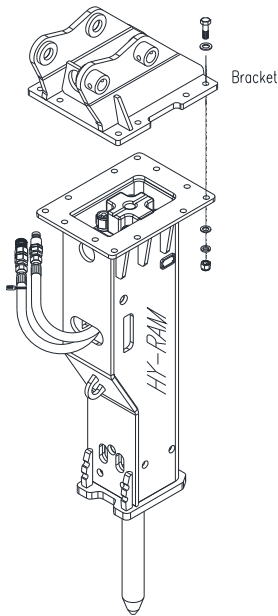


Fig. 6-1 Housing Box, Mounting Bracket & Bolt Set

Hy-Ram series breakers come without mounting. Allied offers an array of mounting brackets to fit virtually any carrier, including those equipped with pin-grab or hook style mounting couplers.

To order a mounting bracket, complete information about the carrier (and coupler) is required: including the make, model, series and serial number.

6.2 Connection Plate

The mounting bracket is bolted to the connection plate located at the upper end of the housing box. Dimensions of the connection plate, including thickness, spacing, quantity and diameter of the bolt holes, will vary between small, medium and large size breakers. Dimensions for the connection plate can be found in Operation & Maintenance Manual.

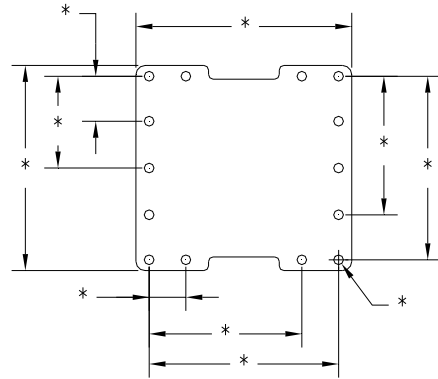


Fig. 6-2 Connection Plate – Dimensions Vary

In Table 6.1, 'Family' identifies the connection plate that's been appointed to the standard housing box. Other work tools from Allied, including the Ho-Pac[®], share the same Family types.

Table 6.1 Mounting Family & Hardware (QTY)

Family	Model	Bolt	FL Washer	LK Washer	Nut
XR	HR175	575555 (7)	667628 (7)	100088 (7)	575652 (7)
XR	HR230	901382 (7)	667628 (7)	100088 (7)	575652 (7)
BR	HR270	577485 (12)	921825 (24)	056245 (12)	90548 (12)
BR	HR290	577485 (12)	921825 (24)	056245 (12)	90548 (12)
SR	HR330	575556 (12)	798064 (24)	100088 (12)	575652 (12)
SR	HR390	951390 (12)	798064 (24)	100088 (12)	575652 (12)
MR	HR470	575557 (12)	901291 (24)	658529 (12)	90507 (12)
MR	HR560	575557 (12)	901291 (24)	658529 (12)	90507 (12)
LR9	HR600	90520 (12)	573029 (24)	573028 (12)	90519 (12)
LR10	HR710	573167 (12)	573029 (24)	573028 (12)	90519 (12)



Always follow the recommended tightening torque of all fasteners. These can be found in the Operation and Maintenance Manual 577202.

7.0 How To Order Spare Parts

Your local Allied dealer requires the Product Name, Model and Serial Number to better assist you with questions regarding parts, warranty, operation, maintenance, or repair. This information should be noted in Section 2.3 of this manual.

Product Hy-Ram Series Breaker
 Model HR270
 Serial No. _____

Please fill out completely

Line	Description	Part Number	Quantity	Price
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Your contact information

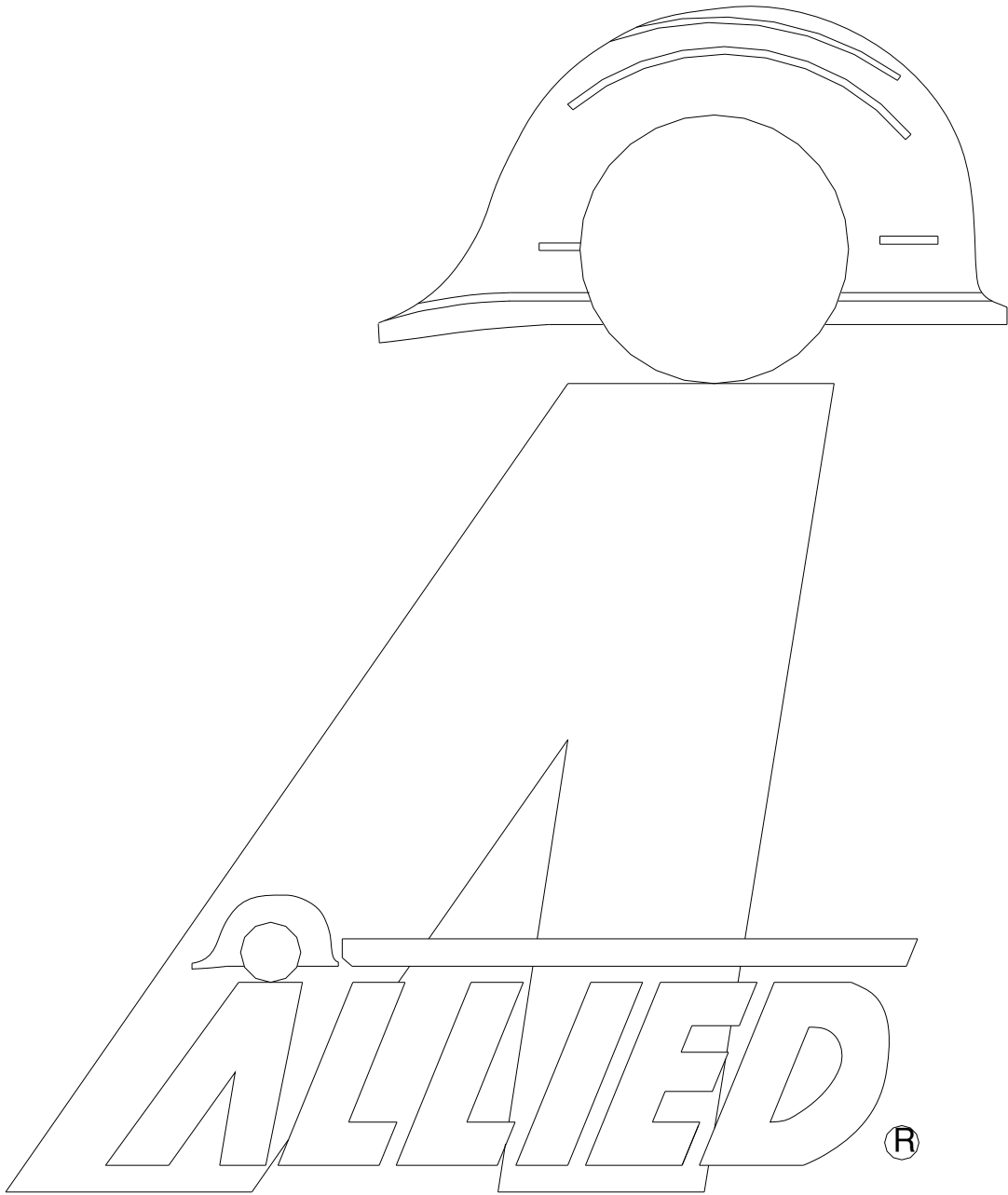
Your Name _____ Company Name _____
 Phone _____ Account Number _____
 Fax _____ Purchase order _____
 Email _____ Shipping carrier _____

*See note below

Billing Address _____ Shipping Address _____

***Note: All backordered parts will be shipped when available via the same method as the original order unless initialed and checked below:**

Initials _____
 Ship complete order only
 Ship available parts and contact customer on disposition of backordered parts
 Other – specify below



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