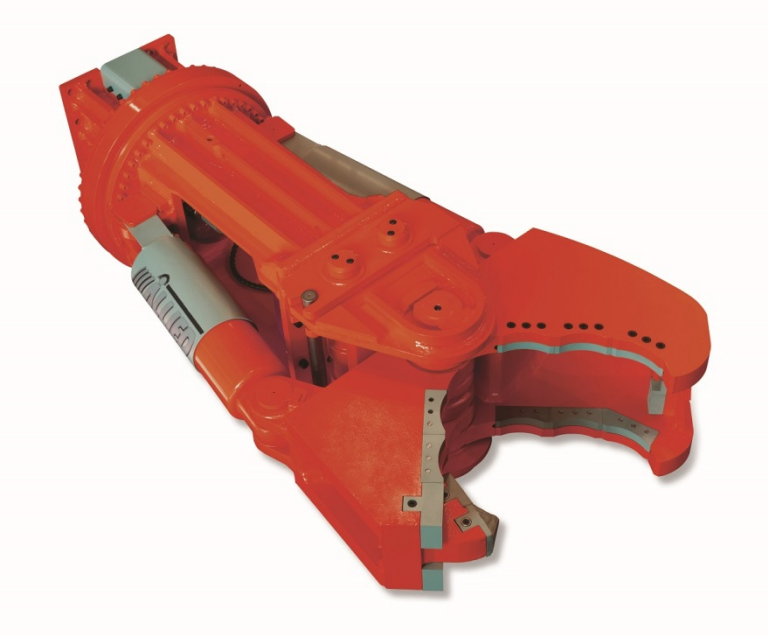
Multi-Processor

MP – S Jaw



Multi-Processor

MP- D Jaw

ALLIED®
Construction Products, LLC

Safety, Operation and Maintenance

This manual has been prepared to assist the operator and maintenance personnel with the information necessary for the safe and proper use of the Allied Breaker. Thoroughly read and understand the content of this manual before using the Breaker.

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.

SOM577430

Contact Information
3900 Kelley Ave
Cleveland, Ohio 44114
Tel: 216-431-2600
E-mail: sales@alliedcp.com
Fax: 216-431-2601

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. When changes become necessary, these will be noted in the table below. Specifications are based on published information at the time of publication. Allied Construction Products, LLC, reserves the right to change, edit, delete or modify the content of this document, including descriptions, illustrations and specifications without prior notification. For document updates go to www.alliedcp.com .

Table of Revision History for SOM577430

Effective Date	Page	Summary of Change
2014, June	All	Original Issue of SOM577430

Safety Information

Safety Statements and Hazard Alerts

Safety messages appear throughout this manual and on labels affixed to the Allied equipment. Read and understand the information communicated in safety messages before any attempt to install, operate, service or transport the Allied equipment.

Keep all safety labels clean. Words and illustrations must be legible. Before operating this equipment, replace damaged or missing labels.

Purpose of Safety Messages

Information provided in safety messages is important to your safety. Safety messages communicate the extent, magnitude and likelihood of injury associated with unsafe practices such as misuse or improper handling of the Allied equipment. Safety messages also explain how injury from potential hazards can be avoided.

Safety messages presented throughout this manual communicate the following information:

Alert personnel to potential hazards

Identify the nature of the hazard

Describe the severity of the hazard, if encountered

Instruct how to avoid the hazard

Safety Alert Symbol

Fig. S-1 ATTENTION, BECOME ALERT, YOUR SAFETY IS INVOLVED.

Fig. S1. The exclamation point within an equilateral triangle is the safety alert symbol. This symbol, either used alone or with a signal word, is used to draw attention to the presence of potential hazards.

Signal Words

“DANGER”, “WARNING” and “CAUTION” are signal words used to express severity of consequences should a hazard be encountered.

DANGER - Indicates an imminent hazard, which, if not avoided, **will** result in death or serious injury.

WARNING - Indicates an imminent hazard, which, if not avoided, **can** result in death or serious injury.

CAUTION - Indicates hazards which, if not avoided, **could** result in serious injury or damage to the equipment.

This manual presents safety messages configured in a uniform manner as shown in Fig. S-2.

CAUTION

Burn injury from contact with hot surface. Some components become hot during operation. Allow parts and fluids to cool before handling.

Fig. S-2 Safety Message – Typical Presentation

Signal Words Used for Non-Hazard Messages

Other message types that appear in this manual utilize signal words "IMPORTANT" and "NOTE". These are used only for the purpose of notifying personnel to instructions and suggestions but do not pose a safety hazard to workers.

IMPORTANT – Identify instructions that if not followed, may diminish performance; interrupt reliability and production or cause equipment damage.

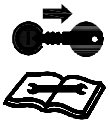
NOTE – Highlight suggestions, which will enhance installation, reliability, or operation.

Safety Information – [cont'd]

Meaning of Pictograms

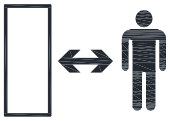
Pictograms are used to rapidly communicate information. For the purposes of this manual and labels affixed to the Allied equipment, pictograms are defined as follows:

Read / Refer to the manual for information

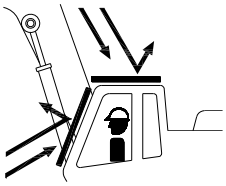


Shut off carrier & remove key before servicing

Read / Refer to the Service Manual for information

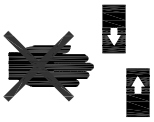


Stay clear
Maintain a safe distance



Fragments / debris that become airborne projectiles. Protective guards are required on cab when operating this work tool

Crush / Shear point



Falling object
Unsupported loads

Falling part
Safety shoes

Flying debris

Leaking fluid under pressure - injection

Hot surface

Oil / Gas under pressure

Identifies lift point

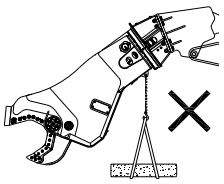
Electric Shock

Personal protection equipment

Hearing protection

Safety eyewear

Gloves



Prohibited actions are actions that must be avoided to prevent personal injury and/or equipment damage

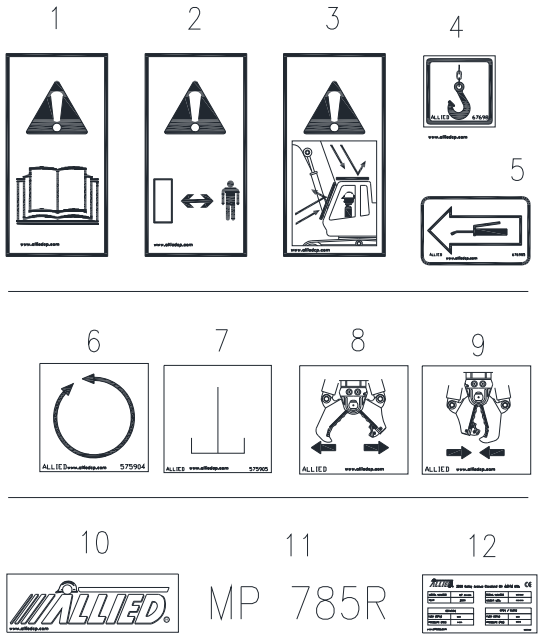
Prohibited actions bare an "X" or a circle with a diagonal slash.

Safety Information – [cont'd]

Safety, Identification and Information Labels

Information labels affixed to the Allied equipment include safety warnings, identification and instructions important to operation and service.

Keep all safety labels clean. Words and illustrations must be legible. Before operating this equipment, replace damaged or missing labels. Refer to the parts section for ordering information. Refer to Figure "S-3" for their position on the equipment.



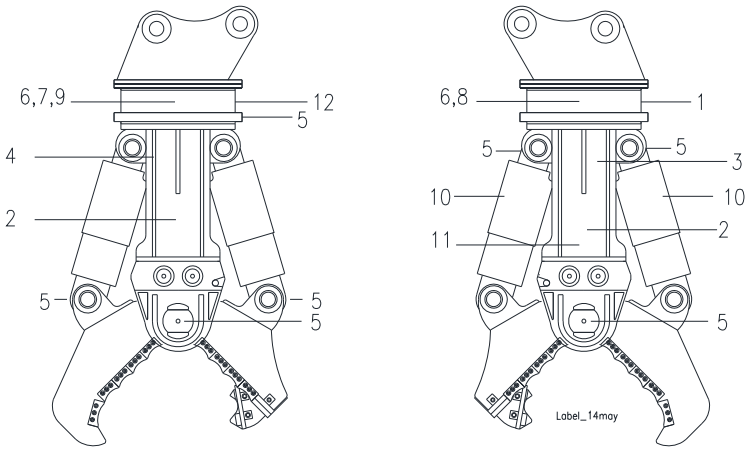


Fig. S-3 Position of Labels

Table S.1 Labels – Ordering Information

Item	Part No.	Description	Qty	Remarks / Specifications
---	**577428**	**Decal Set**	**1-Set**	**Set includes 1-11**
L1	676984	Label - Read Instructions / Manual	2	
L2	840156	Label - Stay Clear	2	
L3	575948	Label - Guards	1	
L4	676982	Label - Lift Point	8	
L5	A101725	Label – Lube Point	10	
L6	575904	Label – Rotation	2	
L7	575905	Label – Drain	2	
L8	577433	Label – Jaw Open	1	
L9	577432	Label – Jaw Close	1	
L10	676655	Label - Allied Logo	2	
L11	577339	Label - Model	1	
L12	577338	Label – Equipment ID	1	Item L12 Not included in set

Safety Information – [cont'd]

Attention Read the Manual

Operators and personnel responsible for maintenance of the Allied work tool should read this manual. Other manuals, such as those published by the machinery used in support of the Allied equipment, should also be read. Improper installation, operation or maintenance of the Allied equipment could result in serious injury or death. Only qualified operators may operate the Allied equipment. Personnel responsible for the maintenance of the Allied equipment or its systems, including inspection, installation or adjustments must also be qualified.

Qualified Person

For the purposes of this manual, a qualified person is an individual that has successfully demonstrated or completed the following:

Has read, fully understands and adheres to all safety statements in this manual.

Is competent to recognize predictable hazardous conditions and possess the authorization, skills and knowledge necessary to take prompt corrective measures to safeguard against personal injury and/or property damage.

Has completed adequate training in safe and proper installation, maintenance and operation of this Allied equipment.

Is authorized to operate, service and transport the Allied equipment identified in Table 1.1.

Safety Information Overview

It's important for all personnel working with the Allied equipment to read this manual in its entirety. It contains important safety information that must be followed so that unsafe situations may be avoided. Safety information described at the beginning of this manual is generic in nature. As you continue reading through later sections of this manual, instructions and safety information become more detailed and operation-specific.

Allied has made every effort to provide information as complete and accurate as possible for this document. Allied cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this manual and labels affixed to the Allied attachment are therefore not all inclusive.

General Construction Safety

Always follow procedures that promote safe conditions for workers and bystanders. The standard safety precautions expected and required of those working in construction shall include, but not limited to:

- Locating and marking existing underground and above ground service and utility lines
- Establishing pedestrian barriers
- Using personnel protection equipment appropriate to working conditions, etc.

Federal, State, Local and OSHA Construction Guidelines and Regulations

Use the Allied equipment 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. Box 371954 Pittsburgh, Pa. 15250-7954
Website: www.osha.gov

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

Owner's Responsibilities

Ensure that only qualified personnel operate and service the Allied equipment.

Ensure personnel protection equipment is available to personnel and enforce the use of PPE

Ensure equipment is kept in safe operating condition

Ensure safety-related materials such as instructions and including this manual are kept in a convenient location so that they are easily accessible to operators and maintenance personnel.

Safety Information – [cont'd]

Operational Safety Program

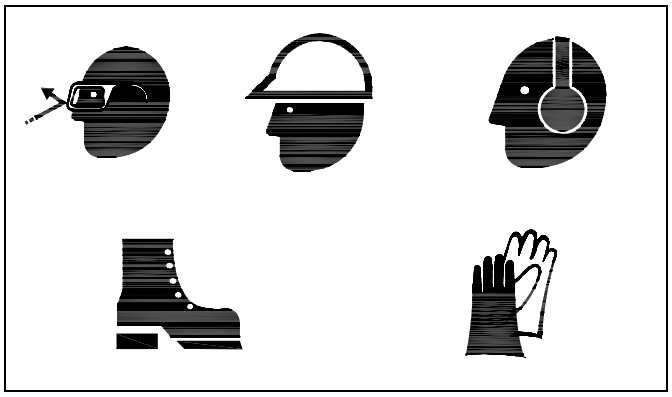
The safe and efficient use of the Allied equipment depends upon proper installation, operation, maintenance and repair. Operational safety programs must encompass all of these elements.

Accident prevention through operational safety programs are most effective when the equipment owner further develops the program by taking into account his own experience in using and maintaining equipment.

Developing such programs will help minimize equipment downtime, while maximizing service life and performance. Most importantly, it will minimize the risk of personal injuries.

Personal Protective Equipment (PPE)

Personnel operating or nearby the equipment that may be exposed to hazards such as falling, flying and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases shall use appropriate personal protection equipment (PPE) necessary to protect them against injury from the hazard. PPE selection, such as safety eyewear, face shield, hearing protection, safety footwear, gloves, dust mask, etc.shall be reviewed to ensure appropriate PPE is made available to all personnel. Personnel are responsible for wearing PPE as directed by the supervisor.



Protective Equipment - Guarding

Allied equipment designed with guards shall have guards in place when equipment is in use. Guards are fitted to the equipment to protect against unsafe situations that could not be eliminated through design measures. Where it was not possible to prevent an unsafe situation by means of a guard, safety messages appear on the equipment, warning personnel of a hazardous condition.

Guards shall not be removed unless for the purpose of inspection and service of components. All guards must be reinstalled after service or adjustments are completed. Do not operate the Allied equipment without guards installed.

Additional guarding, not included with the Allied equipment, is necessary at the operator's station to protect the operator and other nearby personnel against flying debris from material being cut or demolished. Do not handle, demolish or cut material overhead without proper guards installed.
To prevent accidental start up, the control switch shall be located in a protected area that is guarded and makes it difficult to accidently operate the Allied work tool.

Unapproved Use or Modifications

In order to provide and maintain efficient operation with reliable service, while ensuring operator safety, the Allied equipment may not be used for any other purpose other than, for which it was intended. Use of the Allied equipment, other than those cited in this manual, may place personnel at risk of injury and/or may subject the equipment to damage.

When making repairs, use only the manufacturer's genuine parts. Substitute parts may not meet the required standards for fit and quality, or may impair function, safety and performance. The Allied equipment shall not be modified or used in unapproved applications unless written consent is received from the Allied Engineering Department.

Table of Contents

Table of Contents - [cont'd]

1.0 Introduction & Scope

1.1 Purpose of this Manual

This manual has been prepared in support of the product named in Table 1.1 and is intended to assist the operator and maintenance personnel with the information necessary for the safe and proper use of the Allied equipment.

Material presented in this manual may show equipment that is optional. Figures, captions, parts tables and descriptions are intended solely for use with the product identified in Table 1.1 and may not be suitable for other models.

1.2 About This Manual

Table 1.1 About This Manual

Document ID No.	SOM577430
Type	Safety, Operator's and Maintenance
Current Status	See Inside Cover
Product Name:	Material Processor
Series	MP
Applicable Model[s]:	MP 785R, 985R, 1385R
Years of Manufacture:	Begin 2014

This document is published 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.

Prior to using, confirm that the information recorded on the Equipment's Identification Tag corresponds with the model information located in Table 1.1.

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 been 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 summary of changes made to the content of this document can be found on the inside cover of this manual.

1.3 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.

Replacement manuals can be ordered by contacting your local Allied dealer or the Allied Customer Support Department. See inside cover for contact information.

1.4 Related Publications

- Parts Manual – 577431
- Service Manual – 577454
- Blade and Jaw Maintenance - 577454

2.0 Equipment Identification

2.1 Location of the Serial Number

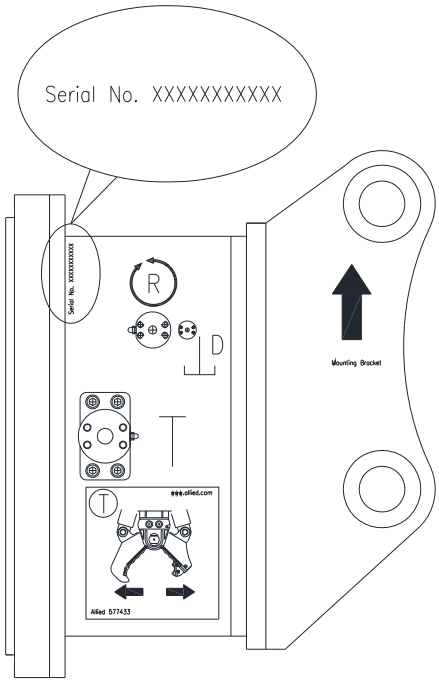


Fig. 2-1 Equipment Identification

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

On the Equipment ID Tag

Stamped in the eccentric housing – motor side.

2.2 Equipment Identification Tag

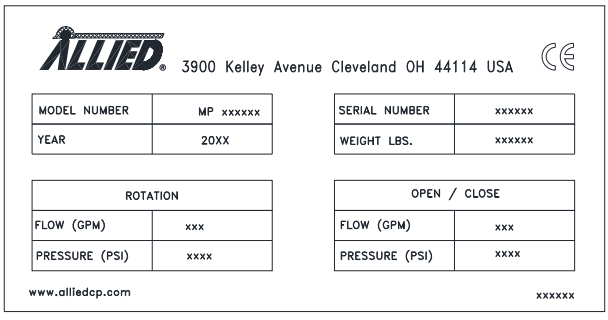


Fig. 2-2 Equipment Identification Tag

Refer to Figure 2-2. The Equipment Identification Tag is affixed to the top mounting frame. It provides the following useful information:

- Name
- Address
- Product name
- Model number
- Serial number
- Year of manufacture
- Mass

Verify that the information contained on the Tag corresponds with the information provided in Section 1 of this manual.

2.3 Owner's Record of the Equipment

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 copied from the Equipment Identification Tag to the space provided below.

Indicate the date in which the Allied equipment was placed into service.

Fill out the Warranty Registration form and return to Allied Construction Products, LLC.

Product Name: Material Processor

Model / Part No: MP 785R /

Model / Part No: MP 985R / 577072

Model / Part No: MP 1385R /

Serial Number: _____

In Service Date: _____

Registration Date _____

Model MP 785-R

MP	Multi-Processor
785	
R	Rotation
S	Shear Jaw
D	Demolition Jaw

3.0 Warranty Protection Summary

3.1 Overview

The Allied work tool is delivered assembled, lubricated, and factory tested. Upon receipt of the equipment, inspect for possible shipping damage.

For every new Processor, Allied requires that a Warranty Registration form be filled out. The form provides a section for information about the host machine that the work tool will be installed on. Complete all sections of the form and return to Allied.

Use of non-Allied parts, unapproved service methods, modifications to the Allied equipment, or installation, operation and maintenance, not in accordance with the instructions outlined in this manual may cause equipment failure or personal injury.

For details regarding warranty terms and conditions, refer to document 577429.

3.2 Owner's Responsibilities

When properly installed, operated and maintained by qualified personnel, the Allied work tool will remain productive with a minimum of service.

Keep the Allied equipment operating within its performance limits by familiarizing yourself with the specifications provided in the technical data and specifications tables. Improper installation, including failure to calibrate the carrier correctly may result in loss of performance or subject the equipment to conditions beyond their design.

The following outlines general maintenance policies required for all Processor models. The owner is strongly encouraged to adopt these general guidelines and further develop them in order to manage particular applications and operating environments.

Ensure that personnel entrusted with installation, operation, maintenance and transporting of the Allied equipment adhere to the following:

Read and thoroughly understand the information and procedures described in this manual.

Understand proper operating techniques for all recommended applications.

Use the Allied attachment only if it is in sound operating condition. Take prompt action to rectify any faults that, if left uncorrected, could lead to personal injury or further damage.

Use the Allied attachment only for the purpose for which it is intended.

Understand that particular applications, such as working underwater, will require modifications to the standard breaker and additional training for operation and service.

Appoint Who Does What. Ensure that all personnel understand what their specific responsibilities include.

Establish maintenance responsibilities to be performed by the OPERATOR.

Establish maintenance responsibilities to be performed by the SERVICE TECHNICIAN.

Recognize problems and know how to take corrective action as detailed in Troubleshooting Section 12.

Conduct regular checks and inspections as scheduled in the Care & Maintenance Section 9.

Allow only qualified operators and Allied trained service technicians to perform maintenance and repair as specified in the care and maintenance schedule.

Use only genuine Allied replacement parts and recommended lubricants to protect total warranty coverage.

Maintain written records of equipment maintenance, service and repair. These records are helpful if warranty coverage is ever in question.

Each record shall include at least:

Date of service, maintenance or repair.

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.

3.0 Warranty Protection Summary [cont'd]

3.3 Allied Product Policies

In this manual, Allied recommends Processor applications, maintenance and service consistent with industry practices.

Allied assumes no responsibility for the results of actions not recommended in this manual and specifically the results of:

Improper Training

Improper Installation

Operation in unapproved applications

Incorrect operation

Inadequate maintenance

Use of non-genuine Allied replacement parts

Unapproved modifications

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

4.0 Product Information

4.1 Description and Application - Typical

The Allied MP Processor is a hydraulic powered demolition tool design to crush, process and reduce both concrete and steel. The processor is designed to be installed on mobile equipment such as rubber tired and track-type excavators. The MP will attach to the host machine by either pinning to the stick of the machine (in place of the bucket) or by removing the stick and pinning it to the boom as a 2nd member. The host machine's systems will provide the hydraulic power to operate the MP's jaws and rotation.

Applications include primary demolition of concrete and steel structures and secondary processing of the same material.

4.2 Familiarization of Main Components

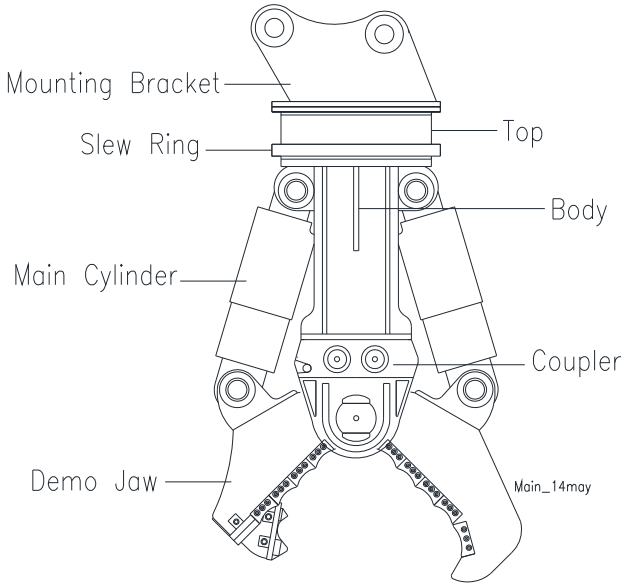


Fig. 4-1 Main Components

Major components of the Processor include:

Body – The body serves as the connection point for the rotation system, main cylinders and coupler. It also houses the speed valve and connecting cylinders.

Top - The top housing includes the connection plate for the bolt-on mounting bracket. It also houses the rotation motor(s), the brake valve, directional valves and flow control valves. All of the connection ports (P,T,R,D) are located on the top.

Rotation System - Rotation is bi-directional and provides a means of 360-degrees of continuous rotation. The assembly includes the slew ring, drive motors, swivel joint and the top.

Hydraulic System – All actuators of the processor are hydraulic powered. This includes the main cylinders, rotation motor(s) and the connecting cylinders. The balance of hydraulic components includes the valves, swivel joint and hoses.

Speed Valve – This is a regenerative type valve that optimizes the circulation of oil to and from the main cylinders. Cycle times of the jaw open and close are reduced, thereby increasing efficiency.

Flow Control Valve - Prevents over-speeding the drive motors used for rotation and for metering the flow to the connecting cylinders.

Brake Valve – Protects the drive motors, pinion and slew bearing against damage from over-load of excessive force.

Connecting Cylinder – The coupler and jaws are pinned to the body by the connecting cylinders. Directional valves are used to actuate the cylinders.

Demo Jaw – Used to crush, process and reduce material such as concrete.

Shear Jaw – Used to cut, process and reduce steel structures.

NOTE: The speed valve, brake valves and flow control valves are factory pre-set and require no further adjustments.

4.3 Principle of Operation

The operation of the Allied MP Processor is powered by the host machine. Two large cylinders open and close the jaws. The force exerted by the jaws upon the processed material is dependent upon the oil pressure generated at the main cylinders.

The cycle time (speed) of the jaws from open to close is determined by how quickly the cylinders will fill up with oil. The speed valve quickens the cycle by diverting oil out of the rod side of the cylinder to the piston side when the jaw is closing.

The 360-degree continuous rotation system also receives its hydraulic power from the host machine. A large bearing (slew ring) is driven by a hydraulic motor. This allows the operator to rotate the jaws to precisely the right angle needed for the safe and optimal cutting / processing of the material.

5.0 Processor Selection and Application

5.1 Match Processor Size and Jaw Type with the Application

The Allied MP Processor is a hydraulic powered demolition tool design to crush, process and reduce both concrete and steel.

5.1.2 Size Selection to Match the Application

The Allied MP Processor should be selected based on the application and intent of use. Sizing to the carrier as well should be given much consideration. Each job or processing application has its own set of unique requirements and considerations when it comes to using a mobile processor.

In general, the best way to start is to look at what it is you are cutting and how the final product needs to be processed. In most applications the 80/20 rule can be applied for steel processing in both recycling and demolition projects such as bridges and steel framed block buildings. This works by matching a mobile processor that is capable of cutting 80% of the material that needs to be processed and allowing the remaining 20% to be processed in a different way instead of looking at the largest material that is needed to be cut, which may only be a fraction of the processing work.

In the case of recycling, the above method works very well but with demolition projects there can be more that needs to be considered. Questions to ask for example;

- Is the tool going to just process the material or will it be a primary take-down machine or both?
- Is it required to have the tool mounted at the end of the excavator stick or mounted at the end of the boom?

Please refer to the Allied Appetite guide for your processor to understand its capabilities and also check the Allied machine product selection chart for the proper carrier tool match.

5.1.3 Carrier Selection

The host machine or carrier, as it's sometimes called, can easily be sized after the above has been established. With the proper tool that has been chosen, your Allied processor to carrier guide can guide you into the correct carrier size and configuration that matches your needs.

Know how your machine is equipped and if any modifications have been made. Factors such as boom type, stick length, undercarriage, tracks, counterweights, etc., all affect the lifting capacity of the carrier. Also take into account any add-ons, such as a quick attach coupler. Consult the carrier manufacturer's manual for specifications.

Select a carrier equipped with a two-way hydraulic circuit that's capable of supplying the flow and pressure required without a loss of hydraulic power to the Processor. If the carrier cannot achieve the power required, the maximum cylinder speed and force cannot be reached.

The carrier must also be equipped with a second hydraulic circuit to operate the rotation mechanism.

5.2 Carrier With Auxiliary Hydraulic Circuit

CAUTION

Hydraulic circuits differ between machines. Improper oil flow or pressure can damage the Processor or carrier.

Only qualified personnel, having knowledge of the machine's systems, proper test equipment and tools should perform conversion set-up and adjustments.

The Allied Processor and other hydraulic work tools are not self-powered. The efficient and reliable performance of any hydraulic work tool hinges upon the ability of the host machine's hydraulic circuit to provide all of the equipment's requirements. There are minimum and maximum pressure and flow requirements that will vary depending on the model of the work tool. Requirements are found in the back of this manual under the specification tables.

Generally, most machines will require some degree of conversion to make use of their hydraulic power. Conversions to machines equipped with a factory or dealer installed auxiliary circuit, however, may require little more than minor adjustments to flow and pressure settings.

When making adjustments, carefully follow all instructions, including those provided by the machine manufacturer.

6.0 Hydraulic Conversion

6.1 Conversion Kit for Hydraulic Circuits

Allied conversion kits are available for almost any carrier. Requests for further information or assistance with Processor selection or conversion kits should be directed toward your Allied dealer or by contacting Allied Sales or Product Support Departments.

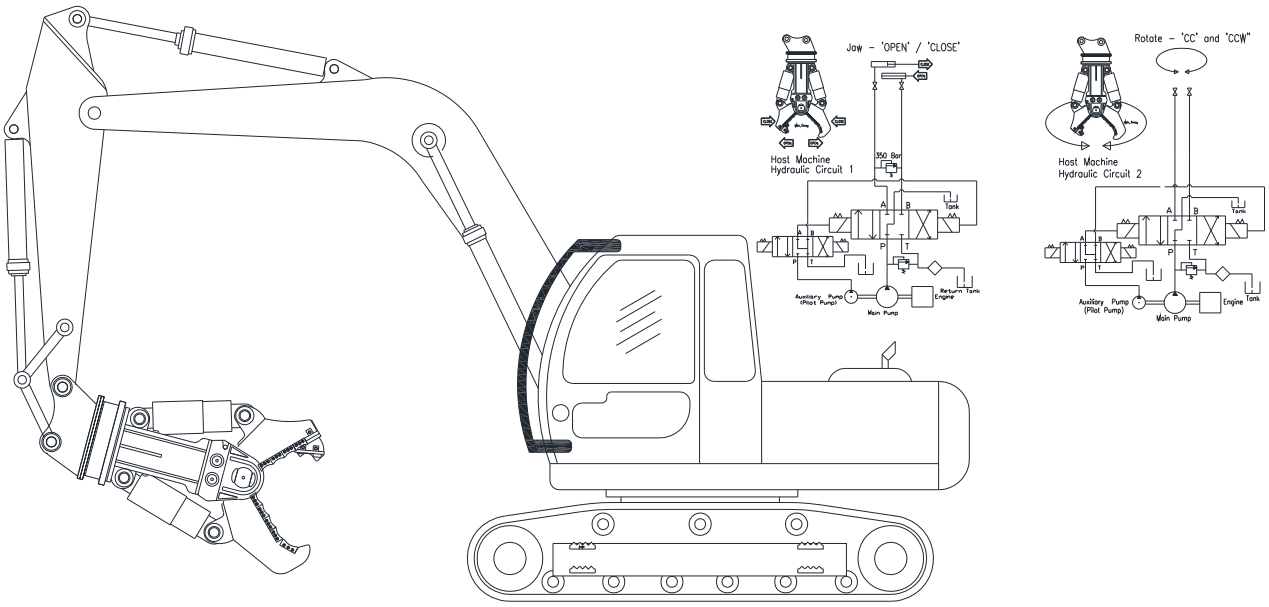


Fig 6-1 Hydraulic Circuit of Machine

No	Description	Specifications
1	4-way valve for Jaw 'OPEN' and 'CLOSE"	Example Fig 6-2 Option Port 1
2	Relief Valve for Jaw 'OPEN' and 'CLOSE"	Example Fig 6-2 Option Port 1
3	4-way valve for 'ROTATION"	Example Fig 6-2 Option Port 2
4	Switch for 4-way for Jaw 'OPEN' and 'CLOSE"	More information in Table X
5	Switch for 4-way for ROTATION	More information in Table X
6	Tubing	Example Fig 7-3
7	Shut-Off Valve	Example Fig 7-3
8	Hose for Jaw 'OPEN' and 'CLOSE"	More information in Table 13.2
9	Hose for 'ROTATION'	More information in Table 13.2
10	Hose for 'DRAIN'	More information in Table 13.2

6.0 Hydraulic Conversion

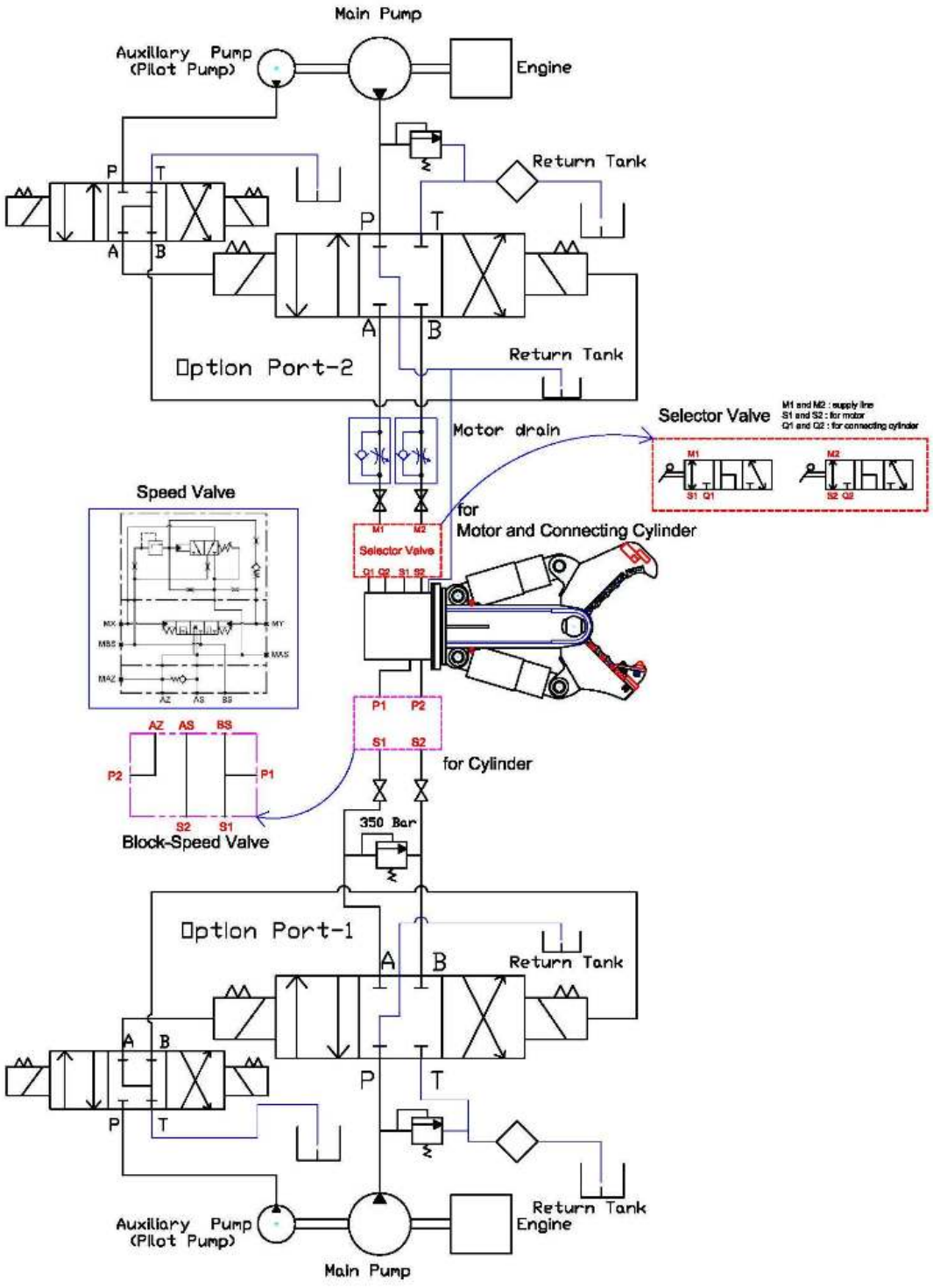
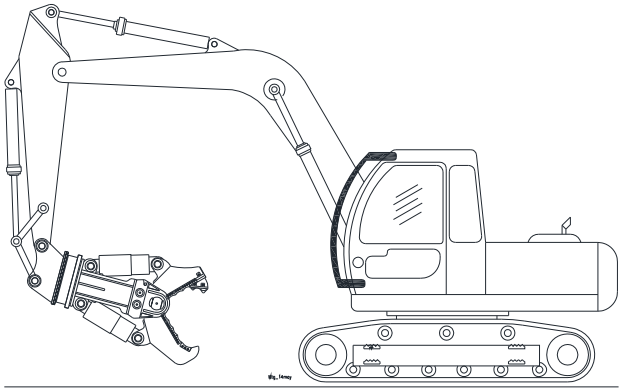


Fig 6-2 Overview of the Hydraulic Circuit

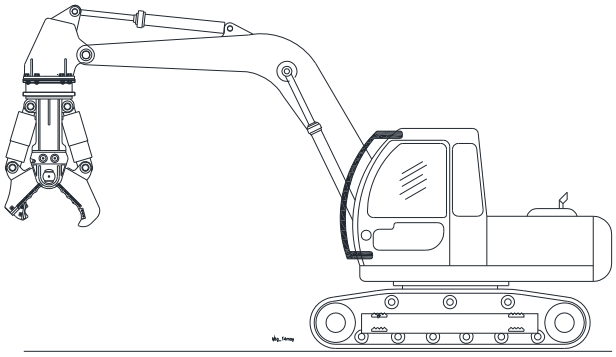
7.0 Install / Uninstall Processor

7.1 Mounting Bracket

The Processor can be attached to the host machine by pinning it to the stick (in place of the bucket) as a 3rd member.



Or by removing the stick from the carrier and pinning it to the boom as a 2nd member.



Allied offers an array of mounting brackets (sold separately) to fit virtually any carrier, including those equipped with pin-grab or hook-type quick mounting couplers. Use the bolt set furnished with the Processor to fasten the bracket.

IMPORTANT
The mounting bracket is sold separately from the Processor. Allied brackets are typically designed to utilize the carrier's pins. To order a mounting bracket, complete information about the carrier is required. This includes the make, model, series and serial number. If the carrier is equipped with a quick coupler, additional information is required.

The hole pattern used in the top connection plate is the LR9. Other work tools from Allied, including hydraulic breakers, share these same mounting families. Dimensions for the LR9 bolt hole pattern are located in Section 13 of this manual.

CAUTION

Follow proper tightening procedures and torque when installing mounting bracket.

7.2 Attach the Processor to Carrier

The Processor is attached to the carrier in the same manner as mounting a bucket. Use standard mechanic's techniques and tools. The described installation is for a typical pin on type. Procedures may vary and you should always follow the instructions in the manual that is provided by the carrier manufacturer.

For carriers equipped with a quick coupler, refer to the owner's manual furnished by the coupler manufacturer for instructions.

CAUTION

Some procedures, such as attaching the work tool to and from the carrier, will require an assistant. Both the operator and assistant must be qualified in these procedures.

Take all necessary precautions. Throughout the procedure the machine operator shall be seated in the operator's seat and maintain full control of the machine. All directions and signals must be agreed upon in advance. Take signals from only ONE person.

Crush hazard. Use sufficient blocking to avoid accidental or sudden movement of the work tool. Keep hands and feet clear of crush points. Do not touch any moving parts.

Use personal protective equipment when handling the work tool. PPE should include appropriate clothing, gloves, safety eyewear and shoes.

7.2.2 Tools Required to Mount Processor On Carrier

No special tools are required, but the following tools should be available:

- PPE including Safety eyewear & gloves
- Sledge Hammer
- Drift pin / Alignment bar
- 3/4 drive socket wrench
- 3/4 drive metric sockets
- Standard & Metric open end wrenches
- Grease gun

7.0 Install / Uninstall Processor

- Rags
- Suitable container to collect fluids

Remove the bucket or other attachment following the manufacturer's recommended procedure. Install the Processor to the carrier in same manner as mounting a bucket. Installation procedures can vary.

IMPORTANT

Check that all mountings parts are on hand. Mounting bracket, hardware, pins and adapters are not included with the Processor. These parts are supplied with the mounting kit (sold separately).

The following describes the basic procedures used to mount a Processor to a machine equipped with a typical pin on type mounting arrangement.

The machine operator and an assistant shall perform the following procedure:

Operator: Move carrier and Processor to a firm level surface. Position the Processor with the jaws of the processor facing the excavator.

Assistant: Check that the Processor is stable and all loads are supported.

Operator: Maneuver the stick in between lugging of the mounting bracket. Align the stick pin holes to the mounting bracket holes.

Assistant: Clean pins of rust and debris before they are installed. Insert the stick pin and secure with keepers.

Repeat procedure for installing link pin.

Lubricate pins.

7.3 Connect Hoses

CAUTION

Hydraulic circuits differ between machines. Improper set up can damage the Processor or carrier. Only qualified personnel, having knowledge of the machine's systems should install.

Identify the carrier's pressure lines. Identify the rotation lines. Identify the motor drain line. Do not guess. The Processor can be damaged if hoses are not connected properly.

IMPORTANT

Use care while performing service to hydraulic systems. Safeguard against contaminating the oil. Always clean the area around connections prior to opening the hydraulic system. Cap all open connections. Contamination will diminish service life of components.

IMPORTANT

Exercise extreme care to ensure fluids are collected in a suitable container when opening the hydraulic system. Clean up spilled fluids and obey all local regulations for the disposal of these fluids.

IMPORTANT

The Processor has several connection ports. For ease of identification, the ports are marked.

- P – Jaw Close
- T – Jaw Open
- R – Rotation CW
- R – Rotation CCW
- D - Drain

When installation is complete, raise the Processor off the ground and curl the processor in and out to ensure hoses will not be pinched or restricted. Check for interference. Contact Allied or authorized dealer if any interference occurs.

Briefly test Processor for proper operation. Stop and check for hydraulic leaks. Tighten hoses and connections as necessary.

IMPORTANT

Read, understand and follow the instructions included with the installation kit. The installation is not complete until the hydraulic circuit is tested for flow and pressure. Tools required for testing include a flow meter and pressure gages. Test procedures, along with a form to record the results of the flow test, can be found in the Technical Data section of this manual. Observe flow rate and pressure range (both cylinder and motor) or the warranty will become void. Questions regarding testing procedures should be directed toward the Allied Technical Service.

7.0 Install / Uninstall Processor

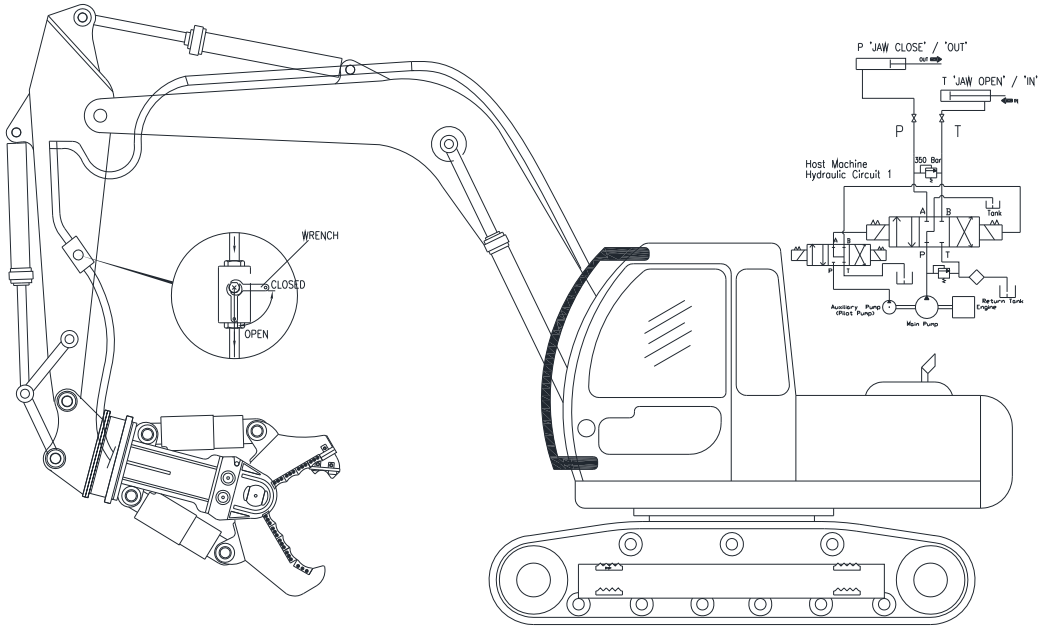


Fig. 7-3 Hydraulic Circuit 1 Controls Jaw [CLOSE] and [OPEN]

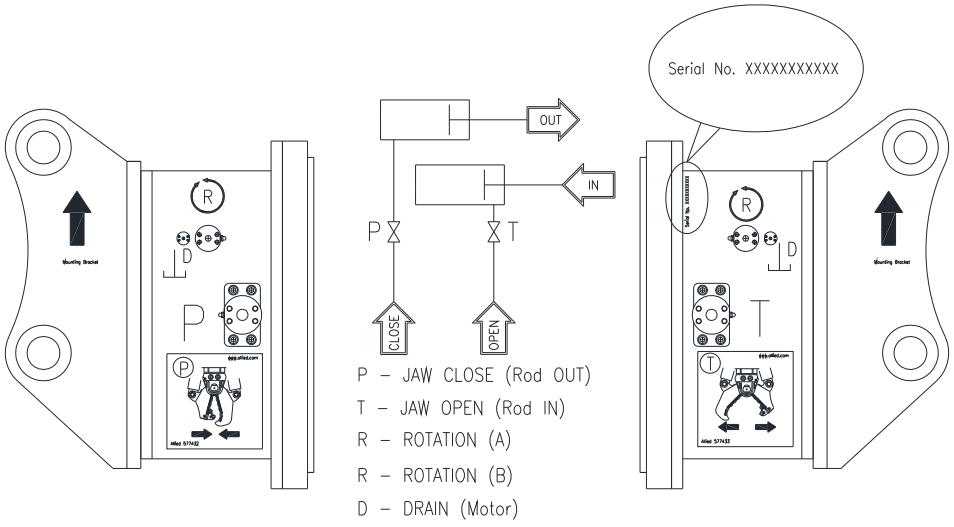


Fig. 7-4 Ports Marked [P] JAW CLOSE and [T] JAW OPEN

IMPORTANT
The hydraulic connection ports are located on the 'Top' of the Processor. For ease of identification, the ports are marked. • P – Jaw Close • T – Jaw Open • R – Rotation CW • R – Rotation CCW • D - Drain

7.0 Install / Uninstall Processor

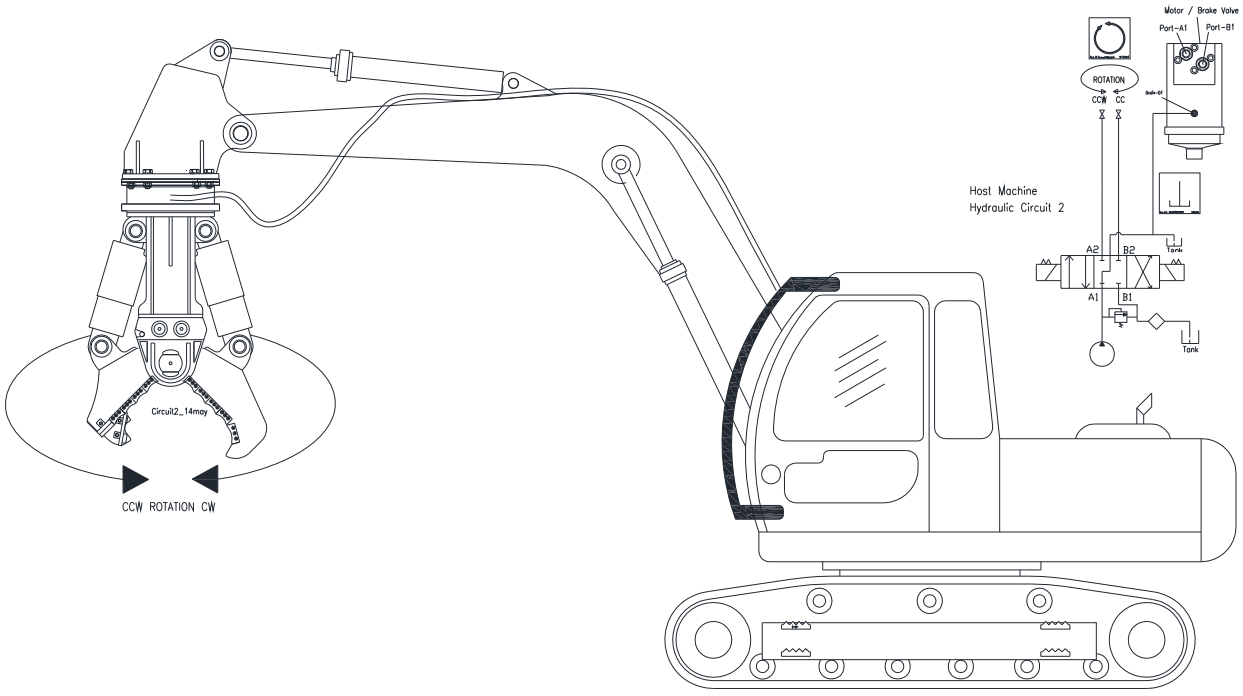


Fig 7-5 Hydraulic Circuit 2 Controls Rotation [ROTATE-CW], [ROTATE-CCW], Motor [DRAIN]

7.4 Remove the Processor From the Carrier

CAUTION

Some procedures, such as attaching the Processor to and from the carrier, will require an assistant. Both the operator and assistant must be qualified in these procedures. All directions and signals must be agreed upon in advance.

CAUTION

Burn injury from contact with hot fluids and surfaces. Some machine components become hot during operation. Allow surfaces and fluids to cool before handling.

CAUTION

Injury from fluid penetration. When opening the hydraulic system, exercise extreme care. Release pressure trapped in hoses before disconnecting. Wear appropriate protective equipment including safety eyewear and gloves.

IMPORTANT

Collect fluids in a suitable container. Clean up spilled fluids and obey all local regulations for the disposal of these fluids.

Position the Processor on stable ground.

Disconnect hydraulic connections.

With loads adequately supported, remove mounting pins and hardware.

Keep mounting hardware with Processor to avoid loss or damage.

IMPORTANT

Use care while performing service to hydraulic systems. Safeguard against contaminating the oil. Cap all open connections. Contamination will diminish service life of components.

Refer to Section 11 for storage instructions.

8.0 Operation

8.1 Pre-operation Checks

IMPORTANT

The Allied Processor is designed to provide optimum performance with reliable service life at a specific flow range and oil pressure. Prior to its first use on a machine, it's important to test the hydraulic circuit. Operating the Processor beyond its performance limits will cause equipment damage. Follow the accepted specifications listed in Technical Data Section of this manual.

CAUTION

Repair or replace any damaged components prior to operation. Do not operate Processor until all faults are corrected.

For safe and proper operation, perform a thorough daily inspection of the equipment before use.

Daily, before operating:

Ensure Processor is securely attached to the carrier. Check mounting pins and hardware for wear or damage.

Excessive dirt and debris on the Processor can decrease performance and should be removed.

Inspect the following for damage:

Inspect hoses, seals, motor and valve for oil leaks

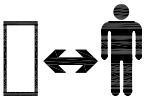
Check for loose or missing fasteners

NOTE: Further maintenance details are located in Section 9 of this manual.

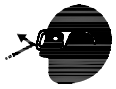
8.2 Operation

CAUTION

Injury from flying debris. Do not operate the Processor with workers in close proximity of work zone.



Clear all personnel from work area before the Processor is operated.



CAUTION

Injury from flying debris. Personal protection equipment, including safety eyewear, must be worn when operating or servicing this equipment.

Prolonged exposure to high noise levels may risk hearing impairment or loss. Hearing protection must be worn when equipment is in operation.

WARNING

Injury from falls into open excavations. Establish pedestrian barriers around open excavations. Ground vibrations may collapse trench walls.

Excavations must be shored to meet federal, state and local guidelines.

CAUTION

Never activate the Processor unless the operator is seated in the operator's seat and in full control of the machine. Follow instructions in the operator's manual provided with carrier.

Position the carrier in-line with direction of work.

Position the Processor to the work surface and within full view of the operator.

Activate the Processor with the switch located in the operator's cab.

IMPORTANT

Always practice proper operating techniques.

Do not use the Processor to lift, rake, sweep or push materials. Damage to components may result.

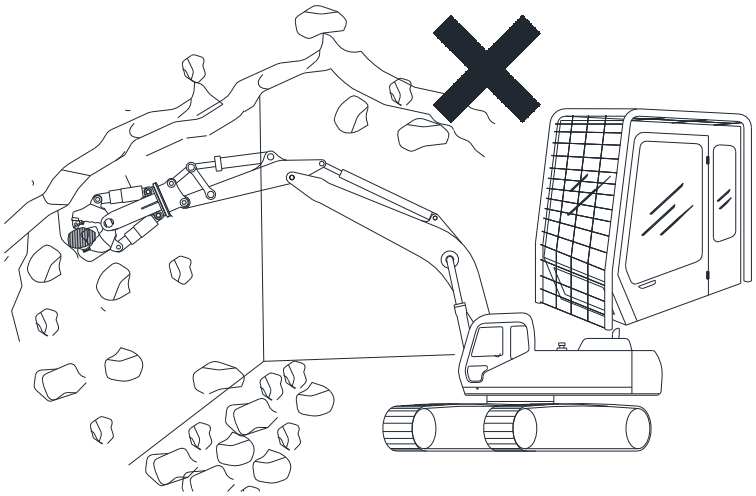
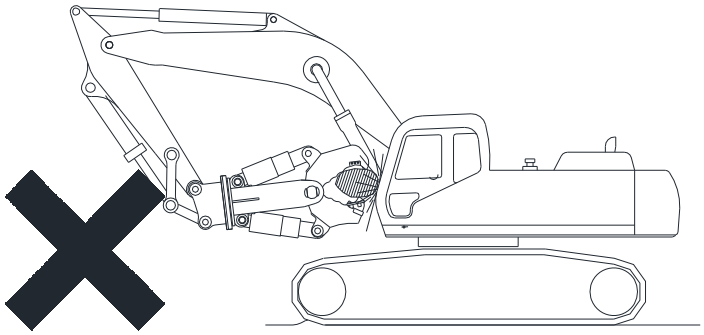
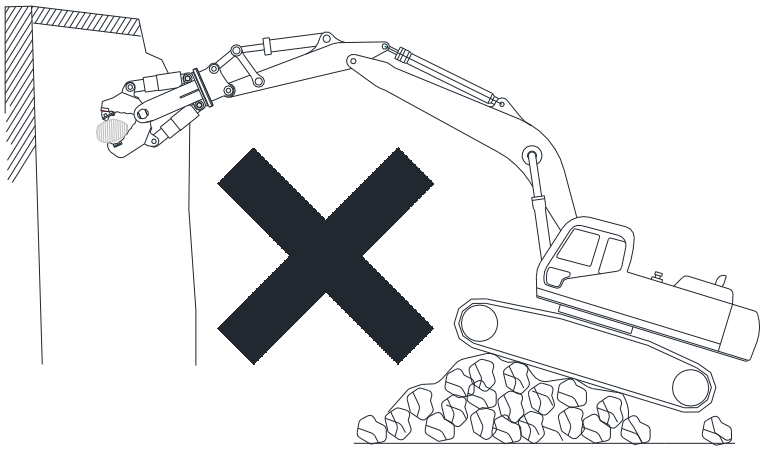
Do not operate the Processor underwater.

At temperatures below 32°F (0°C), operate the Processor for a few minutes without load to allow the oil to warm.

Do not operate Processor with hydraulic oil temperature above 180°F (80°C)

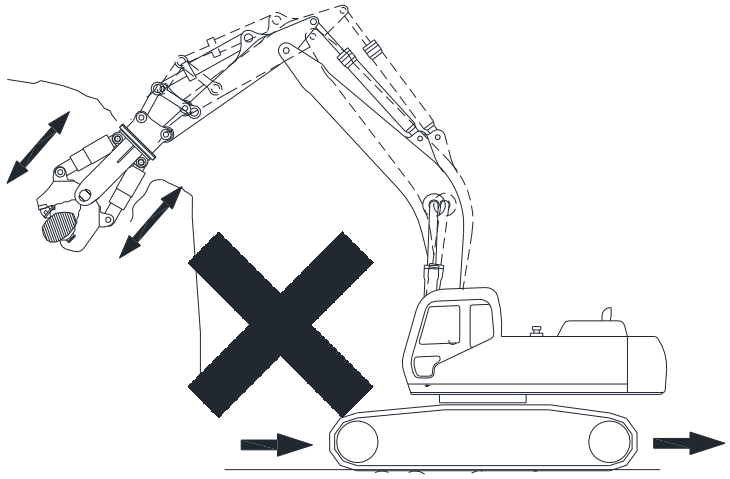
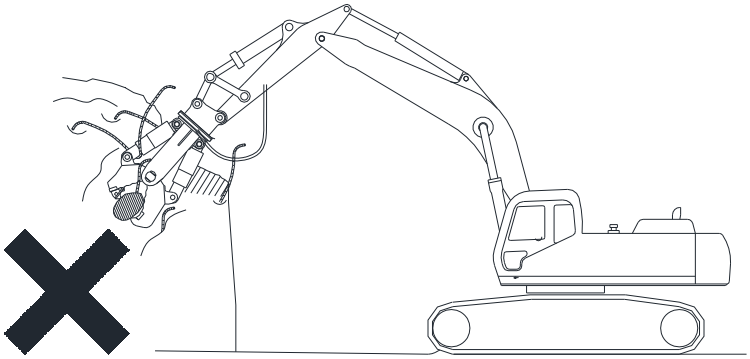
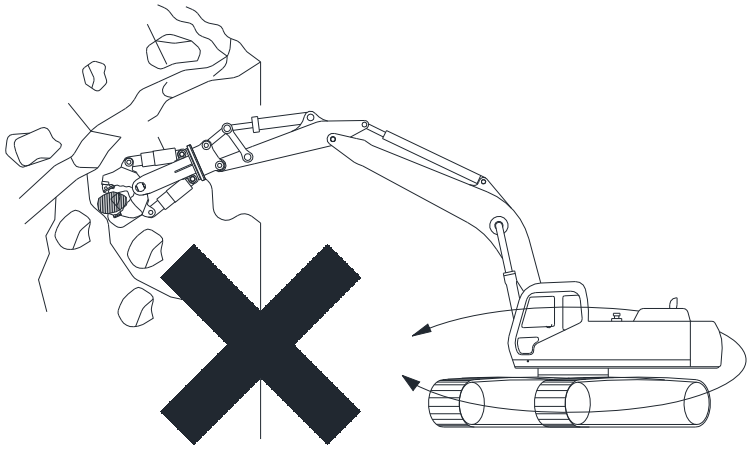
8.0 Operation – [cont'd]

8.2.1 Precautions for Safe Operation

	Fig. 8-1 Do Not Use If Machine is Not Equipped with Protective Structures, Guarding and Shields Do Not Process or Cut Material Over the Machine
	Fig. 8-2 Do Not Process Material Near Machine Operate With Care and Maintain Control While Positioning to Prevent Contact Between the Machine and Processor
	Fig. 8-3 Do Not Operate Machine On Unstable Surface

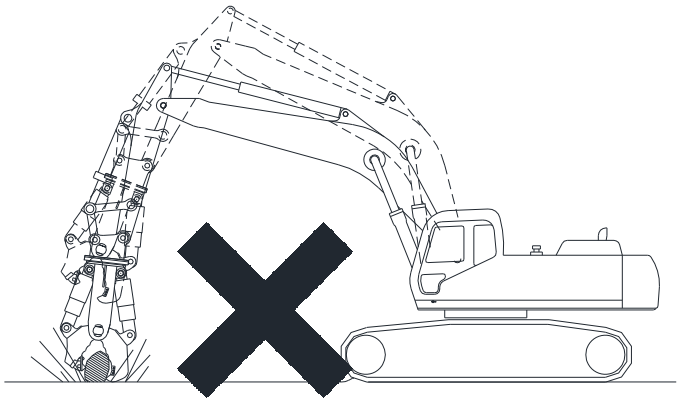
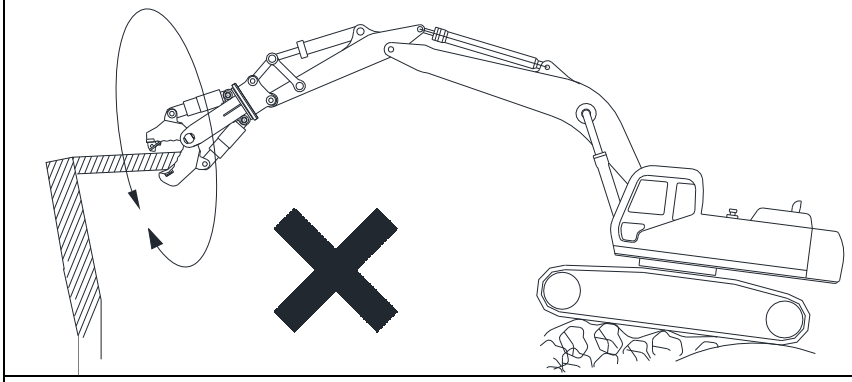
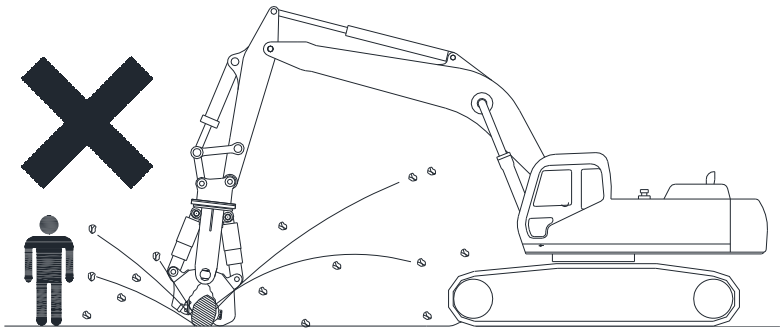
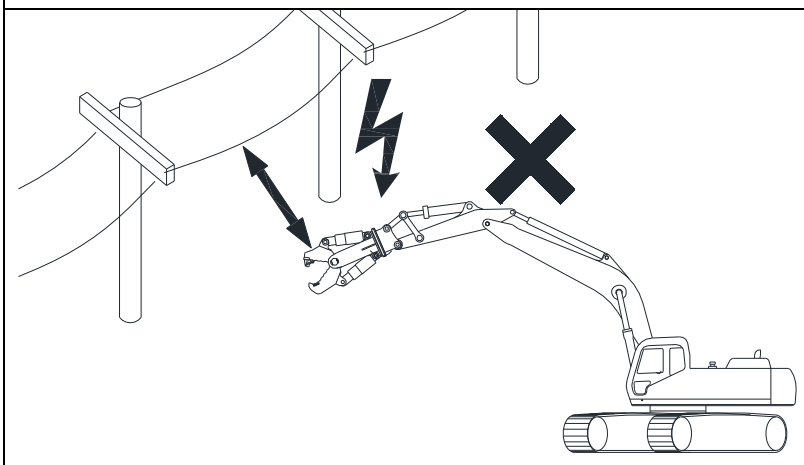
8.0 Operation – [cont'd]

8.2.1 Precautions for Safe Operation

	Fig. 8-4 Do Not Pull or Push Objects When Processor Cylinder Is In Motion
	Fig. 8-5 Careless Operation Can Damage the Cylinder Rods
	Fig. 8-6 Do Not Strike Objects with Processor Do Not Use Processor to Rake or Sweep Materials

8.0 Operation – [cont'd]

8.2.1 Precautions for Safe Operation

	Fig. 8-7 Do Not Drop, Hack or Pound Objects with the Processor
	Fig. 8-8 Do Not Twist or Lever Objects Using Rotation
	Fig. 8-9 Do Not Operate With Workers Inside Work Zone
	Fig. 8-10 Keep Away From Utilities

9.0 Care and Maintenance

9.1 Maintenance Schedule

Table 9.1 Maintenance Schedule	Hours								
Item	10	50	250	500	1000	1500	2000	N/A	Note
Visual inspection - Walk around	X								A, B, D
Re-check Fasteners Torque		X							C, B, D
Re-torque Slew Bearing Fasteners	X								
Replace All Slew Bearing Fasteners						X			
Re-lubricate Slew Bearing	X								B, D
Re-lubricate All Pin Joints	X								B, D

A) Refer to the list of parts to include during the inspection.
B) Normal recommendation (Standard operating conditions).
C) After first 50 hours of use
D) Under extreme conditions or if a change in performance is observed, shorten intervals.
N/A – Non-applicable

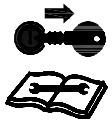
9.1.1 Maintenance Schedule Overview

When properly installed, operated and maintained by qualified personnel, the Allied equipment requires a minimum of maintenance.

Table 9.1 specifies how often and what items need to be inspected in order to maintain safety, reliability and performance. Intervals are based on standard (normal) operating conditions. Use regular component inspection to determine if interval adjustment is warranted.

A "walk around" type of inspection is indicated in Table 9.1. Visually inspect all external components. Look closely at fasteners for any that may be loose, missing or broken. Check welds for cracks. Inspect hoses and connections for fluid leaks. Look for parts that are damaged or worn.

9.2 Safety Precautions During Inspection



WARNING

Unless otherwise instructed, all maintenance is performed only when the work tool is lowered and supported on stable ground. The machine must be shut off. Remove ignition key and engage interlock and parking brake.

WARNING

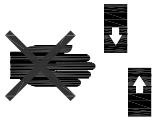
Crush injury. Never rely on the rotation system or cylinders as a means of support when servicing the Allied equipment. Hydraulic cylinders are strictly lifting devices and not a structural support member.

Prevent sudden or unexpected movement by using proper blocking to support loads.

WARNING

Crush injury. When releasing pressure make sure that the boom and work tool cannot fall or make unexpected movements.

Refer to the manuals provided by the carrier manufacturer for instructions on how to depressurize the hydraulic system.



WARNING

Crush injury. Any guard removed from the equipment for purpose of inspection or maintenance must be reinstalled before returning back to work.

9.0 Care and Maintenance – [cont'd]

WARNING

Injury from pressurized fluid. Fluid under pressure can penetrate skin. Never use hands to locate leaks. Use cardboard.

Regularly inspect hoses for damage. Replacement hoses must be the same type and pressure rating.

CAUTION

Personal protection equipment, including safety eyewear, must be worn when operating or servicing this equipment.

IMPORTANT
Do not make alterations to the Processor without written authorization from the Allied Engineering Department.

9.3 10 Hour (Daily) Maintenance

- Re-lubricate Slew Ring, Gear and Pins
- Remove all excessive dirt/debris on the Processor that can decrease performance.
- Check for loose, missing or broken fasteners.
- Check components for damage or excessive wear.
- Check surface condition of cylinder rod.
- Check condition of cutter and bolts
- Check condition of hoses and replace if any of the following conditions are present:
- Leak at end fitting that cannot be eliminated through proper tightening techniques
- Outer coverings are chafed or cut.
- Wires are exposed
- Outer coverings are ballooning
- Flexible part of the hoses are kinked
- Outer covers have embedded armoring
- End fittings are displaced

9.4 Check Carrier's Oil Level and Quality

CAUTION

Follow the recommended service intervals from the carrier manufacturer.

Check oil level in reservoir. Check records for last oil and filter service. Test oil quality. Review the manufacturer's maintenance schedule. It may specify operating conditions that require special attention to maintenance and adjusted service intervals.

Maintain clean oil in the carrier. Follow the recommendations from the carrier manufacturer for approved hydraulic oils and hydraulic system maintenance.

IMPORTANT
Contamination will diminish service life of components. Use care while performing service to hydraulic systems. Safeguard against contaminating the oil. Before connections are opened, ensure fluids are collected in a suitable container. Clean up any spilled oil. Obey all local regulations for the disposal of these fluids.

9.5 Check Threaded Fasteners

IMPORTANT
Keep fasteners tight. Replace missing or damaged fasteners with new. Follow proper torque procedures. Replacement fasteners must be the same type and grade. Refer to Table 9.2 for bolt torque.

The bolts connecting the slew bearing are important maintenance areas.

NOTE: After bolt installation, operate the Processor for a few hours, and then re-check bolt torques.

9.6 Conditional Maintenance

While the frequency of inspections and maintenance depend primarily on use, other factors may require additional monitoring. For example-

- if using water content hydraulic fluid
- or when operating under conditions of extreme temperatures, dust, high elevations, or extended use
- If reduced performance is observed

9.0 Care and Maintenance – [cont'd]

9.7.1 Slew Ring Bearing Lubrication

Due to the high loads, frequently inspect the slew bearing to ensure it receives sufficient lubrication. Use a lithium type grease, with extreme pressure (EP) additives. Use NLGI-2 when temperatures are above 0° C (32 ° F).

Comparable lubricants from other reputable manufacturers not listed may also be used.

Table 9.2 Grease Recommendations

Brand	Name	Operation Below 0° C (32 ° F) & storage	Operation Above 0° C (32 ° F)
AMOCO	Rycon	EP0	EP2
CHEVRON	Dura Lith	EP0	EP2
EXXON	Lidok	EP0	EP2
MOBIL	Mobilux	EP0	EP2
SHELL	Alvania	EPR0	EP2
SOHIO	Bearing Guard	LT0	2
SUN	Prestige	740EP	742EP
TEXACO	Multifak	EP0	EP2
UNION	Unoba	EP0	EP2

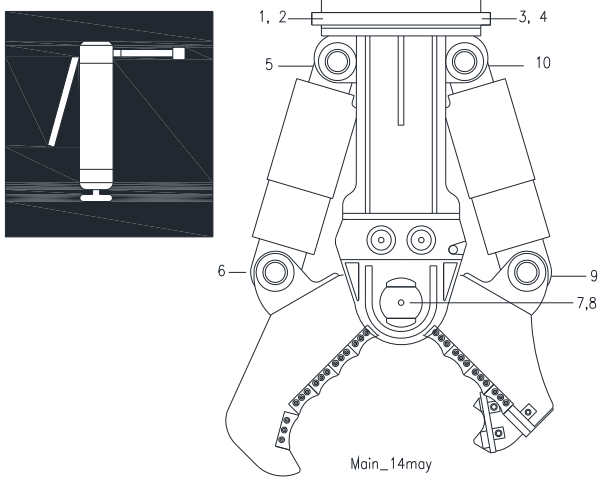


Fig. 9-1 Lubrications Points

Depending upon the model, grease fittings are located either on the outside of the slew bearing or on the upper head side plate. Large slew bearings are equipped with 4 grease fittings.

The bearing should be turned through two full revolutions while greasing through any one fitting. This will distribute the grease uniformly and effectively flush out the old grease and contaminants. Continue to fill until clean grease can be felt exiting at the seals.

- Rotating attachments in storage should be lubricated at least every six months.
- Equipment operating frequently in extreme environments should be lubricated at least every eight hours.
- If old grease is noted to be in good condition and free of contamination, the interval may be extended. Conversely, if the old grease is contaminated or deteriorated, the interval should be shortened.

9.7.2 How to Check Slew Ring Bearing

The MP Processor is capable of 360-degree of continuous and bi-directional positioning. Use the rotator to quickly and easily align the jaws with the material to be cut or crushed.

Never attempt to twist, bend or break material using the rotation. Doing so will damage the rotation components. These parts are expensive to repair. Damage as a result of misuse is not covered under the terms of the warranty.

The rotation mechanism consists of a slew bearing that's driven by a hydraulic motor. Due to the high loads, periodic maintenance of the rotator is important. This includes maintaining proper bolt torque and lubrication.

9.7.3 Bearing Replacement

IMPORTANT
Use only genuine Allied replacement parts to protect total warranty coverage. Non-approved parts may impair performance or reliability.

Questions regarding maintenance, repair or operation can be directed toward the Allied Technical Service. For questions regarding replacement parts, contact Allied's Customer Service.

9.0 Care and Maintenance – [cont'd]

9.7.4 Bearing Removal

Use standard mechanic's techniques and tools to disassemble and assemble the Processor.

CAUTION

Crush injury. Parts are heavy. Handle carefully to avoid injury to hands or fingers.

IMPORTANT
Obey all local regulations for the proper disposal of all used fluids.

9.7.5 Bearing Installation

IMPORTANT
Handle new bearings with care to prevent damage. Do not remove from packaging until ready to install.

CAUTION

Bearings are interference press fit. Apply contact pressure to the outer race only. Do not hammer on the bearing rings.

- Clean all parts.
- Install hydraulic motor and bolts.
- Install hydraulic hoses.

IMPORTANT
Keep fasteners tight. Replace missing or damaged fasteners with new. Replacement fasteners must be the same type and grade. Follow proper torque procedures. Refer to Table 9.2 for bolt torque.

9.8 Parts - Replacement

Parts are subject to fatigue, wear and aging and will require periodic replacement. While service life of parts will depend primarily on use, other factors, such as extreme environmental conditions can also shorten service life.

9.9 Slew Ring Bolts

The bolts connecting the slew ring are important maintenance areas. These bolts should be inspected daily and replaced after 1,500 hours or 12 months.

- Slew ring bolts must be re-torqued after the first ten hours of use.
- These will be re-torqued only once.
- If a bolt, after it has been re-torqued, is found loose, it must be replaced.
- If the bolts continue to loosen, contact the dealer or factory.

9.10 Brake Valve Adjustment

The rotation motor on the attachment is equipped with Brake Valve (Dual Relief Valve). The pressure adjusting procedures of the brake valve is as follows:

Loosen the jam nut locking the adjustment screw. To increase pressure turn the adjustment screw clockwise; check pressure every 1/8 turns interval. To decrease the pressure turns the adjustment screw counterclockwise: check pressures every 1/8-turn interval.

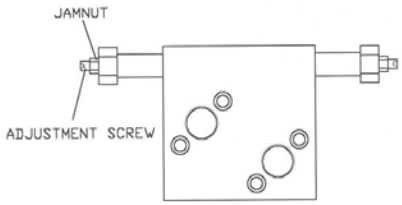


Fig 9-2. Brake Valve Adjustment Screw and Jam Nut

9.0 Care and Maintenance – [cont'd]

CAUTION

Some components of the Processor are heavy. Use approved lifting equipment to properly support and stabilize loads.

CAUTION

Crush injury. Do not place hands or fingers between parts during removal.

Ensure all loads are adequately supported before performing any service work.

Position Processor on flat, stable surface.

Support top mounting bracket to remove weight off bolts.

Loosen all nuts. Remove nuts and washers.

Remove all bolts and mounting bracket.

9.9 Threaded Fasteners Tightening Torque

Due to vibration and shock loads experienced by the Processor, all threaded fasteners must be checked frequently for loose, broken or missing bolts. The bolts connecting the turntable bearing are important maintenance areas.

IMPORTANT

Keep fasteners tight. Replace missing or damaged fasteners with new. Replacement fasteners must be the same type and grade. Follow proper torque procedures. Refer to Table 9.2 for bolt torque.

9.9.1 Bolts - Proper Preparation, Pre-tensioning and Torque

Clean threaded fasteners and surfaces to be bolted.

Lightly lubricate threads.

IMPORTANT

Do not apply thread lock compound to the bolt threads unless instructed to do so.

Install all bolts finger tight.

Follow a crisscross pattern (Fig. 9-3) and tighten all bolts until 1/3 of the specified torque in Table 9.2 is reached.

Tighten all bolts again until 2/3 of the specified torque is reached.

Continue crisscross pattern and tighten to the full torque shown in Table 9.2.

Table 9.3 Standard Tightening Torque

Bolt head identification markings. SAE Grade and for metric bolts, the Property Class is indicated.

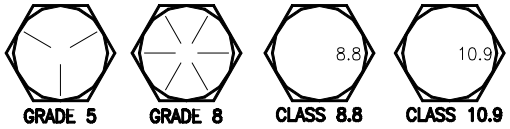


Fig. 9-3 Bolt Head Bolt Markings

	CL8.8		CL10.9		CL12.9	
Size	ft-lb	N•m	ft-lb	N•m	ft-lb	N•m
M10			41	55	49	67
M12			71	96	85	116
M16			173	235	207	281
M20			335	454	403	547
M24			579	785	693	939
M30			1164	1579	1391	1887

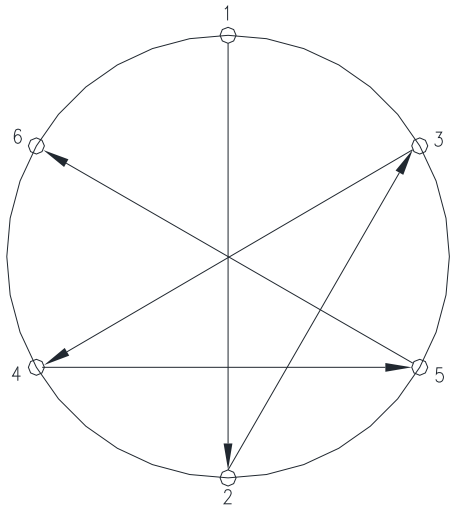


Fig 9-4 Tightening Sequence

9.0 Care and Maintenance – [cont'd]

9.2.1 Tightening Method

Bolts should be systematically tightened starting from the most rigid part of the joint.

A hardened washer must be used under the head of a bolt in a blind hole.

When a bolt and nut are used, a hardened washer must be used under the element to be turned.

It is preferred to apply torque (turn) the nut rather than the bolt head wherever possible. The part not turned must be prevented from rotating during this operation.

NOTE: After bolt installation, operate the Processor for a few hours, and then re-check bolt torques. This cannot be done if thread lock compound was applied.

Table 9.4 Blade Bolt Tightening Torque

Bolt head identification markings. SAE Grade and for metric bolts, the Property Class is indicated.

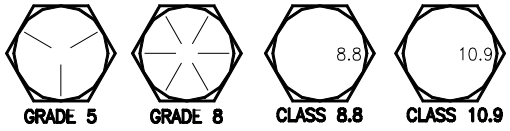


Fig. 9-5 Bolt Head Bolt Markings

	CL8.8		CL10.9		CL12.9	
Size	ft-lb	N•m	ft-lb	N•m	ft-lb	N•m
M10						
M12						
M16			258	350		
M20			500	678		
M24			900	1220		
M30						

Bearing Fasteners

The bolts connecting the turntable bearing are important maintenance areas.

- After the first eight hours of use the bolt must be re-torqued.
- Bolts are re-torqued only once and then must be replaced if they loosen due to fatigue caused by stretching the bolt during torqueing.
- If the bolts continue to loosen, contact the dealer or Allied Technical Service.
- These bolts should be inspected daily and replaced after 1,500 hours or 12 months.

10.0 Jaw Exchange

10.1 Procedure for Jaw Exchange

IMPORTANT
Read through all steps before proceeding with jaw exchange.

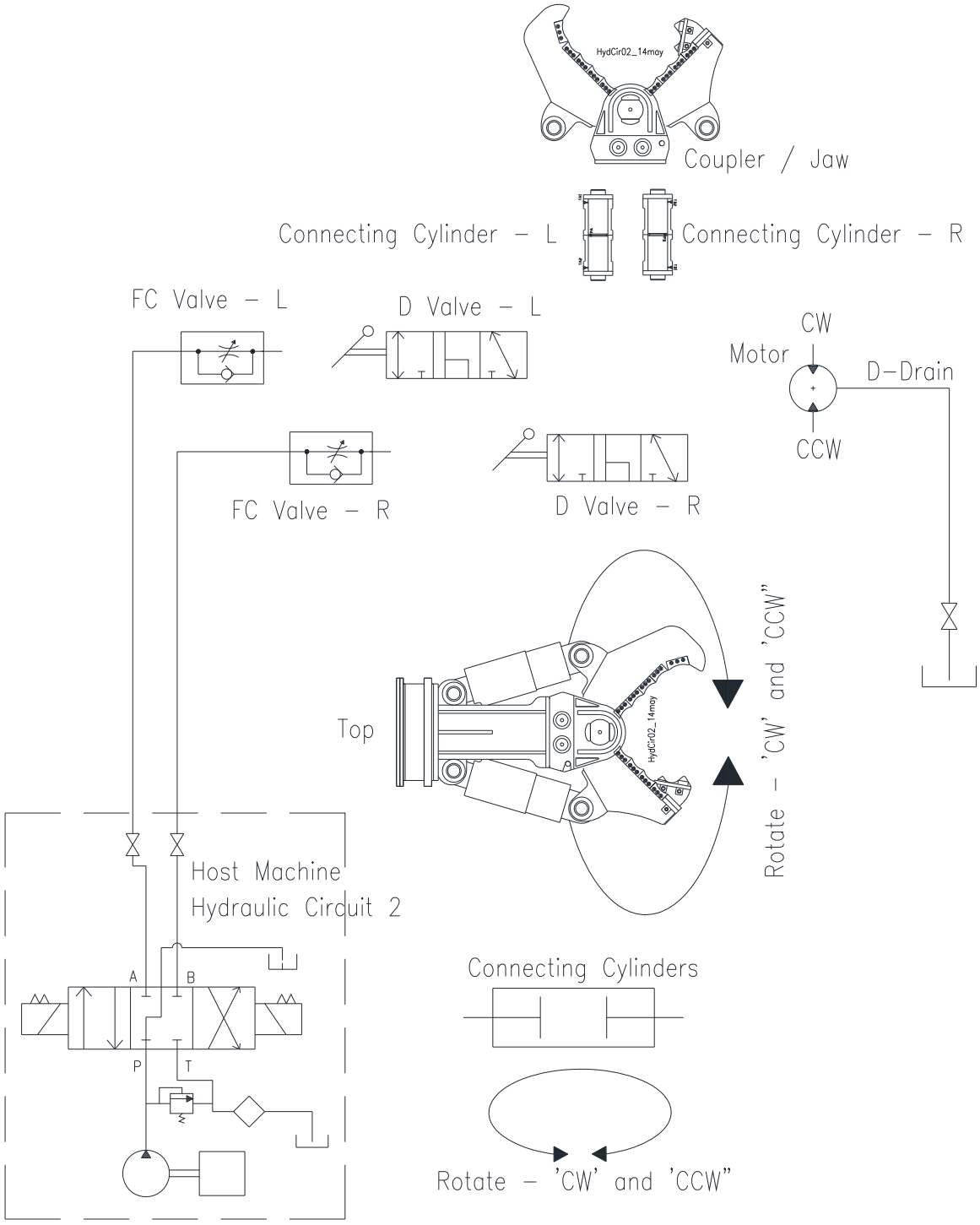


Fig 10-1 Overview of Hydraulic Circuit 2 - Rotation and Jaw Exchange

10.0 Jaw Change – [cont'd]

10.1 Procedure for Jaw Exchange

Read through all steps before proceeding with jaw exchange.

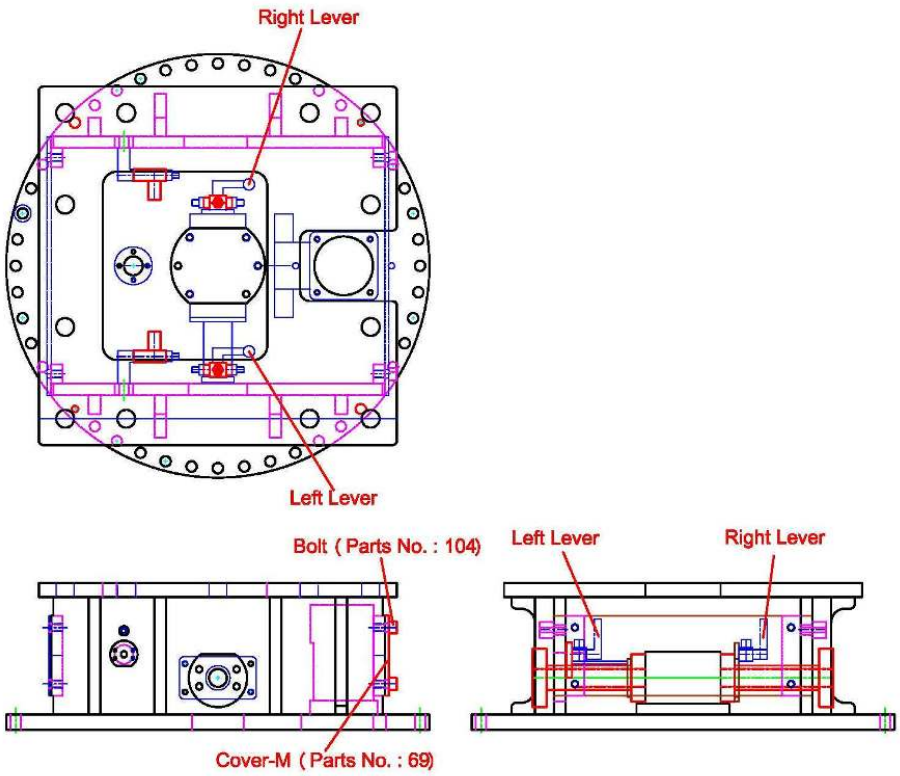


Fig 10-2. All 3 figures are of the 'Top'.

(Upper Left). View of the Top with the mounting bracket removed. The Right and Left Levers (Directional Valves) are identified.

(Lower Left). View of the Left Side of the Top. Identified are the Cover – M and Bolts. The 'T" port, 'R' port and 'D' ports are also shown.

(Lower Right). View of the Top with Cover 'M' removed. The Right and Left Levers are identified. Access to reach levers when mounting bracket is installed is through 'Cover – M'.

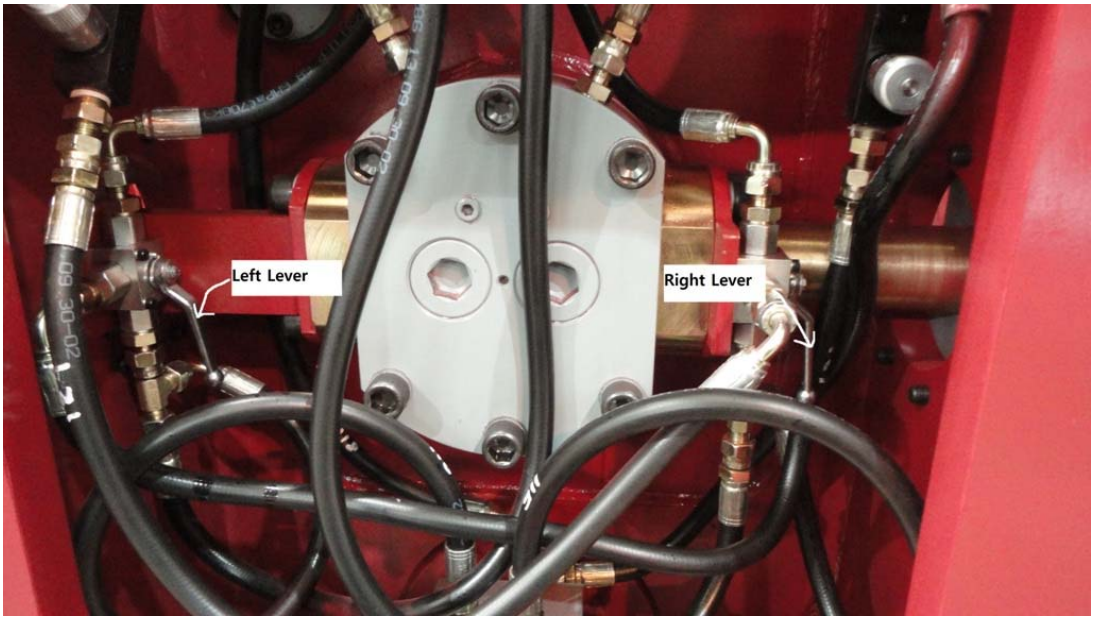


Fig 10-3 View of the 'Top' with the mounting bracket removed. The Left and Right levers are called out. Both levers are shown in the 'Normal' position. In the 'Normal' position, the rotation circuit is operational.

10.0 Jaw Change – [cont'd]

Jaw Exchange Procedure - cont'd

Read through all steps before proceeding with jaw exchange.

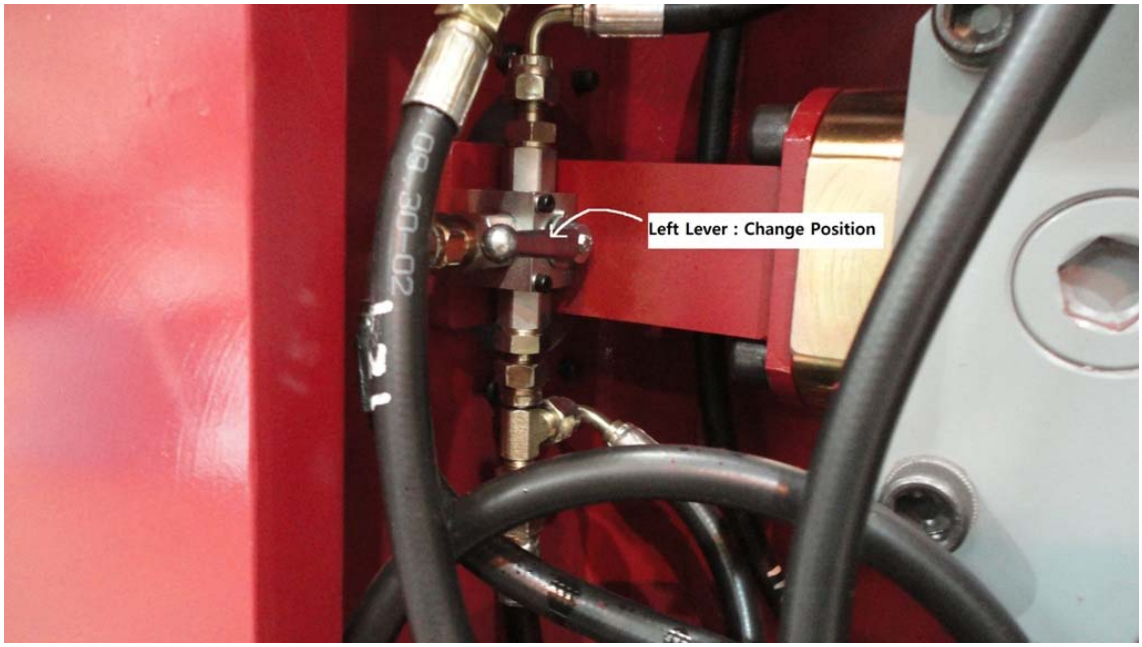


Fig 10-4. View of 'Top' with mounting bracket removed. Rotate the lever of both directional valves 90° as shown. This position will divert oil flow from the rotation motor to the connecting cylinders.

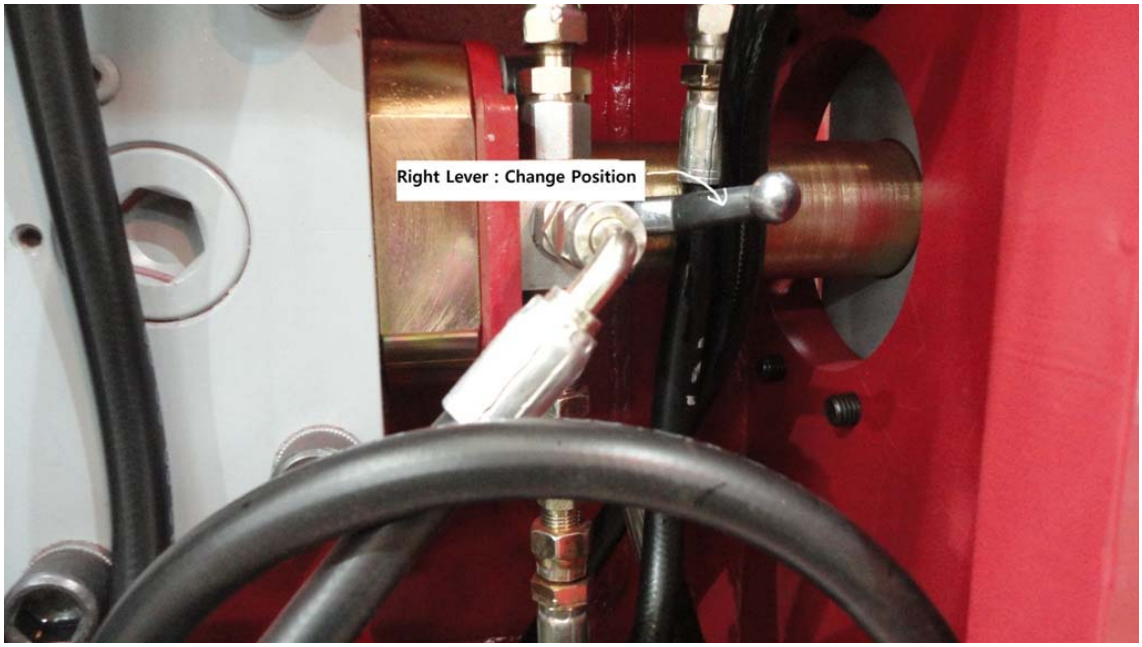


Fig. 10-5 View of the 'Top' with mounting bracket removed. With both levers in the position shown, the connecting cylinders can be actuated to release the coupler (and jaw) from the body.

Note: If mounting bracket is installed, the Cover-M (Fig. 10-2 Item 69) must be removed to reach levers.

10.0 Jaw Change – [cont'd]

Jaw Exchange Procedure - cont'd

Read through all steps before proceeding with jaw exchange

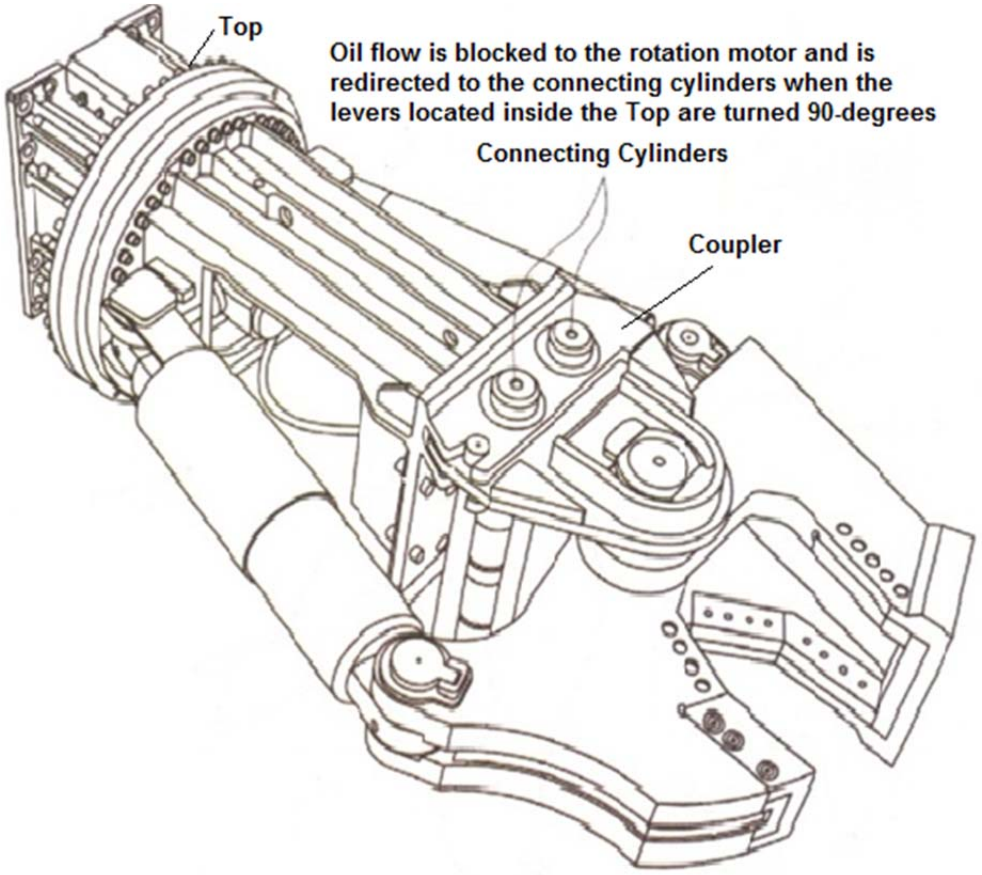


Fig. 10-6 Coupler and Connecting Cylinders

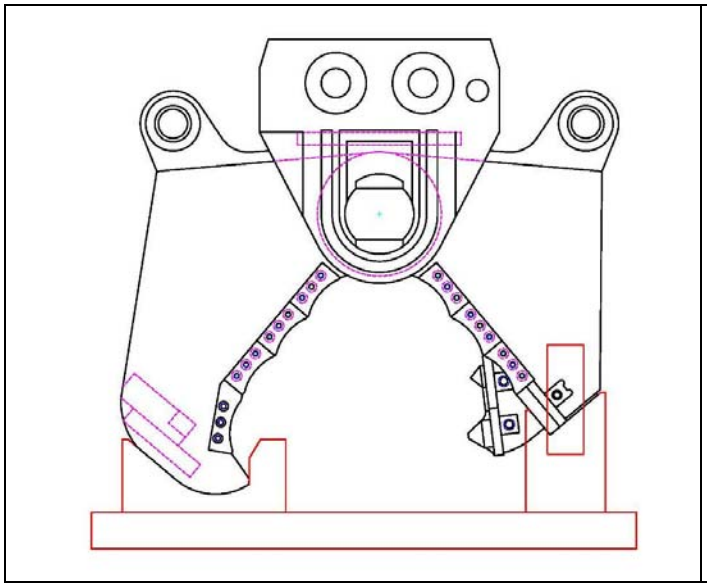


Fig. 10-7 Stand Fixture for Demo Jaw / Coupler

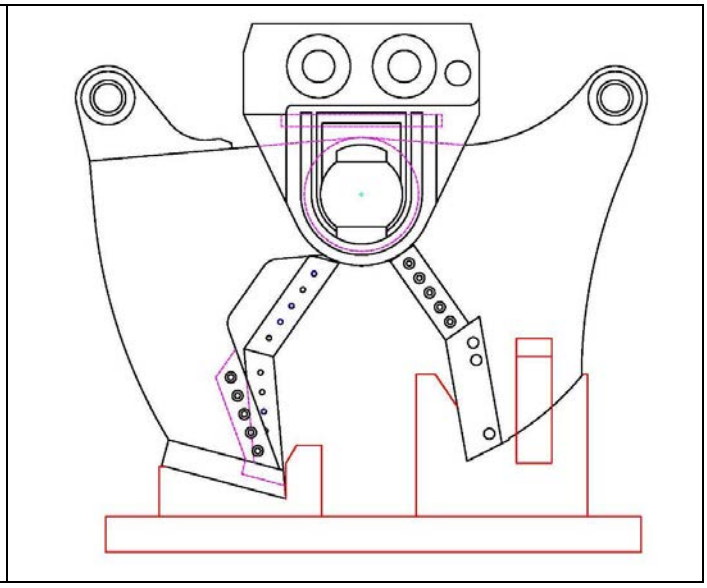


Fig. 10-8 Stand Fixture for Shear Jaw / Coupler

10.0 Jaw Change – [cont'd]

Jaw Exchange Procedure - cont'd

Read through all steps before proceeding with jaw exchange.

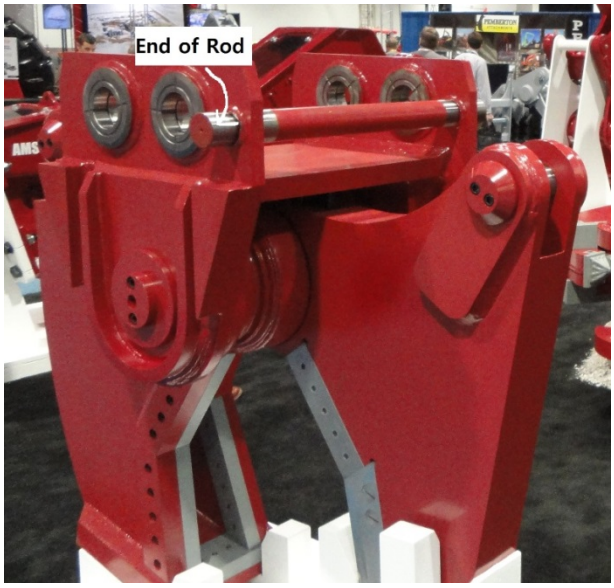


Fig. 10-9 Rod Side of Coupler

Fig. 10-10 A Wood Block is Placed Between the Coupler and Jaw

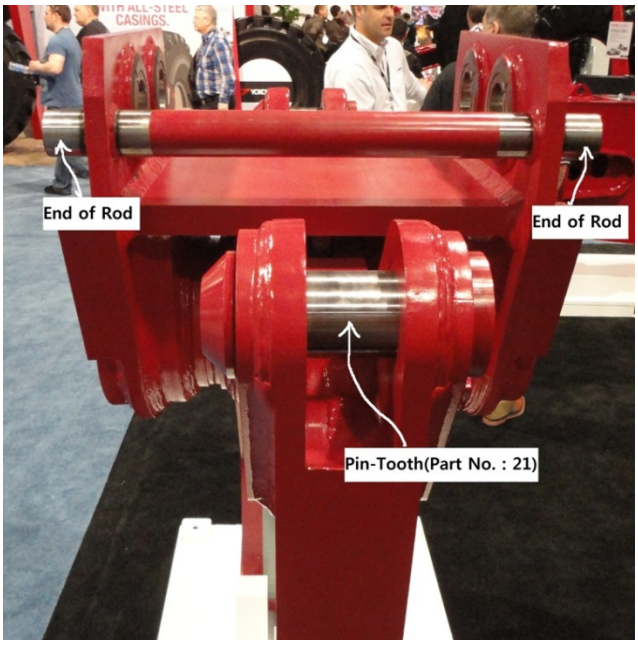


Fig. 10-11 Approach the Processor with the Machine from the Rod Side of the Coupler.

It's important to line up the machine and processor with precision. Then hook the rod in the coupler with the groove in the body.

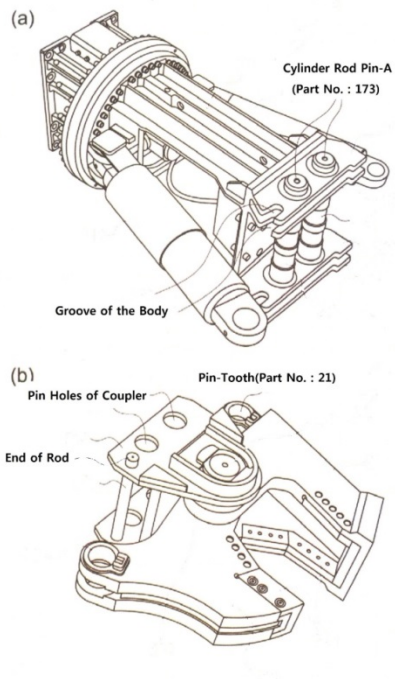


Fig. 10-12 Note Locations of Rod, Groove in Body, Pin Holes of Coupler and Cylinder Rod Pin "A"

10.0 Jaw Change – [cont'd]

Jaw Exchange Procedure – cont'd

IMPORTANT
Read through all steps before proceeding with jaw exchange.

1. Hook the rod in the coupler with the groove in the body.
2. Pull up and rotate the body slightly
3. Pin Holes and Cylinder Rod Pin-A will be aligned automatically by the weight.
4. Check the alignment of the holes between the coupler and rod pins. The Pin Holes of Coupler align with the four Rod Pins "A".
5. Pressurize the Connecting Cylinders.
6. Check the Cylinder Rod Pin-A of the connecting cylinder**. It should extend approximately 15mm beyond the Pin Holes of coupler.**
7. When all four Rod Pins "A" have moved the correct distance, then fasten the End-Pin as shown.
8. Pin the main cylinders to jaws.
9. Return Left and Right Levers back to the Normal (Rotation) position.
10. Re-install cover "M".
11. Jaw exchange is complete.

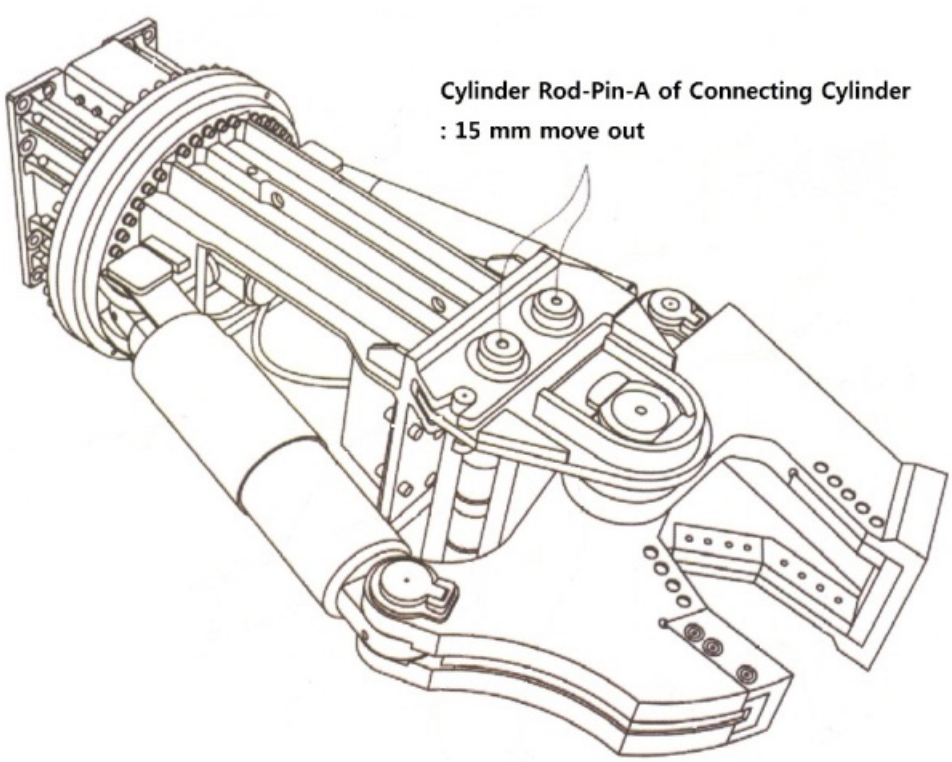


Fig. 10-13 Connecting Pins Extend Thru Coupler

10.0 Jaw Change – [cont'd]

Jaw Exchange Procedure - cont'd
Fig. 1/4 Coupler and Jaws in Stand. Approach the Coupler from the Rod Side of Coupler.
Fig. 2/4 Hook the Rod with Groove in Body

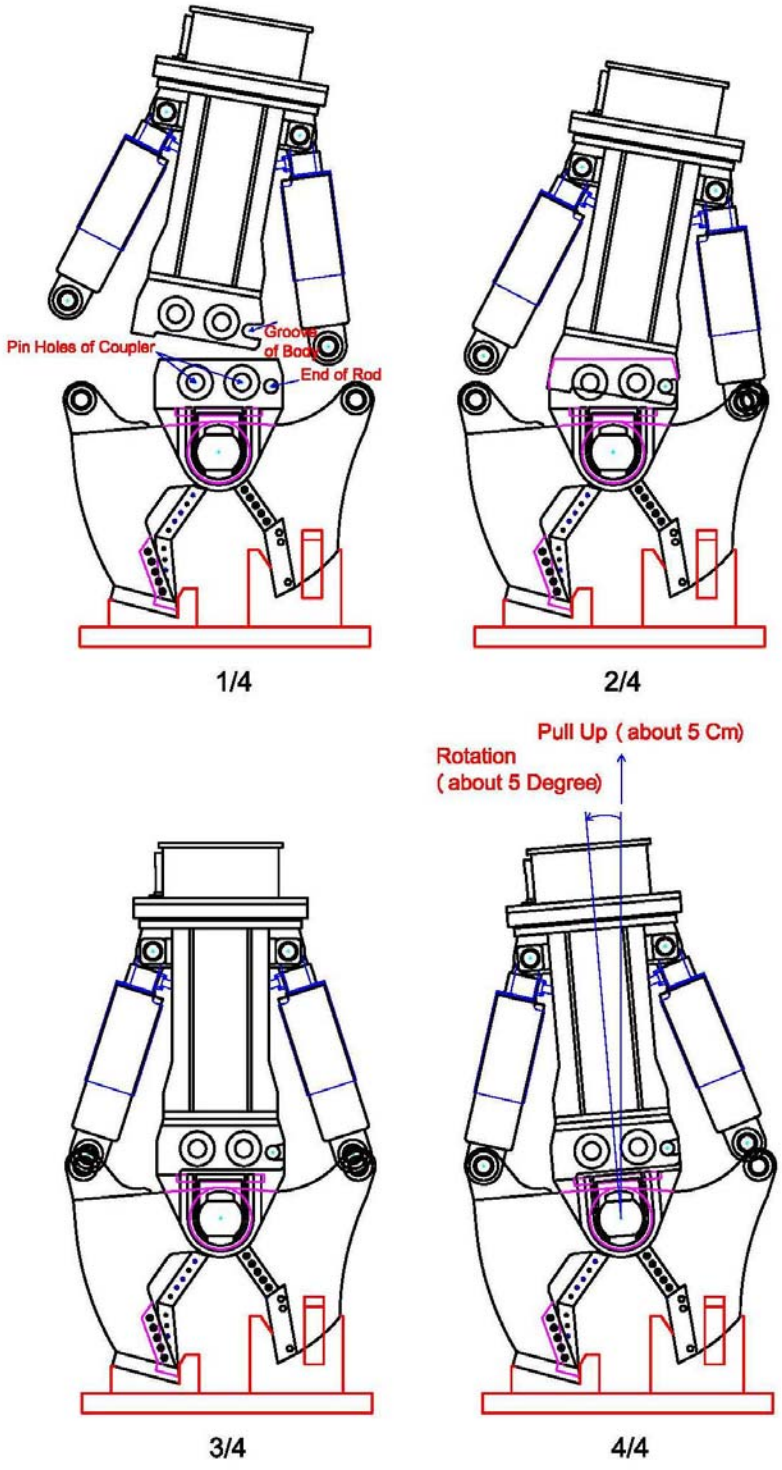


Fig. 3/4 Connect Main Cylinder to Jaw With Pin.
Fig. 4/4 Pull Up and Tilt to Align Jaw and Main Cylinder. Install Pin.

11.0 Lifting, Transport & Storage

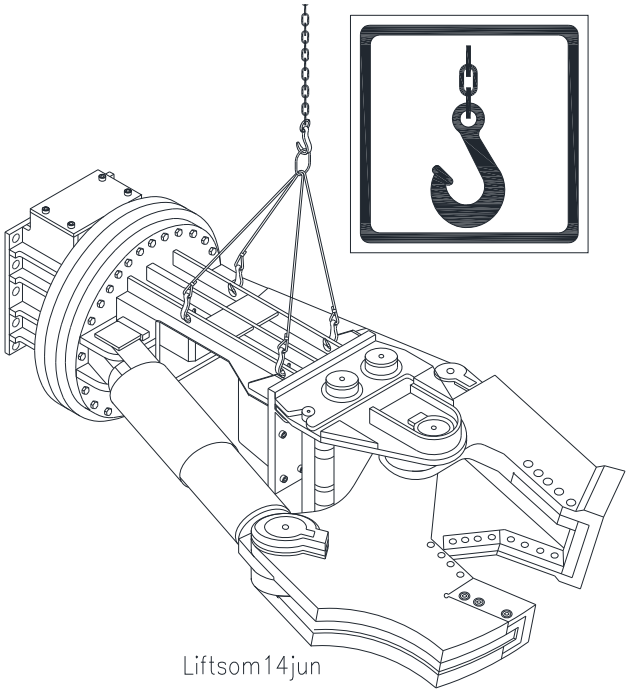
11.1 Lifting & Transport Precautions

WARNING

Crush injury may result if the Processor shifts or falls. Do not lift the Processor by the mounting pins or whip hose. LIFT POINT is identified with hook. Lifting devices must safely carry the loads to which they will be subjected. Lift away from people. Do not enter the danger zone while the attachment is being lifted.

CAUTION

Crush injury. Keep hands and feet clear of crush points. Always use sufficient blocking to avoid accidental or sudden movement of the attachment.



11.2 Transport

11.2.1 When transported independently of the carrier;

Remove all loose debris from attachment.

Follow removal instructions in Section 7.

Secure hoses to unit to avoid accidental damage.

Lift attachment only at approved lift points. Refer to pictogram of the HOOK for the location.

Adequately stabilize and secure attachment for transport.

11.2.2 When transported while attached to the carrier:

Remove all loose debris from attachment.
Secure hoses to unit to avoid accidental damage.

Inspect the mounting pins and hardware for damage and integrity.

Transport carrier in accordance with carrier manufacturer's recommendations.

11.3 Storage

During periods of non-use, protect against damage.

Seal hydraulic connections to protect system against contamination.

Keep the motor full of oil to protect internal components.

Apply coating of rust and corrosion inhibitor to all unpainted surfaces, especially cutter blades and cylinder rods.

Apply fresh grease to all lube points. Include the pins and machined bores of the mounting bracket.

Rotating attachments in storage should be lubricated at least every six months.

If possible, store indoors. Avoid wet or damp conditions to minimize rust.

Block the processor up off the ground.

Protect rubber components such as hoses from exposure to direct sunlight to reduce aging effects.

Cover with water proof tarp.

12.0 Troubleshooting

12.1 Troubleshooting - General

The table provides information useful in diagnosing and correcting unsatisfactory machine operation or failure of the system and its components. The table lists various faults, the possible cause and recommended action to correct the fault. It's virtually impossible to describe all possible problems. Therefore, if an unusual condition is encountered and is not covered in the troubleshooting table, we recommend you contact the Allied distributor in your area or contact the Allied Technical Service Department.

CAUTION

Only qualified personnel, having knowledge of the machine's systems, proper test equipment and tools should attempt adjustments and repairs.

Fault	Possible Cause	Corrective Action
No jaw operation	Electrical fault	Check power source (fuse) and trace wire connections / switch to valve
	Failed solenoid valve	Repair solenoid spool or replace
	No oil flow or insufficient pressure at cylinder	Verify shut off valve position. Test hydraulic circuit. Correct as required.
	Failed seal in center joint	Replace seals
	Failed seal in cylinder	Replace seals
	Mechanical bind	Clear debris. Lubricate bearings.
No Rotation	Electrical fault	Check power source (fuse) and trace wire connections / switch to valve
	Failed solenoid valve	Repair solenoid spool or replace
	Failed Motor	Repair or replace with new one
	Failed Pinion	Replace with new one
	Brake pressure too low	Adjust brake valve pressure
	Mechanical Bind	Clear debris. Lubricate bearings
Operation smooth, but at reduced speed	Flow too low.	Check flow output from carrier
Oil leakage from Cylinder	Seal damage	Replace seals
Oil leakage from center joint	Seal damage	Replace seals
Erratic operation	Uneven oil pressure or flow.	Test hydraulic circuit. Oil contamination. Repair / replace speed valve.
	Mechanical Bind	Clear debris. Lubricate bearings
Excessive noise or vibration	Failed bearing	Inspect and replace bearings
	Loose bolts.	Inspect and tighten bolts

12.0 Troubleshooting

12.2 Knowing the System

Knowing the system is the greatest aid to troubleshooting. Every component has a purpose in the system. The construction and operating characteristics of each one should be understood.

- Know the correct operating specifications of the Allied equipment. Know the capabilities of the machine's system. Each component in the system has a maximum rated speed, torque or pressure.

- Loading the system beyond the specification increases the possibility of failure.

- Know the correct operating pressures. Always set and check pressures with a calibrated gauge. Refer to the Specifications Table for the correct oil flow and pressures.

The Allied work tool is not self-powered. Its performance level is affected by a hydraulic system that is not operating to specification.

The Allied Processor is designed to provide optimum performance with reliable service life at a specific oil flow. Use a flow meter to measure oil delivery and to verify the cracking pressure of the relief valve.

If the machine is equipped with a work mode switch, verify the selector switch is set on the proper attachment setting for operating the Processor.

When troubleshooting, include all associated parts of the attachment circuit to exclude any possibility of a collapsed hose or other fault or malfunction.

Tools required for testing include a flow meter and pressure gages. Test procedures, along with a form to record the results of the flow test, can be found in the Technical Data section of this manual.

Most troubles encountered with the machine will be quickly recognized by failure of the machine to operate properly.

Analyze the system and develop a logical sequence for setting valves, mechanical stops, interlocks and electrical controls. Develop a cause and effect-troubleshooting guide similar to the tables on the following pages.

Determine if the problem is electrical, hydraulic or mechanical. Unless the trouble is immediately apparent, try the simple things first. For example, if the jaws are moving slowly, take the following approach:

- Check if the pins or bearings are binding. If joints are not properly lubricated the pin and bushing will wear or seize.

- If the fault is not a mechanical, be sure to check one of the most common causes of trouble in a hydraulic system. See if there is enough oil in the hydraulic reservoir.

- Troubleshooting procedures for the hydraulic and electrical system should start with the power supply and work down each circuit until the fault is located.

12.3 Recognizing Trouble Indicators

The ability to recognize trouble indicators in a specific system is usually acquired with experience.

- Observe if the problem affects one or more functions.

- Swap hoses and/or electrical connections with another similar function to try to isolate the problem. Swap only one thing at a time! Be ready with a drain pan to collect oil from the hose.

CAUTION

Burn injury from contact with hot surfaces. Some components of the Allied work tool become hot during operation. Allow parts and fluids to cool before handling.

WARNING

Fluid penetration hazard. Escaping fluid under pressure can cause injury from injection. Always relieve pressure before disconnecting hydraulic lines or other pressurized lines. If any fluid appears to penetrate the skin, seek immediate medical attention.

- Make note of when and under what conditions problems may occur, such as extreme high or low ambient temperature, wet or humid conditions, high oil temperature, or at times of heavy vibration.

12.0 Troubleshooting Guide

- Ask if the problem is reported by one shift or all shifts. If the test can be done safely, ask the operator to create the situation, which will cause problem.

- Check service and maintenance records. Check dates to see when and what types of services were performed last. Check that the correct parts were used. If oil was change, verify correct type.

- A warmer than normal oil line might reveal a relief valve is bypassing oil because of a malfunction or mis-adjustment. Hydraulic fluids that have a low viscosity will increase the internal leakage of components resulting in a heat rise.

- Excessive noise means wear, misalignment, cavitation or air in the fluid. Contaminated fluid can cause a relief valve to stick and chatter. These noises may be the result of dirty fluid or filter, high fluid viscosity, low reservoir level or loose suction lines.

12.4 Know the Correct Operating Specifications

CAUTION

Always use a gage when adjusting pressures. The operating specifications for this equipment are shown in the Specifications Tables. Only qualified personnel, having knowledge of the machine's systems, proper test equipment and tools are permitted to adjust and repair the Allied work tool.

13.0 Technical Information

13.1 Testing the Hydraulic Circuit

The Allied Processor will provide efficient and reliable service if operated at the accepted oil flow and pressures.

It's important to verify the machine's hydraulic output is properly calibrated prior to using the Allied work tool. The performance of the work tool is impaired by a hydraulic system that is not operating correctly or set outside the accepted specifications.

Tools required to complete these tests include a flow meter and pressure gages. Record the test measurements in the worksheet provided below.

Tests are performed under varied conditions, including temperature, work mode, engine speed and load. Use test results to confirm that the hydraulic circuit is properly calibrated and set in accordance to the accepted specifications listed in the technical data section of this manual.

Work Mode	Engine RPM	Flow [GPM]	Load [PSI]	Oil Temp [ºF]	Relief [Crack]	Relief [Static]	Return [PSI]
			0				
			1000				
			1500				
			1800				
			2000				
			2200				
			2400				
			2600				
			2800				
			3000				
			3200				
			3400				

CAUTION

Only qualified personnel, having knowledge of the machine's systems, proper test equipment and tools should attempt testing and adjustments. Before starting, make sure the circuit to be tested has a relief valve. Open restrictor valve on flow meter. Procedures can vary depending on specifics of your equipment. Follow the instructions provided by the manufacturer of the carrier and flow meter when testing.

Work Mode – Set to correct position (if equipped).

Engine RPM – Set to normal operating speed

Flow [GPM] – Record measured flow at each load pressure

Load Pressure [PSI] – Steadily increase load with restrictor valve on the flow meter

Oil Temperature – Oil temperature must be at normal operating temperature while testing. Stop test if temperature exceeds 176° F (80° C)

Relief Pressure [Crack] – Slowly close restrictor valve until pressure gage indicates relief valve has cracked open.

Relief Pressure [Static] – After cracking pressure is reached, further adjust restrictor valve until flow gage indicates relief valve is fully open.

Return Pressure [PSI] – Record the pressure measured in the return line. Measuring point for gage must be located near the motor's outlet port.

If troubleshooting, include all associated parts of the attachment circuit to exclude any possibility of a collapsed hose or other fault or malfunction.

13.0 Technical Information – [cont'd]

13.2 Oil Pressure Check

IMPORTANT
The Processor is designed to provide optimum performance with reliable service at specific oil flow and pressure. Inattention to correct machine set up may result in equipment damage, diminished service life and poor efficiency.

Measure Oil Pressure Whenever the Following Conditions Occur

When first installed on a carrier

Anytime repairs or modifications are made to the machine's hydraulic circuit.

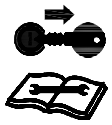
The machine operates other hydraulic work tools.

Anytime the Processor is removed from one machine and attached to a different machine.

Check the pressure every 250 operating hours is recommended.

13.3 How to Measure the Oil Pressure

CAUTION
Only qualified personnel, having knowledge of the machine's systems, proper test equipment and tools should attempt testing and adjustments.



WARNING

Prevent accidental start. Engage interlock, shut off engine and apply parking brake. Follow all safety and operating instructions provided by the carrier manufacturer.

Certain tests, such as measuring the oil pressure, can only be done while the Processor is operating.

Lower the Processor to the ground and stop the carrier engine.

Relieve hydraulic pressure in attachment circuit.

Connect a pressure gauge [0-5000 PSI] to the [M] measuring port located on the [P] hose (Jaw Close) of the Processor.

Use the form provided in Section 12.1 to record your results.

Start the carrier. Use the boom and arm controls to extend the Processor away from the carrier. Adjust the engine's rpm to the normal operating speed and set operating mode to "work tool".

The test can begin when the normal operating temperature is reached.

Start the Processor and record the pressure reading. It's normal for the pressure reading to increase and decrease as the jaws apply varying amounts of pressure.

Compare your results with the values listed in the General Specifications Table.

When finished with the pressure-measuring test, lower the Processor safely on the ground and stop the engine. Relieve hydraulic pressure in attachment circuit. Remove test gauge.

13.4 Definition of Hydraulic Terms

For the purposes of this manual, the following terms are defined as:

Range – A range is represented by two values 'V1 – V2' and generally means the lowest-to-highest limit of a device that will allow it to adequately respond. The term "minimum flow" describes the least amount required that permits continuous operation that is both satisfactory and efficient.

Hydraulic Flow – A measure of the volume of oil (values given in GPM / LPM) necessary for the safe and efficient operation of the Allied work tool.

Efficient performance relates primarily with how quickly oil can fill the cylinders. Under-flowing the cylinders with too little flow will result in excessive cycle times. Conversely, too much flow (above the accepted flow rate) does not improve performance. Excessive flow results in overheating the oil, and should be avoided.

IMPORTANT
Never use a relief valve as a means to reduce the hydraulic oil flow to the Processor. Oil by-passed over the relief valve will cause significant heat generation.

13.0 Technical Information – [cont'd]

Operating Pressure – A measure of the hydraulic oil pressure (values given in PSI / BAR) taken in the attachment's supply line during operation.

Oil pressure will fluctuate with changes to material density and the force exerted by the cylinders. With no load in the Processor jaws, the oil pressure is minimal. Each component of the hydraulic system has a maximum working pressure. For safety and reliability, it's important that pressure is regulated so that no component is subjected to pressures beyond their design.

IMPORTANT
The Operating Pressure is not to be used as a relief valve pressure setting. Poor performance and significant heat generation will occur.

Relief Valve – An adjustable, spring-loaded valve that opens when a preset pressure value is reached. A relief valve is safety device, used to protect the circuit against hydraulic overload. Relief valves vary in design. Pilot controlled pressure relief valves are designed so that the relief pressure increases very little as the flow through the valve increases. For Processor applications, they are recommended over direct acting type relief valves.

CAUTION
The relief valve is a safety device, used to protect the circuit against hydraulic overload. It is a required component.

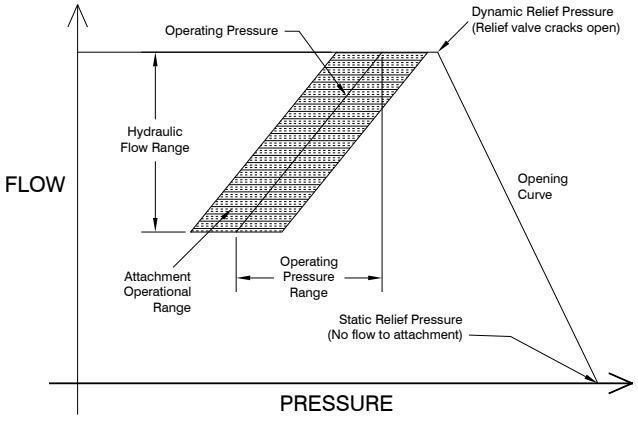


Fig. 13-1 Flow-Pressure Diagram

Dynamic Relief Pressure – Also referred to as "Cracking Pressure". The pressure measured at the moment the oil pressure exceeds the preset value of the relief valve and the spool "cracks" open.

Static Relief Pressure – Also referred to as "Full Relief Pressure". The pressure measured at the moment the relief valve has opened fully and all oil is by-passed.

Opening Curve – The dynamic pressure is always less than the static pressure. A relief valve adjusted to a dynamic pressure of 3000 psi (200 Bar) will crack open when the preset point is reached, but fully opens at a higher pressure. The opening curve is the rise of pressure between dynamic and static.

IMPORTANT
The carrier's hydraulic system must be capable of providing the accepted oil flow and pressure.

13.0 Technical Information – [cont'd]

13.1 Specifications

Operating Specification		MP 785R		MP 985R		MP 1385R	
		Demo Jaw	Shear Jaw	Demo Jaw	Shear Jaw	Demo Jaw	Shear Jaw
Weight	lbs [kg]	6,467 [2936]	6,467 [2936]	8,480 [3850]	8,480 [3850]	10,903 [4950]	10,506 [4770]
Crushing Force at Front Spike	tons	91	---	114	---	143	---
Cutting Force at Throat	tons	---	195	---	272	---	335
Cylinder Pressure Max.	psi [bar]	5,075 [350]		5,075 [350]		5,075 [350]	
Motor Pressure Max.	psi [bar]	3,045 [210]		3,045 [210]		3,045 [210]	
Cylinder - Oil Flow Range	gpm [lpm]	26-66 [100-250]		40-80 [150-300]		53-106 [200-400]	
Motor - Oil Flow Range	gpm [lpm]	2-8 [10-30]		2-8 [10-30]		2-8 [10-30]	
Carrier Weight - Recommended	lbs 1,000	74-110		88-124	110-146	158-264	158-264

Important: Do not exceed 5075 psi [350 Bar] setting at the pressure relief valve.

Table 13.2 Oil Port Type and Size. Hose Size for Jaw, Rotation and Drain

Port	MP 785R		MP 985R		MP 1385R	
	Type and Size	Hose Dia	Type and Size	Hose Dia	Type and Size	Hose Dia
P					Flg C62 1 ½	1 1/2
T					Flg C62 1 ½	1 1/2
R					Flg C61 1/2	½
D					BSPP ¼	¼
M					BSPP ¼	---

IMPORTANT

The Processor has several connection ports. For ease of identification, the ports are marked.

- P – Jaw Close
- T – Jaw Open
- R – Rotation CW
- R – Rotation CCW
- D – Drain
- M - Measure

13.0 Technical Information – [cont'd]

General Dimensions

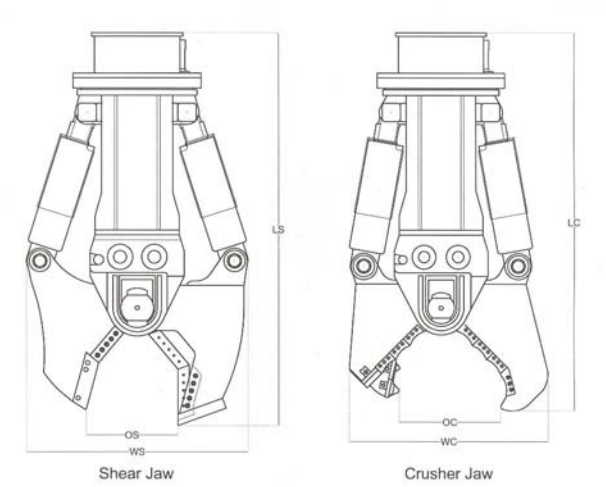


Fig. 13-2

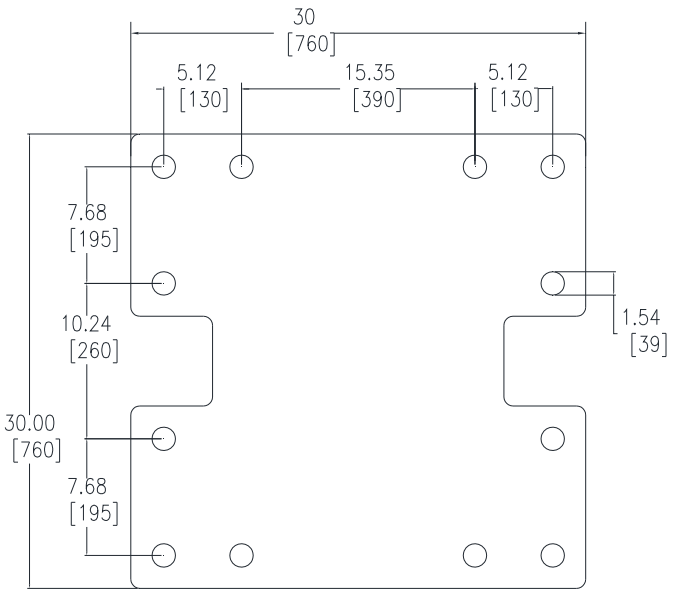


Fig 13-3 LR9 Mounting Hole Pattern

Table 13.3. Specifications

		MP 785R		MP 985R		MP 1385R	
Operating Specification		Demo Jaw	Shear Jaw	Demo Jaw	Shear Jaw	Demo Jaw	Shear Jaw
Opening – Max.	in. [mm]	23.6 [600]	21.2 [540]	28.2 [717]	28.2 [630]	33.6 [855]	30.6 [735]
Length – Overall	in. [mm]	92.6 [2352]	96.5 [2450]	102.5 [2603]	106.8 [2713]	111.1 [2821]	115.5 [2933]
Width – Overall	in. [mm]	47.6 [1210]	50.0 [1271]	55.5 [1410]	61.1 [1552]	64.2 [1630]	63.5 [1614]

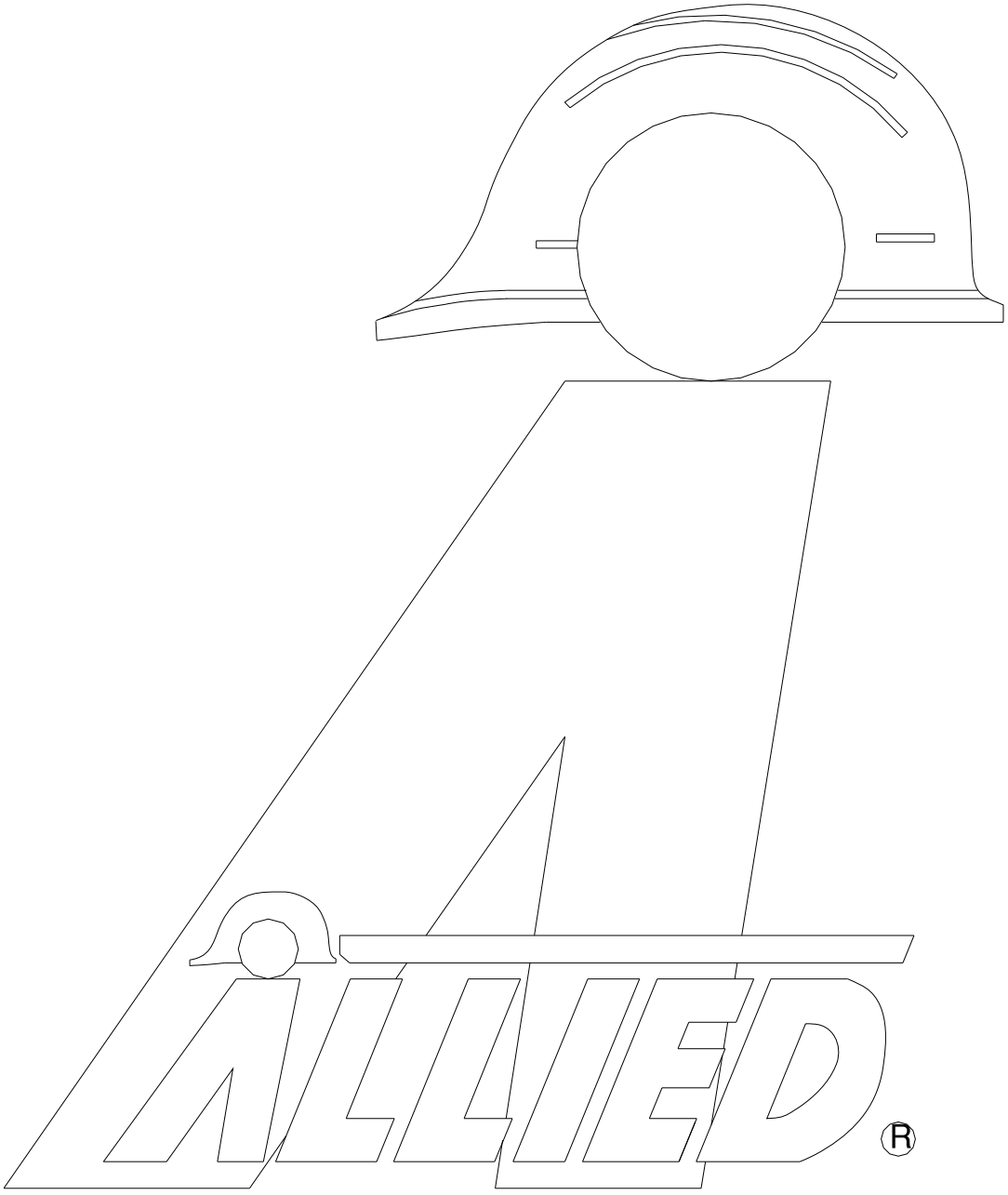
Table 13.4

Shear/Plate Jaw Set		MP 785R	MP 985R	MP 1385R
"I" Beam	in.	12	15	18
Solid Round	in.	2.1	2.5	2.6
Plate (pierce)	in.	.6	.6	.6
Pipe	in.	11	12	14
Concrete	in.	11-16	12-18	18-26

Demolition Jaw Set

Concrete	in.	18-27	20-28	26-30
Rebar	in.	2.1	2.5	2.6

Notes



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