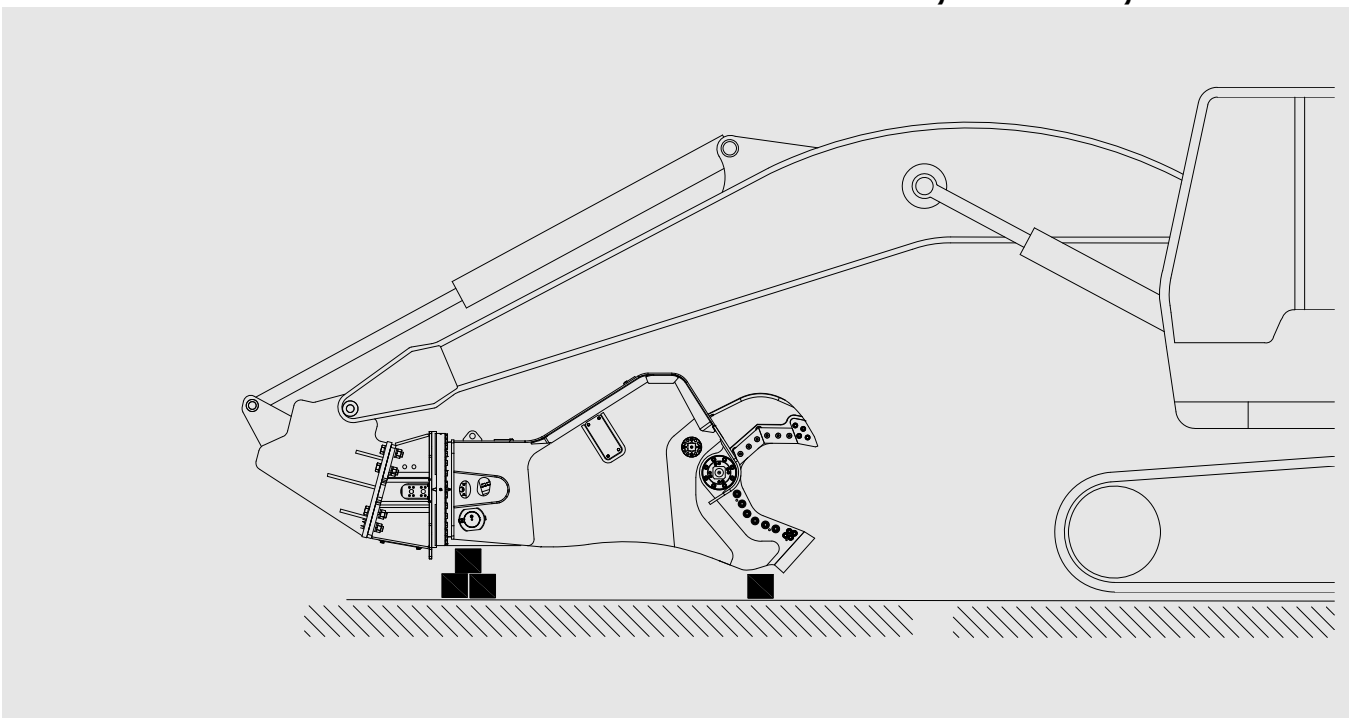
Mobile Scrap Shear

Models
AMS20, AMS30,
AMS40, AMS50, AMS100



ALLIED®
Construction Products, LLC

Safety, Operation and Maintenance

This manual was prepared to assist the operator and maintenance personnel with the information necessary for the safe and proper use of the Allied equipment. Before use, read the entire manual and thoroughly understand its content, including all safety-related instructions. 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 this manual must include effective date shown on inside cover

SOM575886

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Revision History of Document 575886

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. Specifications are based on published information at the time of publication. Go to www.alliedcp.com for product or document updates.

Effective Date	Page	Summary of Change
Jan 13, 2012	All	1st Edition 575886_release date12jan
Feb 13, 2012	6	Table 5.1 add model AMS50
Mar 6, 2012	6	Table 5.1, 9.4 add model AMS30, AMS100
May 7, 2012	iv, 5, 8, 6	Rotation & drain connections - revise figures & tables. Revise Table 5.1 mounting family.
Apr 2013	6,7,10	Revise Table 5.1. Add tech-data for non-rotation models. Add Tables 5.2, 6.2, 6.3 and figures to identify hydraulic connection ports.
May 2014	1, 6, 7	Add AMS 20 to tech data. Revise tech data.

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 contained in the safety message before attempting to install, operate, service or transport the Allied equipment.

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

The information provided in the safety message is important for your safety. These messages provide instructions on how to avoid injury from potential hazards associated with improper use, operation or handling of the Allied equipment. Read and follow the instructions in each safety message. Be aware of the consequence if these instructions are not followed.

Safety messages provide the following information:

1. **Alert** personnel to potential hazards
2. **Identify** the severity of the hazard, if encountered
3. **Describe** the nature of the hazard
4. **Instruct** how to avoid the hazard

Fig. S1 Safety Alert Symbol

ATTENTION, BECOME ALERT, YOUR SAFETY IS INVOLVED.

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 safety hazards.

Signal Words

"DANGER", "WARNING" and "CAUTION" are used to express the different degrees of hazard seriousness. Learn to recognize and understand the severity and consequence associated with each of these signal words should a potentially hazardous condition be encountered.

"**DANGER"** identifies the highest degree of hazard seriousness. Its use is limited to the most severe situations.

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.

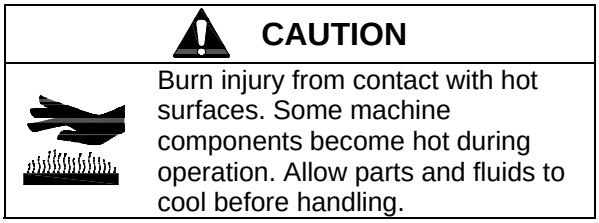


Fig S2 Safety Message - Typical

Non-hazard Related Signal Words

Other signal words found in this manual are IMPORTANT and NOTE. These messages provide information that is not hazard-related

IMPORTANT – Identify instructions that if not followed, may damage or shorten the service life of the equipment

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

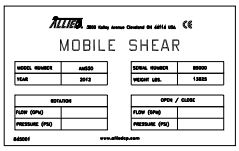
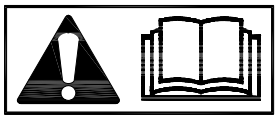
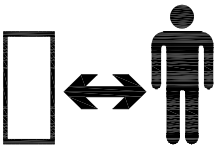
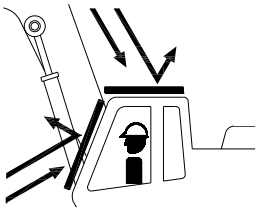
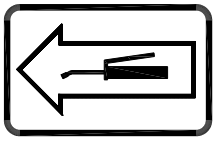
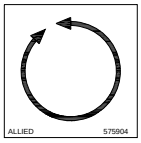
Safety Information – [cont'd]

Safety Warnings and Information Labels

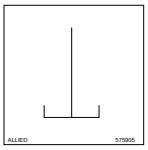
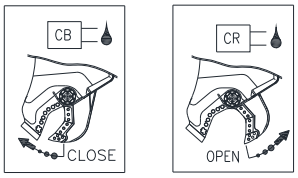
Information labels affixed to the Allied equipment include safety warnings, identification and instructions important to operation and service. Refer to Figure "A" for their location on the equipment.

Keep all safety labels clean. Words and illustrations must be readable. Before operating this equipment, replace damaged or missing labels. For label identification and replacement, refer to the Parts Manual.

Table A

Figure	Label	Description
1		**EQUIPMENT ID** - Contains identifying information about the equipment, including: Product name, model number, serial number, company name and address.
2		**SAFETY ALERT SYMBOL / READ INSTRUCTIONS** - Directs personnel to the manual for further information / instructions.
3		**STAY CLEAR** – Alerts personnel and by-standers to maintain a safe distance from the work tool during operation.
4		**PROJECTILE HAZARD** – Alerts of the need for a protective guard to shield the operator from debris generated when work tool is in operation. It directs personnel to the Operator's Manual for safety instructions.
5		**LIFT POINT** – Marks lift points for safe handling of the work tool.
6		**LUBRICATION** – Marks lubrication points on the equipment.
7		**ROTATION** – Marks the location of hydraulic connection port for motor rotation. Pictogram indicates rotation is bi-directional 360°.

Safety Information – [cont'd]

Figure	Label	Description
8		**MOTOR CASE DRAIN CONNECTION** – Marks the location of the connection port for the hydraulic motor's case drain. Hydraulic symbol, used in standard fluid power, identifies connection to tank.
9	**AMS40**	**MODEL** – Identifies the Model of the Allied Mobile Shear
10	ALLIED	**ALLIED LOGO** – The Allied brand identifier and is a registered trademark of Allied Construction Products, LLC.
11		**NON-ROTATION TYPE MODELS - HYDRAULIC CONNECTIONS "CB" and "CR" –** Oil drop next to connection port and action of jaw open / close. Oil flow at CB connection closes jaw. Oil flow at CR connection opens jaw.

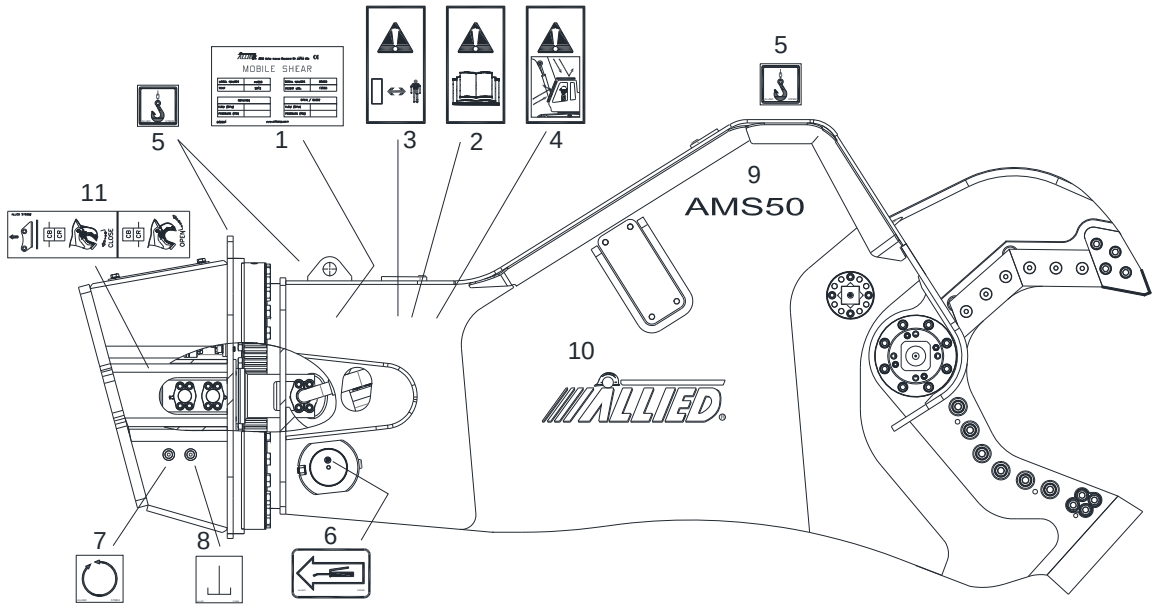


Fig. "A" Label Locations

Safety Information – [cont'd]

Meaning of Pictograms

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

- Read the manual
- Refer to the manual for further details
- Procedures are explained in the manual

Read the Service Manual For Additional Information

Crush point

Crush point / Falling part

Moving part (in direction indicated by arrow)

- Falling object
- Unsupported loads

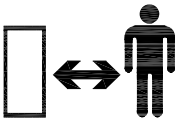
Personal Protection Equipment

- Hearing protection

- Safety eyewear

- Gloves

- Safety shoes



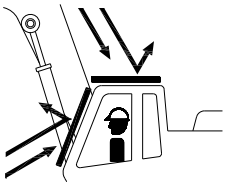
Personnel must always maintain a safe distance from the work tool

Fragments / debris becoming airborne projectiles

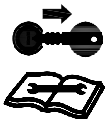
Fluid injection

Hot surfaces

Oil / Gas under pressure

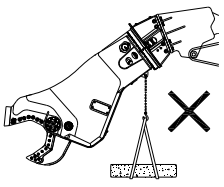


Fragments / debris that become airborne projectiles. Protective guards are required on cab when operating this work tool



Shut off carrier & remove key before servicing

Identifies lift point



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.

The check mark symbol is used to indicate actions that are correct, approved and recommended

Safety Information – [cont'd]

Attention Read the Manual

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. Operators and personnel responsible for maintenance of this equipment should read this manual. Other manuals, such as those published by the manufacturer of the machinery used in support of the Allied equipment, should also be read.

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-related statements in this manual.
- Is competent at recognizing existing and potential hazards and possess the 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.

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. Instructions and safety information described at the beginning of this section are general in type. As you continue to read through later sections of this manual, instructions and safety information are written and defined by specific operations and the type of equipment.

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 existing underground 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 attachment.
- Enforce the use of personnel protection equipment
- Ensure equipment is kept in safe operating condition
- Ensure safety-related instructions, 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 factors.

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 and equipment damage.

This section forward describes safety measures specific to the type of product identified in Table 1.1.

General Instructions For Working Safely With the Scrap Shear

It is essential that you familiarize yourself with the dangers that are present and how to avoid them before you begin working with the scrap shear.

Intended Use / Unapproved Modifications

In order to provide and maintain efficient production and reliable service, while ensuring operator safety, the Allied equipment may not be modified or used for any other purpose other than, for which it was intended. Use of the Allied equipment, other than those specified in this manual, may place personnel at risk of injury and/or may subject the equipment to damage. Do not use the scrap shear to demolish buildings; this can overload the carrier and parts can fall. The scrap shear may only be used for cutting scrap metals. Metals identified as unsuitable for cutting with the scrap shear include alloy steel, hardened steel or cast metals. It is prohibited to modify or use the Allied equipment in unapproved applications unless written consent is received from the Allied Engineering Department.

Guards On the Work Tool

Guards have been fitted to the scrap shear, where possible, to prevent unsafe situations. Guards are removable for purposes of adjustments, maintenance and/or repair. Guards must be reinstalled after service work is completed. Do not operate the scrap shear without all guards installed.

Guards On the Machine

To prevent risk of injury and equipment damage, do not handle or cut material overhead. Whenever possible, the operator should distance himself as far as possible from the material being handled and cut. The cab of the carrier must be fully guarded to shield the operator against injury during material handling and from fragments when materials are cut.

Review Performance Specifications of Work Tool With Carrier to Ensure Safety / Compatibility

Before the Allied equipment is used, it is the responsibility of the owner to confirm that it is suitable for the work that will be required of it.

Ascertain that the carrier is capable of providing adequate stability and support so that operator safety is ensured, while providing efficient production and reliable service.

The hydraulic system of the shear requires large quantities of oil and operates at very high pressures. Accordingly, it cannot be over-emphasized, that attention to detail is critical when evaluating the carrier's hydraulic performance as well as to the integrity of all system components. Both are key for achieving machine compatibility and operator safety.

Use the performance specifications located in the Technical Data Section of this manual to determine compatibility with the carrier. If further assistance is required, contact your authorized Allied dealer or Allied's Product / Technical Support Department.

Table of Contents

1.0 Introduction and Scope

1.1 Purpose of This Manual

This manual has been prepared to assist the operator and maintenance personnel with the information necessary for the safe and proper use of the Mobile Scrap Shear. Content includes:

- Safety Information
- Equipment Identification
- Technical Data (Weight & dimensions)
- Installation and Set-up
- Pre-Operation Inspection
- How to Operate the Allied Work Tool
- Maintenance Schedule
- Lubrication
- Cutting Blades – Inspection / Changing
- Basic Troubleshooting Guidelines
- Transporting, Removal, Lifting, & Storage

The Technical Manual contains figures that help with the identification and description of machine components. Some figures may show optional equipment that is not supplied with standard configured equipment.

Material presented in this manual, including illustrations and descriptions, is applicable to the equipment identified in Table 1.1 and may not be suitable for use with other models.

Prior to use, 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.

Table 1.1 About This Manual

Document ID.	SOM575886
Category	Safety, Operation, Maintenance, Technical Specifications
Current Status	See Inside Cover
Product Name:	Mobile Scrap Shear
Applicable Model[s]:	AMS20, AMS30, AMS40, AMS50, AMS100
Years of Manufacture:	2012

Inquiries regarding this manual must include effective date shown on inside cover

This document is published 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.

The content of this document has been reviewed for accuracy. Allied Construction Products, LLC has endeavored to deliver the highest degree of accuracy possible and has made every effort to provide information as complete as possible for this document. However, continuous improvement of our products is an Allied policy. The material in this publication, including descriptions, illustrations and specifications, describes the product at the time of its publication, and may not reflect the product in the future. Revisions made to the content of this document are recorded 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.

Replacement manuals can be ordered by contacting your Allied dealer service center. These 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.

- PM577104 Parts Manual for AMS20R/NR
- PM576001 Parts Manual for AMS30R/NR
- PM575888 Parts Manual for AMS50R/NR
- PM575887 Parts Manual for AMS40R/NR
- PM576000 Parts Manual for AMS100R/NR

The Parts Manual has been prepared to assist with the identification of all components used in the Mobile Scrap Shear. Figures depicted in Parts Manuals are for purposes of parts identification and replacement. The Parts Manual is not intended for use in the repair or service of the Allied equipment.

Content included in the Parts Manual:

- Ordering information for the safety and information labels displayed on the equipment.
- Illustrations of assemblies, name of part, quantity and descriptions that help identify each component and its location on the Mobile Scrap Shear.

For your convenience, an order form is provided in the Parts Manual.

2.0 Equipment Identification

2.1 Serial Number Location

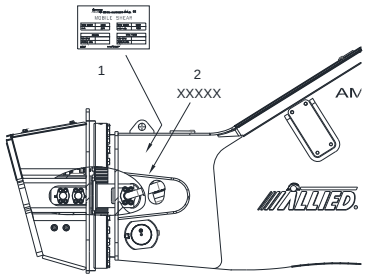


Fig 2-1 Equipment Identification

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

1. On the Equipment Identification Tag
2. Stamped on the guard.

2.2 Equipment Identification Label

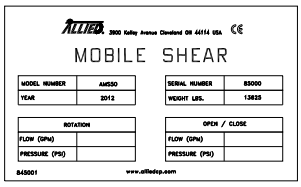


Fig 2-2 Equipment Identification Label

The Equipment Identification label is affixed to the subhead. 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

- Record the Model and Serial Number from the Equipment Identification label to the space provided below.
- Indicate the date in which the Allied equipment was placed into service.

Model _____

Part Number: _____

Serial Number: _____

In Service Date: _____

Product Registration Date _____

- Your local Allied dealer requires this information to better assist you with questions regarding parts, warranty, operation, maintenance, or repair.

Register this equipment by returning the completed warranty registration form to Allied.

3.0 Warranty Protection Summary

3.1 Overview

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

For every new Scrap Shear, Allied requires that a Warranty Registration form be completed and returned to Allied. The form has a section to record information about the carrier on which the Allied equipment is being installed.

To keep the Allied equipment operating within its performance limits, familiarize yourself with the technical specifications section of this manual. Adhere to these specifications when calibrating the carrier. Improper installation, including failure to calibrate the carrier correctly may result in loss of performance or subject the equipment to conditions beyond their design.

Use of non-Allied parts, unapproved service methods, modifications to the attachment, 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 570519.

3.2 Owner's Responsibilities

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

The following outlines general maintenance policies required for all Scrap Shear models. The equipment 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 detailed in this manual.
- Understand proper operating techniques for all recommended applications.
- Use the Allied equipment 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 equipment only for the purpose for which it is intended. Understand that equipment used in particular climate conditions or special applications may require modifications. Equipment that is modified from standard may require additional training for operators and service personnel.
- Appoint Who Does What. Ensure that all personnel understand what their specific responsibilities include.
    1. Establish maintenance responsibilities to be performed by the OPERATOR.
    2. Establish maintenance responsibilities to be performed by the SERVICE TECHNICIAN.
- Recognize problems and know how to take corrective action as detailed in Troubleshooting Section of this manual.
- Conduct regular checks and inspections as scheduled in the Care and Maintenance section of this manual.
- 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 Scrap Shear applications, operation, 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:

- Inadequate Training
- Improper Installation
- Operation in unapproved applications
- Incorrect operation
- Improper 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 Components Familiarization

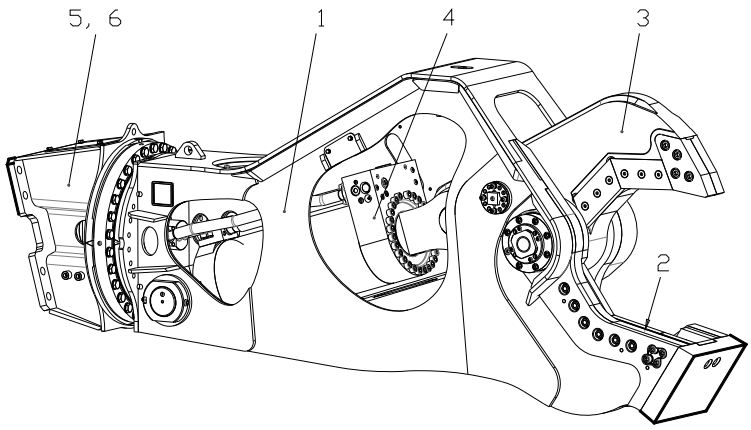


Fig. 4-1 Main Components

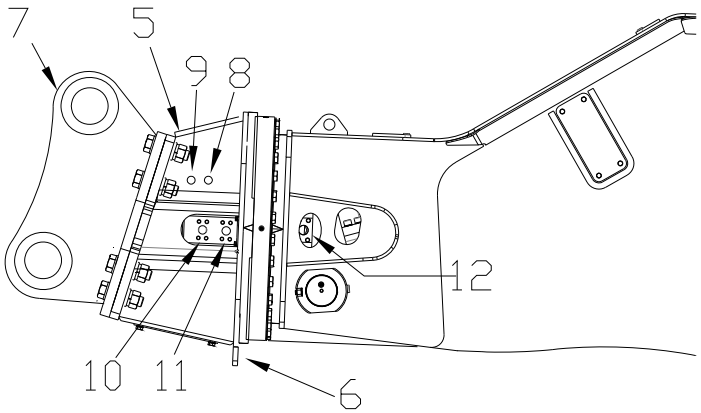


Fig. 4-2 Rotation & Subhead Components

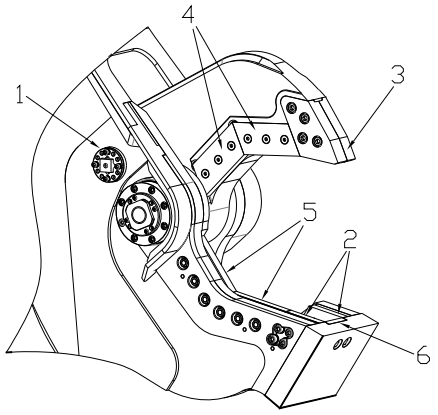


Fig. 4-3 Position of Cutting Blades

Item	Part Name	Qty
1	Housing	1
2	Lower jaw	2
3	Upper jaw	1
4	Hydraulic cylinder	1
5	Rotation assembly	1
6	Subhead	1
7	Mounting Bracket	--- [a]
8	Case drain connection	2 [b), c)]
9	Rotation connection	2 [b)]
10	CB – Jaw close	2 [b)]
11	CR – Jaw open	2 [b)]
12	Swivel - CB port	1

[a] Item not included – order separately

[b] 1st port in view – 2nd port located on far side

[c] No case drain connection on model AMS30

Item	Part Name	Qty
1	Auto-Guide	1
2	Guide Blades [c), d), e)]	2
3	Nose Blades [d)]	2
4	Upper Jaw Blades [c), d)]	2
5	Lower Jaw Blades [c), d), e)]	2
6	Front Blade [c), d)]	1

[c] 4-way indexable cutting blade
[d] Detachably fastened by bolts to movable or stationary jaw
[e] Blade adjustment accomplished thru use of shims

5.0 Technical Data

Table 5.1 Performance Specifications (R-Equipped with Rotation)

	AMS-20R	AMS-30R	AMS-40R	AMS-50R	AM-S100R
Carrier Weight Class	**576890**	**575810**	**575380**	**575770**	**575820**
[a] – lbs x 1000 (metric ton)	32 (15)	46 (21)	58 (26)	70 (32)	110 (50)
[b] – lbs (metric ton)	47 (21)	70 (32)	93 (42)	115 (52)	175 (79)
Mounting Bracket Family	LR8	LR9	LR9	LR9	LR9
Weight & Dimensions					
Weight [c] - lbs (kg) x 1000	5.4 (2.5)	7.9 (3.6)	9.7 (4.4)	13.7 (6.2)	18.1 (8.2)
Dim. “A” in (mm)	105 (2,657)	129 (3,275)	143 (3,635)	157 (3,980)	190 (4,835)
Dim. “B” in (mm)	17.5 (445)	23.9 (607)	29.9 (760)	30.8 (782)	37.3 (947)
Dim. “C” in (mm)	16.4 (416)	21.4 (544)	24.6 (625)	27.6 (701)	35.5 (903)
Cutting Force [d]					
Tip "D" -ton (metric ton)	143 (130)	187 (169)	201 (182)	240 (218)	289 (262)
Apex "E" -ton (metric ton)	265 (240)	355 (322)	381 (346)	467 (423)	559 (507)
Throat "F" -ton (metric ton)	586 (532)	795 (720)	973 (882)	1,143 (1,037)	1,601 (1,452)
Jaw Open-CR / Close-CB					
Pressure Max. -psi (bar)	5,500 (380)	5,500 (380)	5,500 (380)	5,500 (380)	5,500 (380)
Oil Flow Max. -gpm (l/min)	63 (240)	120 (450)	120 (450)	120 (450)	200 (750)
Jaw Ports – (Inside subhead) Flange SAE 6,000 psi CB 2x, (CR 2x)	1.25" (1.25")	1.25" (1.25")	1.25" (1.25")	1.25" (1.25")	1.5” (1.5”)
Rotation 360° Bi-directional					
Pressure Max. -psi (bar)	2,465 (170)	2,465 (170)	2,465 (170)	2,465 (170)	2,465 (170)
Oil Flow Max. -gpm (l/min)	13 (50)	13 (50)	13 (50)	13 (50)	13 (50)
Rotate ports - BSPP 2x (Motor Case Drain ports – BSPP 2x)	1/2" (e)	1/2" (e)	1/2" (1/2")	1/2" (1/2")	1/2" (1/2")

[a] 2nd member (Boom)
[b] 3rd member (Stick)
[c] Weight excluding mounting bracket
[d] Ratings at 5,500 psi (380 bar)
[e] All models have case drain connection except AMS30

Specifications are subject to change without prior notice.

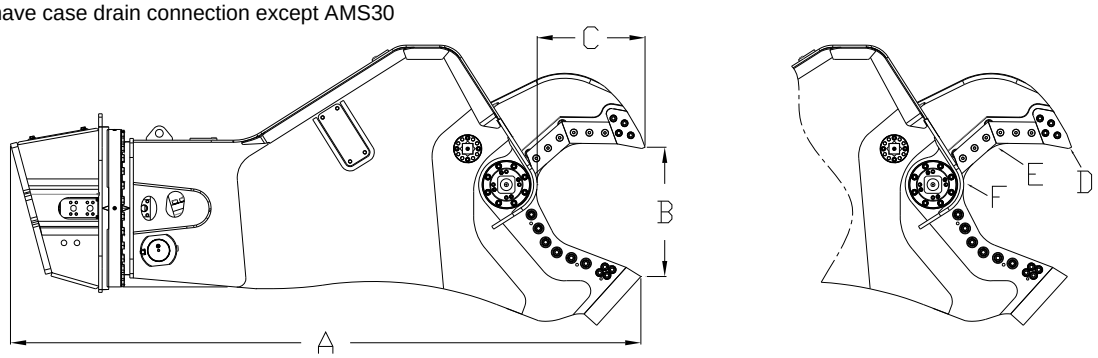


Fig. 5-1 Standard AMS-R Models

5.0 Technical Data

Table 5.2 Performance Specifications (NR-Not equipped with Rotation)

	AMS-20NR	AMS-30NR	AMS-40NR	AMS-50NR	AMS-100NR
Carrier Weight Class	**576891**	**576199**	**576200**	**576201**	**576202**
[a] – lbs x 1000 (metric ton)	27 (12)	38 (17)	50 (23)	60 (27)	94 (43)
[b] – lbs (metric ton)	40 (18)	55 (25)	78 (35)	105 (47)	145 (66)
Mounting Bracket Family	LR8	LR9	LR9	LR9	LR9
Weight & Dimensions					
Weight [c] - lbs (kg) x 1000	5.0 (2.3)	7.5 (3.4)	9.5 (4.3)	12.8 (5.8)	16.5 (7.5)
Dim. “A” in (mm)	105 (2,657)	113 (2,880)	127 (3,220)	140 (3,555)	166 (4,230)
Dim. “B” in (mm)	17.5 (445)	23.9 (607)	29.9 (750)	30.8 (782)	37.3 (947)
Dim. “C” in (mm)	16.4 (416)	21.4 (544)	24.6 (625)	27.6 (701)	35.5 (903)
Cutting Force [d]					
Tip "D" -ton (metric ton)	143 (130)	187 (169)	201 (182)	240 (218)	289 (262)
Apex "E" -ton (metric ton)	265 (240)	355 (322)	381 (346)	467 (423)	559 (507)
Throat "F" -ton (metric ton)	586 (532)	795 (720)	973 (882)	1,143 (1,037)	1,601 (1,452)
Jaw Open-CR / Close-CB					
Pressure Max. -psi (bar)	5,500 (380)	5,500 (380)	5,500 (380)	5,500 (380)	5,500 (380)
Oil Flow Max. -gpm (l/min)	63 (240)	120 (450)	120 (450)	120 (450)	200 (750)
Jaw Ports – (Inside Subhead) Flange SAE 6,000 psi CB 2x, (CR 2x)	1.25” (1.25”)	1.25" (1.25")	1.25" (1.25")	1.25" (1.25")	1.5” (1.5”)

[a] 2nd member (Boom)
[b] 3rd member (Stick)
[c] Weight excluding mounting bracket
[d] Ratings at 5,500 psi (380 bar)

Specifications are subject to change without prior notice.

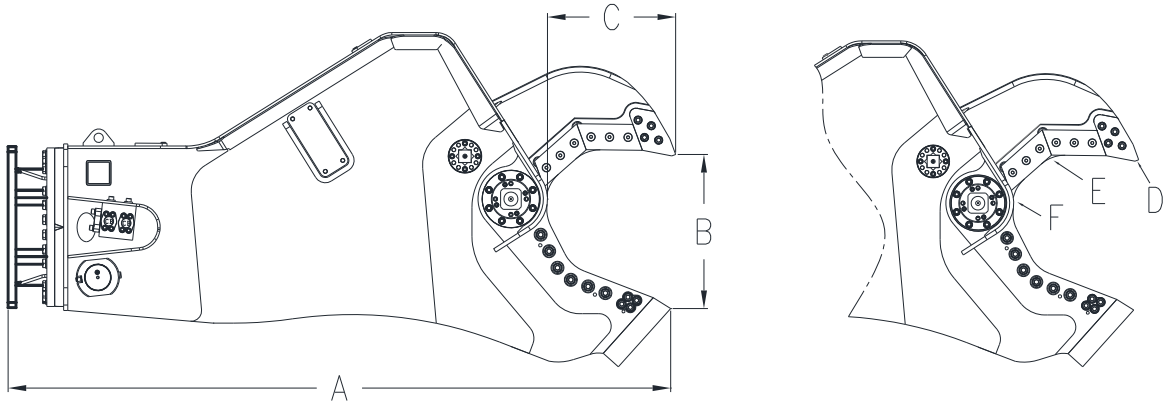


Fig. 5-2 Standard AMS-Non-Rotation Models

6.0 Installation

6.1 Items Required To Install the Scrap Shear

The scrap shear is suitable as a 2nd or 3rd member attachment. Refer to the specifications in the Technical Data Section 5.0 for information that will help determine which position is suitable for your carrier.

The Allied scrap shear is hydraulically powered and utilizes the hydraulic system of a host machine to control the action of the jaw open/close and rotation. Hydraulic hoses and mounting bracket are ordered separately. These are available by contacting Allied or your authorized Allied dealer.

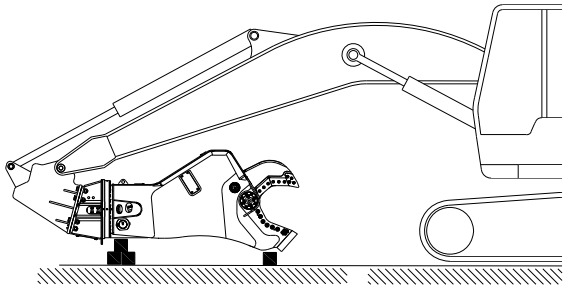


Fig. 6-1 Mounting as 2nd Member

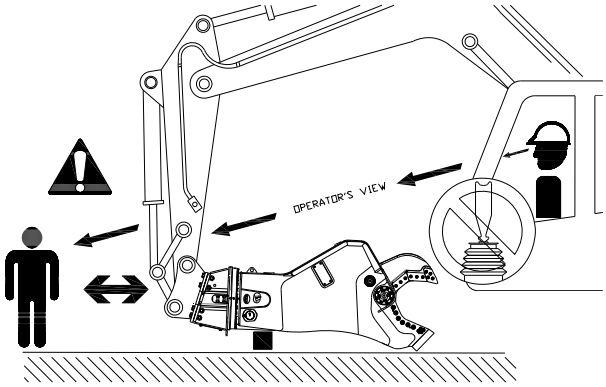


Fig. 6-2 Mounting as 3rd Member

Before starting, precautions must be taken to ensure no unexpected movements of the shear will occur. Follow the instructions and figures for installing the scrap shear to the carrier. Only qualified personnel may install the scrap shear.

- The operator and installer must agree upon signals beforehand.
- The operator must never start the machine or move the shear unless signaled by the installer that it is OK.
- Before starting the machine or moving the shear, the installer must be at a safe distance from the shear.
- The operator must not start or operate the carrier unless seated in the operator's cab.

CAUTION

The operator must have an unobstructed view of the installer and shear at all times.

6.2 Mounting Procedure - 3rd Member (Fig. 6-2)

The procedure used to attach the scrap shear to the carrier as a 3rd member closely follows the mounting procedures for attaching a bucket.

- The bucket must be off the carrier before the shear can be attached. Follow removal and safety instructions provided by the carrier.
- Bolt the mounting bracket (ordered separately) to the subhead. Torque bolts.
- Position scrap shear on firm, level ground.
- Use timber or steel piling as needed, to prop the scrap shear off the ground. Ensure all loads are stabilized to prevent movement.

1. Maneuver the carrier in front of scrap shear with jaws facing towards the operator (Fig. 6-2).
2. Align the end of the stick with the pin holes of mounting bracket.
3. Insert mounting pin and secure with keepers.
4. Align linkage and repeat steps for installing link pin and keepers.

6.3 Mounting Procedure - 2nd Member (Fig. 6-1)

- Remove the stick (arm) from the carrier. Follow removal and safety instructions provided by the carrier manufacturer.
- Bolt the mounting bracket (ordered separately) to the sub-head assembly. Torque bolts.
- Position scrap shear on firm, level ground.

6.0 Installation- [cont'd]

- Use timber or steel piling as needed to prop the scrap shear off the ground. Ensue all loads are stabilized to prevent movement.

1. Maneuver the carrier in front of the scrap shear with jaws facing towards the operator.
2. Align the boom with the pin holes of mounting bracket.
3. Insert mounting pin and secure with keepers.
4. Align stick (arm) cylinder rod eye with mounting bracket pin holes and repeat steps for installing pin and keepers.

6.4 Hydraulic Hose Requirements

Hydraulic hoses are not provided with the shear. These can be ordered separately. Contact Allied or your authorized Allied dealer.

✓ Hoses must be suitable for the maximum pressures that can occur within the hydraulic system. Refer the Technical Data Section, Table 5.1 for hose specifications.

✓ Route hoses in such a manner that their minimum radius will not be exceeded regardless of the position of the machine.

✓ Hoses must be a secured to prevent twisting, rubbing or from being pinched.

6.5 Hydraulic Connections - General

Read and follow all instructions, including safety-precautions provided by the carrier manufacturer when working on the hydraulic system.

Follow the instructions and figures when connecting hydraulic hoses to the scrap shear.

✓ Do not remove the protective caps/plugs from the hose connections until ready to connect.

✓ Check the condition of the hoses and couplings. Do not use if damaged.

1. Wipe the couplings to prevent debris from entering the hydraulic system. Remove plug/cap from the hydraulic hose. Store them for future use.
2. Connect each hose to their correct oil ports. Tighten properly to prevent twisting. Tighten flange bolts to the torque specified in Section 11.

6.5.1 Hydraulic Connections – With Rotation

All hydraulic connections are made at the subhead. Pictograms are used to identify location and action.

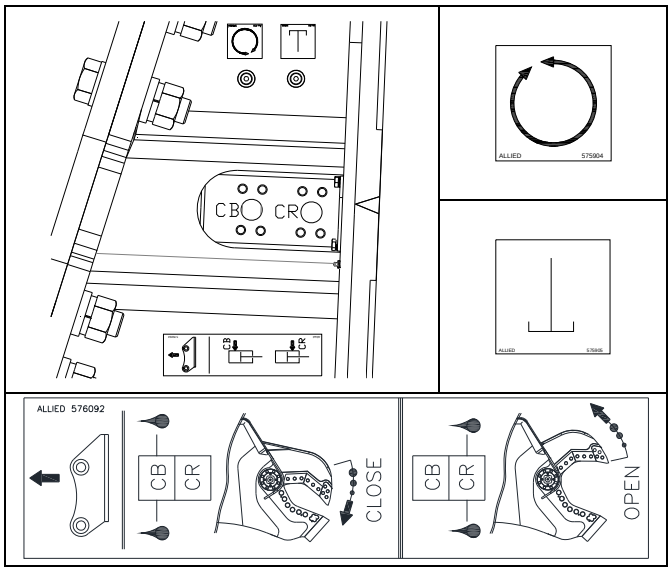


Fig 6-3 Hydraulic Connections Located At Subhead

Table 6-1 How To Identify the Hydraulic Ports

Port ID	Qty	Action
CB– PORT 1 near side and PORT 2 far side. Hook up of both sides is optional, but highly recommended.		
CB	2x	Flow to Cylinder Barrel – JAW CLOSE
CR– 1 PORT near side and 1 PORT far side. Hook up of both sides is optional, but highly recommended.		
CR	2x	Flow to Cylinder Rod – JAW OPEN
Rotation – 1x near side and 1x far side. Requires hook up of both sides – no exceptions		
	2x	Pictogram of 360° rotation and bi-directional
Motor Case Drain Line – PORT 1 near side and PORT 2 far side. Requires hook up of one – no exceptions (excludes AMS30 – not equipped). Located on both sides of subhead for ease of connection. Select the side most suitable for hook up.		
	2x	Symbol for return to tank. Marks connection for Motor Case Drain

6.0 Installation- [cont'd]

6.5.2 Hydraulic Connections - Without Rotation

Hydraulic connections for non-rotation models are different from rotation type models. Pictograms are used to identify port location and action.

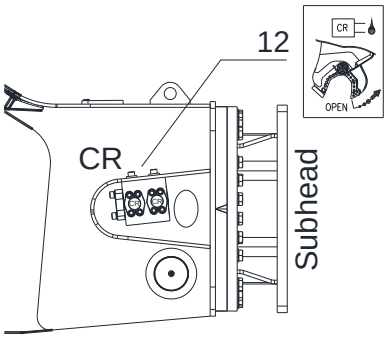
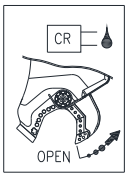


Fig 6-4 Location of Port Block "CR" Without Rotation

Table 6-2 Hydraulic Connections for Non-Rotation

Port ID	Qty	Action
"CR"	2x	Flow to Cylinder Rod - JAW OPEN



Label 12

Oil drop shown next to CR ports 1 and 2. Oil flow to CR ports will OPEN JAW. The port block manifold has two CR connection ports. Hook up of one hose is required but the use of two hoses is highly recommended.

The port block manifolds are attached to the guard. Hose connections are as follows

CR (1) Hose 1 from carrier

CR (2) Hose 2 from carrier

CR (3) Oil flow from CR1 & CR2 combine at CR3. Cylinder Rod – JAW OPEN

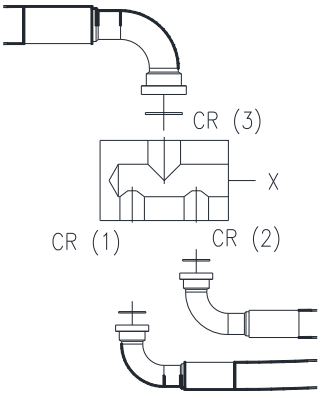


Fig 6-5 Port Block – CR Side

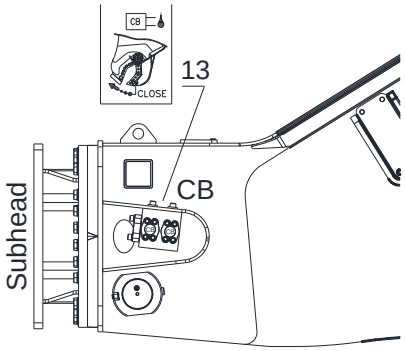
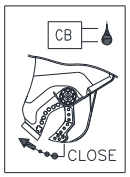


Fig 6-6 Location of "CB" Port Block Without Rotation

Table 6-3 Hydraulic Connections for Non-Rotation

Port ID	Qty	Action
"CB"	2x	Flow to Cylinder Barrel - JAW CLOSE



Label 13

Oil drop shown next to CB ports. Oil flow to CB ports will CLOSE JAW. The port block manifold has two connection ports. Hook up of one hose is required but the use of two hoses is highly recommended.

The port block manifolds are attached to the guard. Hose connections are as follows

CB (1) Hose 3 from carrier

CB (2) Hose 4 from carrier

CB (3) Oil flow from CB1 & CB2 combined at CB3. Cylinder Barrel – JAW CLOSE

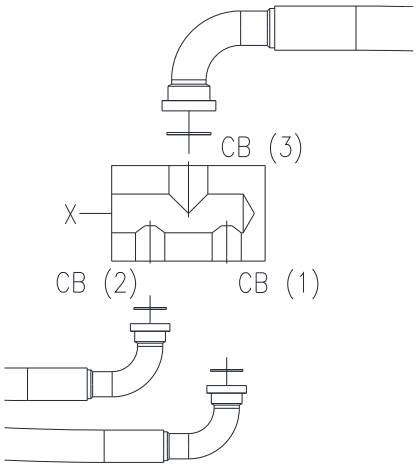


Fig 6-7 Port Block – CB Side

7.0 Commissioning - At First Start-up

7.1 When First Put to Work or After Repairs

CAUTION

Serious equipment damage may occur if air is not bled after installation or repair of shear. All air must be purged from the cylinder of the scrap shear to prevent damage to cylinder seals and the carrier's hydraulic system.

Each time the scrap shear is installed or repaired, these steps must be followed before it is returned to work:

1. Check the oil level in the carrier's hydraulic tank. Top off if necessary.
2. Start the carrier. Closely follow the procedures provided by the carrier manufacturer concerning the proper method for starting.
3. Warm-up the hydraulic system of the carrier. Closely follow the procedures provided by the carrier manufacturer concerning the proper method for warming up the hydraulic system.
4. Once the machine has reached its normal operating temperature, reduce the engine RPM to idle speed.
5. Slowly operate the scrap shear until the jaw is halfway open. **Do not fully extend or retract the cylinder during the initial cycles.**
6. Gradually increase the opening of the jaw until the full cylinder stroke has been reached.
7. Shut off the carrier and re-check the oil level. Top off if necessary.
8. Start the carrier and perform 5-6 complete cycles without allowing the cylinder to reach the end stops. Do not subject the scrap shear to the maximum operating load until warm-up procedure is complete.

7.2 Adjusting the Cross-over Valve

The cross-over valve is factory pre-set. Normally, it is not necessary to readjust the cross-over valve.

If necessary, use the following procedure to check the operating performance of the cross-over valve:

1. Raise the supply pressure to the rotation valve of the device carrier to 2610 psi (180 bar).
2. Connect pressure gages to both measuring points of the cross-over valve.
3. Connect the hoses to the rotation motor (Fig. 6-3, Item 8) and restrain the shear so it cannot rotate.
4. Operate the "rotation" valve.
5. Adjust the pressure cartridge of the cross-over valve to 2550 psi (175 bar).
6. Repeat the process for the other rotational direction.

8.0 Operation

8.1 Checklist Before the Shear is Put to Work

The operator, or other qualified personnel, must check and satisfy himself that the scrap shear is safe and in good condition before putting it to work. Use the Maintenance Schedule, Table 9.1 to evaluate the condition of the scrap shear. Do not operate the shear until all scheduled maintenance and repairs have been completed.

In addition to the items listed in the maintenance schedule, make a check of the following:

- ✓ Replace missing or damaged warning labels affixed to the scrap shear.
- ✓ Perform all maintenance and inspection requirements as instructed by the carrier manufacturer, including a check of the oil level inside the hydraulic tank.
- ✓ Check all controls in the operator's cab to ensure all are operating properly.

8.2 Conditions to Avoid With the Scrap Shear

CAUTION

✗ ✓ Do not operate the scrap shear when the temperature of the hydraulic system is below 32°F (0 °C). The system must first be warmed according to the procedure provided by the carrier manufacturer. The full power of the scrap shear is available at a temperature of 140°F (60 °C).

CAUTION

✗ The scrap shear is not suitable for cutting alloy steel, hardened steel or cast metals.

CAUTION

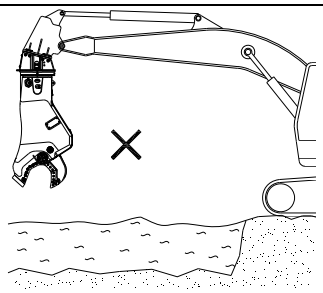
✓ During initial operation and the first time the machine is used after maintenance, you must first cut thin, light material. This hardens the blades, which increases their service life.

CAUTION

✓ When working at low temperatures, begin by cutting thin, light material. This warms up the blades, which prevents crack formation as a result of a sudden change of temperature.

CAUTION

✗



Do not use the scrap shear under water

CAUTION

✗ Use the rotation function only for positioning the scrap shear. Never attempt to break off material or reduce its size by using the rotation function.

CAUTION

✗ The temperature of the hydraulic system may not exceed 176°C (80 °C). This must be monitored. If a higher temperature is measured, the system and pressure-limiting valve must be checked. If work is performed at high ambient temperatures, hydraulic oil of at least type HLP 68 must be used.

8.3 Operating Instructions

- ✓ Only qualified personnel may operate the scrap shear.
- ✓ The operator must be certain at all times that no one is within the danger zone of the scrap shear.
- ✓ Only one person from within the operator's cab must operate the scrap shear. Operation by multiple persons can increase the level of danger.

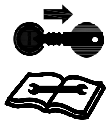
9.0 Maintenance

9.1 General

Keep to the specified service intervals. Regular maintenance of the scrap shear contributes significantly to the equipment's up time and production. Frequent inspections help to maximize the service life of the scrap shear while preventing untimely stoppage and keeping repairs to a minimum. In Table 9.1, a Visual Inspection of Part is defined as: A walk around inspection looking for any damage, loose, missing or unsecured fastener, fluid leaks, wear, cracks

9.2 Safety Pre-cautions During Inspection

WARNING



Unless you are instructed otherwise, perform maintenance with the work tool on the ground and with the machine shut off. Remove the ignition key before performing work on and/or maintenance or cleaning of the scrap shear. Release pressure in the hydraulic system. Refer to the Service Manual provided by the carrier manufacturer for the proper procedure to release the hydraulic pressure. When releasing pressure make sure that the scrap shear cannot fall or make unexpected movements.

Before performing work on and/or maintenance or cleaning of the scrap shear:

- Move the carrier and scrap shear to a safe location. Lower the scrap shear until it rests on firm and level ground. Make sure that the scrap shear is stable and cannot shift unexpectedly.
- Shut off the carrier and remove the ignition key. Relieve all pressure in the hydraulic system.

WARNING

Crush hazard. Never rely on the rotation system as a means of support during maintenance of the scrap shear. Prevent unexpected movement of the rotation system with proper support and blocking.

CAUTION

Only qualified technicians may perform maintenance to the scrap shear.

WARNING

Fluid penetration hazard. This equipment operates at high-pressures. Oil under pressure can penetrate your skin. Never use your hand to seal off a leak. Use a piece of cardboard to locate a leak.

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.

X Do not bend high pressure lines

X Do not strike high pressure lines

X Do not install any lines that are bent or damaged

✓ When tightening connections, use backup wrenches

✓ Tighten all connections to recommended torque

WARNING

All guards on the scrap shear must be in place and properly secured during operation. If removed for maintenance, check that all protective guards are reinstalled before use.

CAUTION

Use only OEM spare parts for the scrap shear. The use of unapproved parts can cause severe damage.

9.0 Maintenance – [cont'd]

9.3 Maintenance Schedule

WARNING

Do not remove any hydraulic components or parts until pressure has been relieved. When releasing pressure make sure that the scrap shear cannot fall or make unexpected movements.

A Visual Inspection of Part is defined as: A walk around inspection looking for any damage, loose, missing or unsecured fasteners, fluid leaks, wear, cracks.

Table 9.1 Maintenance Schedule

Hours of operation [a)]	Part Name	General Check / Action
Every 8	Bolts	Visual inspection
	Connections/hoses	Visual inspection
	Wear and bearing seat of: Dipper, Main boom, Cylinder mounting, Attachment of upper jaw	Visual inspection
	Housing construction	Visual inspection
	Lubrication	Refer to Table 9.2 Re-lubrication Points
	Cutting blades - All	Visual inspection - Gap measurement, radius of edge wear
	Bolts for cutting blades - All	Visual inspection
	Jaw	Hardfacing - As required
	Rotation drive	Check Bolts - Visual inspection
	Rotation motor – gearbox	Mounting bolts - Visual inspection
Every 80	Bolts on cylinder rod bearing	Visual inspection
	Bolt connections	Visual inspection
	Bolts on rotating connection	Visual inspection
	Gear Oil	Change at 1st 50-100 hours of use. Then check fluid level every 200
	Auto-guide mechanism	Check play - adjust as necessary
Every 200	Gear oil	Check oil level - Refer to Figure 9-3
Every 400	Hydraulic hoses	Visual inspection
Every 2000	Hydraulic hose	Replace after 2000 hours or 2 years
	Bolts for rotating connection	Replace (consult factory)
Every 2500	Valves in cylinder	Replace (consult factory)
	Cylinder seals	Replace (consult factory)
	Gear oil	Replace – Refer to Table 9.4

[a)] These intervals may be modified, depending on actual operating conditions.

9.0 Maintenance – [cont'd]

9.4 Lubrication Points

Figure 9-2 shows the lubrication points of the scrap shear. The lubrication points are marked with pictogram (Fig 9-1).

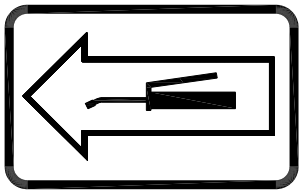


Fig. 9-1 Pictogram Marks Lubrication Points

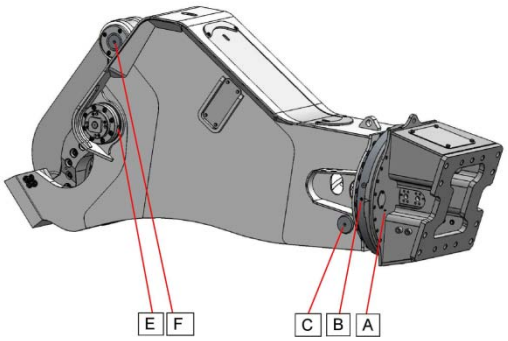


Fig. 9-2 Lubrication Points

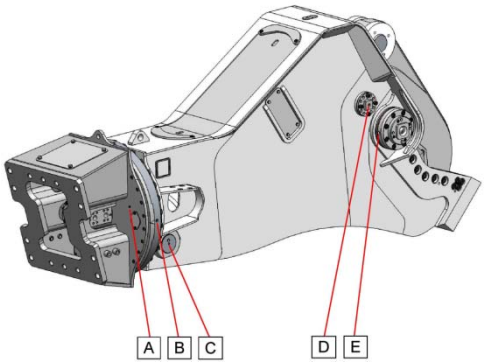


Table 9.2 Lubrication Points

Item	Part Name	Qty
A	Gear, slewing ring	2
B	Bearing, slewing ring	4
C	Cylinder pin (bottom end)	2
D	Auto-guide/Puck	1
E	Main shaft	2
F	Cylinder pin (rod eye)	1

9.4.1 Re-lubrication Instructions

Observe the following restrictions:

- **X** Do not use any grease that shows signs of contaminants. Discard and replace with new grease cartridge.
- **X** Grease must not change consistency over time.
- **X** Do not use grease containing additives such as molybdenum disulphide.
- **X** Do not use graphite grease.
- ✓ Use multi-purpose grease based on lithium soap MPG-A and KP2N-30 acc. to DIN 51825. Refer to Table 9.3 for details.
- ✓ The jaw must be closed to provide easy access to all lubrication points.
- ✓ Wipe off grease nipple to prevent contamination from entering lubrication system
- ✓ Sufficient grease must be added to the lubrication points, one after the other, until a new ring of fresh grease is formed.
- ✓ After grease has been added to all the lubrication nipples, perform two complete rotations of the scrap shear.
- ✓ All the grease nipples of the scrap shear must be lubricated after every 8 hours of operation.

9.0 Maintenance – [cont'd]

Table 9.3 Lubrication Data

Type (or equivalent)	Part Name	Re-lubrication Interval
SHELL Retinax EP2, MOBIL Mobilux EP2	Pins and bushings	Every 8 hours of use
SHELL Alvania, MOBIL Mobilux EP2	Slewing ring bearing	Every 50 hours of use
SHELL Alvania, MOBIL Mobilux EP2	Pinion/Gear	Every 8 hours of use

9.5 Gearbox Lubrication

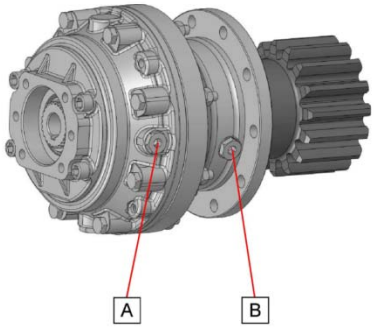


Fig. 9-3 Pictogram by lubrication points

Item	Part Name	Qty
A	Plug Fill opening	1
B	Plug Drain opening	1

Oil changes must be carried out after the first 50/100 hours of operation, and subsequently after every 12 months [a)]. Do not mix oils of different types. Never mix mineral and synthetic oils. The best approach is to thoroughly clean out any old oil before adding a different oil that may not be compatible.

9.5.1 How to Replace the Gearbox Oil

WARNING

Crush hazard. Never rely on the rotation system as a means of support during maintenance of the scrap shear. Prevent unexpected movement of the rotation system with proper support and blocking.

1. Position the scrap shear so that the gearbox is horizontal.
2. Remove the cover from the rotation drive and place an oil drain pan under the drain opening of the gearbox.
3. Unscrew the drain plug and remove the fill plug from the fill opening.
4. Once all the oil is drained from the gearbox, the drain plug must be reinstalled and tightened.
5. Fill the gearbox with suitable oil via the fill opening. **IMPORTANT! Do not over-fill.**
6. Install and tighten fill plug.
7. Dispose of the used oil in accordance with the regulations. Environmentally harmful substances must be disposed of in accordance with local regulations.

Table 9.4 Gear Box Oil

Oil Class	Temperature °F (°C)	Hours of operation	Capacity Max – qt (liter)	
SAE 80W-90	5 (-15) to 122 (50)	500 hours / 1 year [a)].	1 qt. (1) [b)]	3.7 qt. (3.5) [c)]
EP 80/90	5 (-15) to 122 (50)	1,000 hours / 1 year [a)].	1 qt. (1) [b)]	3.7 qt. (3.5) [c)]

[a)] These intervals may be modified, depending on actual operating conditions.

[b)] Applies to models AMS30, AMS40, AMS50.

[c)] Applies to model AMS100.

10.0 Maintenance – Cutting Blades

10.0 Cutting Blade Maintenance

This section describes maintenance procedures that must be followed to keep the scrap shear performing at peak cutting power and service life.

10.1 Safety Precautions – Blade Inspection

CAUTION
Use only OEM spare parts for the scrap shear. The use of unapproved parts can cause severe damage.

CAUTION	
✕	Due to their composition and treatment, blades may not be hardfaced. The use of hardfaced blades can cause severe damage.

During maintenance of the blades it may be necessary to move the jaw, particularly during inspection of the gap.

Before starting any inspection or maintenance procedures, all personnel involved must take precautions to be certain that no unexpected movements of the shear will occur.

- The operator and inspector must agree upon signals beforehand.
- The operator must never start the machine or move the shear unless instructed (signaled) by the inspector that it is OK.
- Before starting the machine or moving the shear, the inspector must be at a safe distance from the shear.
- The operator must not operate the carrier unless seated in the operator's cab.

CAUTION
The operator must have an unobstructed view of the inspector and shear at all times.

10.2 Inspection of Blade Bolts

The blade bolts must be visually inspected each day. Replace broken bolts with bolt of same type. Do not substitute. Tighten bolts to torque specified Section 11.

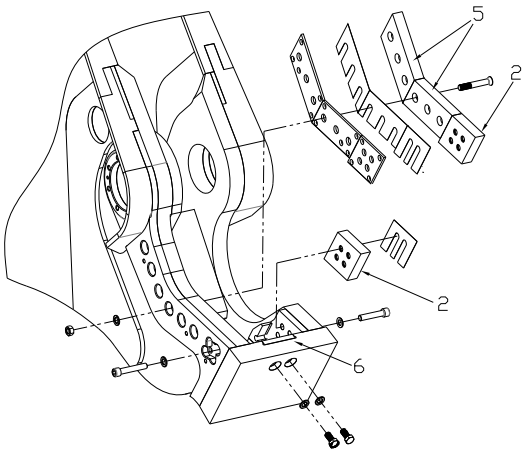


Fig. 10-1 Lower Jaw Blades

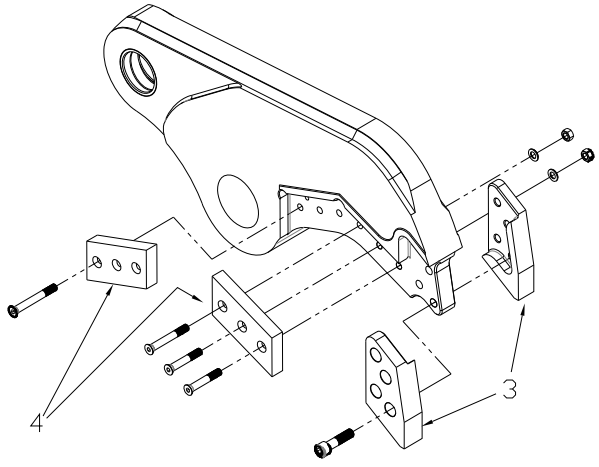


Fig. 10-2 Upper Jaw Blades

10.0 Maintenance – Cutting Blades - [cont'd]

10.3 Order of Blade Adjustment / Maintenance

NOTICE: *Figure10-3. When performing inspections, gap measurements, adjustments and maintenance, pay special attention to the prescribed order listed in Table 10.2.*

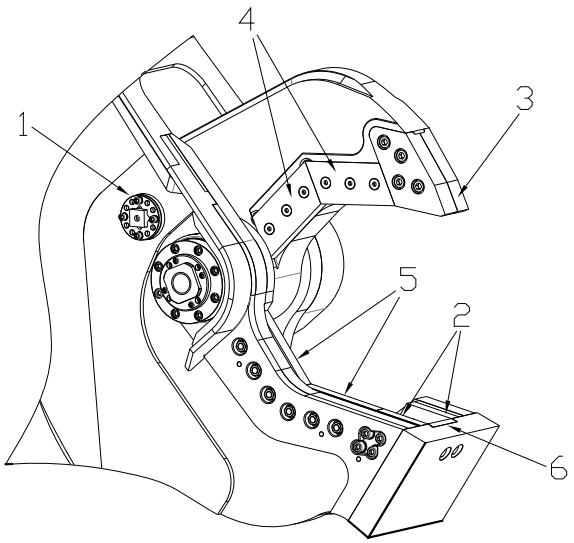


Fig. 10-3 Order of Blade Maintenance

Table 10.1 Cutting blades

Measure Gap and/or Edge Wear	
Auto-guide Gap	0.005 – 0.015 in. (0.13 – 0.38mm)
Guide Blades, Gap & Radius	0.008 – 0.020 inch max 0.20 - 0.50mm max 0.12 inch max radius 3mm max radius
Nose Blade / Front Blade, Gap & Radius	0.24- 0.47 inch max 6-12 mm max 0.20 inch max radius 5mm max radius
Cutting Blades	0.02 inch max 0.50mm, max 0.12 inch max radius 3mm max radius

Table 10.2 Adjustment Order of Blades / Maintenance (Fig. 10-3)

Item	Part Name	Action
1	Auto-guide	1-Check for play & wear. 2-Adjust as necessary. [a)]
2	Guide blades	1-Measure gap. 2-Check edge wear. 3-Shim to compensate. 4-Rotate if edge radius worn [a), b)]
3	Nose blades	1-Measure gap. 2- Check edge radius. 3-Replace if worn [a), c)]
4	Upper cutting blades	1-Measure gap. 2-Check edge radius. 3-Replace if worn [a), b), c)]
5	Lower cutting blades	1-Measure gap. 2-Check edge radius. 3-Shim to compensate [a), b)]
6	Front blade	1-Measure gap. 2-Check edge radius. 3-Replace if worn [a), b), c)]

[a)] This part is a wear item. Replace if worn.

[b)] Rotate in accordance with the prescribed rotation order. Replace after 4th cutting edge radius is worn.

[c)] Never use shims to position nose blade or upper jaw blades.

10.0 Maintenance – Cutting Blades - [cont'd]

10.4 Auto-Guide Adjustment - Item 1

Auto-guide ensures that the upper and lower jaw do not contact each other. Visually inspect the Auto-guide daily for wear and damage. The Auto-guide element is an adjustable wear part that is in contact with the wear surface of the upper jaw.

Table 10.3 Auto-guide Adjustment

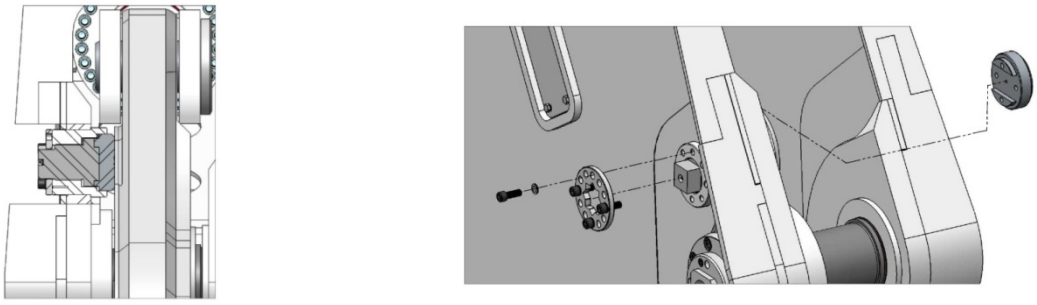


Fig. 10-4 Auto-guide Adjustment

Item	Part Name	Action
1	Auto-Guide	Inspect [a]. Check play [b]. Adjust [c]. Replace if worn [d].
Note [a]	Inspect every 8 hours of operation.	
Note [b]	Maintain play between the sliding piece and wear surface between 0.005 to 0.015 inch (0.13 and 0.38 mm).	
Note [c]	Adjust after every 40 hours of operation. The sliding piece must never exert excessive pressure on the wear surface.	
Step 1	Loosen the four bolts of the retaining ring.	
Step 2	Turn adjustment using a wrench placed on the square portion.	
Step 3	Measure gap using a shim or feeler gauge.	
Step 4	Reinstall retaining ring to prevent setting change.	
Note [d]	Replace element if considerable wear or damage is found	

10.5 Guide Blades – Item 2

IMPORTANT! Auto-guide adjustment must be completed prior to measuring the gap of the guide blades.

Table 10.4 Guide Blade – Measure the Gap (Fig. 10-5)

Item	Part Name	Action
2	Guide blades	Step 1 & 2 - Measure gap [a], Step 3-6 Adjust gap [b]
Step 1	Slowly close the upper jaw until the nose blade and the guide blade are at the same height.	
Step 2	Hold the upper jaw at that position and measure the gap between the guide blade and nose blade.	

[a] Permissible gap is 0.008 to 0.020 inch (0.2 to 0.5 mm). Add shims if gap exceeds 0.020 inch (0.5 mm).

[b] Follow Step 5 & 6 to adjust the position of the guide blades (Fig. 10-6)

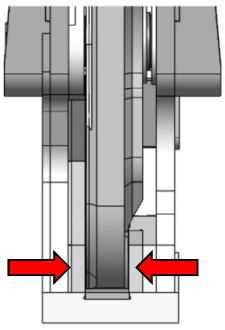


Fig. 10-5 Guide Blade Gap

10.0 Maintenance – Cutting Blades - [cont'd]

Table 10.5 Guide Blade Adjustment / Rotation

Item	Part Name	Action
2	Guide blades	Measure gap. Shim as required. Rotate worn edges. Replace worn-out blades.
Note 1	If necessary, use a different number of shims to compensate the upper and lower end of the blades.	
Note 2	Do not exceed 0.05 inch (1.3 mm) difference in shim thickness between the upper and lower end of blade.	
Note 3	Shim thickness cannot exceed 0.10 inch (2.5mm). Replace guide blade if gap remains greater than 0.02 inch (0.5mm).	
Note 4	Index blades when radius exceeds 0.12 inch (3mm).	

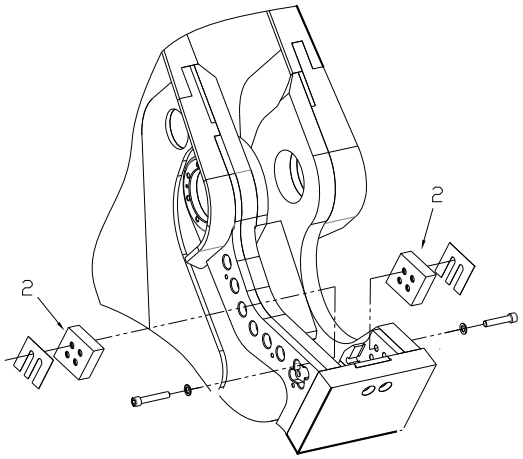


Fig. 10-6 Adjust Guide Blade With Shims

Step 3	Next, slowly close the upper jaw, stopping several times to measure the gap each time.
Step 4	If the gap is larger than 0.02 inch (0.5 mm), add shims behind guide blade.
Step 5	Loosen the mounting bolts for the guide blade. Slide shims between guide blade and the seat.
Step 6	Tighten the mounting bolts. Re-check the gap again.
Step 7	Perform Steps 1 thru 6 to guide blades on both sides.

10.6 Nose Blades – Item 3

The safety and cutting power of the scrap shear are highly dependent on regular maintenance and repair of the nose blades. An excessive gap will cause the material to cling to the jaw of the scrap shear. This will greatly reduce the strength of the scrap shear.

✓ Inspect the cutting edges of the nose blade for wear every 8 hours of operation.

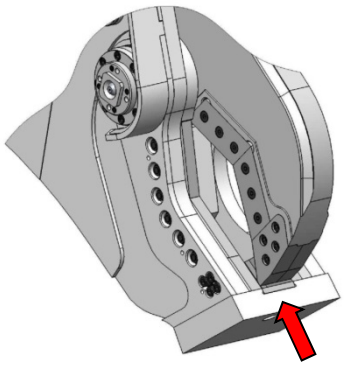


Fig. 10-7 Nose Blade Gap

Table 10.6 Nose Blades – Measure the Gap (Fig. 10-7)

Item	Part Name	Action
3	Nose blades	Check wear of edge radius and gap.
Step 1	Slowly close the jaw until the cutting surfaces are at equal height or parallel to the top of the front blades.	
Step 2	The measured gap must be between 0.24 to 0.47 inch (6 and 12 mm).	
Note 1	Use a suitable ruler or measuring square to check the condition of the nose blades	
Note 2	Check the cutting surface of the front blade; if there is considerable wear, these must be rotated or replaced. If wear is light, sharpen the blade with an appropriate grinding machine.	

10.0 Maintenance – Cutting Blades - [cont'd]

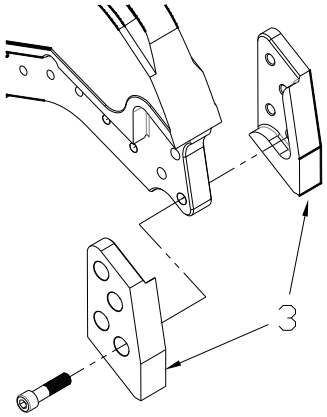


Fig. 10-8 Nose Blades

CAUTION

Never use shims on the nose blade to compensate the gap.

CAUTION

Due to the metal composition and heat treatment, blades may not be hardfaced. The use of hardfaced blades can cause severe damage.

Table 10.7 Nose Blade Replacement (Fig. 10-8)

Item	Part Name	Action
3	Nose blades	Replace the nose blades after 40 to 80 hours of operation [a)]. Check edge wear [b)], [c)]. Replace if worn-out [b)], [c)]
How to replace the nose blades:		
Step 3		Use an open-end spanner with an extension bar or a torque multiplier to loosen the bolts of the old nose blades. Remove the old nose blades.
Step 4		Thoroughly clean the seat area and remove all debris before installing new nose blades.
Step 5		Apply anti-corrosion paste or grease on the bolt threads and under the bolt heads.
Step 6		Slide the nose blades upwards into their fitted seats on the upper jaw and tighten bolts by hand.
Step 7		Tighten the bolts in a criss-cross pattern to 1/3 of the specified torque. Then tighten again to 2/3 of the specified torque. Finally, tighten to the full torque value. (Refer to Torque Section in this manual).
Step 8		Make sure there is a gap of 0.004 to 0.020 inch (0.1 to 0.5 mm) between the nose blades.
Note [a)]		Depending on the material that is being cut.
Note [b)]		The cutting edge has a maximum radius limit of 0.20 inch (5 mm).
Note [c)]		The nose blades can be ground with a maximum difference of 0.08 inch (2 mm) from top to bottom.

10.0 Maintenance – Cutting Blades - [cont'd]

10.7 Cutting Blades – Inspection

- Inspect the cutting blades and bolts every 8 hours of operation.
- Check for loose or broken bolts. Tighten loose bolts to the specified torque (Section 11.1). Broken bolts must be replaced immediately with same type and property class.
- Depending on the material that is being cut, the cutting blades must be replaced after 40 to 80 hours of operation.
- When cutting thin parts, maintenance must be performed at shorter intervals.
- The blade is designed so that all four cutting edges are used. Rotate the cutting blades in accordance with sequence specified in Table 10.8.

10.8 Compensation Plates in the Lower Jaw

CAUTION	
✕	Never remove or rotate the compensation plates in the lower jaw. These are specially machined for each scrap shear. If they become damaged, replacement plates must be ordered from the factory and the serial number will be required.

Table 10.8 Lower Cutting Blades (Fig 10-9)

Item	Part Name	Action
4	Lower cutting blades	1- Measure Gap [a]. 2- Check edges [b]. 3- Rotate if worn [c]
Step 1	To remove blades, first loosen the mounting bolts that secure each blade. If the blades are stuck in place, they can be broken free by placing a punch 3/8 inch (10 mm diameter) in the provided hole and tapping it with a hammer. Then carefully remove the bolts and blades.	
Step 2	After the cutting blades are changed, the gap between the upper and lower cutting blades must be set again.	

[a] Check whether the blade change was performed before inspection of the gap width.

[b] Index blade when cutting edge is worn to about 0.12 inch (3 mm) radius.

[c] 4-way indexable. Replace blades after all four sides are used.

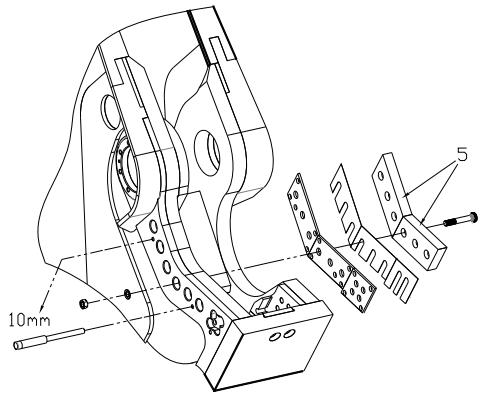
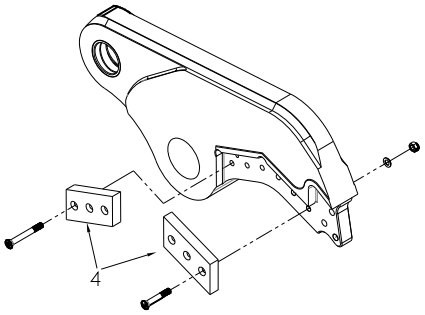


Fig 10-9 Remove Cutting Blades

- ✓ Optimal gap width is 0.005 to 0.010 inch (0.13 to 0.25 mm)
- ✓ Maximum gap width is 0.02 inch (0.5 mm).
- ✓ Use shims to adjust the position of the lower cutting blades
- **x** It is prohibited to use shims for the blades in the upper jaw.
- ✓ Only use original shims.

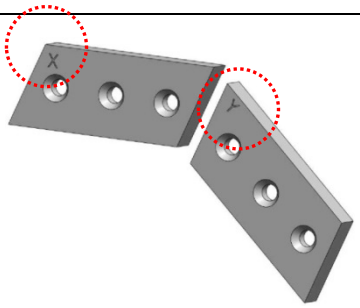
10.0 Maintenance – Cutting Blades - [cont'd]

Table 10.9 Rotation Sequence For Upper & Lower Jaw Blades (Fig. 10-10)



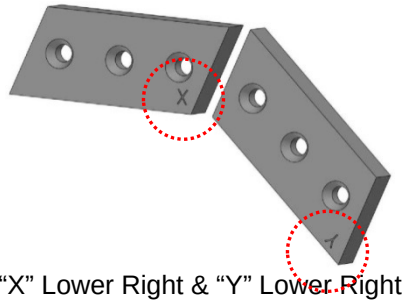
- ✓ Proper rotation ensures gap remains even over the entire length of the cutting blade.
- ✓ Rotate cutting blades by following the order described. (Note: Markings X & Y are shown for the purpose of explanation. Actual blades are not marked).

Position 1



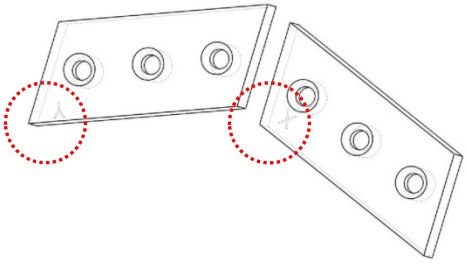
"X" Upper Left & "Y" Upper Left

Position 2



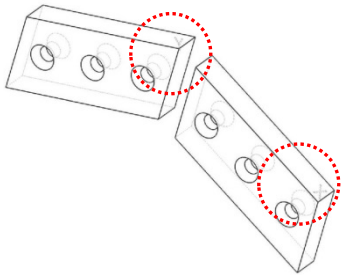
"X" Lower Right & "Y" Lower Right

Position 3



"Y" Lower Left & "X" Lower Left

Position 4



"Y" Upper Right & "X" Upper Right

Fig. 10-10 Correct Rotation Order For Upper & Lower Cutting Blades

Item	Part Name	Action
4 & 5	Cutting Blade	How to measure gap of the cutting blades:
Step 1	Slowly close the upper jaw until the cutting blades are at the same height.	
Step 2	Use a feeler gauge to check the play between the blades.	
Step 3	Move the upper jaw a bit farther. Repeat step 2.	
Step 4	Repeat Step 3 & 2 until the entire length of the cutting blades are checked.	
Rotation Order of Cutting Blades		
Pos 1	Original position of the blades - "X" Upper Left & "Y" Upper Left as shown in Fig. 10-10.	
Pos 2	1st rotation of the blades - index 180° as shown in Fig. 10-10.	
Pos 3	Second rotation of the blades (index 180°) and change of position	
Pos 4	Third rotation of the blades (index 180°)	
Note 1	Refer to Table 10.9 if the gap exceeds 0.02 inch (0.5 mm) and follow steps 5, 6, & 7.	

10.0 Maintenance – Cutting Blades - [cont'd]

Table 10.9 Adjusting Lower Blades With Shims (Fig. 10-9)

Item	Part Name	Action
4 & 5	Lower Cutting Blade	If the gap is greater than 0.02 inch (0.5 mm), continue to following steps 5, 6, 7. [a)]
Step 5	Loosen the mounting bolts of the lower cutting blade.	
Step 6	Slide the shims between the blade and the compensation plate.	
Step 7	Tighten the mounting bolts to the torque specified in Table 11.1.	
Note 1	Only use original shims.	
If the gap between the blades cannot be reduced to the specified dimension using the shims included in the set, the cutting blade must be replaced.		
[a)] Never use shims for the blades in the upper jaw.		

10.9 Front Blade

✓ Inspect the front blades after 8 hours of operation.

✓ The front blade can be rotated, so that all four cutting surfaces can be used.

- If, after replacement of the nose blade, the gap between the nose blade and the front blade cannot be reduced, the front blade must be replaced.

X Never try to position the front blade using shims.

Table 10.10 Front Blade Rotation Procedure (Fig. 10-11)

Item	Part Name	Action
6	Front blade	Rotate in prescribed order [a)]
Step 1	Remove the mounting bolts of the front blade.	
Step 2	Rotate blade to the next position in accordance with prescribed order.	
Step 3	Reinstall the mounting bolts and tighten to the torque specified in Table 11.1.	

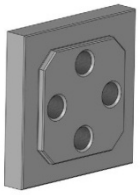


Fig 10-11 Front Blade

Table 10.11 Rotation Order of Front Blade

Position	Action
1	Original position of blade
2	1st rotate blade (index 180°) so the lower edge now faces upwards.
3	2nd rotation is (index 90°) to change sides.
4	3rd and final rotation, the blade is rotated (index 180°) again.
[a)] Never try to position the front blade using shims.	

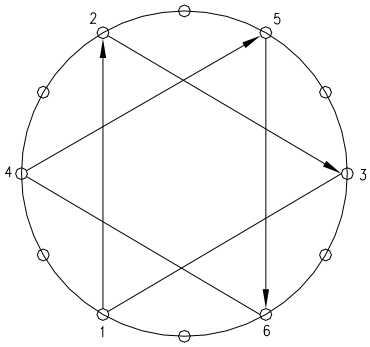
11.0 Threaded Fasteners

11.1 Proper Preparation and Torque

Tighten bolts equally to the torque specified in Table 11.1. Follow proper tightening sequence of bolts. Failure to observe these tightening instructions can have serious consequences.

11.2 Bolts Used For Rotating Connection

- ✓ The bolts of the rotating connection must be visually inspected every eight hours.
- ✓ Replace these bolts every 2000 hours of operation. These bolts may not be reused.
- ✓ Avoid applying torque to several bolts on one side. Tighten in a diagonal sequence



Torque Fasteners Equally

- ✓ Tighten all to 1/3 of the specified torque. Next, tighten all to 2/3 of the specified torque. Finish tightening all to final torque in Table 11.1.
- ✓ If any of these bolts break off, you must also replace the adjacent bolts with new ones.
- ✓ Apply thread lock compound to bolts used for the rotating connection. Follow the manufacturer's instructions.

11.3 Bolts For Blades

- ✓ Visually inspect the blade bolts each day.
- ✓ Replace broken bolts with bolt of same type. Do not substitute.
- ✓ Use anti-corrosion paste or grease on the bolt threads and under the bolt heads. Do not apply thread lock compound to the bolt threads unless directed to do so.
- ✓ Tighten bolts by hand.

Table 11.1 Fastener Torque

	Property Class		
	8.8	**10.9**	**12.9**
Size	**Torque Ft-lbs (Nm)**		
M 6	8 (10)	11 (16)	13 (18)
M 8	18 (25)	27 (37)	32 (43)
M 10	38 (51)	55 (75)	64 (87)
M 12	64 (87)	96 (130)	111 (150)
M 14	103 (140)	151 (205)	177 (240)
M 16	159 (215)	229 (310)	273 (370)
M 18	221 (300)	317 (430)	376 (510)
M 20	317 (430)	457 (620)	531 (720)
M 22	428 (580)	613 (830)	715 (970)
M 24	546 (740)	782 (1060)	915 (1240)
M 27	811 (1100)	1143 (1550)	1364 (1850)
M 30	1106 (1500)	1549 (2100)	1844 (2500)

12.0 Troubleshooting

When performing troubleshooting, first check whether the quick-disconnect couplings are properly attached and functioning correctly.

Problem	Possible cause	Remedy
Insufficient cutting power	Carrier not providing the necessary pressure	Test hydraulic system of carrier
	Speed valve is set incorrectly, dirty or defective	Check setting, clean, reseal or replace speed valve
	Oil bypass in cylinder	Replace seals in cylinder
	Oil bypass in the rotating coupling (for shears with rotation mechanism)	Replace seals in rotating coupling
Cutting quality is poor	Material dimensions exceed cutting capacity of scrap shear	Contact factory
	• Cutting blades are worn • Excessive gap between cutting blades	See Section 10
	High back pressure on the rod side of the cylinder	Check the main valve of the carrier machine
Nose blade not cutting correctly	• Nose blade is worn • Front blade is worn	See Section 10
Cycle time too long	Speed valve is set incorrectly, dirty or defective	Check setting, clean, reseal or replace if necessary
Cut material jams between upper and lower jaw blades	• Excessive gap between cutting blades • Cutting blades are worn • Nose blade is worn	See Section 10
Excessive time to open or close the jaw	Too much back pressure on the return side of the cylinder	Check the main valve of the carrier machine
	Malfunction in speed valve	Check setting, clean, reseal or replace if necessary
Shear jaw remains closed	Problem with seals in shear cylinder	Replace seals in cylinder
	Problem with seals in rotating coupling	Check for bypass. Replace seals
	Malfunction in speed valve	Check setting, clean, reseal or replace if necessary
No rotational movement	Pressure set incorrectly	Check pressures at rotation valve, cross-over valve and rotation motor
	Defective components	Check rotation valve, on cross-over valve and rotation motor
Jaw only rotates in one direction	Defective rotation valve	Check whether the rotation valve moves in both directions
	Defective components	Check rotation valve on cross-over valve
Rotation mechanism rattles	Pressure set too high	Reduce pressure setting
Rotation faster in one direction	One rotation flow rate set higher or lower than the other	Set rotation flow rate correctly
Rotation speed too fast / too slow	Rotation flow rate set too high or too low	Set rotation flow rate correctly

12.0 Troubleshooting – [cont'd]

Problem	Possible cause	Remedy
Rotation speed differs from set value	Setting of non-return valve with throttle function has changed	Set non-return valve correctly
	Defective or dirty non-return valve	Clean valve and replace if necessary
	Defective directional valve	Replace directional valve
	Pressure set too low	Adjust to correct pressure setting

13.0 Transport, Removal, Handling and Storage

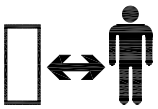
13.1 Transport (On carrier)

Make sure the scrap shear it is securely attached to the carrier. Do not overload the carrier beyond its capacity. Keep the carrier under control at all times. Be careful to avoid any condition that may cause the carrier to become unstable which could lead to tipping. In travel mode, carry the scrap shear close to the ground. Do not go near excavation, overhang or cliff edge.

13.2 Removal From carrier

Read and follow all safety precautions. Only qualified technicians may perform removal of the scrap shear.

CAUTION



Some procedures, such as detaching the scrap shear 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. The operator must have an unobstructed view of the assistant and shear at all times.

WARNING

Rest the scrap shear on the ground. Refer to the Service Manual provided by the carrier manufacturer for the proper procedure to release the hydraulic pressure. When releasing pressure make sure that the scrap shear cannot fall or make unexpected movements.

WARNING

Releasing trapped oil pressure can cause sudden movement of machine or work tool. Prevent movement with proper support and blocking. High-pressure oil that is released when hydraulic lines or fittings are loosened can cause hose whip and oil spray. Use personnel protection equipment such as safety eyewear to protect against injury from Wear gloves to protect skin from fluid contact.

CAUTION

Never rely on the rotation system as a means of support during maintenance of the scrap shear. Prevent unexpected movement of the rotation system with proper support and blocking.

CAUTION

Crush hazard. Keep all body parts clear and do not touch any parts when the linkage or other member of boom/arm is moving.

CAUTION

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

CAUTION

Personal protection equipment should be worn when handling the shear. Equipment should include appropriate clothing, gloves, safety eyewear and shoes.

IMPORTANT

Contamination can shorten service life. Prevent dirt and debris from contaminating the oil. Always clean the area around the connections prior to removal of plugs or caps.

IMPORTANT

During removal of the scrap shear, environmentally harmful substances, such as hydraulic oil, must be disposed of in accordance with local regulations.

Operator: Move carrier and shear to a firm level surface. Position the shear with jaws pointing toward the carrier.

Operator: Shut the carrier off and relieve the pressure in the hydraulic tank and hydraulic lines.

Assistant: Check that the shear is stable and all loads are supported. Close the ball valves located in the hydraulic circuit that carries the oil to and from the shear.

13.0 Transport, Removal, Handling and Storage

Assistant: Clean dirt from all connection areas. Disconnect the hoses from the ball valves. Seal all open connections with the appropriate plugs and caps.

Assistant: Remove the pin retainers from the stick and link pins. Collect any spacers that may have been used.

13.3 Safety Precautions During Handling

Only qualified personnel may operate hoisting equipment.

WARNING

Falling or shifting loads may cause injury or equipment damage. Do not lift the Allied work tool by the mounting pins or hose. Use the lifting eye located on the housing. Approved lift points are marked with label of HOOK pictogram.

Crush hazard. Falling or shifting loads may cause injury. Lift away from people. Never stand under a hoisted load. Do not enter the danger zone while equipment is being lifted. Lifting devices must safely carry the loads to which they will be subjected.

CAUTION

Never rely on the rotation system as a means of support during maintenance of the scrap shear. Use proper support and blocking to prevent unexpected movement of the rotation system.

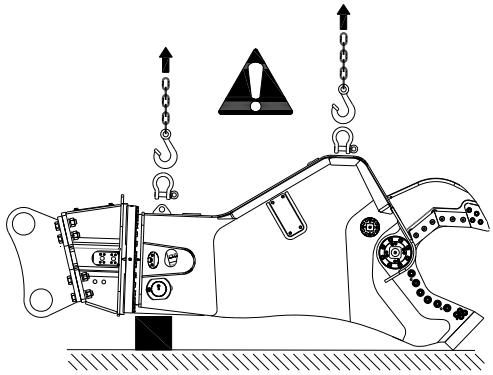


Fig 13-1: Lift Points & Blocking

Figure 13-1 identifies the points to be used when lifting the scrap shear. Lift points are marked with a pictogram. Lift using bow shackles attached to the eyes on the scrap shear. The hooks of the crane can then be attached to the bow shackles.

CAUTION

Falling debris and unsecured objects can be hazardous to bystanders or to the machine itself. Clean debris from scrap shear before lifting. Remove tools, loose parts and secure hoses to prevent injury or damage.

Lift and move the scrap shear using appropriate hoisting equipment with sufficient load carrying capacity. All equipment used to lift the shear must be well maintained and in undamaged condition. Refer to section Technical Data, Table 5.1 for the weight of the scrap shear.

Place the scrap shear on large, stable square beams

13.4 Storage

For storage longer than 6 months, prepare as follows:

- ✓ Retract the cylinder rod fully inside the cylinder.
- **X** Do not drain oil from cylinder unless degradation of the oil quality warrants change.
- ✓ Make sure that the oil supply and drainage ports are capped/plugged.
- ✓ Coat blades with grease containing corrosion protection additive.
- ✓ If outdoor storage cannot be avoided, hold the shear on pads out of contact with the ground.
- ✓ Cover the shear with a waterproof tarp.

IMPORTANT

Contamination in the hydraulic system can shorten service life. Prevent dirt and debris from entering the hydraulic system. Always cover hydraulic connections with plugs or caps.

14.0 Repair Welding and Hardfacing

14.1 Welding - Repair and Hardfacing

It is extremely important to protect the base steel of scrap shear against wear. This can be achieved through hardfacing. This must first be performed after around 200 hours of operation.

The wear that is present on the surfaces of the upper and lower jaw can be compensated by means of repair welding.

When performing repair welding and hardfacing on the scrap shear, observe the following guidelines:

- ✓ Remove cutting blades located close to the area being welded. The cutting surfaces can be damaged by the heat produced during welding.
- ✓ The curve radius at the intersection of the jaws must be maintained.
- **X** Do not weld directly onto the base material; this can cause cracks.
- ✓ Perform all grinding and welding work in the direction of the grain of the material.
- ✓ Tap every weld with the chipping hammer to eliminate stress and harden the material.
- **X** Do not allow any penetration notches to develop at the ends of the welds.
- ✓ The hardfacing may not consist of more than two layers.
- ✓ Make sure that the ends of the welds are staggered rather than along a single line to prevent a notch effect.
- **X** Do not begin or end the weld directly above a cutting point or hole in the jaw.
- ✓ Cover the welded area with an insulating blanket so the welded area can cool slowly (approx. 8 hours).
- **X** Do not use the scrap shear until the welds have cooled completely.

14.2 Repair Welding Procedure

1. Use a ruler or similar tool to determine the area in which repair welding is required.
2. Preheat the area to 350 °F (180 °C). Maintain this temperature during welding, and make sure it does not exceed 400 °F (200 °C).
3. Build up the surface with weld such that the original profile is almost entirely restored. Apply individual beads of weld in the direction of the grain and tap every weld with the chipping hammer. Only use welding material prescribed in Table 14.3.
4. Once the surface has been built up with welding material, grind the surface until the original profile has been restored.
5. Cover of the welded area with an insulating blanket.

14.3 Hardfacing Procedure

1. Refer to Fig 14-1 thru Fig 14-4 when determining which areas will be hardfaced. Use a ruler or similar tool to establish the welding area.
2. Preheat the area to 350 °F (180 °C). Maintain this temperature during welding, and make sure it does not exceed 400 °F (200 °C).
3. The welding pattern must consist of separate beads of weld. Use only the prescribed material for hardfacing (see Table 14.4). Note: Do not apply a bead of weld to the edge; start 0.25” (6mm) from the edge.
4. Every weld seam must be covered by a bead consisting of no more than two layers. Tap every weld with the chipping hammer.
5. Grind the ends of the beads of weld in the direction of the grain over a length of 1 to 1.50” (30 to 40 mm) relative to the base material.

Hardfacing - Allowable / Restricted Areas

- Only perform hardfacing in areas specified in this Tables 14.1 and 14.2. It is not permitted to apply hardfacing to other areas.
- Hardfacing must be carried out in the pattern described in Tables 14.1 and 14.2.

14.0 Repair Welding and Hardfacing

Table 14.1 Allowable areas of the upper jaw that may be hardfaced

Fig. 14-1 Throat of Upper Jaw

Fig. 14-1 Upper Jaw Behind Nose Blades

✓ The beads of weld must be spaced 1” (25 mm) from each other.

Fig. 14-1) The beads run from behind the nose blade to the throat of the jaw.

Fig. 14-2) The beads run from behind the nose blade to an area approximately in the middle of the upper jaw.

Table 14.2 Allowable areas of the lower jaw that may be hardfaced

Fig. 14-3 Lower Jaw

Fig. 14-4 Underside of Chin Plate

✓ The beads of weld must be spaced 1” (25 mm) from each other.

Fig. 14-3) The beads of weld run across the top of the chin plate along the underside towards the throat of the jaw.

Fig. 14-4) The underside of the chin plate must be crosshatched. This can be achieved by applying the beads of weld at 45° to each other, forming a 1” (25 mm) diamond-shaped pattern.

14.0 Repair Welding and Hardfacing

Welding Material

Table 14.3 Repair Welding

Standard / manufacturer	E-hand 111	Mag 135
AWS	A 5.5 E 12018	A 5.28 ER 120 S
Esab		OK Autrod 13.31

Table 14.4 Hardfacing

Standard / manufacturer	Weld Base Material		Hardfacing
DIN 8555 / Welding Alloy			**HARDFACE L-G MSG 6-GF-60-GP**
AWS	7018		814 H
Esab	OK 48.08	OK 16.95	OK Autrod 13.31

Notes:

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