



Operator's Manual Grapple Frame



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Grapple Frame Operation and Maintenance Manual

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MODEL NUMBER: _____
SERIAL NUMBER: _____ (Located on data plate attached to top of unit)
DATE PURCHASED: _____

INTRODUCTION

SYMBOLS USED IN THIS OWNER'S MANUAL

Throughout this owner's manual (and on the attachment itself) there are universal safety symbols. They are commonly used in the equipment and attachment manufacturing industries. These symbols are meant to alert users to possible dangers when used the attachment. Please pay careful attention to any section of this owner's manual with one of these symbols.



**Read
Owner's
Manual**



**General
Warning
Hazard/Alert**



**Do Not Put
Hand In This
Area**



**Flying
Objects**



**Pressurized
Hydraulic
Fluid**

BEFORE INSTALLATION AND OPERATION:



Be sure to read this owner's manual and understand its contents prior to installation and operation of the Arrow Grapple Frame attachment. If there is anything in this manual you do not understand, please contact your authorized dealer, or the Arrow Customer Service Team at 913-495-4803. We will be glad to answer your questions.

ARROW Material Handling Products cares about your safety, and the safety of others who operate or are in the vicinity of the Grapple Frame attachment. ARROW takes great pride in engineering and building quality attachments with the operator's safety in mind, but the responsibility for the safe use of this attachment ultimately belongs to the operator.



Never let anyone operate the ARROW Grapple Frame attachment unless they have first read this owner's manual.

SPECIAL NOTE: The information and illustrations contained in this ARROW Grapple Frame Owner's manual were current at the time of publication. ARROW Material Handling Products reserves the right to redesign all or any portion of this attachment and the owner's manual at any time without notification. For questions or concerns, or to inquire about updates, please contact your authorized dealer or the Customer Service Team at 913-495-4803.

SAFETY PRECAUTIONS



GENERAL SAFETY PRECAUTIONS

ARROW Material Handling Products wants users to have many years of safe, low-maintenance use from the ARROW Grapple Frame attachment. Please read the following section regarding safety thoroughly and follow all precautions each time the ARROW Grapple Frame attachment is used.



1. Follow safe operating procedures:

- Operate the forklift from the operator's compartment — never from the outside.
- Stay seated when operating the forklift controls.
- Work with the seat belt fastened.
- When possible, plan to load, unload, and turn on level ground.
- Travel and turn with the attachment in the lowest position possible.
- Operate on stable surfaces only.
- Do not travel across slopes. Travel straight up and down slopes, with the heavy end of the machine pointed uphill.
- Keep bystanders away from the work area.
- Never disable safety devices.



2. Enter and exit from the Forklift safely:

- Enter the forklift only when the attachment is flat on the ground.
- When entering the forklift, face the seat and keep a three-point contact with handholds and steps.
- Never use foot or hand controls as steps or handholds.
- Keep all walking and working surfaces clean and clear.
- Before leaving the operator's seat:
 - lower the attachment flat to the ground,
 - set the parking brake, and
 - turn off the engine.



3. Maintain the machine in safe operating condition:

- Follow the manufacturer's instructions.
- Keep the foot controls free of mud, ice, snow and debris.
- Regularly inspect and maintain:
 - Interlocked controls
 - Seat belts
 - Restraint bars
 - Side screens
 - Rollover protective structures (ROPS)
 - Falling object protection structure (FOPS)
- NEVER modify or bypass safety devices.
- If you must perform service under a raised attachment, use the lift arm supports.



SAFE OPERATION

Safe operation of a machine with this Grapple Frame attachment is the responsibility of the operator (ITSDF B56.6-2011 paragraph 6.1.1). Such operators must have specific training in the safe operation of the machine, and it is required that the training is well documented and covers all of the requirements of ITSDF B56.6 Part II. Documented training is a critical component to a well-designed, and OSHA compliant, safety program. All ITSDF standards are available for free download from www.itsdf.org.



SAFELY CHECKING FOR HYDRAULIC LEAKS

WARNING: There is significant risk of injection from the high pressure spray at hydraulic leaks.



- The energy used to operate the machine and attachments can be stored in the hydraulic system, even when the machine engine is off.
- Serious injuries from hydraulic fluid injection can seem insignificant at first. Often it can seem like a pin prick or tingling, but later it may require amputation.

HIGH PRESSURE LEAKS ARE OFTEN INVISIBLE.

- Hydraulic system injuries can include:
 - Burns from hot fluid
 - Injection of hydraulic fluid
 - Trauma from energized components or flailing lines

DO



- Always Lock Out, Tag Out machine controls before working on the machine or attachment.
- Always use the methods recommended by the manufacturer to block lift arms and other moving components, to prevent accidental movement.
- Always use appropriate PPE (Personal Protective Equipment) when working on or around machinery.
- Take an approved safety course related to hydraulic systems. Local university extension programs and equipment dealers may offer training on hydraulic safety.

DO NOT



- **DO NOT** use hands, or other body parts, to inspect for hydraulic leaks. Instead, use a piece of paper or wood.
- **DO NOT** place hands or other body parts in pinch points when the machine has not been properly blocked and locked out.
- **DO NOT** “crack” a hydraulic fitting to release hydraulic pressure. Severe risk of injection.
- **DO NOT** tighten or loosen hydraulic components when the system is pressurized.
- **DO NOT** assume that the system is depressurized.

INSTALLATION

Adding this attachment to a rough terrain forklift

- Per ITSDF B56.6-2011 paragraph 5.2.1:
 1. Written approval of the original truck manufacturer or its successor must be obtained prior to use.
 2. Capacity plates, decals, tags, and operation and maintenance manuals must be updated to reflect the installation of this attachment
- Per ITSDF B56.6-2011 paragraph 5.2.3:
 1. The user shall see that the truck is marked to identify the grapple frame attachment
 2. Show the approximate weight of the truck and Grapple Frame combination
 3. Show the capacity of the truck with the Grapple Frame at maximum elevation with load laterally centered

Connecting the attachment to the machine

1. Remove any attachment on the carriage
2. Remove the shaft
3. Approach the Grapple Frame slowly and position the top of the carriage into the bottom clips of the Grapple Frame
4. The Eyes of the Grapple Frame should line up with the shaft hole on the carriage.
5. Re-install the shaft



Ensure that all pins, keepers, hooks, etc. are properly engaged or installed prior to operating the machine with a Grapple Frame attachment.

PREFLIGHT CHECK LIST



Inspect Equipment Prior to Every Shift

BEFORE starting machine:

- Structural Damage
 1. Look for obvious damage to machine structure — welds, dents, loose fasteners, etc.
 2. Inspect Fork heel for damage.
Thickness: forks must be removed from service when more than 10% of the original thickness has been worn off (ITSDF B56.6-2011 paragraph 7.15)
- Hydraulic lines and components
 1. Check hydraulics for abrasion, leaks, kinks, etc.
 2. Inspect hydraulic and electrical connections to machine



DO NOT inspect pressurized hydraulics without using precautions — injection risk

- ITSDF B56.6-2011 paragraph 6.5.1: At the beginning of each shift and before operating the rough terrain forklift truck, check its condition, giving special attention to the following:
 1. Tires and their inflation pressure
 2. Warning devices
 3. Lights
 4. Lift and tilt systems, load-engaging means, chains, cables, and limit switches
 5. Brakes
 6. Steering mechanism
 7. Fuel system(s)

With machine running, check for proper operation of hydraulic functions on the Grapple Frame.

- The grapple arms raise in a smooth and predictable manner

GENERAL OPERATION

■ Loading

1. At some distance away from the load to be lifted, open grapple arms (Diagram 1)
2. Drive into the load making sure to keep the center of gravity of the load laterally centered between the grapple arm (Diagram 2)
3. Close grapple arms (Diagram 3)

OPERATION DIAGRAMS



Diagram 1



Diagram 2

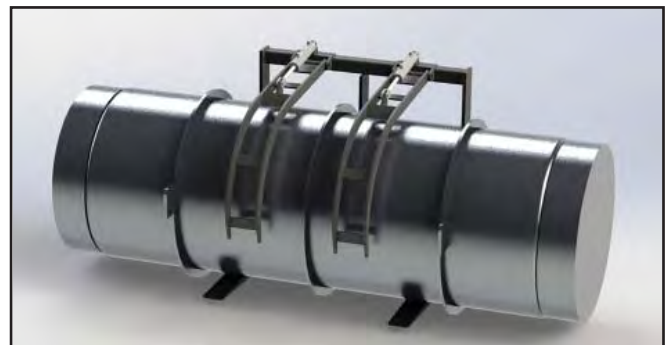


Diagram 3

REMOVAL AND STORAGE

■ To remove the Grapple Frame for storage:

1. Lower the Grapple Frame until it sits on the ground in its storage location, and ensure that the grapple arms are all the way down.
2. **TURN OFF THE MACHINE** and release pressure from the auxiliary hydraulic lines using the manufacturer's recommended procedure.
3. Disconnect the Grapple Frame hydraulic lines from the machine boom.
4. Disconnect the Grapple Frame:
 - a. Remove the shaft
 - b. Restart the machine
 - c. Lift carriage and slowly back away until all parts of the machine are clear of the Grapple Frame.

■ Proper storage of Grapple Frame:

1. It is preferred that the Grapple Frame is stored on wood beams, gravel, asphalt, or other means of preventing it from sitting in mud, standing water, or other conditions which may contribute to corrosion or fouling.
2. Ensure that the hydraulic couplers remain free of dirt and other debris.
3. Protect the cylinder rods on the grapple arms from damage.

Arrow Material Handling Products Limited Warranty – Pipe Grapple

Overview

Arrow Material Handling Products offers a Limited Warranty on products delivered hereunder against faulty workmanship and use of defective materials for a period of twelve (12) months from the date of shipment. Seller offers a Limited Warranty for miscellaneous parts and accessories such as cylinders, hoses, switches, valves and wiring delivered hereunder against faulty workmanship and use of defective materials for a period of three (3) months from the date of shipment. This warranty does not include, and there in hereby excludes, maintenance parts and consumables including but not limited to hydraulic fluid, oil, belts, teeth, blades, filters, hooks, chains and other similar items.

Disassembly, modification or welding of units without Arrow's written authorization voids the warranty. Hydraulic hoses are warranted against failure due to workmanship. Improper installation, ripping or cutting due to unauthorized modifications of Arrow installation procedures is not warranted. An Authorized Dealer or Arrow representative must install hydraulic kits and components for failures to be given warranty consideration.

No warranties are expressed or implied as to the fitness of the equipment on which the attachment or accessory is installed. The purchaser is responsible for promptly informing Arrow Customer Service of any suspected operational deficiencies or failures. Arrow is the sole party responsible for analysis of reported deficiencies or failures. Repair or replacement will be at the sole discretion of Arrow. Field repairs or modifications undertaken without prior approval by Arrow Customer Service may invalidate the warranty.

All returns require a MRA. That policy and form can be found on the website or via 913-495-4803.

General

The Arrow Limited Warranty is extended only to the original purchaser and may be void in the event that the product is sold or otherwise transferred. No warranty will apply to any product that has been (i) modified, altered or adapted without Arrow's written consent, (ii) abused or misused, (iii) repaired by any third party in a manner that fails to meet Arrow's repair standards, (iv) improperly installed, or (v) used with any device or implement not covered by this warranty.

The warranties set forth herein are in lieu of any and all other warranties, express or implied, including the warranties of merchantability and fitness for a particular purpose. The purchaser acknowledges that no other representations or warranties were made or relied on in connection with the purchase of the Arrow Products. No person is authorized to vary, modify or change the terms of this limited warranty.

Neither party shall be liable for any indirect, punitive, special, incidental or consequential damage in connection with or arising out of the use of the property sold to the purchaser, including without limitation, loss of business, revenue, profits, goodwill, consequential damages, whether in contract or tort, including negligence.

Nothing in this warranty affects any statutory rights of consumers or other purchasers that cannot be waived or limited by contract. This limited warranty gives you specific legal rights, and you may have other rights, which vary from state to state and country to country.

Limitations

This LIMITED WARRANTY does not cover product, which in the opinion of Arrow, is damaged due to abuse, misuse, misapplication, prohibited operation, improper maintenance, alteration, unauthorized service, contamination by the base machine, or normal wear and tear. This LIMITED WARRANTY is void if the product is modified in any way without the written consent or instruction of Arrow. This LIMITED WARRANTY is null and void if the product is used in a prohibited operation, or unauthorized adjustment / assembly / disassembly has occurred. This LIMITED WARRANTY is the exclusive warranty and is given in lieu of any and all other warranties, whether expressed or implied, arising in any fashion including but not limited to the course of dealing and course of performance, and including but not limited to warranty of merchantability or warranty of fitness for a particular purpose. Dealers or Agents of Arrow have no authority to make any type of representation or warranties on behalf of Arrow beyond those expressly set forth in this document.

In no event shall Arrow be liable to any party, including but not limited to buyer, for any direct, incidental, consequential, punitive, or special damages, including but not limited to loss of profits, loss of productivity, in any way related to or arising, directly or indirectly, from the product. The liability of Arrow for any and all losses and damages to buyer, its successors and assigns, resulting from any cause whatsoever, including the negligence of Arrow, irrespective of whether such defects are discoverable or latent, shall in no event exceed the purchase price of the product with respect to which such losses or damages are claimed.

Please refer to Arrow's Terms and Conditions of Sale document on the website for complete information.

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