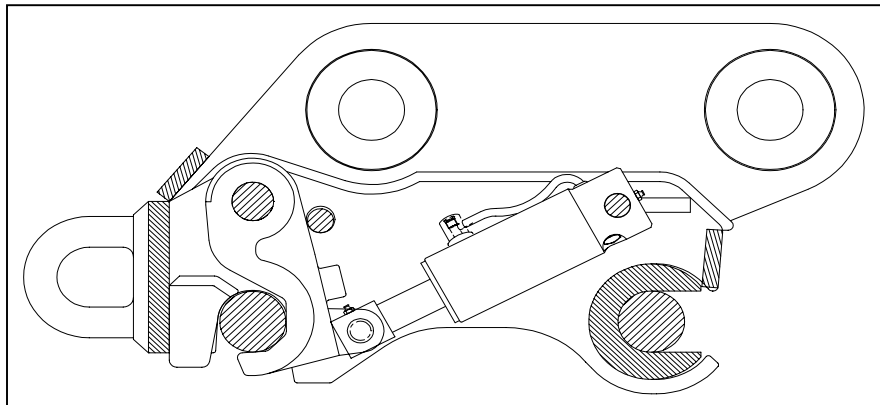


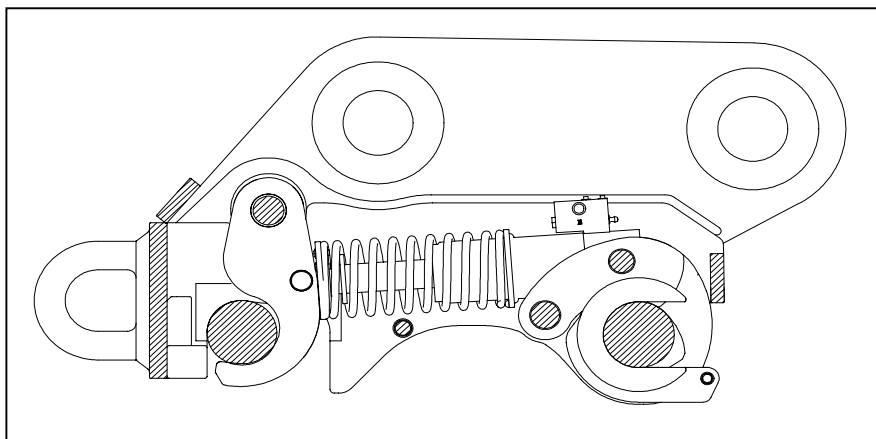


HENDRIX QUICK COUPLER USER MANUAL

1ST GENERATION HENDRIX HYDRAULIC QUICK COUPLER



HENDRIX II HYDRAULIC QUICK COUPLER



PART # - UMCP-0902



HENDRIX QUICK COUPLER USER MANUAL

Congratulations on your purchase of the Hendrix Hydraulic Quick Coupler. The Hendrix Coupler you have purchased is a high quality, well-engineered product that will provide you with many years of good service. The Hendrix Coupler will enhance the productivity and flexibility of your excavator. Please read this manual and any accompanying materials thoroughly before installing, operating, or maintaining your Hendrix Hydraulic Quick Coupler. If you have any questions, please contact your authorized Hendrix dealer.

The Hendrix Quick Coupler brings you the design, quality, and workmanship you expect from a Hendrix product. Please pay particular attention to your personal safety while installing, operating, or maintaining this unit, and remember to follow all applicable standard safety precautions.

The advantages of the Hendrix Coupler become apparent when a bucket or attachment change is necessary. These advantages include:

1. A rotating locking mechanism with a locking lever that engages under and around the machine pin, minimizing the chance of jamming unlike other trouble prone "wedge" lock systems that sometimes have to be hammered open.
2. The positive locking system pushes against the back machine pin and away from the front pin, keeping the coupler always tight.
3. High-strength compression spring(s) maintain constant pressure on the locking lever for protection against a pressure loss in the hydraulic system.
4. A check valve that backs up the compression spring(s) and helps to prevent the possibility of an accidental release of the attachment.
5. The Hendrix Coupler is equipped with a lifting eye. This lifting eye allows you to operate the machine as a lifting device without the attachment, thereby gaining increased lifting power without bucket interference.

The Hendrix Hydraulic Quick Coupler operates on the excavator's low-pressure pilot system rather than the main high-pressure system. Engaging an attachment is easier and safer using the low-pressure pilot system instead of a system that uses pressure from the bucket cylinder of the excavator. The attachment can remain on the ground and does not have to be curled in to take the machine over relief.

The Hendrix Coupler is designed to allow the operator to switch the attachments on a hydraulic excavator in a minimum amount of time. The Coupler is mounted between the excavator arm and the excavating attachment.

Realization of the Hendrix Coupler's full potential will depend upon the following factors:

1. A careful examination and execution of the installation, operation, and maintenance instructions provided in this manual.
2. A designation of responsibility by the user of the equipment for the appropriate training in the installation, operation, and maintenance of the coupler and its systems.
3. The equipment owner and/or operator should lock out/tag out the machine to prevent accidental startup before installation of the Hendrix Coupler is attempted.
4. All users should completely read this manual before attempting to install, operate, or maintain this coupler.

Thank you for purchasing our product. We are confident you will be pleased with its performance.

Hendrix Manufacturing Company, Inc.
P.O. Box 919
Mansfield, LA 71052
Phone – (318) 872-1660 Fax – (318) 872-1508 www.hendrixmfg.com



HENDRIX QUICK COUPLER USER MANUAL

IMPORTANT NOTES

Hendrix Manufacturing Company, Inc. builds its hydraulic quick couplers to OEM attachment specifications. The coupler is designed to work only with attachments that are also built to OEM attachment dimensions. The critical dimensions are the Pin Center-to-Pin Center dimensions, the Stick Width, and the Pin Diameters. You should insure that your attachments are built to these specifications before attempting to operate the coupler. Additionally, you may encounter some attachments that have structural interferences that prevent the coupler from properly engaging the attachment. You should resolve any interference issues before attempting to operate your quick coupler. Hendrix assumes no responsibility or liability for attachments that are not built to OEM specifications and/or have structural interference problems. Any costs incurred to modify attachments that do not conform to OEM specifications and/or have structural interferences are solely the responsibility of the end user.

HENDRIX WARRANTY POLICY AND PROCEDURES FOR QUICK COUPLERS

Hendrix Manufacturing Co., Inc. (Hendrix) warrants all quick couplers against defects in material and workmanship for a period of 6 months or 1000 hours, whichever comes first, after delivery to an end user. This warranty is valid only with the original purchaser, and proof of delivery date to the original purchaser is required.

Warranty claims must be made to Hendrix in advance of any repairs via a warranty claim number and warranty claim form which can be obtained by contacting Hendrix. Warranty claims without a warranty claim number will be rejected. Any product requested by Hendrix to be returned for inspection must be done so with freight charges prepaid. This warranty does not apply to any quick coupler that has been subjected to misapplication and/or abuse, or modified in any way without written authorization from Hendrix.

This warranty covers only new and unused products manufactured by Hendrix. Products manufactured by others are covered only by the warranties extended to Hendrix by its suppliers.

All products are wearable and expendable and as such, Hendrix assumes no responsibility for normal wear. Further, it is the responsibility of the customer to follow normal maintenance and operating procedures, including, but not limited to daily inspection for routine hairline cracks. Any cracks should be repaired before further propagation occurs.

Warranty claims are subject to credit on the dealer's account. Hendrix reserves the right to pass judgement on time allowed for repairs and the rate charged for repairs. Repairs done by an outside source will be subject to warranty one time only-- subsequent failure of repairs by an outside source is non-warrantable. Hendrix shall not be liable for down-time by the customer, mileage costs, damaged equipment, or loss of productivity incurred by the dealer or customer.

Hendrix specifically disclaims all warranties, express or implied, including but not limited to implied warranties of merchantability and fitness for any particular purpose with respect to Hendrix products.

© 2002 Hendrix Manufacturing Company, Inc. Mansfield, LA USA. All rights reserved. Any use of the editorial or pictorial content of this publication is strictly prohibited without express written permission from Hendrix Manufacturing Company, Inc. Mansfield, LA USA. Printed in the USA (09/02). Rev.1 Issued -09/02



HENDRIX QUICK COUPLER USER MANUAL

| TABLE OF CONTENTS | | PAGE |
|---|--|-------------|
| GENERAL INFORMATION | | |
| I | Warnings, Recommendations, & Precautions | 3 |
| II | Parts ID Charts | 4 |
| III | Recommended Welding Procedures | 9 |
| IV | Hydraulic & Electrical Specifications | 10 |
| INSTALLATION INSTRUCTIONS | | |
| I | Installation Preparation | 12 |
| II | Remove the Bucket or Attachment | 13 |
| III | Connect the Coupler to the Excavator Arm | 14 |
| IV | Install Hose Brackets | 15 |
| V | Hydraulic Hose Assembly | 17 |
| VI | Hydraulic Hose Routing | 18 |
| VII | Control Valve, Filter, & Switch Box Installation | 21 |
| OPERATION & MAINTENANCE INSTRUCTIONS | | |
| I | Warnings & Precautions | 28 |
| II | Switch Box Overview | 30 |
| III | 1st Generation Coupler Familiarization | 31 |
| IV | Hendrix II Coupler Familiarization | 33 |
| V | Engaging the Attachment | 35 |
| VI | Disengaging the Attachment | 40 |
| VII | Lifting Loads with the Coupler Installed | 41 |
| VIII | Maintenance Procedures | 42 |



WARNING



Read, understand and follow all safety precautions and procedures found in the machine's operator's manual before attempting any operation, inspection or maintenance of this machine, its attachments and/or systems. Hendrix Mfg. Co. cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this document and on the product are therefore not all inclusive. If a tool, procedure, work method or operating technique not specifically recommended by Hendrix Mfg. Co. is used, you must satisfy yourself that it is safe for you and others. You should also ensure that the product will not be damaged or made unsafe by the operation, lubrication, maintenance and/or repair procedures you choose.



HENDRIX QUICK COUPLER USER MANUAL

GENERAL INFORMATION



DANGER



Failure to comply with information in this Hendrix Quick Coupler User Manual may result in injury, death, damage to property, and/or damage to the Quick Coupler. Insure that all personnel have read and understand the information in this User Manual before attempting to install, maintain, and/or operate the Hendrix Quick Coupler.



HENDRIX QUICK COUPLER USER MANUAL

GENERAL INFORMATION SECTION I – WARNINGS, RECOMMENDATIONS, & PRECAUTIONS

This section provides general information and recommendations needed before attempting to install, operate, or maintain your Quick Coupler

SAFETY MESSAGE CLASSIFICATION

Safety Messages in this Manual are classified as follows:

DANGER – Indicates an imminently hazardous situation. If not avoided, this hazard will result in death or serious injury.

WARNING – Indicates a potentially hazardous situation. If not avoided, this hazard could result in death or serious injury.

CAUTION – Indicates a potentially hazardous situation. If not avoided, this hazard may result in minor or moderate injury and/or damage to the coupler or machine.

- Read these instructions thoroughly before attempting to install, operate, or maintain your Hendrix Quick Coupler.
- Before installing, unpack the Coupler and Coupler Kit. Inspect the Shipper's Bill of Lading to determine that all items have been received.
- Inspect all items for any damage or missing items due to transit or handling. If some items are damaged or missing, please contact your dealer.
- Insure that all items listed on the Coupler Kit Component list (**see Chart #5 in General Information section**) are included.
- Verify that the coupler machine number on the Serial Number ID Tag (**Fig. 3-1**) matches the machine you are attempting to install the coupler on.
- Sort out all Coupler Kit Material and group the components together by component type. Be sure to group all bolts with their respective washers.
- Familiarize yourself with the Coupler and Coupler Kit components before installing, operating, or maintaining your Hendrix Quick Coupler (**see Parts ID charts**).
- Insure that you have an ample supply of rags and absorbent towels on hand for cleaning purposes.
- Tighten all fittings securely and properly.
- Insure that all hoses, lines, and fittings are clean, open, and clear before connecting them to the system.
- Route all hoses and wires in a neat and orderly manner. Secure the hoses and wires to other machine components.
- Do not force any parts during assembly. If the parts are properly aligned, the pins will go in easily and the fittings will screw into the valves without undue force.
- Lubricate all pins. Always use the original machine pins that came with the excavator to attach the coupler to the dipperstick.
- All hoses should have enough slack to move when powering the dipperstick or attachment.



Fig 3-1 (Coupler Serial Number ID Tag)



HENDRIX QUICK COUPLER USER MANUAL

GENERAL INFORMATION SECTION II – PARTS ID CHARTS

This section provides Diagrams and Charts to help you identify the components of the Coupler, the Coupler Installation Kit, and the Excavator, as well as to help familiarize you with the terminology used in this manual.

CHART #1 - Excavator Parts ID Chart

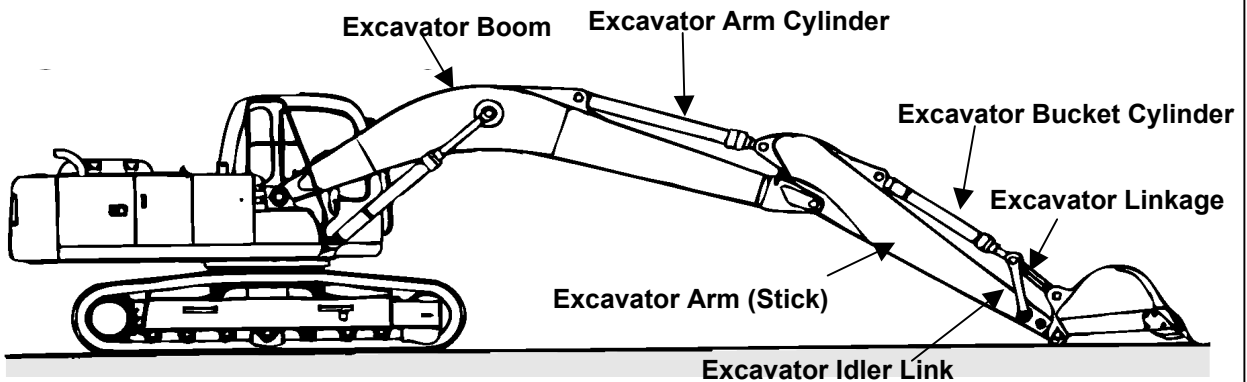
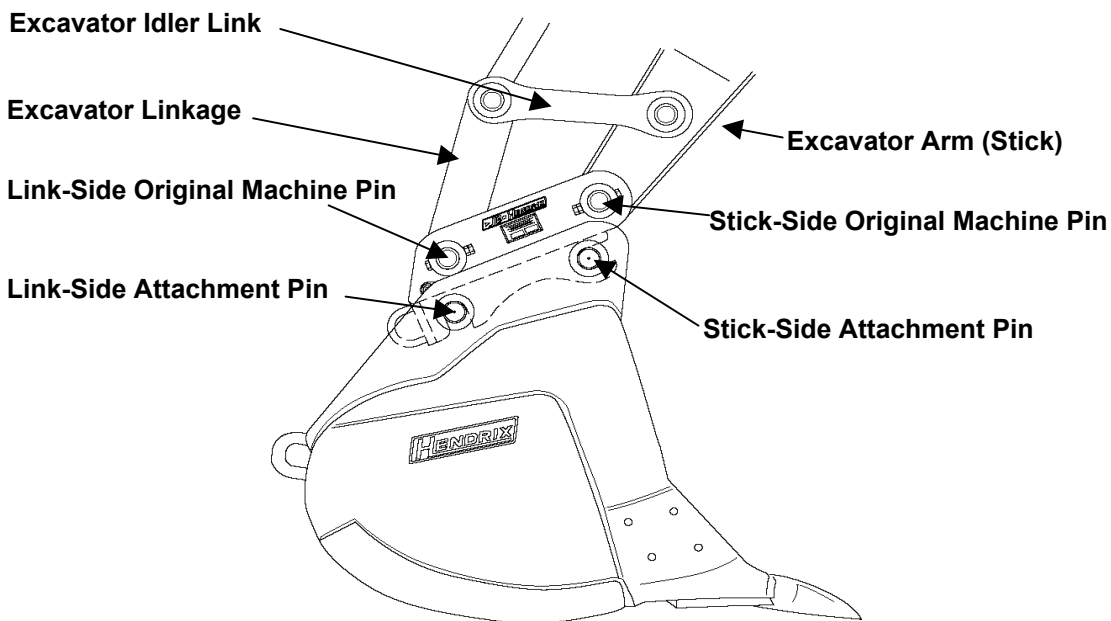


CHART #2 - Coupler/Attachment Parts ID Chart





HENDRIX QUICK COUPLER USER MANUAL

GENERAL INFORMATION SECTION II – PARTS ID CHARTS

Continued....

CHART #3 - 1st Generation Coupler Parts ID

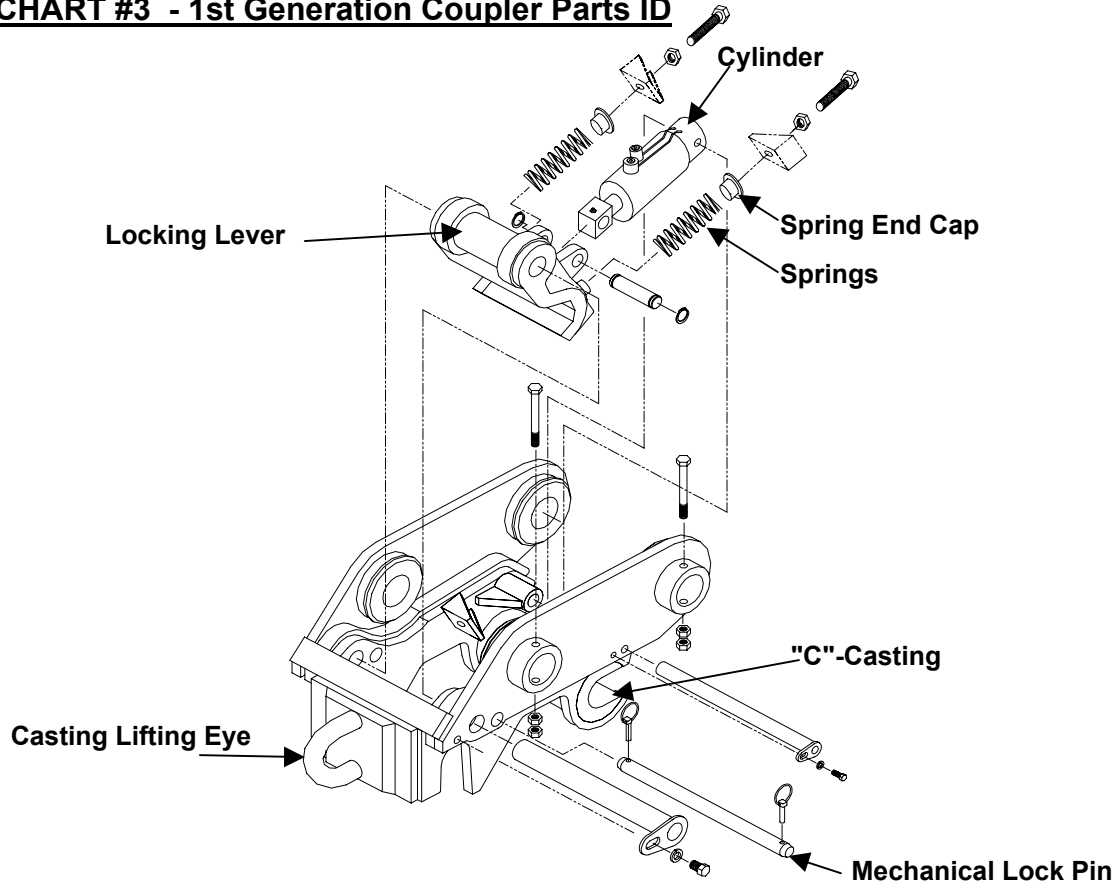
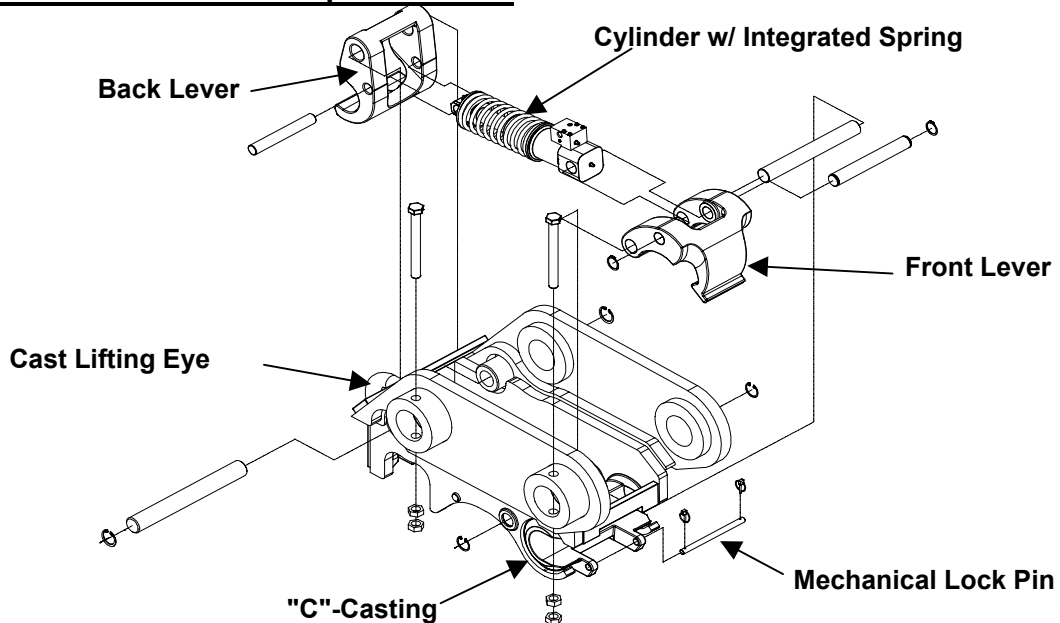


CHART #4 - Hendrix II Coupler Parts ID





HENDRIX QUICK COUPLER USER MANUAL

GENERAL INFORMATION SECTION TWO – PARTS ID CHARTS

Continued....

CHART #5 - COUPLER KIT COMPONENT LISTINGS & DRAWINGS

| FILTER COMPONENTS | PART NUMBER | #4N-212 | #6N-3 | #6N-412 | CHART # |
|--|--------------------|----------------|--------------|----------------|----------------|
| Filter Head | 1753144 | 1 | 1 | 1 | A |
| Filter Element | 20101 | 1 | 1 | 1 | B |
| 2 X 2 X 1/4 Angle Bracket | MB-F | 1 | 1 | 1 | C |
| 1/4 X 20 X 3/4 Hex Head Bolts with Washers | 1/4X20X3/4 | 2 | 2 | 2 | D |
| | | | | | |
| SWITCH BOX COMPONENTS | PART NUMBER | #4N-212 | #6N-3 | #6N-412 | CHART # |
| 3-Light Switch Box Assembly | CCBXR1020799-3 | 1 | 1 | 1 | E |
| Buss 10 Amp Fuse | FUSE10 | 1 | 1 | 1 | F |
| #8 X 1/2" Mounting Screws | 8X1/2MS | 3 | 3 | 3 | G |
| | | | | | |
| CONTROL VALVE COMPONENTS | PART NUMBER | #4N-212 | #6N-3 | #6N-412 | CHART # |
| Hydraulic Control Valve (24V Vickers) | DG4V3S2CMU1H560 | 1 | 1 | 1 | H |
| Mounting Subplate | AD03SP-S6S | 1 | 1 | 1 | I |
| 1/4 X 20 X 3/4 Subplate Mounting Bolts | 1/4X20X3/4SMB | 2 | 2 | 2 | J |
| 1025 Mounting Screws | BK-D03 | 4 | 4 | 4 | K |
| Control Valve Wiring Harness | HARNDIQD | 1 | 1 | 1 | L |
| Control Valve Mounting Bracket | MB-V | 1 | 1 | 1 | M |
| | | | | | |
| FITTINGS & HOSES | PART NUMBER | #4N-212 | #6N-3 | #6N-412 | CHART # |
| #6 Reusable Female Hose Ends (Swivel) | BL06-06NJ | 18 | 18 | 18 | N |
| #6 O-Ring X #6 JIC Male (90 degree) | 849FSO06X06 | 5 | 5 | 5 | O |
| #8 O-Ring X #6 JIC Male | 848FSO06X08 | 2 | 2 | 2 | P |
| #6 JIC Male X #6 JIC Male (Straight Bulkhead Fitting) | 2700-06-06 | 2 | 2 | 2 | Q |
| #6 JIC Male X #6 JIC Male (45 degree Bulkhead Fitting) | 2702-06-06 | 2 | 2 | 2 | R |
| Nut for Bulkhead Fittings | 711BH5F06 | 4 | 4 | 4 | S |
| #6 O-Ring X #6 JIC Male | 6400-06-06 | 1 | 1 | 1 | T |
| Upper & Lower Bulkhead Fittings Bracket | #6MB | 2 | 2 | 2 | U |
| #6 2500 psi Single Braid Hydraulic Hose | HFS06 | 125' | 125' | 150' | V |
| Protective Hose Sleeve | NHS114 | 20' | 20' | 20' | W |
| #4 Reusable Female Hose Ends (Swivel) | BL04-04NJ | 4 | N/A | N/A | X |
| #6 X #4 Tube End Reducer | 883FS06X04 | 2 | N/A | N/A | Y |
| 37 Degree Tube End Reducer Nut | 841FS06 | 2 | N/A | N/A | Z |
| #4 O-Ring X #4 JIC Male (45 degree) | 854FSO04X04 | 2 | N/A | N/A | AA |
| #4 2750 psi Single Braid Hydraulic Hose | E7-04 | 10' | N/A | N/A | AB |
| Wire Ties | | 20 | 20 | 20 | AC |
| Tubular Hose Retainer Bracket | | 1 | 1 | 1 | AD |
| #4 O-Ring X #4 JIC Male (90 degree) | 4C50X-S | 2 | N/A | N/A | AE |

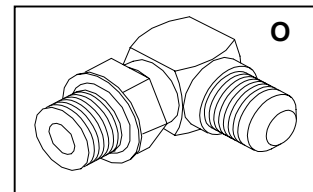
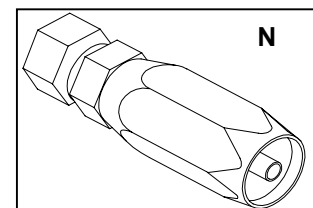
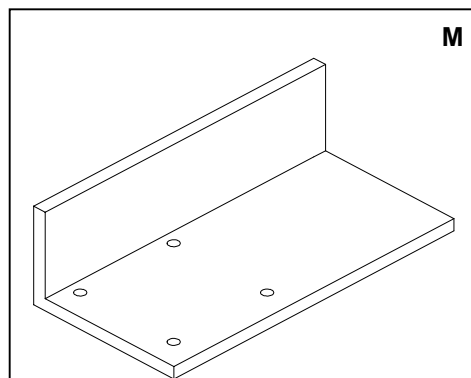
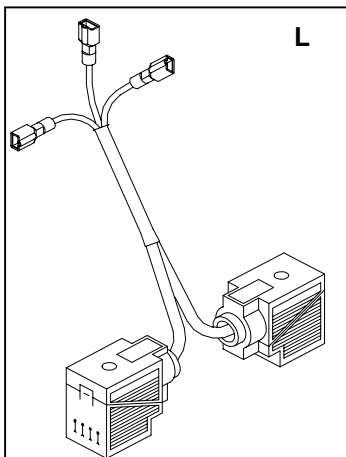
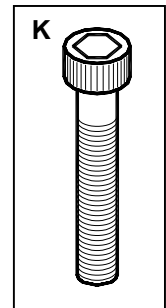
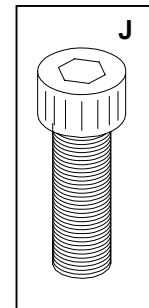
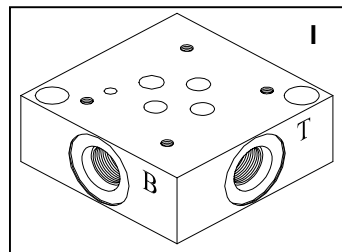
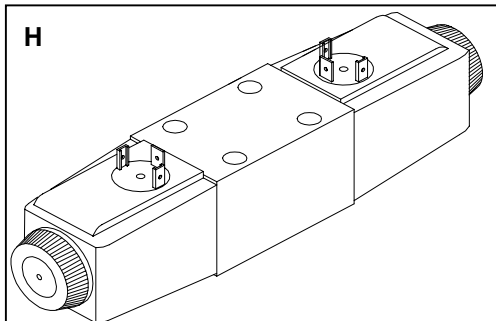
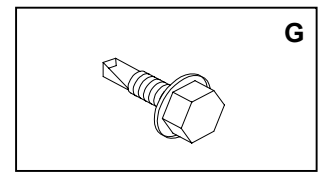
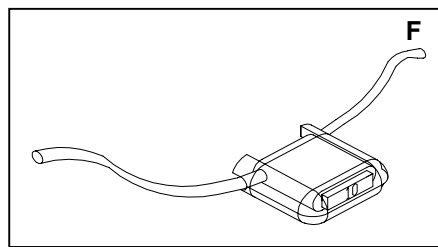
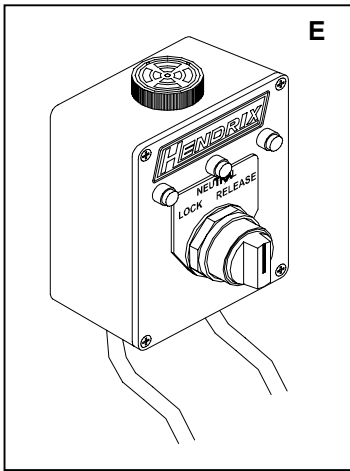
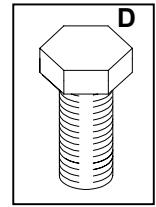
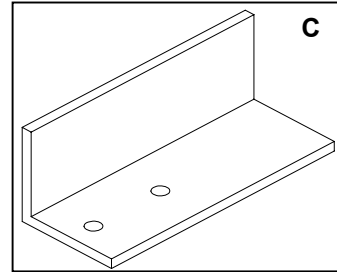
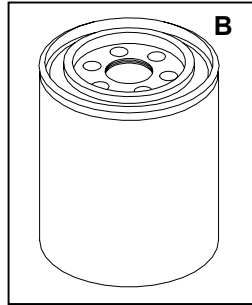
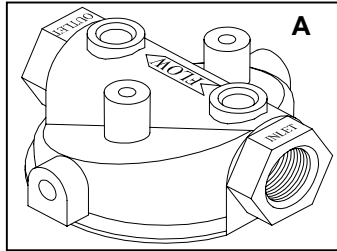
IMPORTANT - Hendrix makes every attempt to supply you with the fittings to install your quick coupler. However due to the variety of excavators, you will be required to provide the brand specific fittings needed to tie into the pilot pressure system and the hydraulic reservoir tank. Please see your excavator dealer to obtain these fittings. Additionally, certain machines may require adaptation of connectors. Please see your excavator dealer for any appropriate fittings.



HENDRIX QUICK COUPLER USER MANUAL

GENERAL INFORMATION SECTION TWO – PARTS ID CHARTS

Continued....(Drawings for representation purposes only. Drawings are not to scale.)

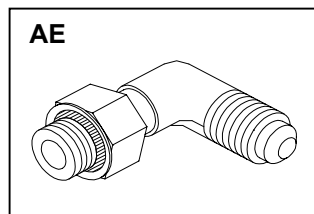
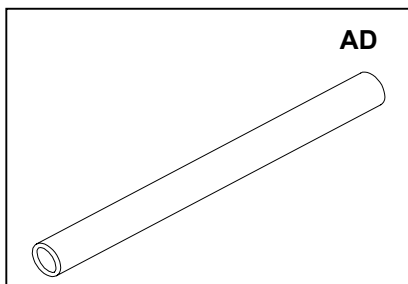
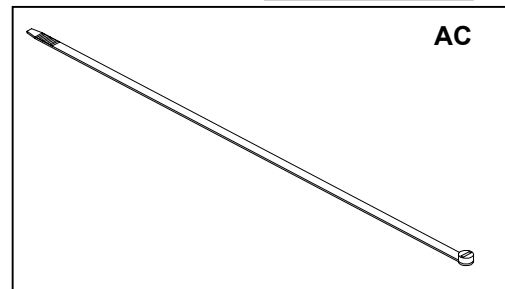
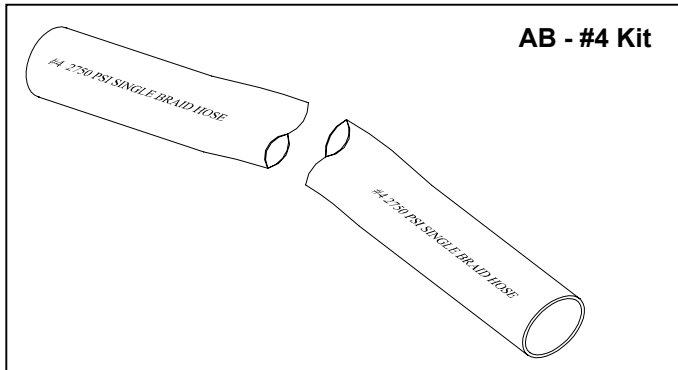
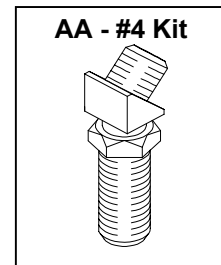
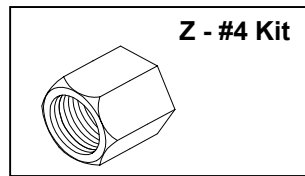
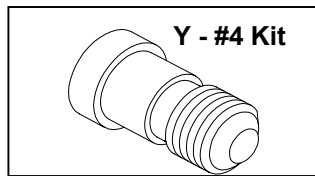
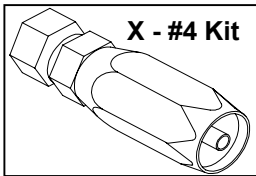
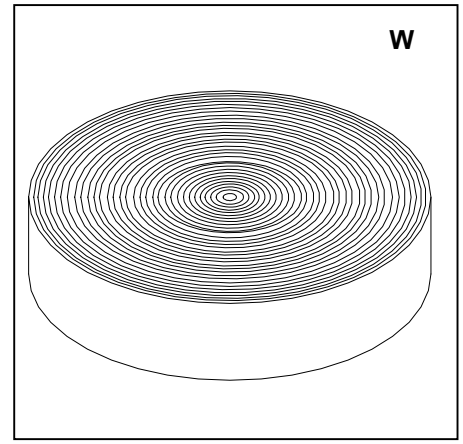
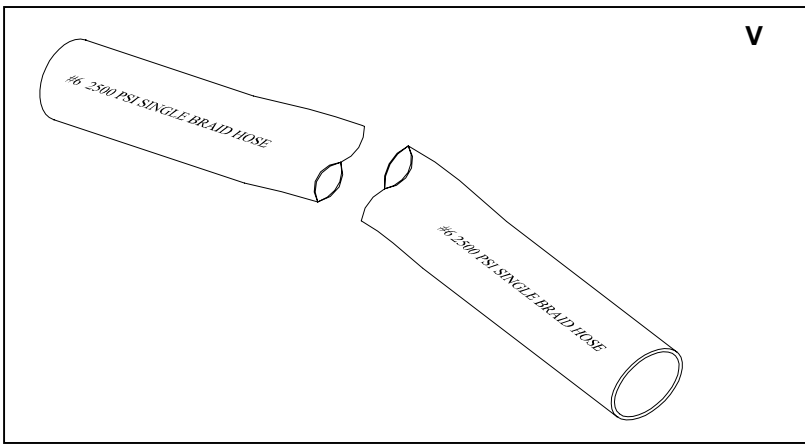
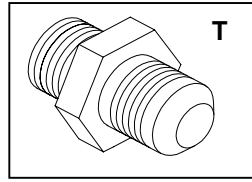
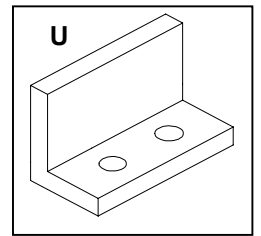
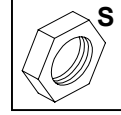
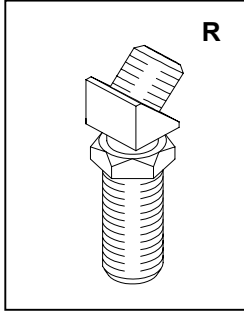
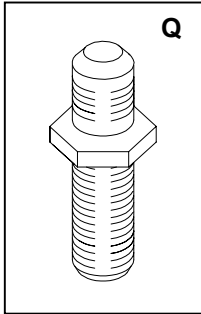
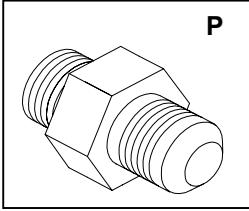




HENDRIX QUICK COUPLER USER MANUAL

GENERAL INFORMATION SECTION TWO – PARTS ID CHARTS

Continued....(Drawings for representation purposes only. Drawings are not to scale.)





HENDRIX QUICK COUPLER USER MANUAL

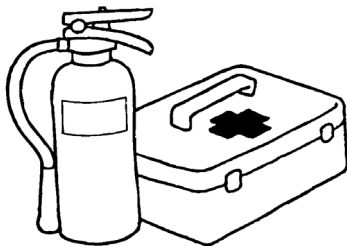
GENERAL INFORMATION SECTION III- RECOMMENDED WELDING PROCEDURES

This section lists the recommended welding procedures to follow when installing or maintaining your Coupler.

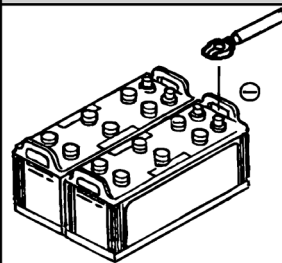
- HENDRIX High Strength Low Allow Steels require greater than normal precautions when welding. All areas to be welded should be cleaned and properly aligned (if a fit is involved). Minimize heat input and welding time by using short stringer beads and weaving not over three (3) times the electrode diameter. Remove slag after each pass, and peen the bead to relieve stress. Preheat the part(s) to be welded to 300 degrees F (150 degrees C) to 400 degrees F (200 degrees C). Cool slowly after welding, wrapping with insulating blanket, if necessary, in cold weather. A localized post weld heat treatment with a Rosebud torch should include at least two (2) inches minimum of the adjacent base metal and the weld. This heat treatment should raise the temperature of the area heated to 400 degrees F (200 degrees C) to 500 degrees F (260 degrees C). Control of this step is critical to avoid embrittling the steel.
- Remove paint from any surface to be heated or welded. Painted surfaces give off unhealthy gases when heated or welded. Use a mask and proper skin protection when removing paint from any surface. When removing paint by sanding, do not breath the generated dust. Protect yourself at all times. When using chemical compounds to remove paint, make sure to use plenty of soap and water to rinse the surface to be welded, since such chemicals will generate unhealthy gases when heated or welded.
- Be sure to perform this work in a well-ventilated area.
- The electrode to be used is E7018 (SMAW) or E70T-1 (FCAW). Follow the manufacturer's recommendations about electrode storage and avoidance of moisture, and other contaminants. The electrode manufacturer can also recommend shielding gases. Persons performing welding should follow Government guidelines for personal protective equipment.
- Place the welding ground cable within 3 feet(1 m) of the area to be welded.
- Use proper welding protection.

NOTE

Have a Fire Extinguisher and First Aid Kit ready for emergencies. Know how to operate the fire extinguisher and know where the First Aid Kit is located in case of any emergency.



CAUTION



Make sure to disconnect the batteries. Failure to do so could result in extensive machine damage to the electronic system.



HENDRIX QUICK COUPLER USER MANUAL

GENERAL INFORMATION SECTION IV – HYDRAULIC & ELECTRICAL SPECIFICATIONS

This section lists the specifications for the hydraulic and electrical components of the Coupler Installation Kit.

HYDRAULIC FILTER UNIT: Purolator Filter Assembly

Max Pressure: 200 psi (13.8 bar)

Filter Element: 20101

Flow Rating: 32 Gpm (121 L/min)

Temp. Range: -45 degrees F to 225 degrees F (-43 degrees C to 107 degrees C)

Element change clearance: 2.50 inches (65mm)

FILTER CROSS-REFERENCE CHART

Hendrix Filter

Puralator # 20101

Cross-Reference

Parker #921999

Baldwin #BT839-10

Stauff #SF6620

HYDRAULIC CONTROL VALVE: Vickers DG4V-3S-2C-M-U1-H5-60

Power Rating: 30W @ 24VDC

Fatigue Pressure: 5000 psi (350 bar)

System Pressure: Excavator Pilot Pressure Control System (Not to exceed 1000 psi)

SWITCH BOX ASSEMBLY:

Voltage Rating: 24VDC

Alarm Decibel Rating: 72 dbA

Wiring Harness: T4-2 SJT0W (TPE) 105 degrees C FT2 water resistant

HYDRAULIC HOSE

#6 Hose: Eastman HFS06 2500 psi Single Braid Hose (or equivalent)

#4 Hose: Eastman E7-04 2750 psi Single Braid Hose (or equivalent)



HENDRIX QUICK COUPLER USER MANUAL

COUPLER INSTALLATION INSTRUCTIONS

The following section will guide you through the necessary steps to install your Hendrix Quick Coupler. Please review the information provided in the "General Information Section" before attempting to install your coupler. Pay close attention to all Safety Messages in the manual.

The Coupler Installation will require you to do the following basic steps. You will connect the coupler to the end of the excavator's arm. You will route the hoses from the coupler up the excavator arm and boom, and down to the engine compartment that houses the pilot pressure system. The Hendrix Quick Coupler operates off of the low pressure pilot system. You will install the control valve and filter in the engine compartment. This will provide easy access to the low pressure pilot system as well as protection from the elements. Your Hendrix Quick Coupler comes with a 3-Light Switch Box that will be mounted in the cab of the excavator.

HELPFUL HINTS BEFORE BEGINNING INSTALLATION:

- A. Read through the entire installation section before beginning the installation.
- B. Determine where you will need to mount the control valve and filter (these components are mounted in the main engine compartment near the excavator's pilot pressure system).
- C. Determine where you will need to mount the switch box (this item mounts in the excavator cab).
- D. Make sure you have the proper fittings needed to tie into the pilot pressure system and the hydraulic return system (these fittings are NOT supplied with the Coupler Installation Kit).
- E. Check to determine if the Tubular Hose Bracket can be welded to the excavator's H-Link.
- F. Determine the best route for running the hoses on the excavator (the hoses should not interfere with other excavator components).



DANGER



Failure to comply with information in this Hendrix Quick Coupler User Manual may result in injury, death, damage to property, and/or damage to the Quick Coupler. Insure that all personnel have read and understand the information in this User Manual before attempting to install, maintain, and/or operate the Hendrix Quick Coupler.



HENDRIX QUICK COUPLER USER MANUAL

INSTALLATION SECTION I – INSTALLATION PREPARATION

This section lists necessary preparation steps before beginning the coupler installation.

1. Place the excavator, coupler, and all tools and supplies needed in an open, unencumbered work area. Make sure that the machine and coupler are on flat secure ground.
2. Inspect the coupler and all coupler kit components for signs of damage.
3. Insure that the coupler kit is not missing any components.
4. If any components are damaged or missing, notify your dealer.
5. Familiarize yourself with the components of the coupler (see Chart #5 in the General Information section).
6. The coupler ships with a set of attachment pins. **REMOVE** these attachment pins from the coupler. These attachment pins are **NOT** case-hardened pins and are designed to be used in the ears of the bucket or attachment. **DO NOT** connect the coupler to the machine with the attachment pins that shipped with the coupler. You will use the original pins that came with the excavator to connect coupler to the excavator.
7. You are now ready to begin the coupler installation.

CAUTION

Never allow a hydraulic line or component to become contaminated. Contamination in the hydraulic system can cause severe system damage. Contact your excavator dealer to obtain the proper caps and plugs used on your model excavator.

CAUTION

Make sure you use the ORIGINAL machine pins from your excavator to connect the coupler to the arm of the excavator. DO NOT use the attachment pins that shipped with the coupler to connect to the arm of the excavator.



WARNING



Avoid oil spills. Use containers, rags, and/or absorbent towels to contain any oil leakage. Dispose of all waste oils, fluids, lubricants, and other hazardous waste properly.



WARNING



Always use the proper safety protection such as: hard hats, work gloves, safety shoes, and safety glasses when operating, maintaining, or installing this equipment.

CAUTION

DO NOT CONNECT THE HENDRIX QUICK COUPLER TO HYDRAULIC PRESSURES EXCEEDING 1000 PSI. The Hendrix Quick Coupler is designed to operate off of the excavator's low pressure pilot system. Only connect the coupler to the excavator's low pressure pilot system.



WARNING



Hendrix Hydraulic Quick Couplers are designed to be used only with a Hendrix Installation Kit. Installing a coupler with anything other than components from a Hendrix Installation Kit results in an unauthorized modification to the coupler. Any unauthorized modifications may impair function, affect performance, and affect the life of the coupler, the excavator, and/or the attachment. Unauthorized modification may result in injury or death to personnel. Hendrix disclaims any liability and responsibility resulting from unauthorized modification. Unauthorized modification voids all warranties.

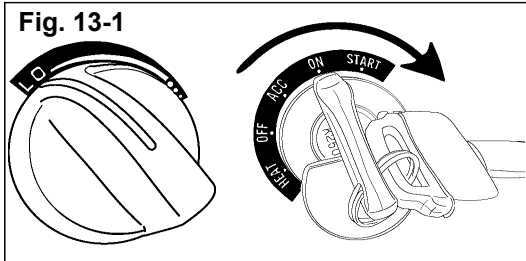


HENDRIX QUICK COUPLER USER MANUAL

INSTALLATION SECTION II – REMOVE THE BUCKET OR ATTACHMENT

This section details the necessary steps to remove any existing attachment from the excavator before beginning the coupler installation.

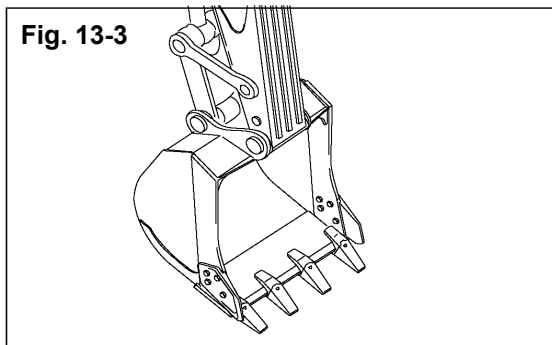
1. Make sure the throttle control is in the low idle position. Start the engine (see Fig. 13-1).



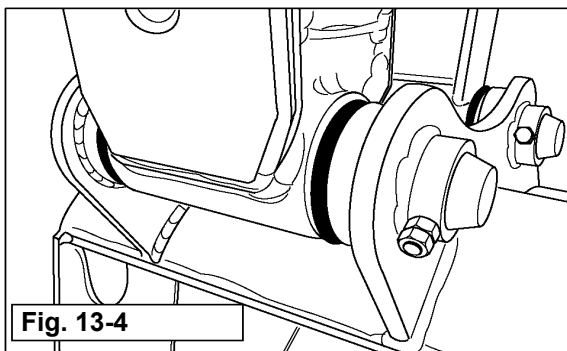
2. Unlock the safety lever (see Fig. 13-2).



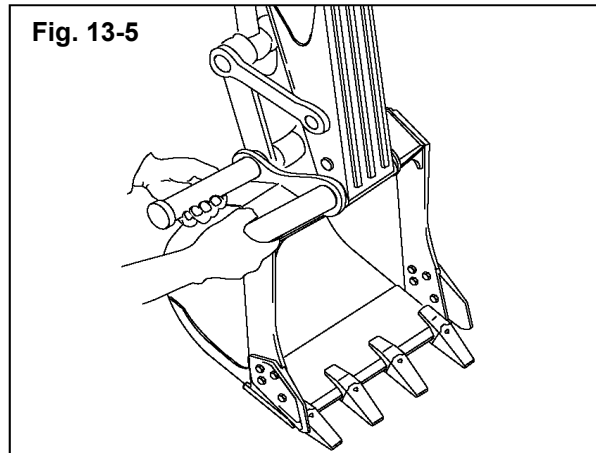
3. Operate the attachment controls on the excavator to position the bucket or attachment securely on firm, level ground (see Fig. 13-3).



4. Remove the retaining bolts from the pins (see Fig. 13-4).



5. Remove both the stick and link pin from the arm-to-bucket connection (see Fig. 13-5).



6. Operate the excavator controls to remove the excavator arm from between the ears of the attachment.

7. Rest the excavator arm securely on firm, level ground.

END OF SECTION



HENDRIX QUICK COUPLER USER MANUAL

INSTALLATION SECTION III – CONNECT THE COUPLER TO THE EXCAVATOR ARM

This section details the necessary steps to connect your coupler unit to the excavator's arm.

1. Insure that the coupler is resting securely on firm level ground. No pins should be in the coupler.

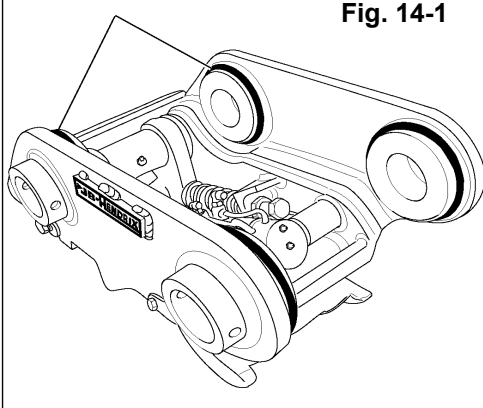
CAUTION

Make sure you use the **ORIGINAL** machine pins from your excavator to connect the coupler to the arm of the excavator. **DO NOT** use the attachment pins that shipped with the coupler to connect to the arm of the excavator.

2. If the attachment pins that shipped with the coupler are still in the coupler, remove these pins. You will **NOT** use these attachment pins to connect the coupler to the excavator arm. These attachment pins are to be used in the ears of the bucket or attachment. You will use the original pins that came with the excavator to connect the coupler to the excavator arm.
3. If your machine requires bucket o-rings, install these onto the coupler bosses at this time (see Fig. 14-1).

Roll O-rings onto coupler bushings

Fig. 14-1



4. You are now ready to connect the coupler to the excavator arm. With the throttle control in the low idle position, slowly operate the excavator controls to align the stick pin hole to the stick-side of the coupler. Insert the stick machine pin. **USE THE ORIGINAL STICK MACHINE PIN THAT CAME WITH THE MACHINE TO CONNECT THE COUPLER TO THE STICK.** Use a rubber mallet to drive the pin into place (see Fig. 14-2).

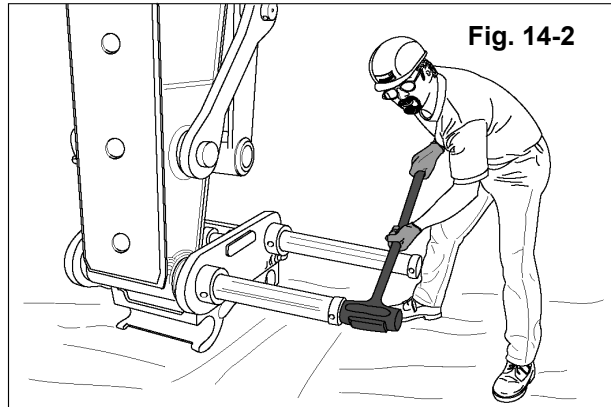


Fig. 14-2

5. Slowly operate the bucket cylinder on the excavator to align the excavator's pivot link hole with the link-side of the coupler. Insert the link machine pin. **USE THE ORIGINAL LINK MACHINE PIN THAT CAME WITH THE MACHINE TO CONNECT THE COUPLER TO THE PIVOT LINK.** Use a rubber mallet to drive the pin into place. A pry bar may be necessary to help adjust the pivot link in order to ease installation (see Fig. 14-3).

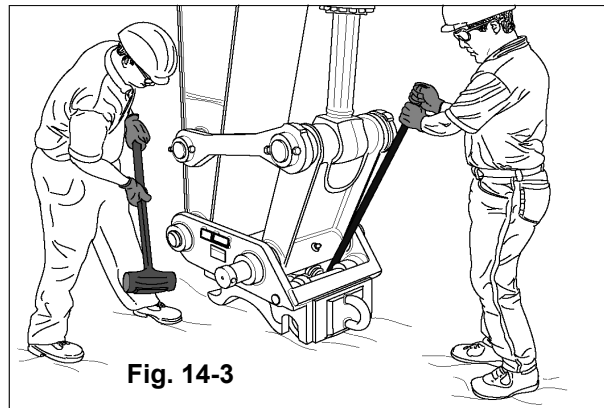


Fig. 14-3

6. Secure the stick and link pins in place by installing their respective retaining bolts and nuts.
7. Your coupler has now been connected to the excavator arm.

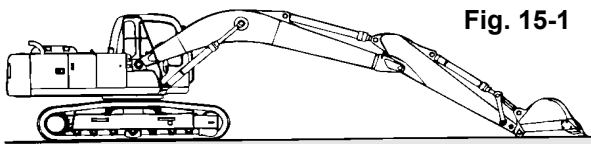


HENDRIX QUICK COUPLER USER MANUAL

INSTALLATION SECTION IV – INSTALL HOSE BRACKETS

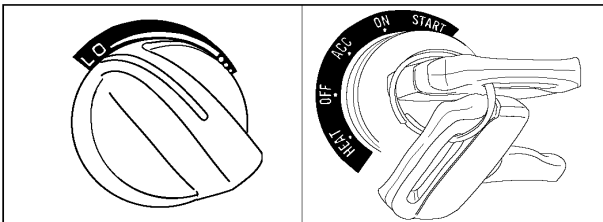
The Coupler Installation Kit includes several brackets to help you neatly route your hoses. These brackets include 2 Bulkhead Fittings Brackets and the Tubular Hose Retainer Bracket. One Bulkhead Fittings Bracket (Lower) mounts on the excavator arm near the arm idler connection point and helps to route the hoses from the end of the excavator arm to the coupler cylinder. The other Bulkhead Fittings Bracket (Upper) mounts on the top portion of the excavator arm underneath the excavator's bucket cylinder and helps to route the hoses up the arm of the excavator. The Tubular Hose Retainer Bracket mounts on the inside of the excavator's bucket linkage and helps to guide the hoses going from the Lower Bulkhead Fittings Bracket to the coupler's cylinder. The following steps will guide you through the process of installing these brackets to the excavator.

1. With the excavator still sitting securely on firm, level ground, rest the excavator arm in an extended position (see Fig. 15-1).

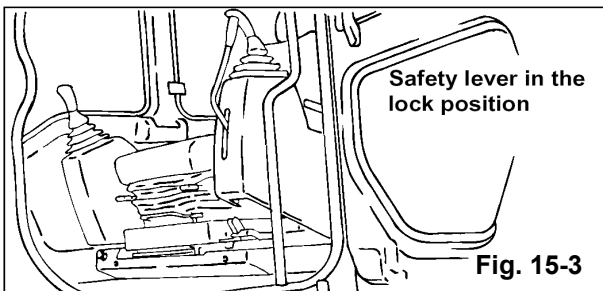


2. Place the throttle control in the low idle position and turn the ignition key off (see Fig. 15-2).

Fig. 15-2



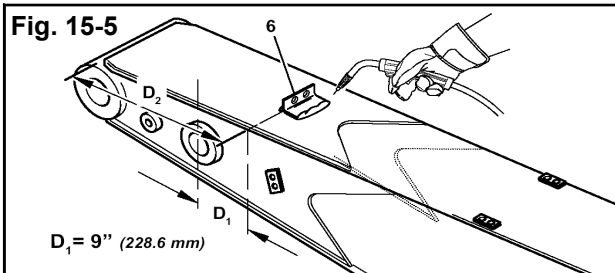
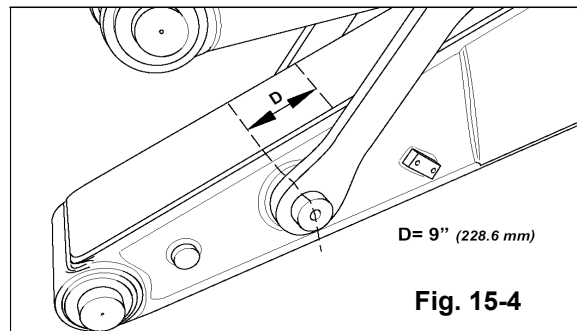
3. Place the safety lever in the locked position before leaving the cab.



4. Secure a "DO NOT OPERATE TAG" to the operator's console to inform users that the machine is inoperable. See your excavator dealer for the appropriate "Lock Out" tag.
5. Release the hydraulic tank pressure by operating release valve on the hydraulic tank.

6. Disconnect the negative cable from the battery terminal. Review the "Recommended Welding Procedures" in the General Information Section.
7. You are now ready to attach the Lower Bulkhead Fittings Bracket to the excavator arm. Remove the fittings from the bracket before welding the bracket to the excavator arm.

8. The location of the Lower Bulkhead Fittings Bracket will vary depending on your specific machine. For a general guideline, install the Bracket 9" from the center of the excavator arm's idler pin. The angle of the bracket should be at the 9" point approximately (see Fig. 15-4 & 15-5). Remember, this is only a guideline and your requirements may vary depending on your specific excavator/arm combination. Weld the bracket securely onto the excavator arm using E7016 or E7018 welding rod, or equivalent.





HENDRIX QUICK COUPLER USER MANUAL

INSTALLTION SECTION IV – INSTALL HOSE BRACKETS CONTINUED....

9. You are now ready to attach the Upper Bulkhead Fittings Bracket to the excavator arm. Remove the fittings from the bracket before welding the bracket to the excavator arm.
10. The location of the Upper Bulkhead Fittings Bracket (**Chart#5 - U**) will vary depending on your specific machine. For a general guideline, install the Bracket approximately 20" to 24" from the center of the bucket cylinder connection pin (see **Fig. 16-1**). Remember, this dimension is only a guideline and your requirements may vary depending on your specific excavator/arm combination. Weld the bracket securely onto the excavator arm using E7016 or E7018 welding rod, or equivalent.

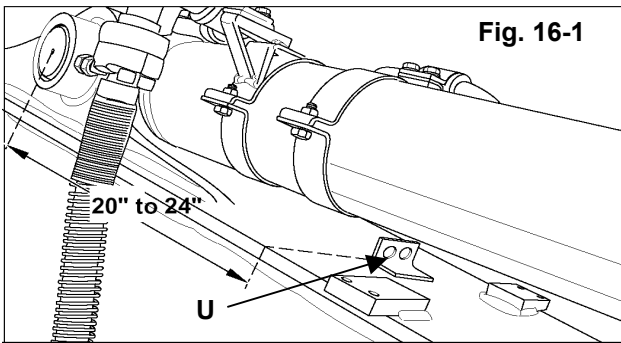


Fig. 16-1

11. You are now ready to mount the optional Tubular Hose Retainer Bracket (**Chart #5 - AD**). This piece of tubing mounts to the inside of the bucket H-Link. It is designed to guide the hoses and help prevent hose chaffing. Position the tubing in the center of the link and weld it securely using E7016 or E7018 welding rod, or equivalent (see **Fig. 16-2**).

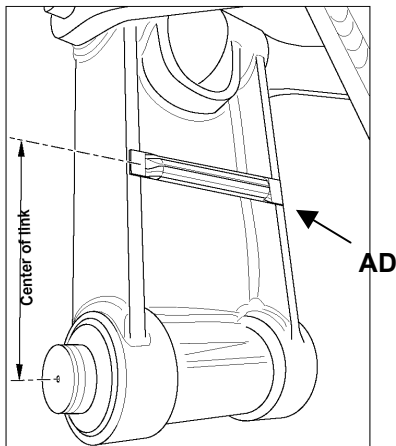


Fig. 16-2

12. Install the bulkhead fittings into the Upper Bulkhead Fittings Bracket. This bracket uses the 45 degree bulkhead fittings (**Chart# 5 - R**) and the fittings are secured by the bulkhead nut (**Chart #5 - S**). See **Fig 16-3**.
13. Install the bulkhead fittings into the Lower Bulkhead Fittings Bracket. This bracket takes the straight bulkhead fittings (**Chart #5 - Q**) and the fittings are secured by the bulkhead nut (**Chart #5 - S**). See **Fig. 16-3**. If you have a #4N-212 kit, you will need to install the #6 X #4 Tube End Reducer and Nut (**Chart #5 - Y & Z**) onto the end of the bulkhead fittings.

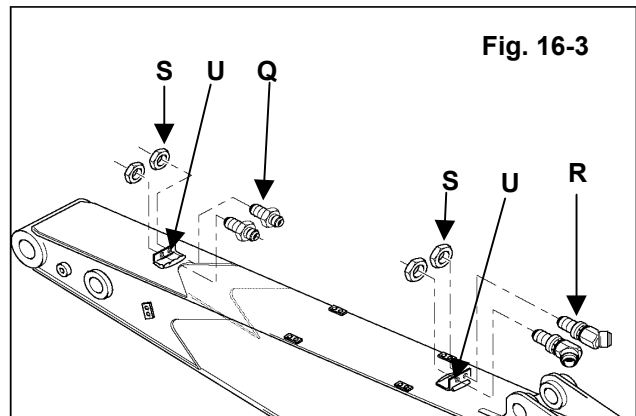


Fig. 16-3

14. You have now mounted the necessary brackets and are ready to route the hydraulic hoses.

NOTE - The Tubular Hose Retainer Bracket may not work on all excavator H-Links. The main objective for the bracket is to guide the hoses from the Lower Bulkhead fittings to the Coupler cylinder and to prevent hose chaffing. Some H-Links are made of materials that are not suitable for welding. Other H-Links may allow the hoses to slip through them. Find a method that will properly guide the hoses and prevent chaffing.

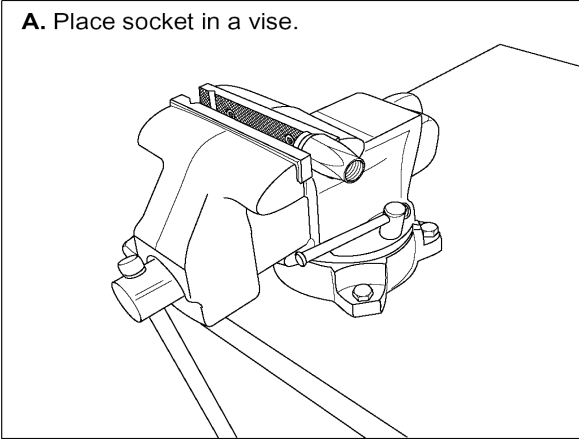


HENDRIX QUICK COUPLER USER MANUAL

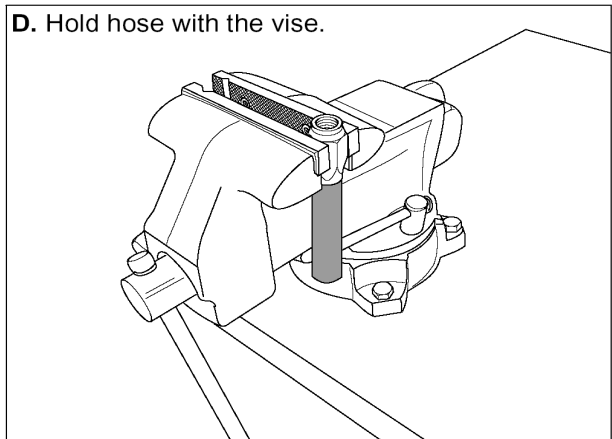
INSTALLATION SECTION V – HYDRAULIC HOSE ASSEMBLY

This section details the processes of making the hydraulic hoses required for the coupler installation. Please refer to the next section for installation procedures for the hoses. Hendrix makes every attempt to provide adequate lengths of hoses for your coupler installation. However depending on your excavator, you may find you need extra hose. Please see the hose specifications listed on the coupler kit component listing in the event you need extra hoses.

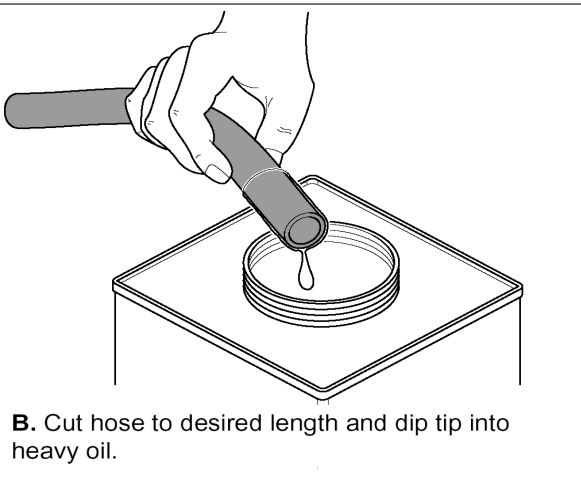
A. Place socket in a vise.



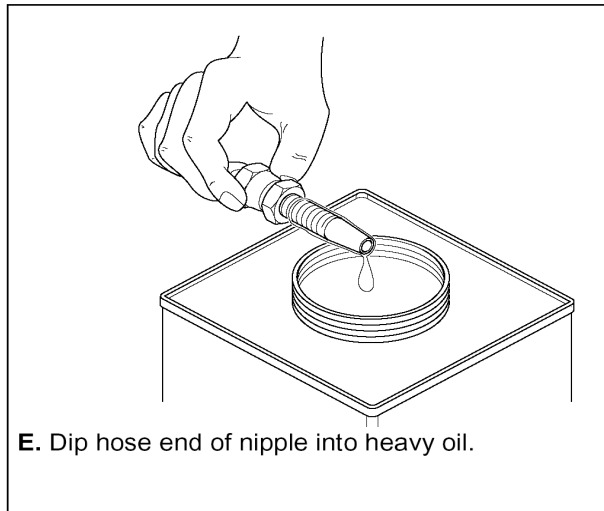
D. Hold hose with the vise.



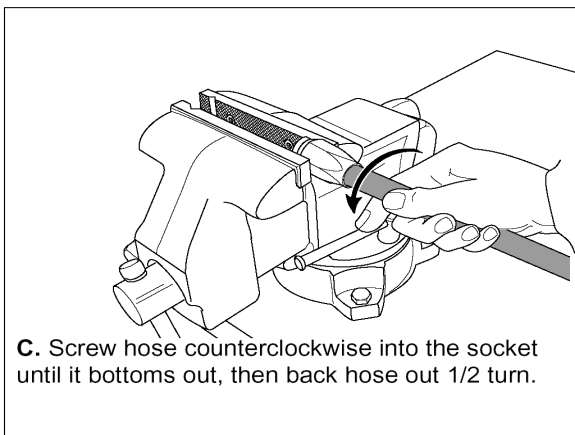
B. Cut hose to desired length and dip tip into heavy oil.



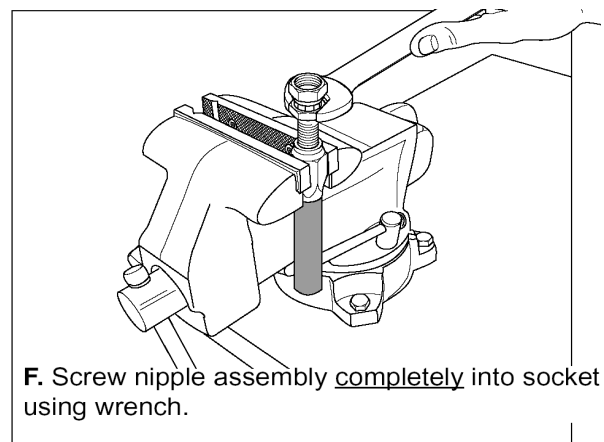
E. Dip hose end of nipple into heavy oil.



C. Screw hose counterclockwise into the socket until it bottoms out, then back hose out 1/2 turn.



F. Screw nipple assembly completely into socket using wrench.





HENDRIX QUICK COUPLER USER MANUAL

INSTALLATION SECTION VI – HYDRAULIC HOSE ROUTING

This section details the necessary steps to route the hydraulic hoses needed for your coupler installation. The hoses must be routed from engine compartment (where they will tie into the pilot pressure system) to the coupler.

CAUTION

The exact manner in which you need to route your hoses will vary depending on the specifics of your excavator. Please use the following steps as a guideline only. Always route all hoses in a manner that will prevent interfering with other lines and equipment. Be sure to secure all hoses to the excavator.

1. Before connecting any hoses, be sure the hoses have been flushed completely with clean hydraulic fluid to prevent contamination.

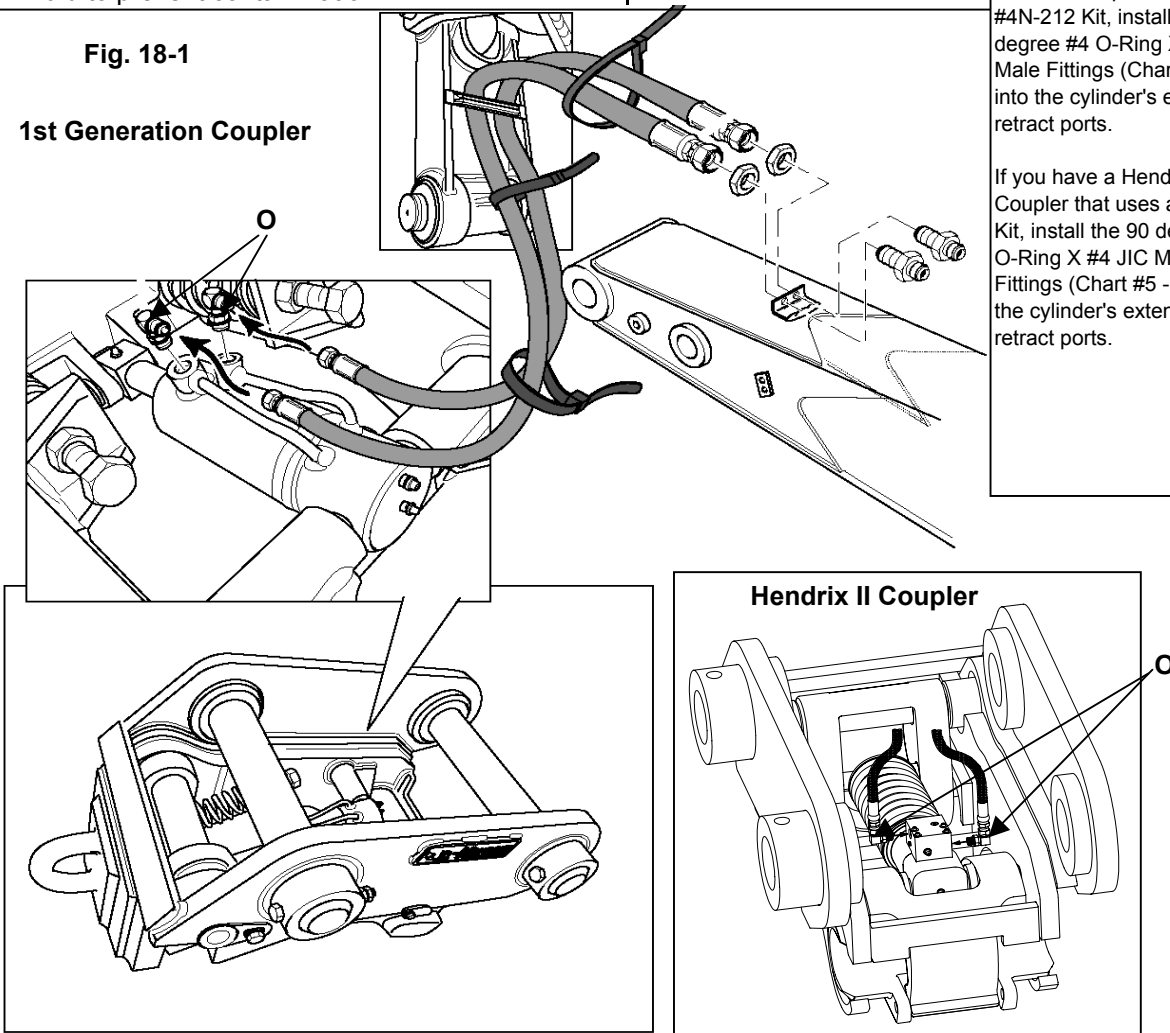
2. Install the 90 degree #6 O-Ring X #6 JIC Male fittings (**Chart #5 - O**) into the Extend and Retract Ports on the cylinder***. Route the hoses through the excavator's linkage as shown in **Fig 18-1**. Make sure the hose has enough slack to move with the excavator linkage. Allow for some flexibility. Protect all moving hoses with the supplied hose guard sleeves (**Chart #5 - W**). The next step offers a procedure for determining the proper length of the hose from the coupler to the Lower Bulkhead Fittings.

***PLEASE NOTE - If you have a 1st Generation Hendrix Coupler that uses a #4N-212 Kit, install the 45 degree #4 O-Ring X #4 JIC Male Fittings (**Chart #5 - AA**) into the cylinder's extend and retract ports.

If you have a Hendrix II Coupler that uses a #4N-212 Kit, install the 90 degree #4 O-Ring X #4 JIC Male Fittings (**Chart #5 - AE**) into the cylinder's extend and retract ports.

Fig. 18-1

1st Generation Coupler





HENDRIX QUICK COUPLER USER MANUAL

INSTALLATION SECTION VI – HYDRAULIC HOSE ROUTING

Continued...

3. In order to determine the proper hose length, cut two pieces of hose and allow plenty of extra hose. Install the hose fittings on one end only. Connect the hoses to the coupler cylinder. Route the hoses through the excavator linkage (see Fig. 18-1). Slowly operate the excavator controls so that the coupler is curled in completely (see Fig. 19-1). Pull the hoses tight to the Lower Bulkhead Fittings Bracket. Release tension on the hoses so that you allow the hoses to have a small amount of slack even in the fully curled in position. Mark the hoses, cut, and assemble the hose fittings on that end.

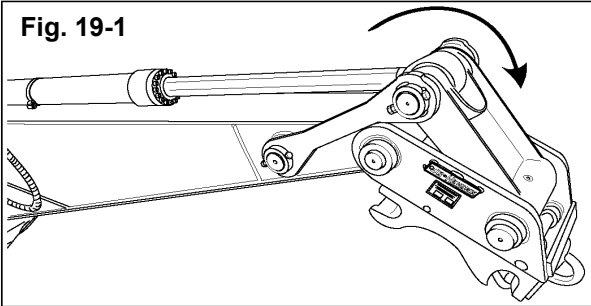


WARNING



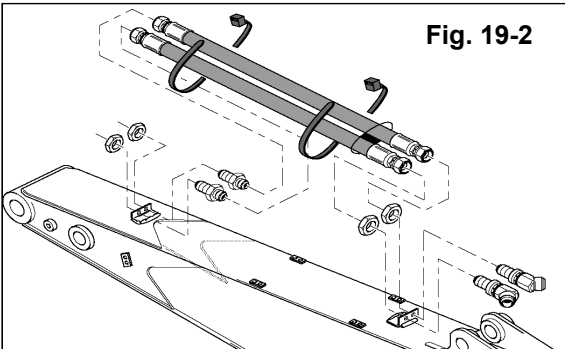
Be sure to eliminate any twisting of the hoses before tightening the connections. Do not put hands into moving excavator linkages.

Fig. 19-1



4. After installing the lower hose running from the coupler to the Lower Bulkhead Fittings bracket, begin routing the remaining hose sections. Measure and install the hose between the Lower Bulkhead Fittings Bracket and the Upper Bulkhead Fittings Bracket (see Fig. 19-2). Remember to route the hoses in a manner that will not interfere with other lines and equipment.

Fig. 19-2



5. Next you will need to route the hoses from Upper Bulkhead Fittings Bracket all the way back to the engine compartment. Install a hose fitting on one end and route the hose to the excavator's bucket cylinder and then down the boom. Route the hoses in a manner that will prevent interference with other lines or equipment. Secure the hoses to the machine using the plastic tie wraps supplied in the coupler kit. Repeat this procedure for both sides.

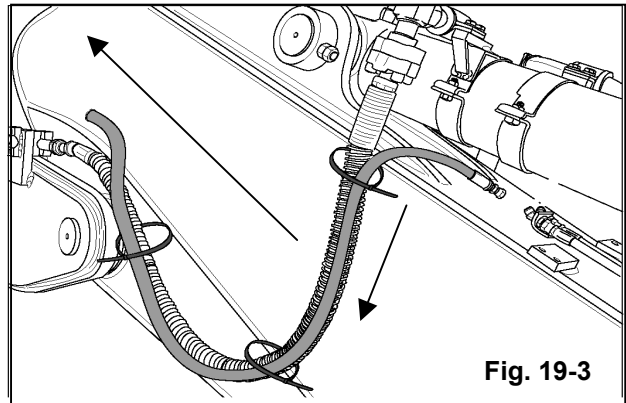


Fig. 19-3

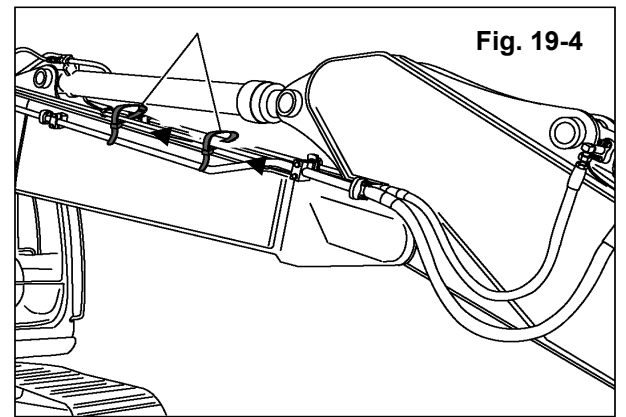


Fig. 19-4

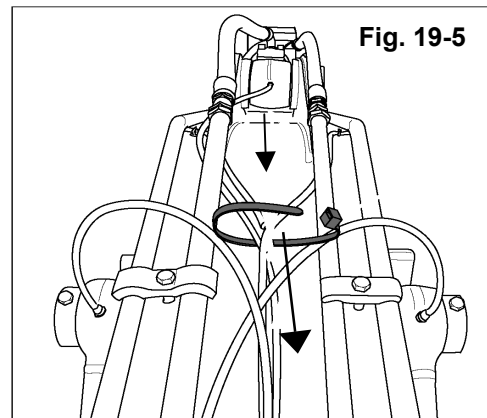


Fig. 19-5

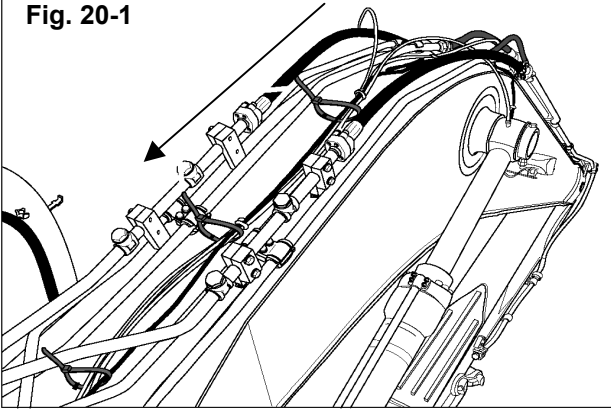


HENDRIX QUICK COUPLER USER MANUAL

INSTALLATION SECTION VI – HYDRAULIC HOSE INSTALLATION

Continued....

Fig. 20-1



6. Carry both of your hoses all the way into the engine compartment that houses the pilot pressure system. Make sure you have plenty of slack where the line ends in the engine compartment. You will tie these two hoses into the control valve, which will be installed in the next section.

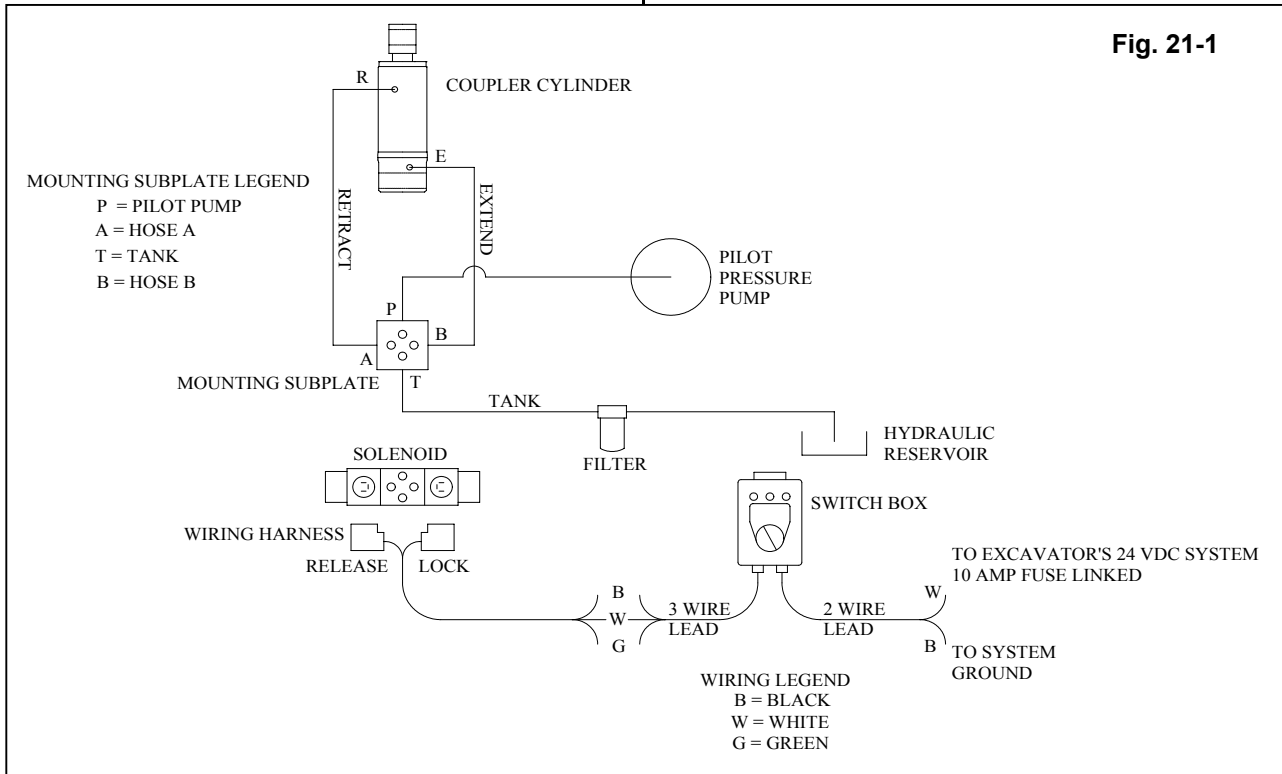
END OF SECTION.



HENDRIX QUICK COUPLER USER MANUAL

INSTALLATION SECTION VII – CONTROL VALVE, FILTER, SWITCH BOX INSTALLATION

The Control Valve and the Filter Assembly for the coupler are installed in the engine compartment of the excavator. These components will tie into the excavator's low pressure pilot system. Additionally, mounting these components in the engine compartment offers protection from the elements. The Switch Box is installed in the cab of the excavator and is used to operate the coupler.



1. **Figure 21-1** shows the electrical and hydraulic schematic for the quick coupler. Please remember that the following steps are a general guideline since all excavators are different. The objective for this section is to mount the control valve (solenoid valve) and the 3 light switch box. The control valve ties into the pilot pressure system and hydraulic reservoir tank in order to provide hydraulic flow to operate the coupler. The 3 light switch box is mounted in the cab of the excavator and is what the excavator operator uses to control the action of the coupler. The 3 light switch box connects to the control valve via the provided wiring harness. The switch box and wiring harness leads are color-coded to ease installation.

CAUTION

DO NOT CONNECT THE HENDRIX QUICK COUPLER TO HYDRAULIC PRESSURES EXCEEDING 1000 PSI. The Hendrix Quick Coupler is designed to operate off of the excavator's low pressure pilot system. Only connect the coupler to the excavator's pilot system.

CAUTION

BEFORE CONNECTING ANY HOSES, FLUSH COMPLETELY WITH CLEAN HYDRAULIC FLUID TO PREVENT CONTAMINATION.



HENDRIX QUICK COUPLER USER MANUAL

INSTALLATION SECTION VII – CONTROL VALVE, FILTER, SWITCH BOX INSTALLATION

Continued....

2. In the engine compartment that houses the low pressure pilot system of the excavator, mount the Control Valve Mounting Bracket (**Chart #5 - L**). You should weld the bracket in a place that does not interfere with other excavator components but allows easy access to the pilot pressure system. Follow standard welding procedures when mounting the bracket.

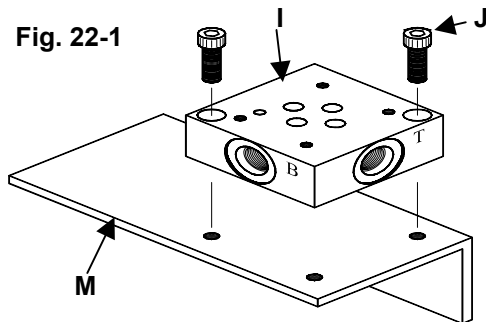
CAUTION

Protect all hydraulic hoses and electrical wires while welding inside the engine compartment.

3. Mount the Mounting Subplate (**Chart #5 - I**) to the Mounting Bracket (**Chart #5 - M**) using the supplied Subplate Mounting Screws (**Chart #5 - J**). Please note the Mounting Subplate ports are marked as follows to assist you with your installation:

T = Tank
P = Pilot Pump
A = Hose
B = Hose

Fig. 22-1



4. Install three 90 degree #6 O-Ring X #6 JIC Male fittings (**Chart #5 - O**) and one straight #6 O-Ring X #6 JIC Male (**Chart #5 - T**) into the Mounting Subplate (**Chart #5 - I**) as shown in **Fig. 22-2**.

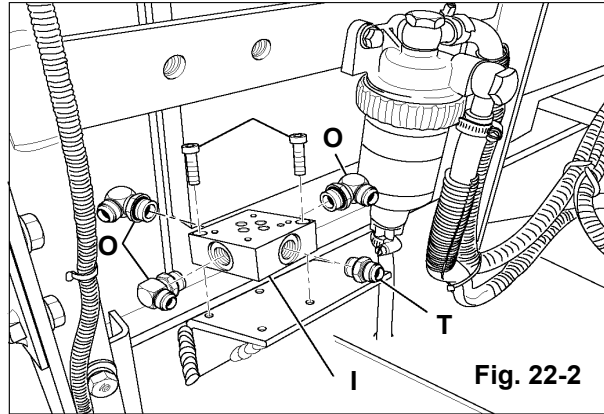


Fig. 22-2

5. Connect the Hoses to the Mounting Subplate. You will connect the two hoses that run from the coupler cylinder into Mounting Subplate ports A & B. You need to run a hose from Mounting Subplate port P to the Pilot Pressure Pump. You will route a hose from Mounting Subplate port T to the Hydraulic Reservoir Tank (**see Fig. 22-3**).

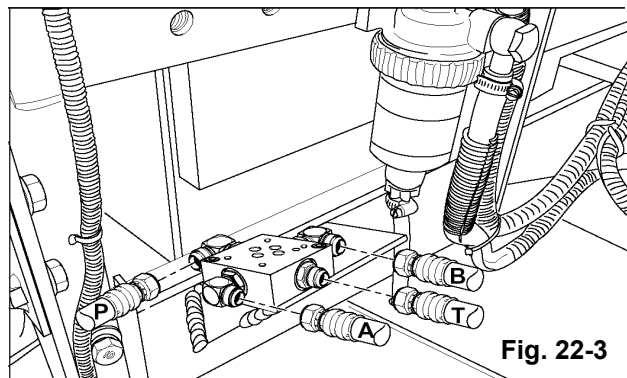


Fig. 22-3

6. Mount the Filter Assembly in an area that provides easy access to the hydraulic reservoir tank but does not interfere with other equipment in the engine compartment. The Filter is mounted in-line between the Mounting Subplate and the Tank.



HENDRIX QUICK COUPLER USER MANUAL

INSTALLATION SECTION VII – CONTROL VALVE, FILTER, SWITCH BOX INSTALLATION

Continued....

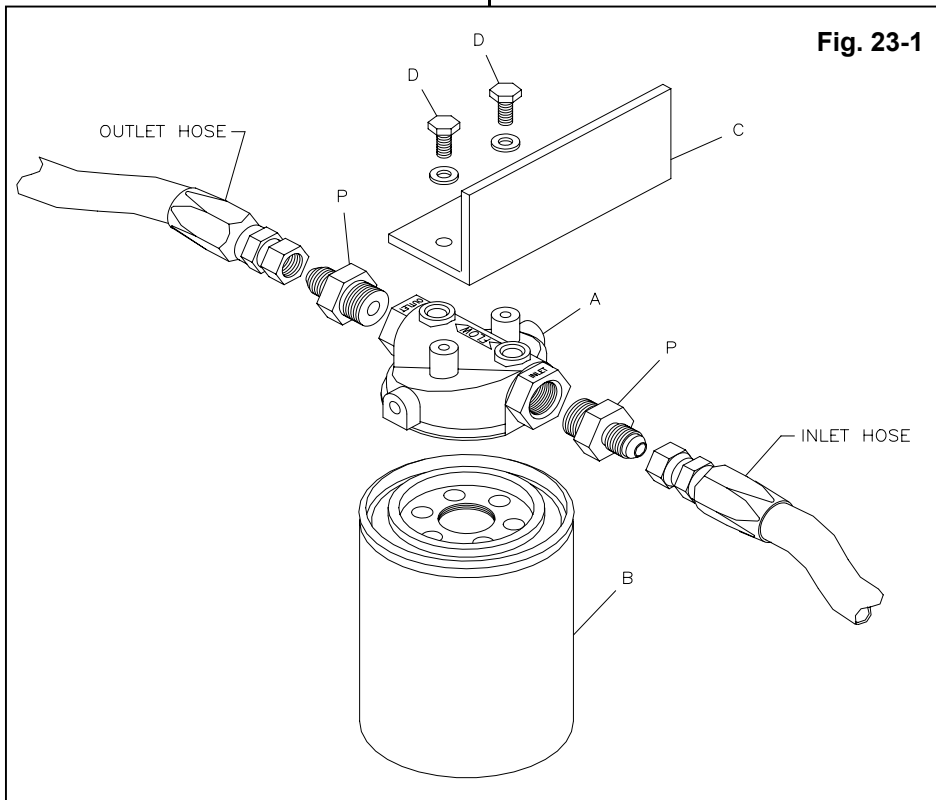


Fig. 23-1

IMPORTANT - Hendrix makes every attempt to supply you with the fittings to install your quick coupler. However due to the variety of excavators, you will be required to provide the brand specific fittings needed to tie into the pilot pressure system and the hydraulic reservoir tank. Please see your excavator dealer to obtain these fittings. Additionally, certain machines may require adaptation of connectors. Please see your excavator dealer for any appropriate fittings.

7. Route a hose from the Mounting Subplate port P to the pilot pressure system. Refer to the excavator's OEM hydraulic system diagram for connection points. **Figure 23-2** provides an example of one method of tying into the pilot pressure system. Newer excavator's may provide auxillary ports for connections from aftermarket attachments. Contact your excavator dealer's service department if you need additional guidance.

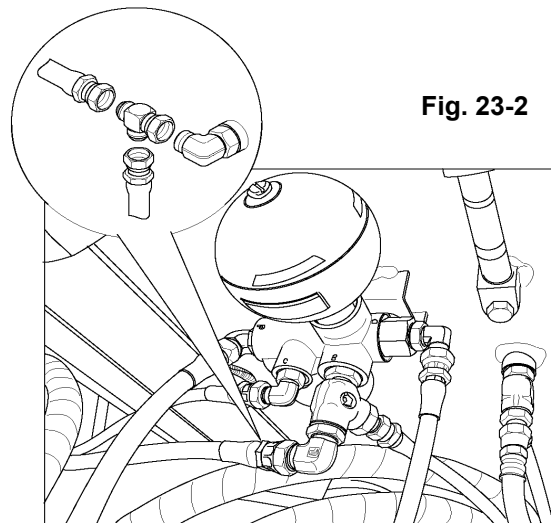


Fig. 23-2

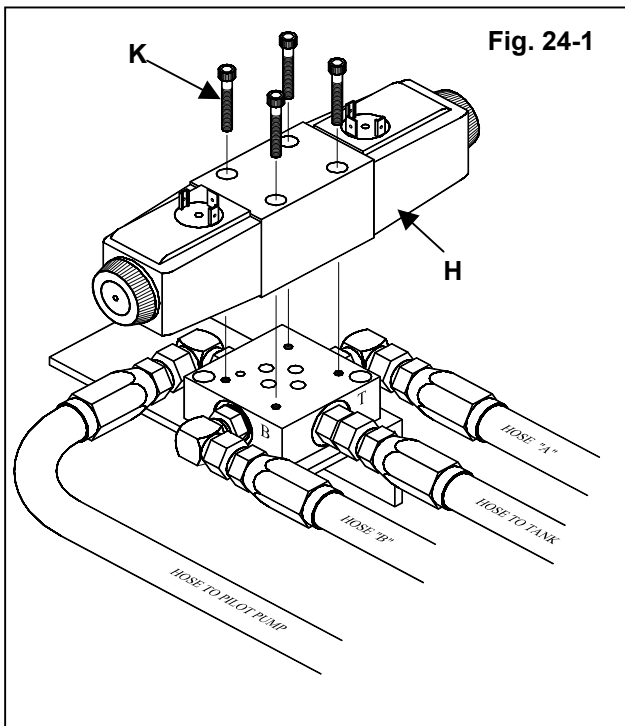


HENDRIX QUICK COUPLER USER MANUAL

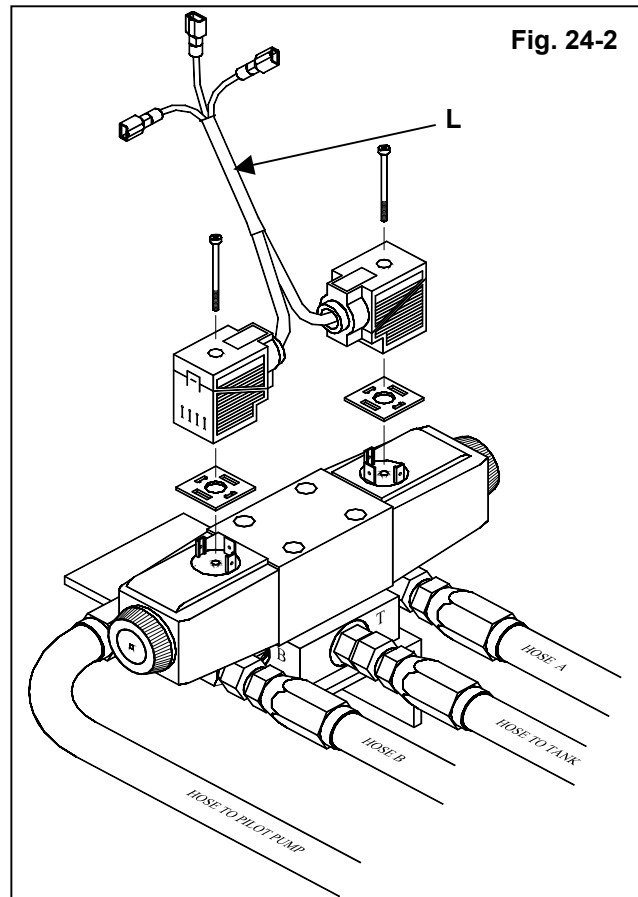
INSTALLATION SECTION VII – CONTROL VALVE, FILTER, SWITCH BOX INSTALLATION

Continued....

8. After properly connecting your hoses from the Mounting Subplate to the Coupler cylinder, the pilot pressure pump and the hydraulic reservoir tank, you are now ready to install your solenoid control valve (**Chart #5 - H**) onto the Mounting Subplate. You will use the four 1025 Mounting Screws (**Chart #5 - K**) to connect the valve and subplate (see Fig. 24-1).



9. Install the Wiring Harness (**Chart #5 - L**) onto the control valve (see Fig. 24-2). The Harness is marked for the "Lock" side and the "Release" side. The "Lock" side of the harness should be connected to the side of the Control valve where the Extend line comes into the subplate. The "Release" side of the harness should be connected to the side of the Control Valve where the Retract line comes into the subplate. Please note that the Wiring Harness has 3 color-coded leads (Black = Ground, White = Release, & Green = Locked).



10. Inside the cab of the excavator mount the 3 Light Switch Box in an area that allows for easy access but does not interfere with the operation of the excavator.



HENDRIX QUICK COUPLER USER MANUAL



INSTALLATION SECTION VII – CONTROL VALVE, FILTER, SWITCH BOX INSTALLATION

Continued....

11. The Switch Box has two cables. The first cable has 3 leads (Black, White, and Green) and is approximately 20 feet in length. Route this cable back to the engine compartment containing the control valve. Connect the 3 leads of the switch box to the 3 leads on the Control Valve Wiring Harness. You should match the color coded wires (Black-to-Black, White-to-White, Green-to-Green.) You should make all wiring connections in accordance with standard electrical practices. **Refer to SAE Standard J2030 - Heavy Duty Electrical Connections Performance.**

12. The second cable on the Switch Box is approximately 6 feet in length and has 2 leads (Black and White). Connect the White lead to the excavator's 24VDC system. Link with the supplied 10 AMP fuse (Chart #5 - F). Fused circuits on the excavator should be utilized where applicable. Connect the Black lead to the system ground. You should make all wiring connections in accordance with standard electrical practices. **Refer to SAE Standard J2030 - Heavy Duty Electrical Connections Performance.**

13. After making all switchbox connections, test the installation of the coupler. **DO NOT CONDUCT THE TEST WITH AN ATTACHMENT ON THE COUPLER. REMOVE ANY ATTACHMENTS BEFORE TESTING THE SWITCH BOX INSTALLATION.** Please Note - The Hendrix Coupler is equipped with a mechanical lock pin. Be sure to remove the mechanical lock pin before performing this test.

| | | |
|--|---------------|---|
|  | DANGER |  |
| CONDUCT ALL TESTS AWAY FROM ALL PERSONNEL. REMOVE ANY ATTACHMENTS WHEN TESTING THE SWITCH BOX INSTALLATION. | | |

14. With the machine power on and no attachment connected to the Coupler, place the Switch Box Selector switch to the "LOCK" position. The Green light on the Switch Box should illuminate and the Coupler cylinder rod should extend. If the cylinder rod retracts, then your connections are installed in reverse. To rectify this situation, reverse the wiring harness DIN connectors. Retest the installation by repeating this step.

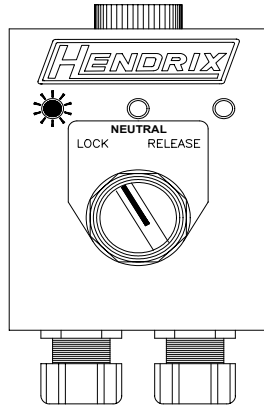
15. Verify that the Switch Box and the Coupler Cylinder operate according to Fig. 26-1. If the Switch Box and Coupler Cylinder do not operate in accordance with Fig. 26-1, recheck the installation of all electrical and hydraulic components and insure that they are installed in accordance with the instructions in this manual. If the problem persists, please contact your dealer.



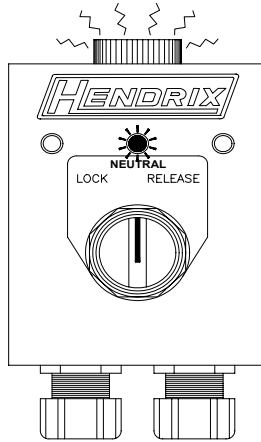
HENDRIX QUICK COUPLER USER MANUAL

INSTALLATION SECTION VII – CONTROL VALVE, FILTER, SWITCH BOX INSTALLATION

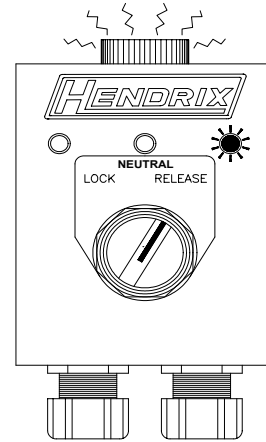
Continued....



LOCK:
GREEN LIGHT ILLUMINATES, NO BUZZER
CYLINDER ROD ON THE COUPLER EXTENDS



NEUTRAL:
YELLOW LIGHT ILLUMINATES, BUZZER SOUNDS *
HYDRAULIC FLOW TO THE COUPLER IS SHUT OFF



RELEASE:
RED LIGHT ILLUMINATES, BUZZER SOUNDS
CYLINDER ROD ON THE COUPLER RETRACTS

Fig. 26-1

ALWAYS OPERATE COUPLER IN LOCK POSITION

* Earlier versions of the Switch Box have a White Light for the Neutral Light

Once you verify that the Coupler Switch Box is operating properly you have completed the installation of your Coupler. Before attempting to operate or maintain the coupler, thoroughly read and familiarize yourself with the following Operation and Maintenance Section of this manual.

Please Note - The lights on the Switch Box indicate switch position ONLY. The lights DO NOT indicate the position of the lever. You must allow the lever time to extend and retract after placing the switch in the respective position. Before operating the machine with coupled attachments, always verify that the lever(s) are properly engaged by following the steps listed in the "Engaging the Attachement" section of this manual.



HENDRIX QUICK COUPLER USER MANUAL

OPERATION & MAINTENANCE INSTRUCTIONS

The following section will provide you the necessary information to operate and maintain your Hendrix Quick Coupler. Please review the information provided in the "General Information Section" before attempting to operate and maintain your coupler. Pay close attention to all Safety Messages in the manual.



DANGER





Failure to comply with information in this Hendrix Quick Coupler User Manual may result in injury, death, damage to property, and/or damage to the Quick Coupler. Insure that all personnel have read and understand the information in this User Manual before attempting to install, maintain, and/or operate the Hendrix Quick Coupler.



HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION I - WARNINGS & PRECAUTIONS

This section provides warnings and precautions to be taken before operating and/or maintaining the Hendrix Quick Coupler.

 **DANGER** 



Improper operation and maintenance of this equipment could result in serious injury or death. Read this operator's manual thoroughly before operating and/or maintaining this equipment.

CAUTION



The excavator's effective reach, as well as the attachment tip radius are increased with the Hendrix Quick Coupler installed. Keep in mind that the attachment can come in contact with the Boom, Arm, and Cab depending on the Coupler/Attachment combination.

Be aware that the excavator's attachment range of motion changes with the Hendrix Quick Coupler Installed:

- >>Increase/Decrease bucket dump angle
- >>Increase/Decrease bucket curl forward angle

 **DANGER** 

Unauthorized modification to the coupler and/or any coupler components may impair function, affect performance, and affect the life of the coupler, the excavator, and/or the attachment. Unauthorized modification may impair the safety of personnel and can cause serious injury or death. Hendrix assumes no responsibility for any unauthorized modifications to the coupler and/or coupler components. Unauthorized modification voids the coupler's warranty.

 **DANGER** 

TEST ALL CONNECTIONS AWAY FROM ALL PERSONNEL. NEVER SWING COUPLED ATTACHMENTS OVER WORKERS' HEADS.



- Read these instructions and safety precautions thoroughly before operating or maintaining the coupler.
- Inspect the coupler and all coupler components before beginning operation. Perform any necessary repairs before operating the coupler.
- Make sure the attachment is resting on the ground and properly supported before performing any work on the coupler.
- Under normal conditions, all machine hydraulic circuits are under extreme pressure. When inspecting for leaks, use a small piece of cardboard, wood, or metal to locate leakages. Small (pinhole) leaks can be dangerous if contact with skin or eyes is made. Wear approved safety glasses and/or face shields, gloves, hard hat, safety shoes, and work clothes during all inspection and maintenance procedures.
- Always wear protective equipment when performing maintenance.
- All coupler/attachment combinations should be checked for possible interference before using. Any interference problems should be corrected before using the coupler. Ensure that the coupler engages and disengages properly and easily.
- All excavator operators should familiarize themselves with all Coupler/Attachment combinations before attempting to operate the coupler. This should include, but not be limited to, practicing engaging and disengaging each attachment. Furthermore, when new attachments are added to the machine's fleet, the operators should proceed with the same "familiarization" process before they are used on the jobsite.
- Never use the coupler without an attachment, except when used for lifting.
- Review all information in the General Information section of this manual.





HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION I - WARNINGS & PRECAUTIONS

Continued....

 **WARNING** 

Avoid oil spills. Use containers, rags, and/or absorvent towels to contain any oil leakage. Dispose of all waste oils, fluids, lubricants, and other hazardous waste properly.

 **WARNING** 

Use safety protection such as: hard hats, working gloves, safety shoes, and safety glasses when needed to perform this job.

CAUTION



The operator may experience slow or unexpected movement of functions when operating with cold hydraulic oil. Likewise, damage to the hydraulic components may result due to the cold oil. Make sure to warm up the hydraulic system before operation.

CAUTION

Never allow a hydraulic line or component to become contaminated. This could cause severe system damage. Contact an authorized machine distributor to obtain proper caps and plugs to be used on this machine.

CAUTION

DO NOT CONNECT THE HENDRIX QUICK COUPLER TO HYDRAULIC PRESSURES HIGHER THAN 1000 psi. The Hendrix Quick Coupler is designed to operate on the low pressure pilot system only.

 **WARNING** 

Maintenance work should be performed by experienced and qualified personnel.

- Only operate the Coupler with the control box switch in the **LOCK** position. The green light indicator will illuminate when the switch is placed in the **LOCK** position.
- The buzzer alarm indicates a potential unlock condition in the coupler. Do not attempt to operate the attachment if this condition is present. Always verify visually that the attachment is properly locked. Make sure that the buzzer alarm functions properly at all times.
- Perform all connection tests before attempting to operate the coupler.
- Make sure to lubricate the Coupler daily with EP2 Lithium base type grease. Lubricate every 4 hours if the coupler works under water.
- Never use the Coupler as a prying tool.
- Never use the Coupler as a clamping device.
- Inspect the Coupler and all components each day. Make any necessary repairs before operating.
- Do not use the Coupler if it is severely worn. Make sure to repair wear before resuming operation.
- Check the spring preload daily on the 1st Generation Coupler. Refer to **Page 42** for spring preload dimensions. Do not pre-load springs more or less than the specification values. Also inspect the locknut on the spring adjustment for tightness each day.



HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION II - SWITCH BOX OVERVIEW

This section provides an overview of the function of the Switch Box.

The Hendrix Quick Coupler is controlled by the provided 3-Position Switch Box that mounts in the cab of the excavator. The Switch Box functions as follows:

A. RELEASE POSITION

When the switch is placed in the Release Position, the Coupler cylinder will retract. In the Release Position the buzzer alarm will sound and the **RED** light on the Switch Box will glow. The Release Position should be used **ONLY** when changing attachments. If the coupler is disconnected from an attachment for any length of time, the selector switch may be returned to the lock position to silence the alarm.

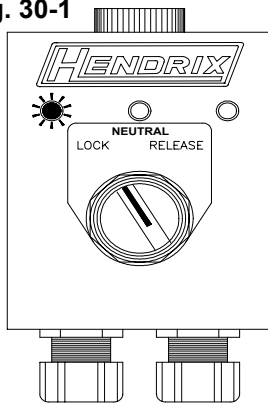
B. NEUTRAL POSITION

The Neutral position is used **ONLY** in the event of a hydraulic leak in the coupler system (i.e. Coupler Hose Breakage). In this position the buzzer alarm will sound and the Yellow light will glow*. **Under no circumstances, should this position be used for Coupler operation.** In the neutral position, hydraulic flow to the coupler is shut off.

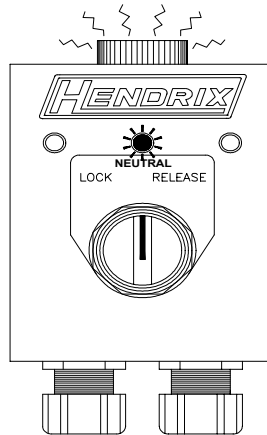
C. LOCK POSITION

The Lock Position will extend the Coupler cylinder. When the Coupler cylinder extends, the locking lever will rotate and engage the attachment link pin. The **GREEN** light will glow and the buzzer alarm will stop when the switch is placed in the lock position. **THE SWITCH MUST BE PLACED AND REMAIN IN THE LOCK POSITION WHILE OPERATING THE EXCAVATOR WITH A COUPLED ATTACHMENT.**

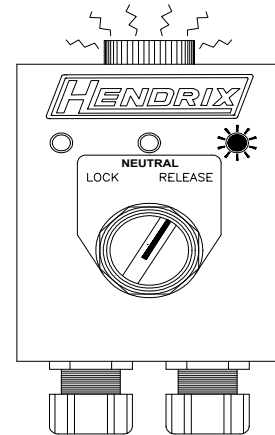
Fig. 30-1



LOCK:
GREEN LIGHT ILLUMINATES, NO BUZZER
CYLINDER ROD ON THE COUPLER EXTENDS



NEUTRAL:
YELLOW LIGHT ILLUMINATES, BUZZER SOUNDS *
HYDRAULIC FLOW TO THE COUPLER IS SHUT OFF



RELEASE:
RED LIGHT ILLUMINATES, BUZZER SOUNDS
CYLINDER ROD ON THE COUPLER RETRACTS

ALWAYS OPERATE COUPLER IN LOCK POSITION

* Earlier versions of the Switch Box have a White Light for the Neutral Light

Please Note - The lights on the Switch Box indicate switch position **ONLY**. The lights **DO NOT** indicate the position of the lever. You must allow the lever time to extend and retract after placing the switch in the respective position. Before operating the machine with coupled attachments, always verify that the lever(s) are properly engaged by following the steps listed in the "Engaging the Attachment" section of this manual.

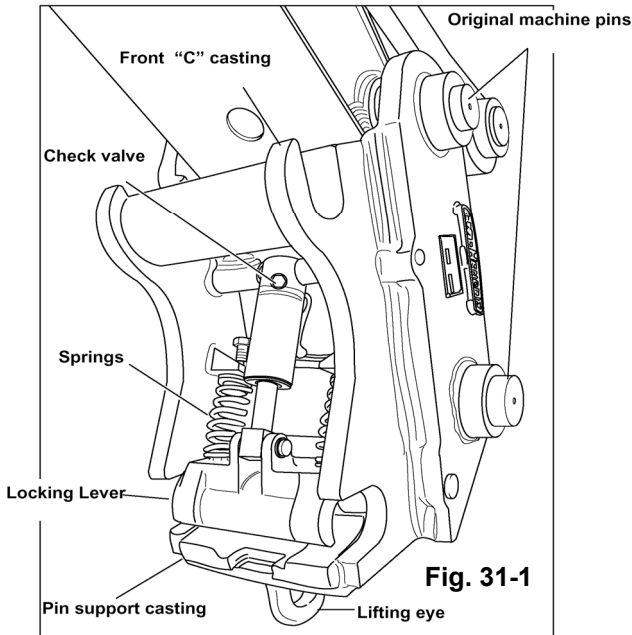


HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION III - 1ST GENERATION COUPLER FAMILIARIZATION

The 1st Generation Hendrix Quick Coupler is built with a low profile design. It uses high-strength castings in critical wear areas. The 1st Generation Coupler is built to OEM specifications. Please review the following section to familiarize yourself with the coupler components.

1ST GENERATION COUPLER



A. SPRINGS (1st Generation)

Constant pressure is maintained on the locking lever by two compression springs. These springs assist the hydraulic cylinder in keeping the locking lever secured. Inspect daily to make sure that the springs are set to their proper pre-load dimension (see Page 42). After the pre-load dimension is properly set, ensure that the adjusting bolt lock nut is tightened so that it jams to the spring hanger. Any broken or missing spring should be replaced immediately. In addition, it is recommended that the springs are replaced annually.

B. LIFTING EYE (1st Generation)

The High-Strength lifting eye is made from a Low Alloy Cast steel and designed to handle the machine's lifting capacity. It is important to mention that the excavator gains additional lifting capacity in both, weight and height, and better visibility when the coupler is used to lift the load without the attachment. The closed lifting eye should not be cut open or altered. An approved lifting shackle is recommended for attaching cables or other safety hoisting products.

C. PIN SUPPORT CASTING (1st Generation)

The pin support casting is located in the rear mounting area of the coupler (see Fig. 31-1). This area of the coupler was strengthened to better accommodate most demolition tools such as hydraulic hammers, concrete pulverizers, hydraulic thumbs, and other tools.

CAUTION

All coupler/attachment combinations should be checked for possible interference before operating the coupler. Insure that the coupler engages and disengages properly and easily with each attachment.

D. LOCKING LEVER (1st Generation)

The cast high-strength locking lever rotates under the attachment link pin in the rear mounting area of the coupler. The rotating mechanism is designed to minimize the chance of jamming. When the pin is seated properly in the lever, pressure from the springs and cylinder locks the attachment link pin between the pin support and the hexagon contact points in the lever. Because the locking system pushes away from the front pin, the coupler remains tight, even as it begins to wear.

E. CYLINDER CHECK VALVE (1st Generation)

The internal check valve is another safety feature that backs up the compression springs in the unlikely event of a hydraulic failure. Should a hose break, the check valve will maintain constant pressure on the attachment link pin. Once the attachment is engaged, the locking lever can only be retracted by applying positive pressure to the retracting port. This is done by placing the control box switch to the Release position.



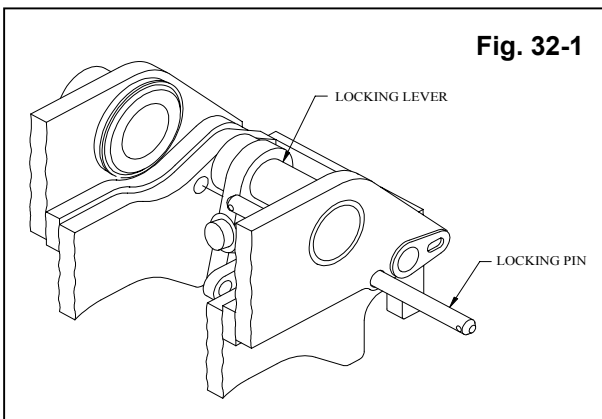
HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION III - 1ST GENERATION COUPLER FAMILIARIZATION

Continued....

E. MECHANICAL LOCK PIN (1st Generation)

Later model 1st Generation Hendrix Quick Couplers are equipped with a mechanical locking pin. This pin is inserted behind the Locking Lever and is secured in place using lynch pins on each end of the pin. If you have a coupler that does not have a mechanical locking pin, Hendrix recommends that you obtain and install the mechanical locking pin. Please contact your Hendrix dealer for details.



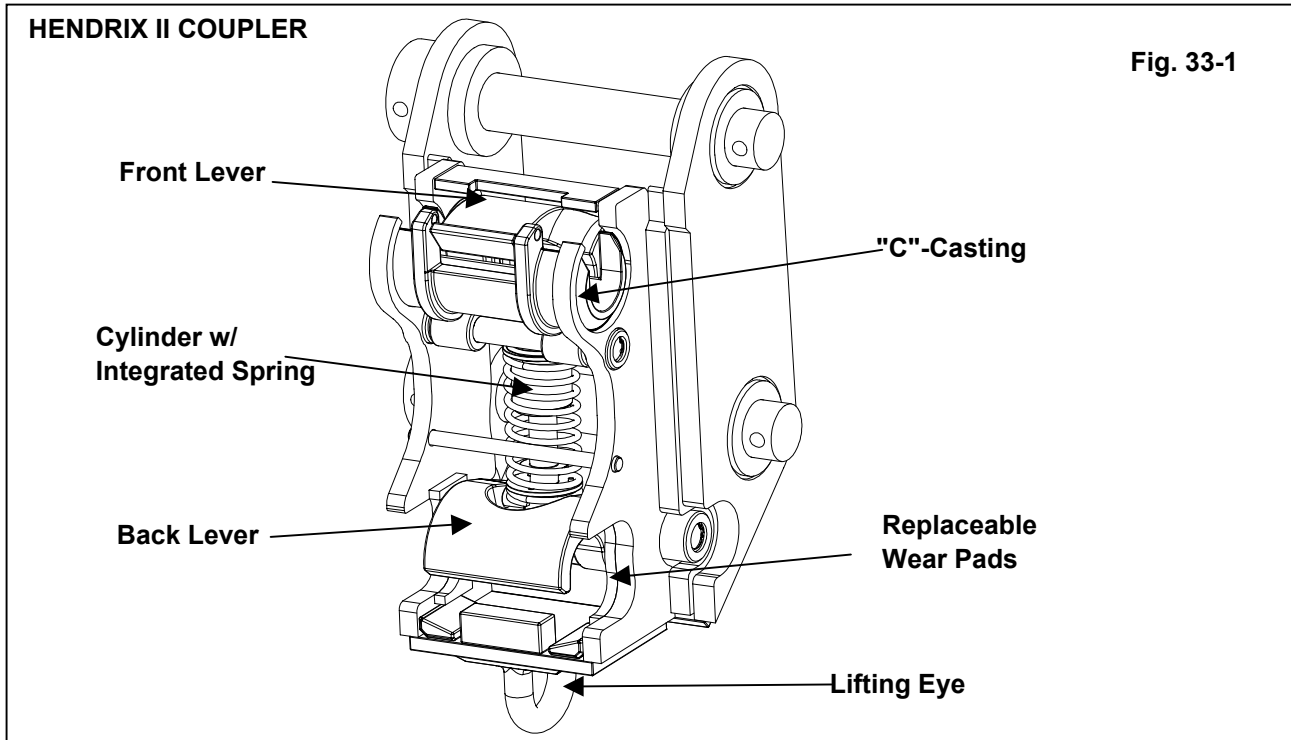
END OF SECTION.



HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION IV - HENDRIX II COUPLER FAMILIARIZATION

The Hendrix II Quick Coupler is built with a low profile design. It uses high-strength castings in critical wear areas. The Hendrix II Coupler is built to accept multiple pin spacing. Please review the following section to familiarize yourself with the Hendrix II components.



A. FRONT LEVER (Hendrix II)

The Hendrix II Coupler features a Front Lever. The geometry of the Front Lever along with the configuration and alignment of other coupler components, hold the Front Lever in the closed position even without the assistance of the hydraulic cylinder.

B. BACK LEVER (Hendrix II)

The cast high-strength back lever rotates under the attachment link pin in the rear mounting area of the coupler. The rotating mechanism is designed to minimize the chance of jamming. Because the locking system pushes away from the front pin, the coupler remains tight, even as it begins to wear.

C. REPLACEABLE WEAR PADS (Hendrix II)

The Hendrix II Coupler features replaceable wear pads on the coupler frame where the back lever engages the attachment pin. These wear pads are made of "Hardox 400" material.

D. CYLINDER W/ SPRING (Hendrix II)

The double-acting cylinder on the Hendrix II coupler features an integrated compression spring. The spring is included solely as a backup to the cylinder.

E. LIFTING EYE (Hendrix II)

The High-Strength lifting eye is made from a Low Alloy Cast steel and designed to handle the machine's lifting capacity. It is important to mention that the excavator gains additional lifting capacity in both, weight and height, and better visibility when the coupler is used to lift the load without the attachment. The closed lifting eye should not be cut open or altered. An approved lifting shackle is recommended for attaching cables or other safety hoisting products.



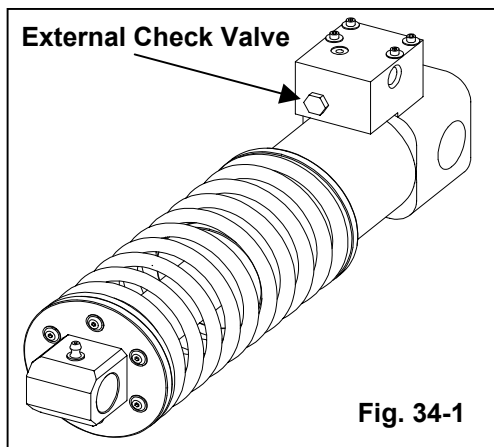
HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION IV - HENDRIX II COUPLER FAMILIARIZATION

Continued....

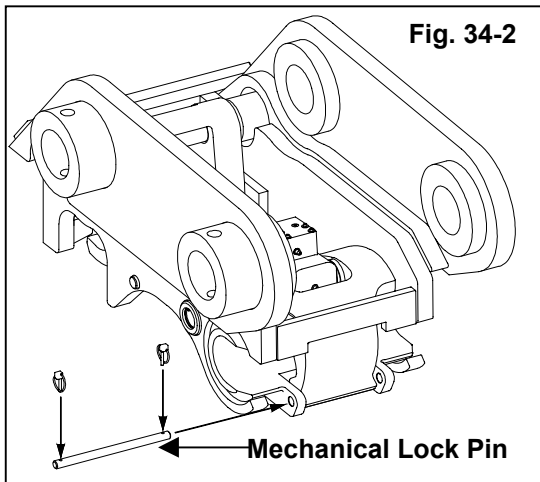
F. CYLINDER CHECK VALVE (Hendrix II)

The Hendrix II features a cylinder with an external check valve allowing for easier access. Should a hose break, the check valve will maintain constant pressure on the attachment link pin. Once the attachment is engaged, the locking lever can only be retracted by applying positive pressure to the retracting port. This is done by placing the control box switch to the Release position.



G. MECHANICAL LOCK PIN (Hendrix II)

All Hendrix II Couplers use a mechanical locking pin that inserts through the "C"-Casting.



END OF SECTION.



HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION V - ENGAGING THE ATTACHMENT

This section details how to properly engage an attachment with the Hendrix Quick Coupler.



DANGER



Failure to properly engage an attachment can result in serious injury or death. **THE ATTACHMENT MAY DROP WITHOUT WARNING IF THE COUPLER IS NOT PROPERLY ENGAGED WITH THE ATTACHMENT.** Read this section carefully and perform the following steps each and every time you change attachments.



DANGER



ENGAGE ATTACHMENTS COMPLETELY CLEAR OF ALL PERSONNEL.

TEST ALL CONNECTIONS AWAY FROM ALL PERSONNEL.

NEVER SWING COUPLED ATTACHMENTS OVER WORKERS' HEADS.

ATTACHMENT PARTS IDENTIFICATION

Attachment Link Pin Attachment Stick Pin

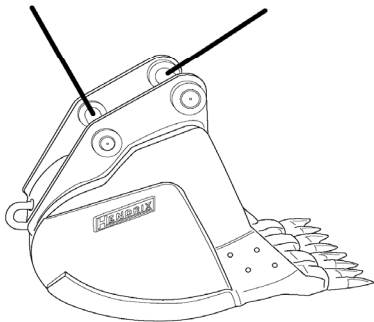


Fig. 35-1

1. Open the coupler lever by placing the control box switch in the **RELEASE** position (see Fig. 35-2,3,&4). The buzzer alarm will sound and the red light will glow. Allow the lever(s) time to retract fully.

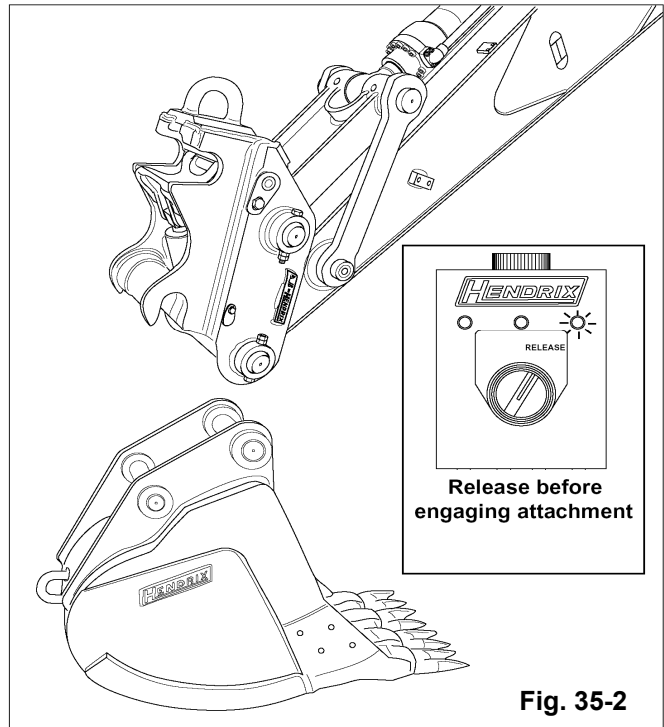
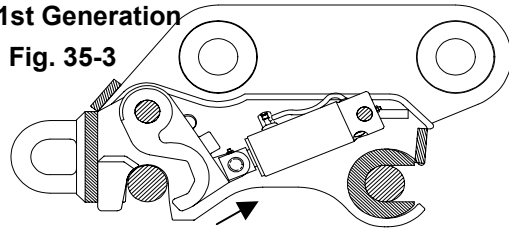
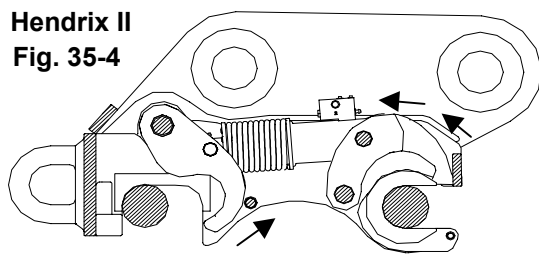


Fig. 35-2

1st Generation
Fig. 35-3



Hendrix II
Fig. 35-4



CAUTION

Do not hit the coupler's locking lever or force the coupler on the attachment pin while in the **RELEASE** mode. Always allow the lever(s) time to fully retract.



HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION V - ENGAGING THE ATTACHMENT

Continued....

- Operate boom, arm, and bucket cylinders to position the coupler at approx. a 45° angle on the attachment's stick pin. Fully seat the coupler's "C" casting on the stick pin as shown in Fig. 36-1.

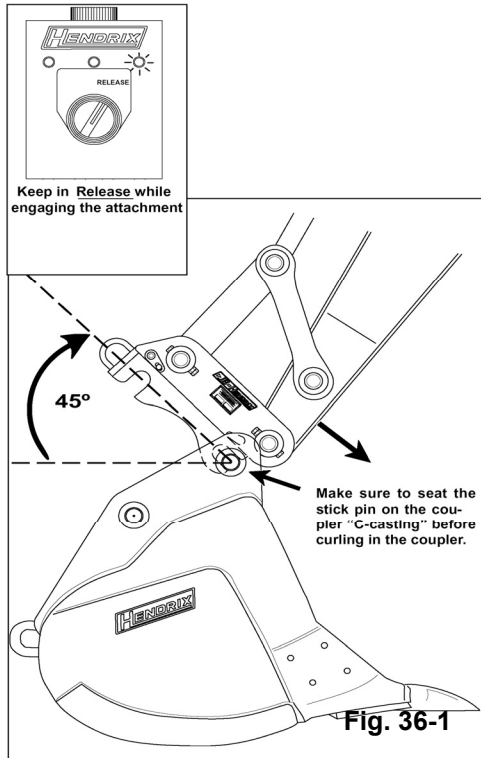


Fig. 36-1

- Seat the coupler onto the attachment's link pin by curling the coupler in toward the machine (extend the machine's bucket cylinder as shown in Fig. 36-2).

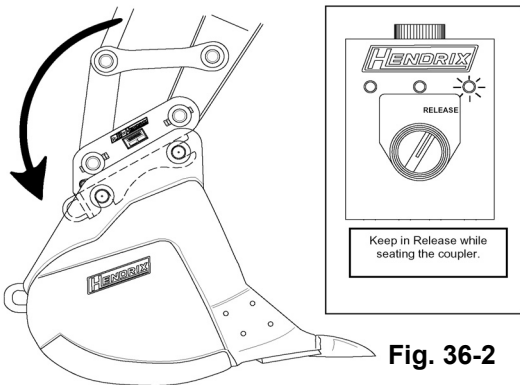


Fig. 36-2

CAUTION

Note - The Control Box switch should still be in the **RELEASE** position while seating the coupler. The coupler must be fully seated on the attachment's link pin for the locking lever to properly engage under and around the link pin.

- After seating the coupler on the link pin, you are ready to lock the coupler in place.

A. 1ST GENERATION COUPLER

The 1st Generation Coupler is locked into place by engaging the attachment's link pin with the coupler's locking lever. To engage the attachment's link pin, place the Control Box switch to the **LOCK** position (see Fig. 36-3). Placing the switch in the **LOCK** position will extend the coupler's locking lever (see Fig. 36-4). The lever should engage under and around the attachment's link pin. Please allow the locking lever time to fully engage the pin. If the locking lever does not engage under and around the link pin, then you have **NOT** properly engaged the attachment.

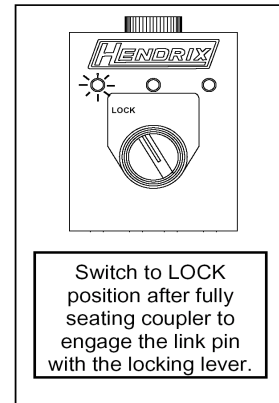
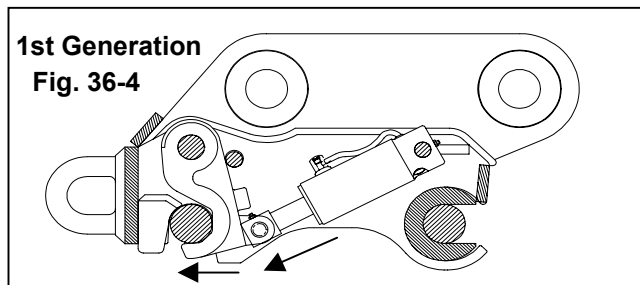


Fig. 36-3





HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION V - ENGAGING THE ATTACHMENT

Continued....

B. HENDRIX II COUPLER

The Hendrix II Coupler is locked into place by engaging the attachment's stick pin with the Front Lever and the attachment's link pin with the Back Lever. To engage these pins with the Hendrix II levers, place the Control Box Switch to the LOCK position (see Fig. 37-1). Placing the switch in the lock position will extend the coupler's cylinder in turn rotating the levers. The lever that rotates first, depends on the angle of the attachment ears. However, generally the Front Lever will engage the attachment's stick pin first. The Front Lever engages over and around the stick pin (see Fig. 37-2). The Back Lever will then engage under and around the attachment's link pin (see Fig. 37-3).

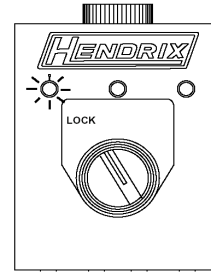
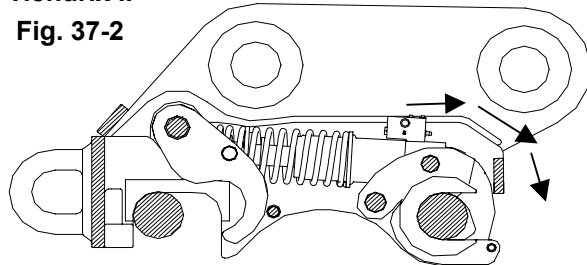


Fig. 37-1

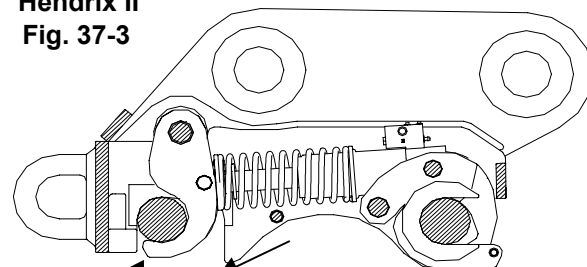
Switch to LOCK Position

Hendrix II
Fig. 37-2



Front Lever engages over and around the attachment'

Hendrix II
Fig. 37-3



Back Lever engages under and around the attachment'



DANGER



IMPORTANT! - The Back Lever is the locking device for the coupler. The purpose of the Front Lever is to act as a backup in case of some type of failure to the Back Lever. You must ensure that the Back Lever along with the Front Lever, is properly engaged before attempting to operate the excavator with a coupled attachment.



DANGER



After the Front Lever engages allow time for the Back Lever to engage. **DO NOT** assume that the Back Lever is engaged just because the Front Lever is engaged. You must allow the back lever time to engage the attachment's link pin.

5. After placing the switch in the lock position and engaging the attachment, you are ready to test the connection to the coupler by performing the following connection tests.



DANGER



The Switch should remain in the LOCK position **ALWAYS** while operating the excavator with coupled attachments.



HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION V - ENGAGING THE ATTACHMENT

Continued....

! DANGER !

CONNECTION TESTS MUST BE PERFORMED EACH AND EVERY TIME YOU ENGAGE AN ATTACHMENT. FAILURE TO PROPERLY ENGAGE AN ATTACHMENT CAN RESULT IN SERIOUS INJURY OR DEATH. THE ATTACHMENT MAY DROP WITHOUT WARNING IF THE COUPLER IS NOT PROPERLY ENGAGED WITH THE ATTACHMENT.

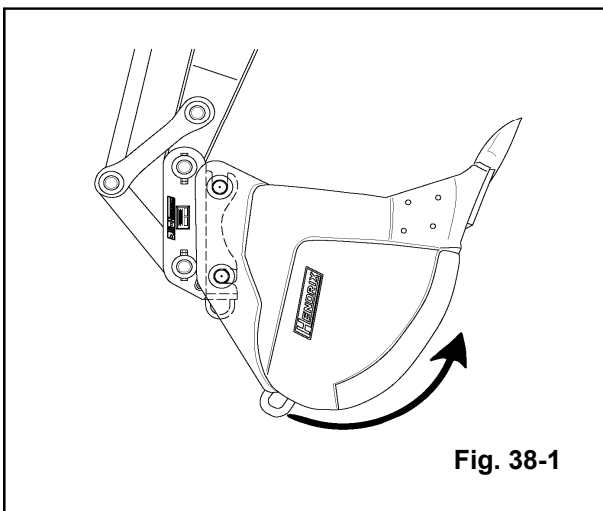
! DANGER !

ENGAGE ATTACHMENTS COMPLETELY CLEAR OF ALL PERSONNEL.

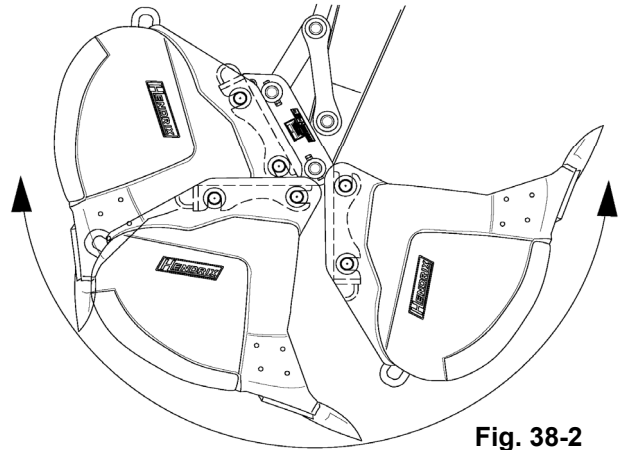
TEST ALL CONNECTIONS AWAY FROM ALL PERSONNEL.

NEVER SWING COUPLED ATTACHMENTS OVER WORKERS' HEADS.

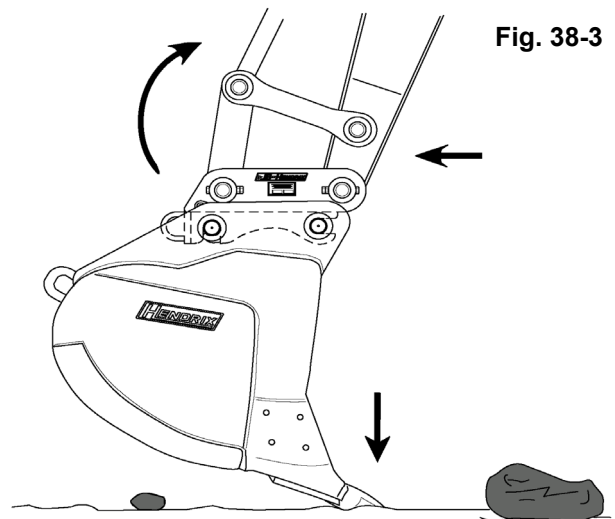
6. **CONNECTION TEST ONE**
Perform away from all personnel - Test the connection to the attachment by completely curling the coupler inward (see Fig. 38-1).



7. **CONNECTION TEST TWO**
Perform away from all personnel - Test the connection by fully cycling the coupled attachment at least twice (see Fig. 38-2).



8. **CONNECTION TEST THREE**
Perform away from all personnel - Test the coupler connection by trying to disengage the attachment from the coupler using the machine's weight. Dig the attachment in the ground, lower the attachment against the ground to lift the excavator's tracks off the ground, and try to force the attachment off (see Fig. 38-3).



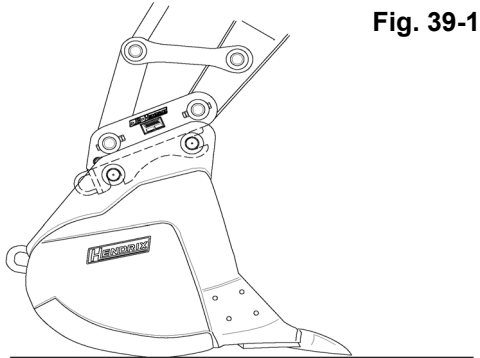


HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION V - ENGAGING THE ATTACHMENT

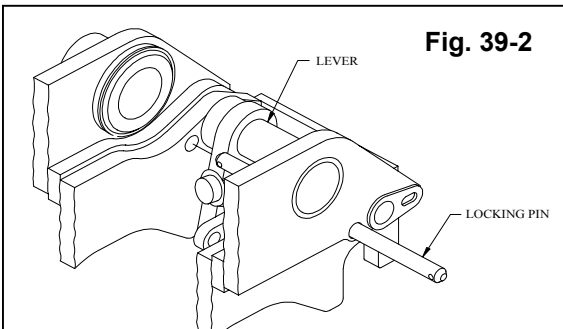
Continued....

- After performing all connection tests, rest the attachment **SECURELY** on the ground (see Fig. 39-1).

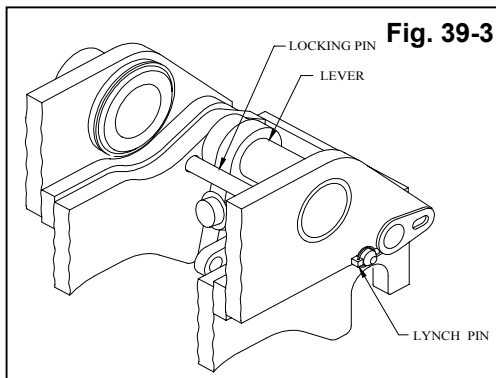


- Insert the mechanical lock pin (Fig. 39-2,3,4,5).

A. 1ST GENERATION COUPLER

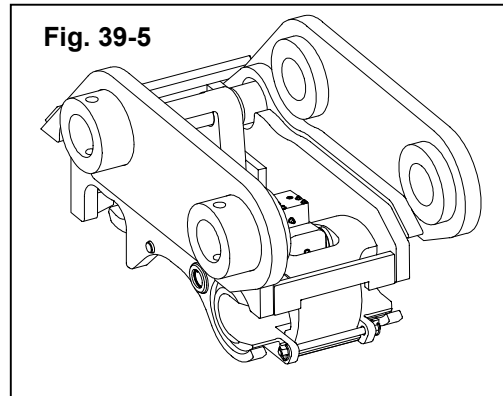
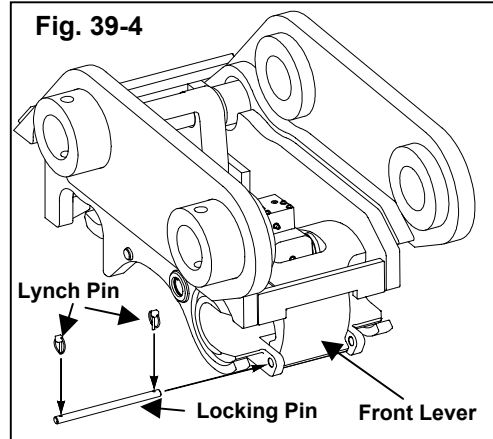


NOTE - When the locking lever is properly engaged under and around the link pin, you will be able to insert the mechanical lock pin.



Secure the mechanical lock pin by inserting the lynch pin on both ends of the mechanical lock pin. Be sure to close each lynch pin's locking ring.

B. HENDRIX II COUPLER



Secure the mechanical lock pin by inserting the lynch pin on both ends of the mechanical lock pin. Be sure to close each lynch pin's locking ring.



DANGER



THE SWITCH MUST REMAIN IN THE LOCK POSITION WHEN OPERATING THE EXCAVATOR WITH COUPLED ATTACHMENTS.

NEVER SWING COUPLED ATTACHMENTS OVER WORKERS' HEADS.

- After you have successfully performed the connection tests and inserted the mechanical lock pin, you are now ready to operate your machine with the coupled attachment.



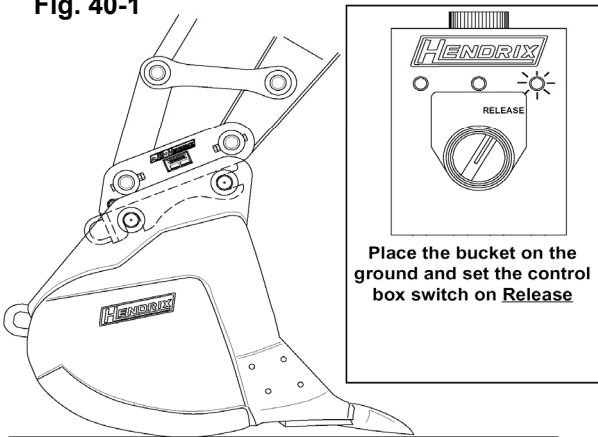
HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION VI - DISENGAGING THE ATTACHMENT

This section will detail the proper steps for disengaging from an attachment with the Hendrix Quick Coupler.

1. Place the attachment on **SECURE** flat ground as shown in Fig. 40-1. Remove the mechanical lock pin. **Clear all personnel from around the attachment.** Place the control box switch to the **RELEASE** position. The buzzer will sound and the

Fig. 40-1



! DANGER !

THE RELEASE POSITION ON THE SWITCH MUST NEVER BE USED WHEN THE COUPLED ATTACHMENT IS OFF OF THE GROUND.

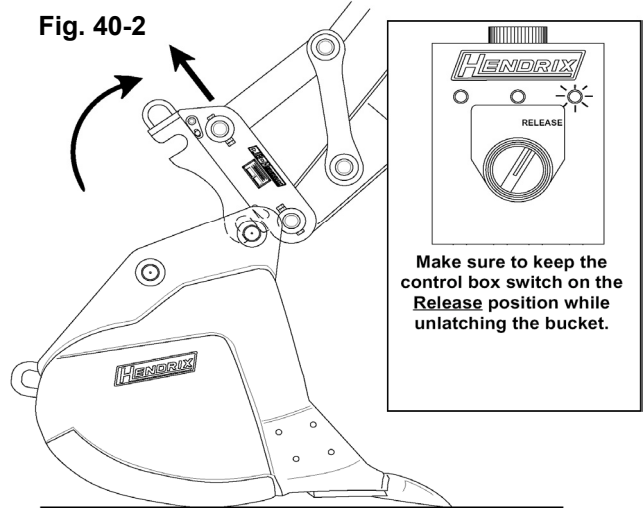
NEVER SWING COUPLED ATTACHMENTS OVER WORKERS' HEADS.

2. Unlatch the attachment link pin by curling the coupler out (retract the machine's bucket cylinder) and simultaneously lift the boom to completely disengage the coupler from the attachment, as shown in Fig. 40-2.

CAUTION

When disengaging from an attachment, turn the Switch to the **RELEASE** position long enough to ensure that the lever(s) are completely open before curling the coupler out. **DO NOT FORCE THE COUPLER OFF OF THE ATTACHMENT.**

Fig. 40-2



! DANGER !

ALWAYS DISENGAGE ATTACHMENTS AWAY FROM PERSONNEL.

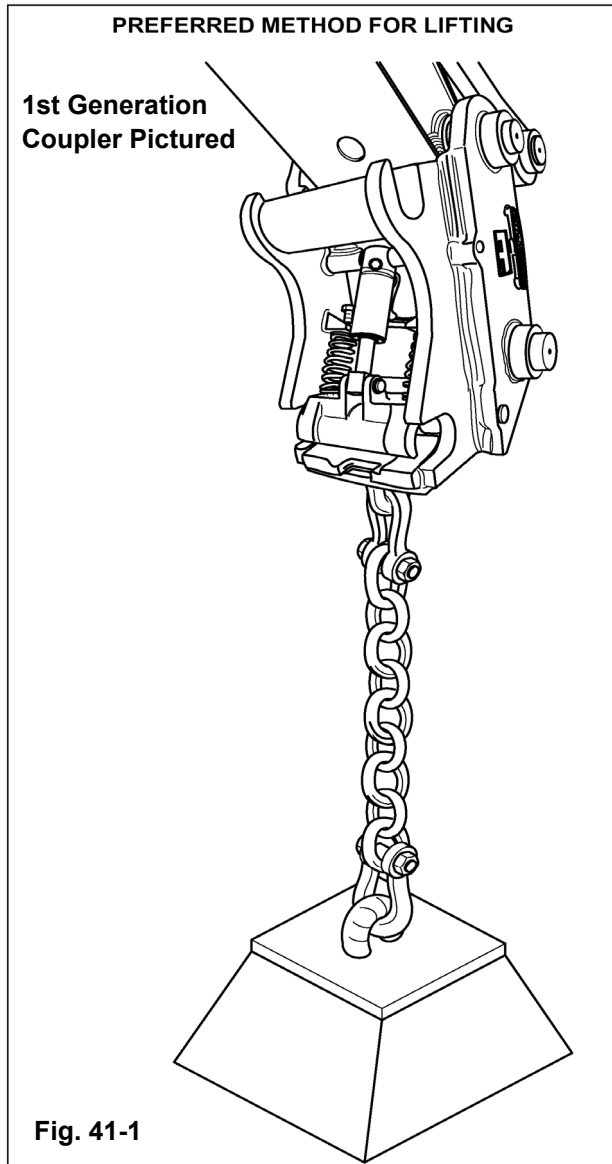


HENDRIX QUICK COUPLER USER MANUAL

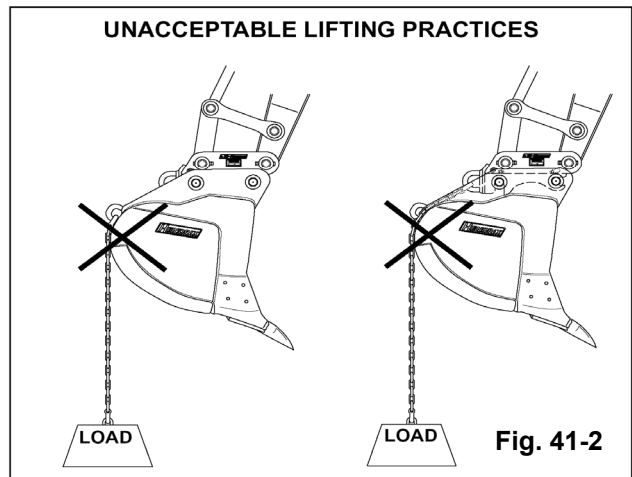
OPERATIONS & MAINTENANCE SECTION VII - LIFTING LOADS WITH THE COUPLER INSTALLED

This section will detail the proper steps for lifting loads using the Hendrix Quick Coupler.

1. Always disengage the attachment when lifting loads with a Hendrix Quick Coupler installed on the excavator. Curl the Coupler inward when lifting loads (see Fig 41-1).



2. **DO NOT** use the attachment hook while coupled to an attachment. - See Fig. 41-2
3. **DO NOT** use the Coupler's Lifting Eye while coupled to an attachment. - See Fig. 41-2





HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION VIII - MAINTENANCE PROCEDURES

This section will detail several maintenance procedures for the coupler.

1. LUBRICATION

You should lubricate all three pivot points of the Coupler at least daily. Certain applications may require more frequent lubrication. If the Coupler is working under water, you should lubricate the Coupler approximately every four hours. Use EP2 Lithium base grease to lubricate the coupler. See Fig. 42-1 for better reference.

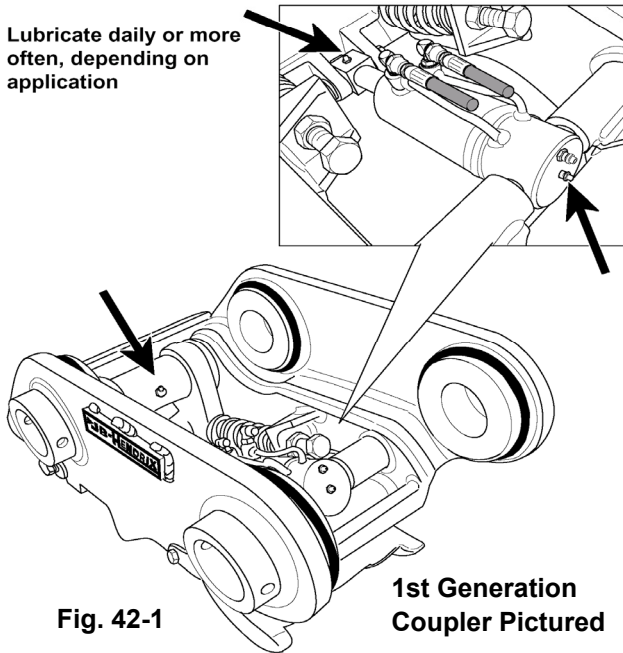


Fig. 42-1

1st Generation Coupler Pictured

2. SPRING PRELOAD ADJUSTMENT (1st Generation)

The springs on the Hendrix Quick Coupler have to be pre-loaded to ensure proper operation. To obtain the correct spring pre-loading, set the dimension "A" accordingly from underneath the spring hanger bracket to the top of the spring cap (see Fig. 42-2). Once the dimension is set, tighten the lock nut against spring hanger to ensure dimension "A" will not change during operation. It is recommended that you replace the springs annually.

| SPRING PART NO. | DIMENSION "A" |
|-----------------|---------------------------------|
| MD140 | 1 - 1 1/8 inch (25.4 - 28.5 mm) |
| MD240 | 5/8 - 3/4 inch (15.9 - 19.0 mm) |
| C245 | 1 - 1 1/8 inch (25.4 - 28.5 mm) |

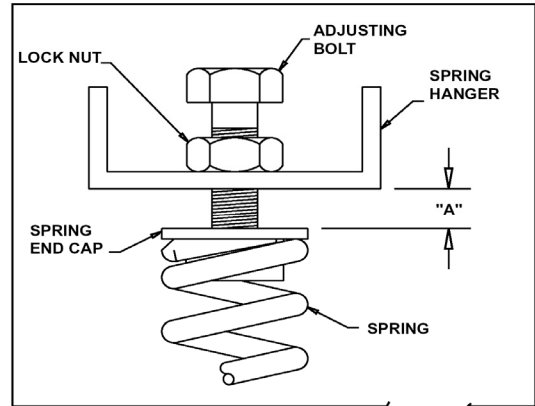
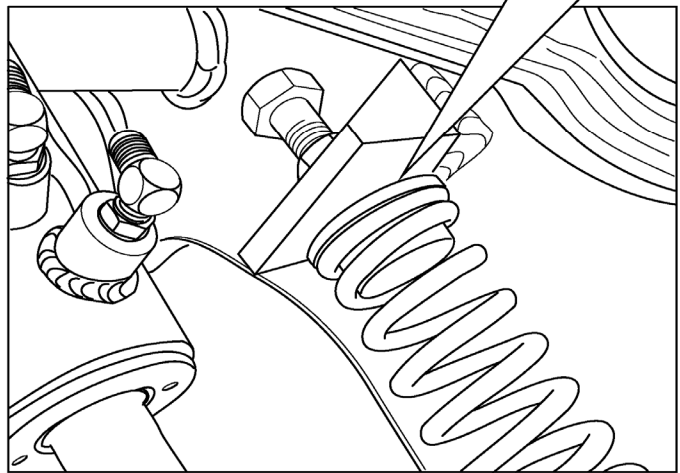


Fig. 42-2



NOTE - The Hendrix II Coupler features a cylinder with an integrated spring that does not require regular adjustment.



HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION VIII - MAINTENANCE PROCEDURES

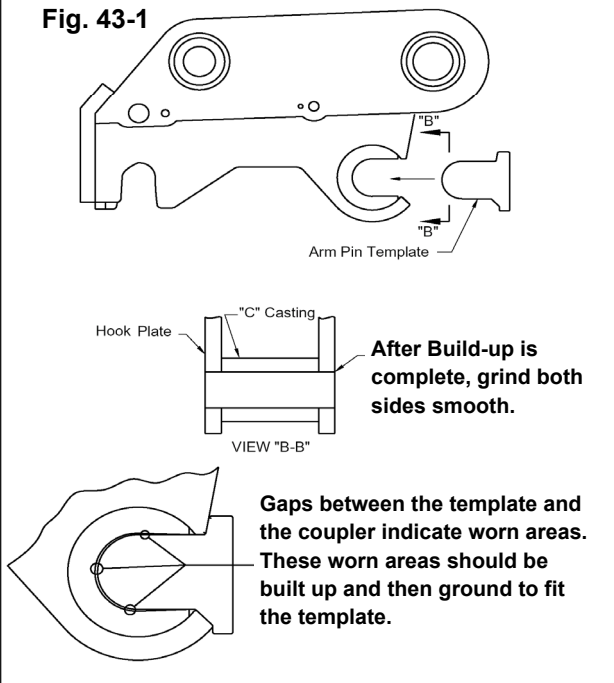
Continued....

3. FRONT C-CASTING BUILDUP

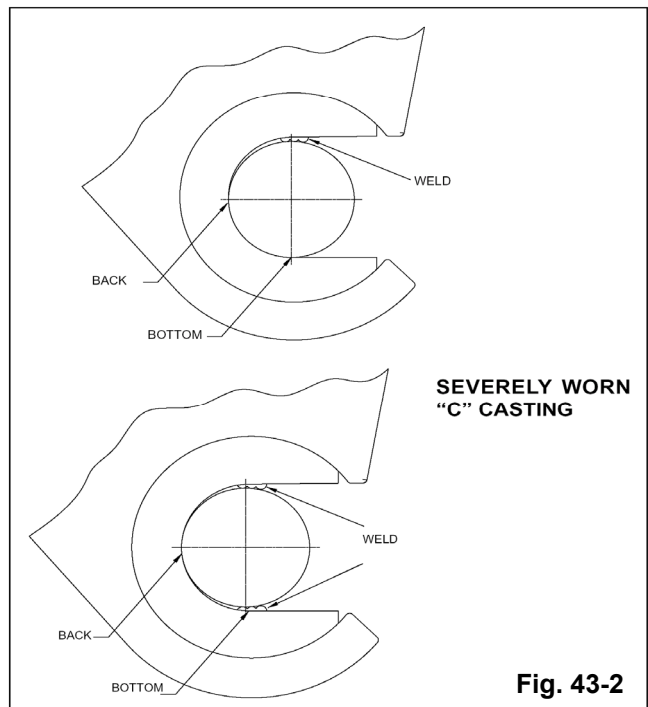
When play exists between the arm pin and the "C" casting, disengage the attachment and place the template at the arm pin "C" casting, as shown in Fig. 43-1. Measure across complete width of arm pin location and mark areas of coupler that do not match the arm pin template, as indicated in the lower part of the figure. Preheat "C" casting area to be rebuilt to 400°F (205°C). Use E7018 or equivalent welding material to weld across complete width of arm pin location. Clean excess weld to match profile of arm pin template. Grind outer diameter of hook plates smooth after all welding is complete.

Please contact your Hendrix Dealer to obtain the appropriate buildup template for your Coupler. Please provide your coupler Serial Number and/or the Coupler part number when ordering.

Fig. 43-1



NOTE - When a template is not available, proceed as follows to rebuild the "C" casting: Allow pin to rest at the bottom of the "C" casting, as indicated in the upper part of Fig. 43-2. Wedge pin to the back of the "C" casting. Mark at the top of the pin (Approx. centerline of pin), where the weld buildup should begin. Weld 3 beds side by side, through the entire width of the "C" casting. Grind the weld smooth and check the pin fit. Repeat the welding process until the desired pin fit is achieved. Remember to use E7018 or equivalent welding material. If the "C" casting is severely worn, proceed as indicated above, but also weld on bottom side of the "C" casting, as shown in the lower part of the figure.





HENDRIX QUICK COUPLER USER MANUAL

OPERATIONS & MAINTENANCE SECTION VIII - MAINTENANCE PROCEDURES

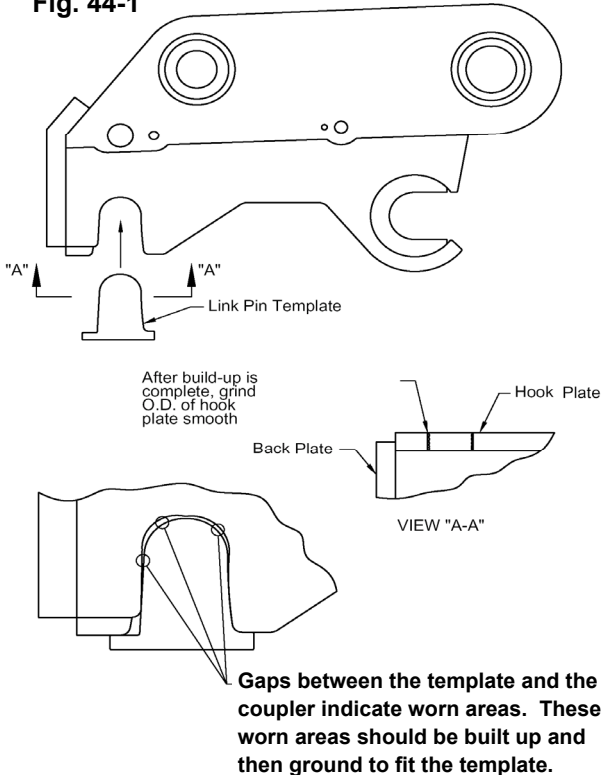
Continued....

4. LINK PIN FRAME BUILDUP (1st Generation)

When play exists between the link pin and the frame casting, disengage the attachment and place the template at the link pin frame casting, as shown in Fig. 44-1. Measure across complete width of link pin location and mark areas of coupler that do not match the link pin template, as indicated in the figure. Preheat frame casting area to be rebuilt to 400°F (205°C). Use E7018 or equivalent welding material to weld across complete width of link pin location. Clean excess weld to match profile of link pin template. Grind outer diameter of hook plates smooth after all welding is complete.

Please contact your Hendrix Dealer to obtain the appropriate buildup template for your Coupler. Please provide your coupler Serial Number and/or the Coupler part number when ordering.

Fig. 44-1



5. LINK PIN FRAME BUILDUP (Hendrix II)

The Hendrix II Coupler features a replaceable wear pad in the frame of the Coupler in the link pin area. This wear pad is made of "Hardox 400" material.

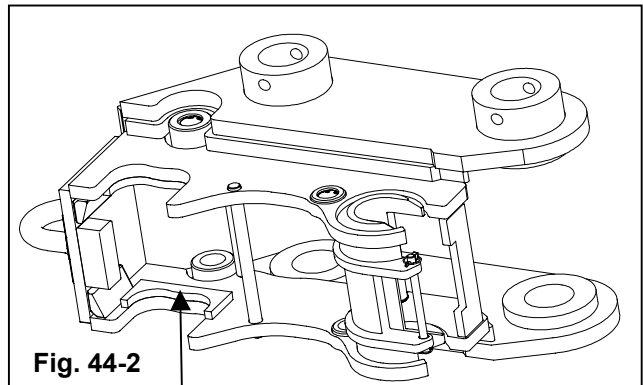


Fig. 44-2

Replaceable Wear Pad

5. FILTER REPLACEMENT

A hydraulic oil filter is provided for your Hendrix Quick Coupler. This filter should be replaced at regular intervals, such as when replacing the other filters on your excavator. This filter is a Purolator brand filter, Part # 20101, and can be obtained from your Hendrix dealer. Alternatively, a cross-reference to several other brands is provided below.

FILTER CROSS-REFERENCE CHART

Hendrix Filter

Puralator # 20101

Cross-Reference

Parker #921999
Baldwin #BT839-10
Stauff #SF6620