



## **M. C. FAULKNER AND SONS, INC. HYDRUALIC QUICK COUPLER**

### **WARNING**

**Read and understand the operator's manual before  
using this Hydraulic Quick coupler**  
Additional copies of this manual may be ordered by calling M. C.  
Faulkner and Sons, Inc. 207-929-4545

## **INSTALLATION AND OPERATING INSTRUCTIONS**

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**WARNING: Use extreme caution when working on or around heavy equipment. Persons and equipment must be positioned so as to prevent injury from contact with moving machinery, or falling objects.**

**Worn, damaged improperly assembled or abused equipment may pose a severe hazard to persons or property. Do not use this equipment if it is damaged or in need of maintenance.**

**Read and abide by all safety warnings and instructions supplied with your particular piece of machinery**

#### **Limit of Liability:**

**M.C. Faulkner and Sons, Inc. Hydraulic Quick Couplers are designed and manufactured to our customers' specifications. Like all custom attachments they can apply an increased tipping moment and could have other unknown effects on your machine. These effects can be adverse and in some cases result in damage to your machines mechanical or hydraulic systems, including catastrophic failure and/or machine upset. Due to the wide variety of attachment types, conditions, and applications etc. it is impossible for M.C. Faulkner and Sons, Inc. to functionally test all of its products and develop specific operating procedures and capacity ratings. It is the owner's responsibility to test their custom attachment and determine its capacity, suitability, correct use and to evaluate the need for extra counterweights or other modifications before putting into service. It is also the owner's sole responsibility to provide specific operating procedures and revised lifting charts for their machine and ensure compliance with OSHA and/or other regulatory bodies**

# Owner, Operators and Installation Instructions

## Hydraulic Quick Coupler Index

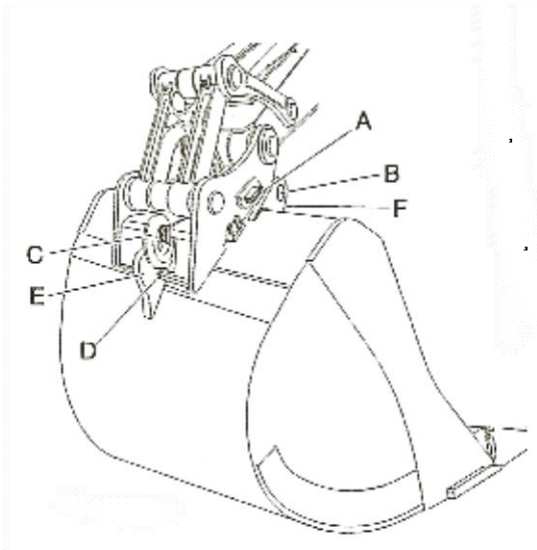
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# DANGER

**Read all these instructions before using your hydraulic quick coupler. Completing EVERY step of these instructions is extremely important. Testing the coupler, alarm and safety systems is critical for operator safety. Failure to complete and test every step may result in injury, damage to property and/or damage to the quick coupler or death. Ensure that all personnel have read and understand the information in this installation and user manual before attempting to install, maintain and/or operate this quick coupler.**

## Hydraulic Quick Coupler



- A – Indicator Pin
- B – Bucket Shafts
- C – Lifting Eyes
- D – Locking Wedge
- E – Bucket Rear Hook
- F – Hooks for gripping attachment

The Hydraulic Quick Coupler consists of a flat plate assembly which is fitted to the arm end and the bucket link. There are two hooks (F) on the plate for the front pins (B) on the bucket.

The hydraulic quick coupler is equipped with a double-acting hydraulic cylinder. The quick coupler locking wedge (D) is fitted to its piston rod. Pilot pressure acts on the piston of the lock cylinder, locking the attachment in place against the rear hook (E). This means that the lock wedge adjusts itself and provides gap free locking.

When the lock wedge (D) is released the pilot pressure is transferred to the piston rod side. If necessary the release pressure can be increased by loading the bucket cylinder in its end position.

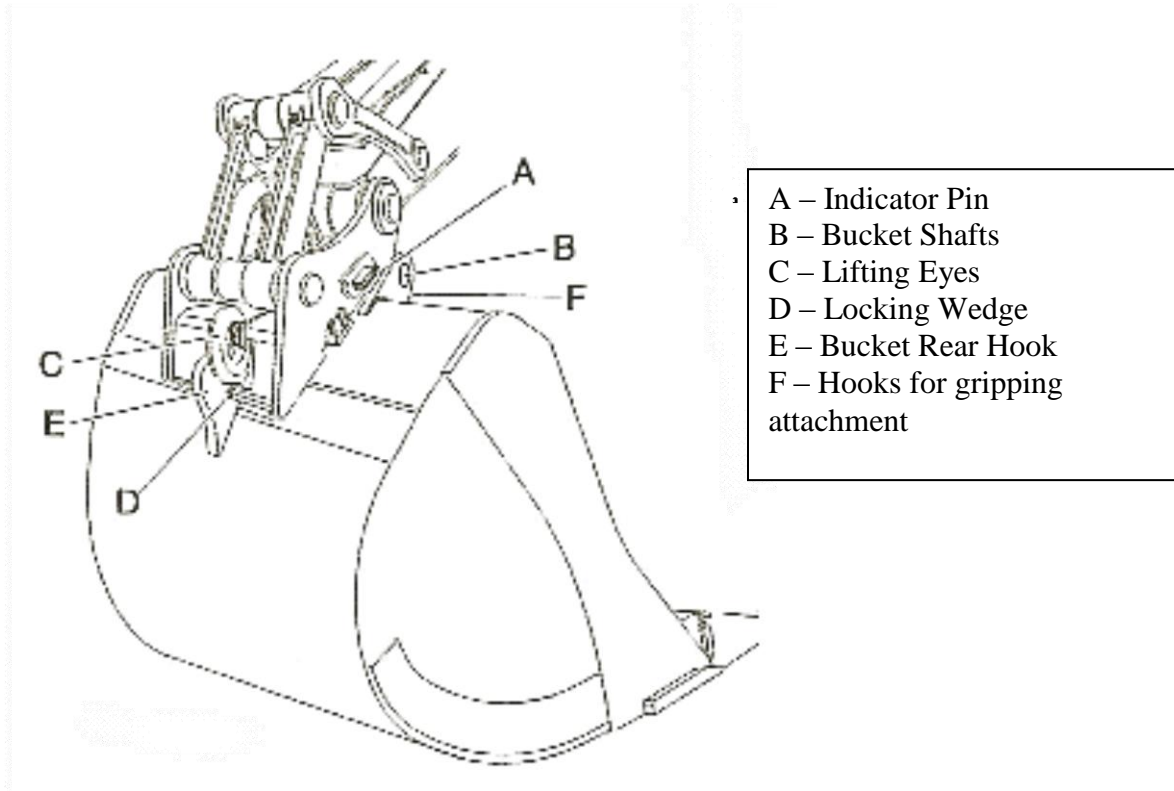
There is a red indicator pin (A) on the left side of the hydraulic quick coupler. It is pulled in when the locking wedge is in the locked position, and pushed out when the locking wedge is released.

There is a lifting eye ( C ) on the hydraulic quick coupler. With the bucket removed the permitted load increases and the operator's field of vision is improved.

## **WARNING**

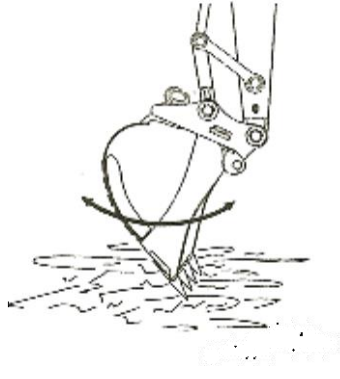
**If the alarm sounds, or the warning light comes on during operation THE BUCKET MAY FALL OFF. IMMEDIATELY PLACE THE MACHINE ARM AND BUCKET ON THE GROUND. DO NOT OPERATE THE MACHINE UNTIL YOU HAVE INSPECTED THE HITCH SYSTEM TO DETERMINE AND CORRECT THE FAILURE**

## INSTALLATION OF BUCKET



1. Turn the Main Power switch on, the alarm will sound.
2. Turn the unlock switch on.
3. Check that the indicator pin (A) is fully extended. There is an indicator pin (A) on the side of the quick coupler which is pulled in when the locking wedge is in the locked position, and pushed out when the locking wedge is released.
4. Operate the excavator arm into position, so the 2 hooks on the quick coupler hook on the front bucket shafts (B) of the bucket or other attachment.
5. Turn the quick coupler slowly towards the bucket, by moving the bucket cylinder until the quick coupler matches up correctly against the bucket or other attachment.
6. Check that the quick coupler is correctly aligned against the edge of the bucket; if necessary adjust with arm or boom movements.
7. Check that the indicator pin (A) is completely pushed into the quick coupler.

8. Perform the following checks to ensure the bucket or other attachment is fully engaged:
  - a. Press the bucket to the ground, with the teeth facing downward as if to start digging.
  - b. Operate the bucket cylinder in and out to ensure the locking wedge (D) is securely seated. If you are not sure, with the bucket or other attachment on the ground, check that the locking wedge (D) has gone into the hook.



## **Removal of the bucket or other attachment**

1. Position the machine on flat, firm, level ground, and have the bucket or other attachment resting on the ground.
2. Turn the quick coupler main power switch “ON”, making sure the warning light is on and the alarm is sounding.
3. Press the unlock switch and hold in position. With the unlock switch held in place the wedge will slowly retract.
4. When the red indicator pin (A) is completely extended, carefully free the bucket from the quick coupler by operating the bucket cylinder to its end position (bucket out). If the red indicator pin is not extended, increase the hydraulic pressure to the lock cylinder by carefully moving the bucket cylinder to its end position (bucket in) and keeping it under pressure for about a second.
5. Disconnect the bucket by moving the arm outward and raising the boom.

## How it works

1. Pilot pressure is supplied to the coupler at all times. This keeps the wedge locked in at all times. There is a spring inside the cylinder on the coupler which keeps the wedge locked into the implement when the machine is not running, or in the event of a loss of hydraulic pressure.
2. When the main power switch is turned on an alarm will sound in the cab of the machine, and the red warning light will come on in the hitch control box. When the **unlock** switch is depressed, the wedge will retract and the implement can be removed. When the unlock switch is released the locking wedge will extend out to the locked position.

## DANGER

**When attaching or disconnecting a quick coupler from an attachment, no one should be in the work area.**



**Installation must be done by qualified personnel.**

## **DANGER**

**Read all these instructions before starting your installation. Completing EVERY step of these instructions is extremely important. Testing the coupler, alarm and safety systems is critical for operator safety. Failure to complete and test every step may result in injury, damage to property and/or damage to the quick coupler or death . Ensure that all personnel have read and understand the information in this installation and user manual before attempting to install, maintain and/or operate this quick coupler.**

### **Hydraulic Quick Coupler Control Installation**

Included in the installation kit for your hydraulic Quick Coupler is:

Hydraulic Valve

Manifold Block

Most of the hoses and fittings you will need to install the hydraulic side of the coupler control

Hitch Control Box

Alarm

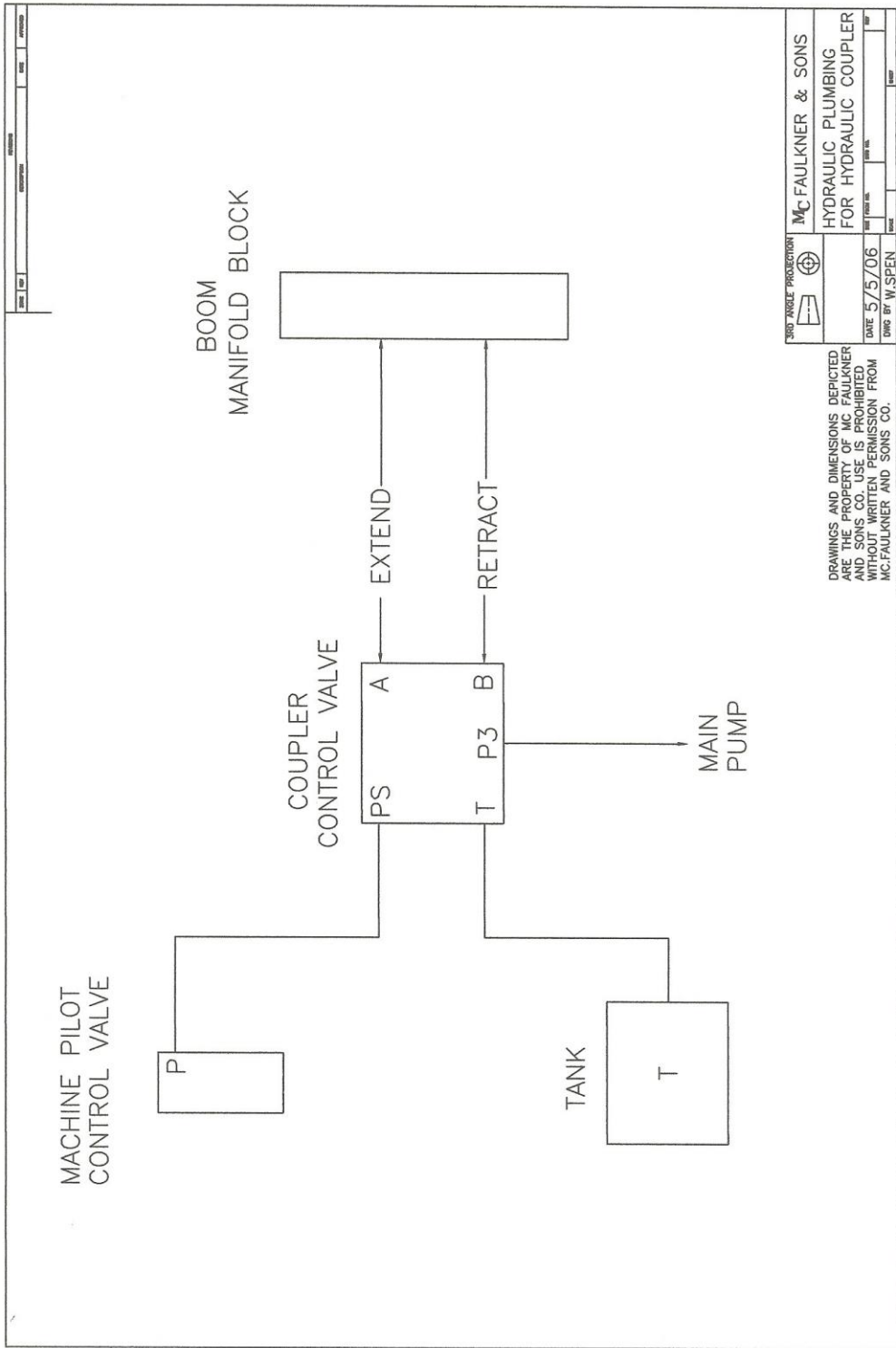
You will need to make up some hoses and supply some adapter fittings that are specific to your machine.

Please refer to the drawing on page 11 of these instructions

1. Install the coupler control valve near the main pumps on your excavator.
- 2.. Install ¼” hose from the pump side of the pilot control manifold to the “PS” port on the coupler control valve.
3. Install ¼” hose from the “T” port on the coupler control valve to the excavator’s tank.
4. Install a ¼” hose from the excavator’s main pump which controls the bucket curl to the “P3” port on the coupler control valve. Most machines have a test port on the main pump, this is a good place to “T” into.
5. Install a ¼” hose from the “A” port on the coupler control valve down the boom to the boom manifold block.
6. Repeat step 5 for the “B” port.
7. The two lines coming from the coupler will hook to the two ports left on the boom manifold block.

## **DANGER**

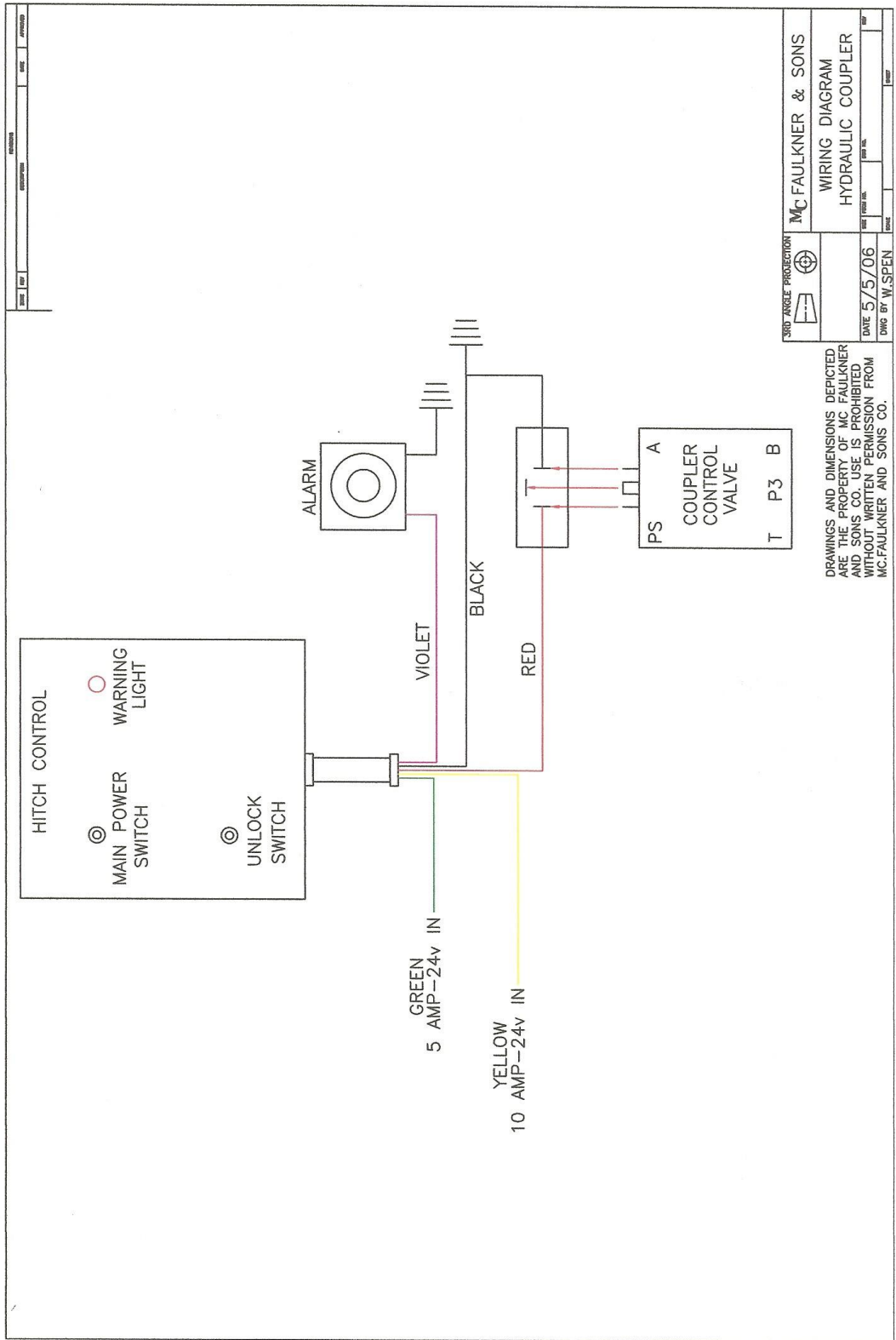
**Shut-off valves MUST NOT be installed on the hydraulic hoses leading to the quick coupler cylinder. If the pressure in the cylinder drops, the bucket or other attachment may fall off.**



## **Electronic Hitch Controller**

1. Install the Hitch control box in the operator's cab, where it can be easily accessed by the operator.
2. Install the alarm in the operator's cab, behind the seat.
3. Locate two 24 volt supply lines from the machine's fused power supply.
4. Connect the green wire from the hitch control box to a 5 amp 24 volt power supply, when the the ignition switch is "ON".
5. Connect the yellow wire from the hitch control box to a 10 amp 24 volt power supply, when the ignition switch is "ON"
6. Connect the violet wire to the alarm.
7. Connect the red and black wire to the coupler control valve.

**Please refer to the schematic on the following page.**



## Testing the Coupler

When all the Hydraulic and Electrical connections have been completed proceed as follows:

1. Start the excavator. Inspect all the hydraulic connections for leaks.
2. While the machine is running, check the wedge on the coupler to make sure that it is fully extended. If it is in the fully retracted position, then the “A” and “B” lines on the control valve must be reversed.

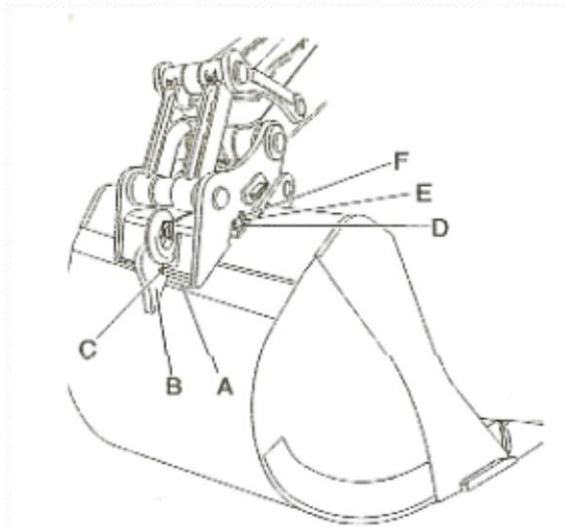


**Fully  
Extended  
Wedge –  
correct  
position**

3. While the machine is running and the wedge is extended, turn the hitch control main power switch “ON”. Make sure the warning light is on and the alarm is sounding. If either the warning light or the alarm are not working, go back and correct the problem before proceeding.
4. Now press the UNLOCK switch and hold. While the UNLOCK switch is being held the wedge will slowly retract. When the switch is released the wedge will slowly extend.

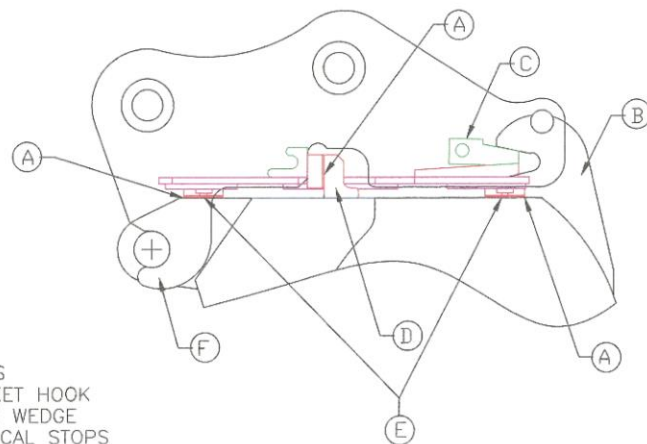
**DANGER**  
**When attaching or disconnecting a quick coupler from an attachment, no one should be in the work area.**

## Adjustment of Hydraulic Quick Coupler



A – Shims  
B – Bucket Hook  
C – Lock Wedge  
D – Vertical Stops  
E - Spacer plates  
F - Tool attachment hooks

Drawing 1



A-SHIMS  
B-BUCKET HOOK  
C-LOCK WEDGE  
D-VERTICAL STOPS  
E-SPACER PLATES  
F-TOOL ATTACHMENT PLATES

Drawing 2

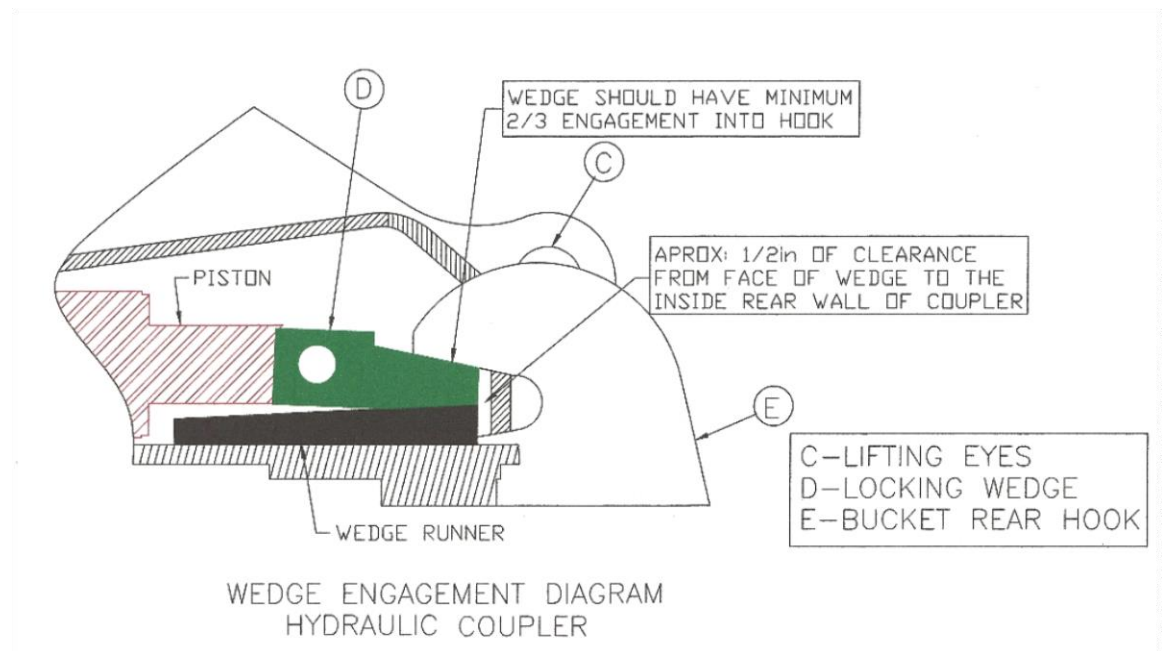
### WARNING

It is very important that the Hydraulic Quick Coupler be shimmed for proper fit to your specific machine. Improper shimming can result in damage to the Quick Coupler and could result in personal injury, or death.

1. Remove any shims between screw holder (D) and the mating plates.

2. Hook the bucket on and lock it in place, following the instructions for installing the bucket (see page 3).
3. Check the lock wedge (C, Drawing 1 and 2, item D in drawing 3) position and the way the attachment butts up against the mating plates.
4. Calculate any adjustment to the plate shims as follows:
  - a. Remove the bucket in accordance with the instructions for removing the bucket (see page 4).
  - b. Fit the necessary number of shims beneath the mating plates. Use thicker shims if the locking wedge goes too far into the hook. Use thinner shims if the locking wedge does not go far enough into the hook.
  - c. Install the bucket per the instructions on page (9).
  - d. Measure and install the necessary number of shims between the screw holder (D) and the mating plate.

Please refer to the attached drawing



Drawing 3