

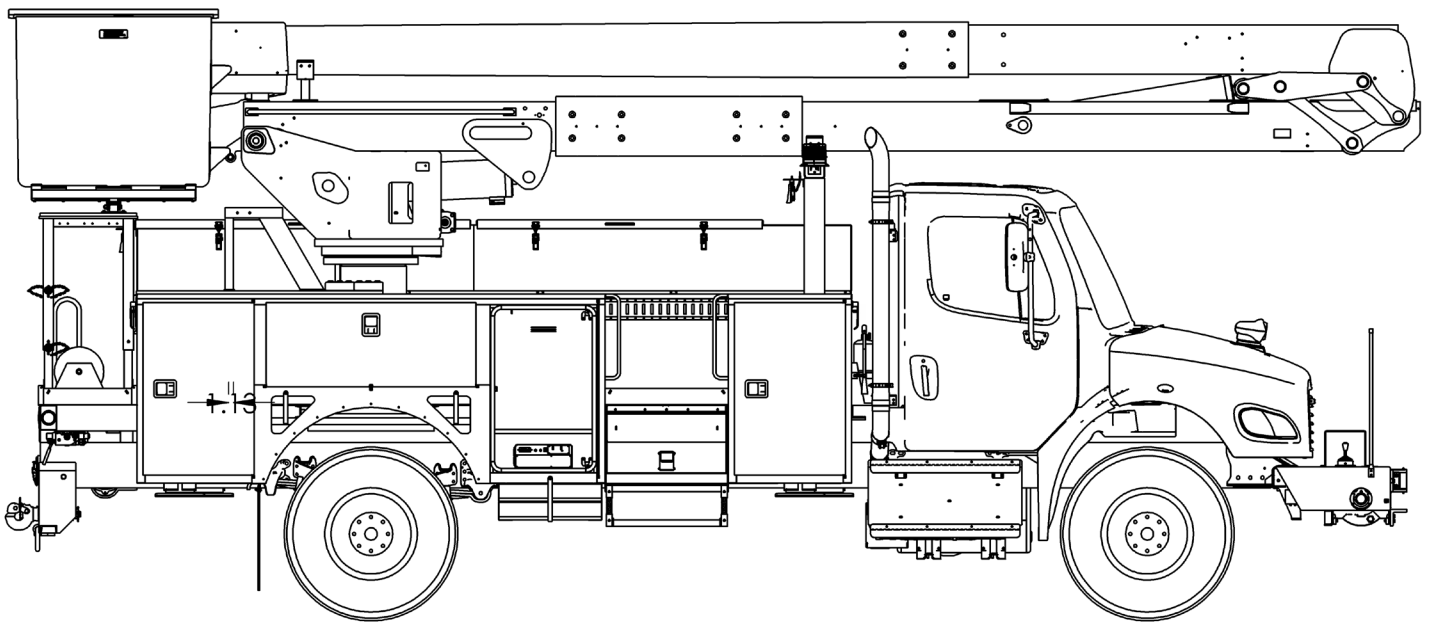


**TEREX®**

# TECH TIPS

**IMPROVE THE METERING AND COMPENSATION**

**NO. 161**



**SERVICE CALL:  
IMPROVE THE METERING AND  
COMPENSATION**




**MODEL(S):  
COMPENSATED OPTIMA TC**




**TOOLS NEEDED:  
HAND TOOLS**

**TEREX UTILITIES TECHNICAL SUPPORT TEAM**

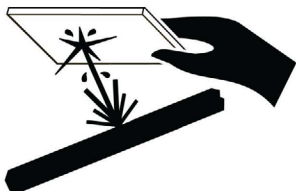
**PHONE: 1-844-TEREX4U (1-844-837-3948) | EMAIL: [UTILITIES.SERVICE@TEREX.COM](mailto:UTILITIES.SERVICE@TEREX.COM)**


WARNING



**Injection Hazard**

Fluid escaping under pressure can penetrate skin and result in death or serious injury.



Relieve pressure before disconnecting hydraulic lines.

Stay clear of leaks and pin holes. Use a piece of cardboard or wood to search for leaks. Do not use hand.

Fluid injected into skin must be surgically removed within a few hours by a doctor familiar with this type of injury, or gangrene will result.



## DANGER

Failure to obey the instructions and safety rules in the appropriate Operator's Manual and Service Manual for your machine will result in death or serious injury.

Many of the hazards identified in the Operator's Manual are also safety hazards when maintenance and repair procedures are performed.

## DO NOT PERFORM MAINTENANCE UNLESS:

- ✓ You are trained and qualified to perform maintenance on this machine.
- ✓ You read, understand and obey:
  - manufacturer's instructions and safety rules
  - employer's safety rules and worksite regulations
  - applicable governmental regulations
- ✓ You have the appropriate tools, lifting equipment and a suitable workshop.

The information contained in this Tech Tip is a supplement to the Service Manual. Consult the appropriate Service Manual of your machine for safety rules and hazards.



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## INTRODUCTION

This document outlines the steps in Z-Kit 1556 to improve the metering and compensation on the Compensated Optima units.

There are 4 procedures that must be performed in the following order:

**1st- Tool pressure**

**2nd- Upper control**

**3rd- Lower control**

**4th - Reset compensation**

The steps required for each of these procedures is broken down in the following pages.



Escaping fluid under pressure can penetrate skin causing serious injury.

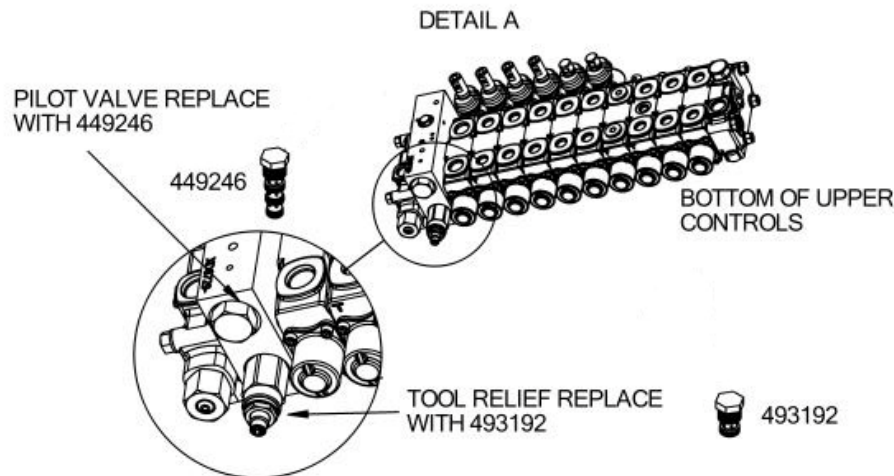
Relieve pressure before disconnecting hydraulic lines. Keep away from leaks and pin holes. Use a piece of cardboard or paper to search for leaks. **DO NOT** use your hand.

## Procedure 1 - Tool Pressure Reducing Valve

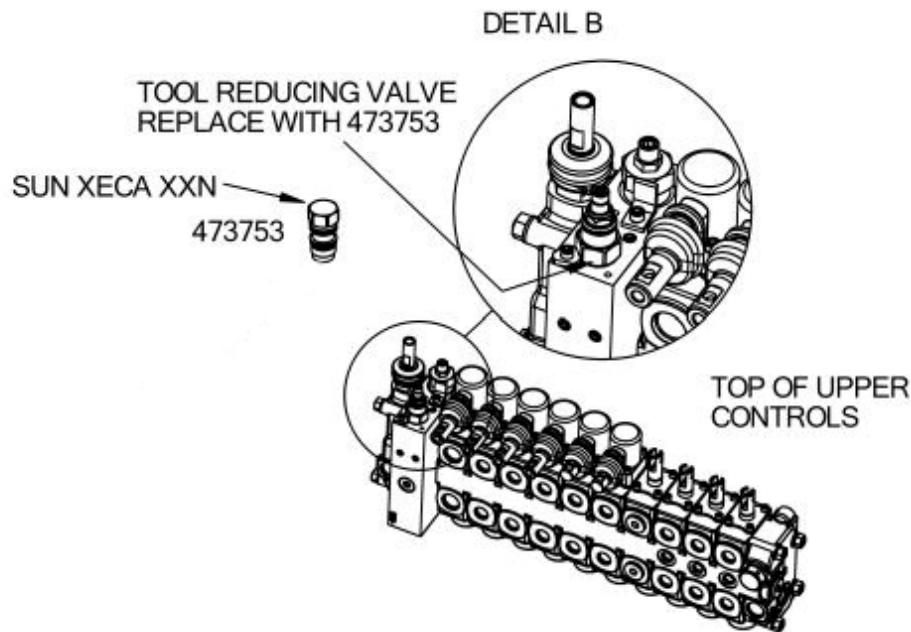
### STEP 1

There are two styles of upper controls. Locate the relief or pressure reducing valve for the hydraulic tool circuit to determine the style installed.

Detail A shows tool relief on the bottom of the upper controls.



Detail B shows the tool pressure reducing valve on top of the upper controls.



## STEP 2

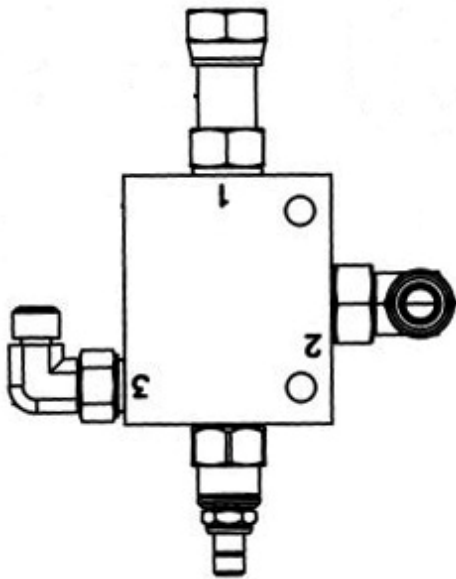
For units with the relief on the bottom of the upper controls, remove the relief and replace with the cavity plug 493192. Then remove the pilot valve and replace with cavity plug 449246

For units with the pressure reducing valve on the top of the upper controls, remove the pressure reducing valve and replace with cavity plug 473753.

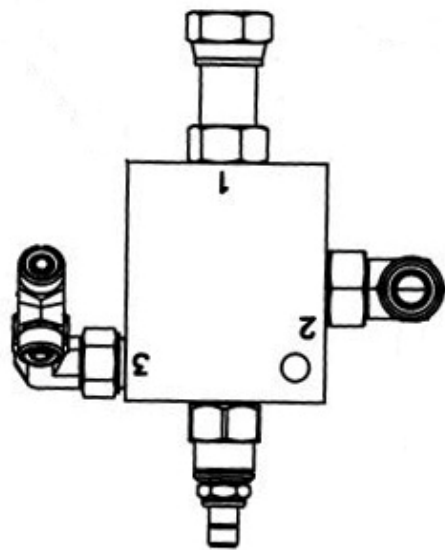
## STEP 3

Assemble pressure reducing valve blocks. Refer to Detail C and D below.

DETAIL C



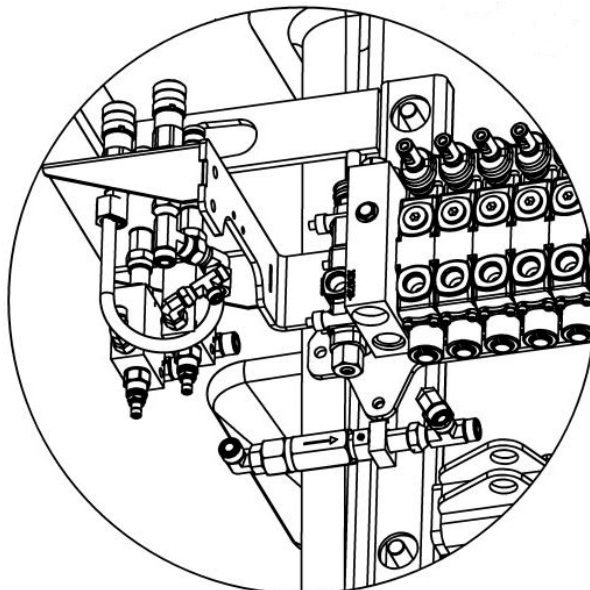
DETAIL D



## STEP 4

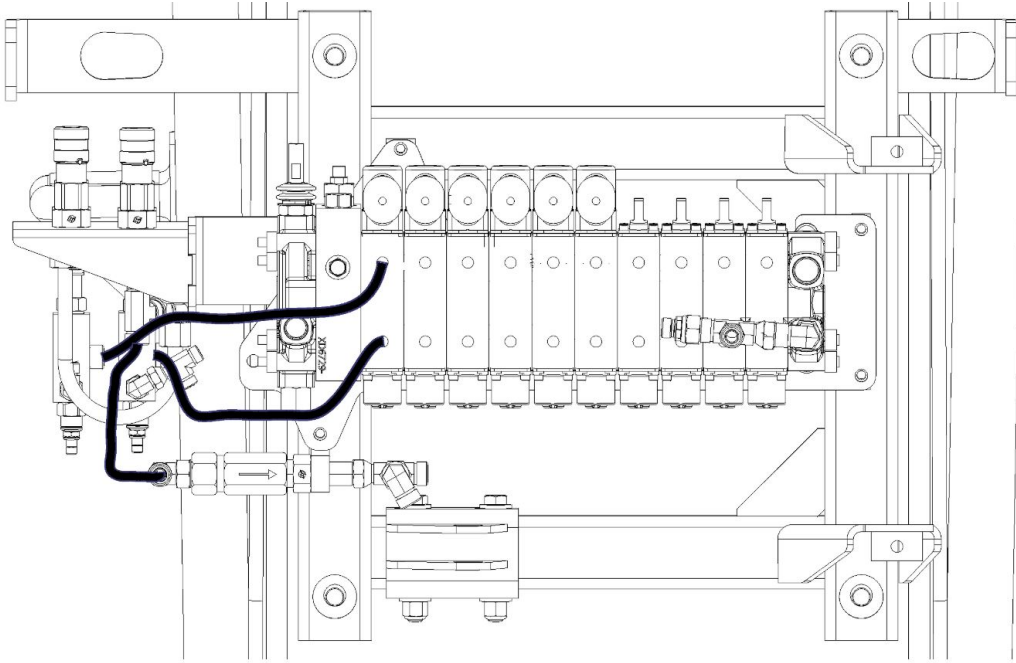
Remove hoses from tool pressure 1 and 2 quick couplers.

Install assembled pressure reducing valve blocks to tool pressure couplers.



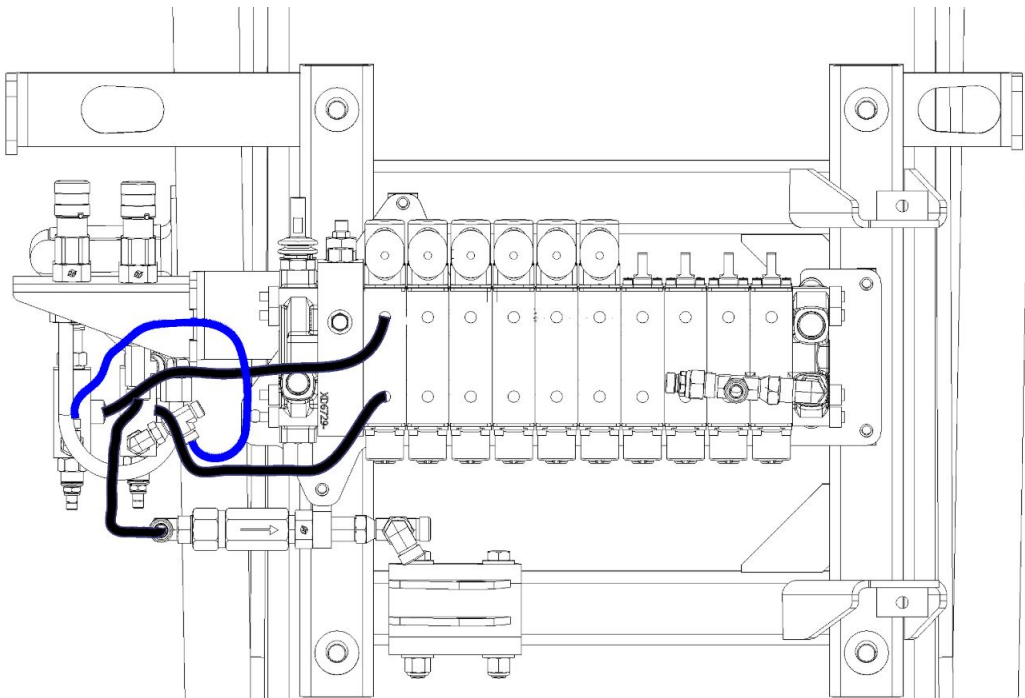
## STEP 5

Attach each hose from tool valve to each port #2 on the pressure reducing valve blocks. Connect port #3 on pressure reducing valve block to tee and reducer on upper control return.



## STEP 6

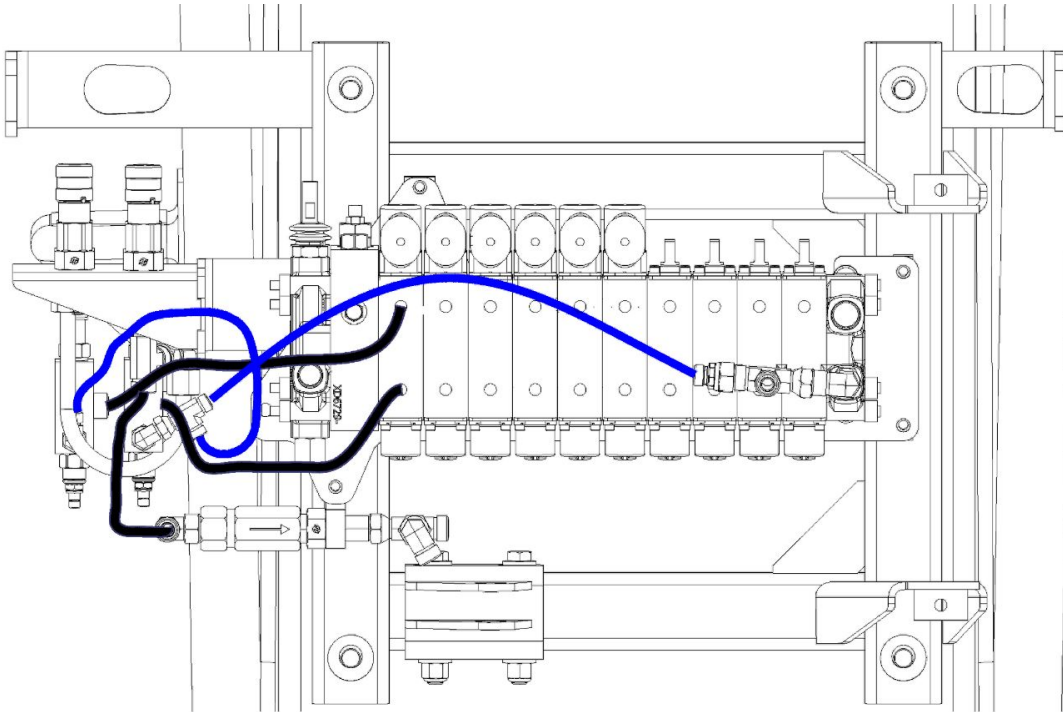
Connect both ports #3 on the pressure reducing valve blocks together with the supplied hose.





## STEP 7

Replace the short 90 with 618242 long 90, add tee and reducer to return line on upper control return.



## STEP 8

To test:

- Verify tool coupler 1 has pressure when tool 1 is selected and tool coupler 2 has pressure when tool 2 is selected
- Set each pressure reducing valve to 2250 PSI



## Procedure 2 - Upper Control Valve Spool

### STEP 1

Rotate the platform, remove control covers and remove retaining pins from control head linkages and valve spools for enable, lower boom, and upper boom.

### STEP 2

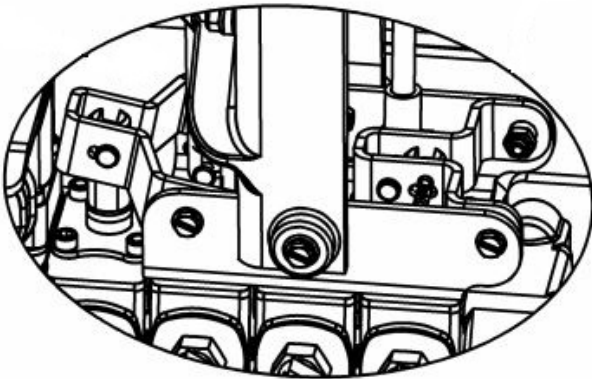
Remove the spiral retaining ring from the rod end of the platform rotate cylinder to gain access to the bottom of the upper control valve assembly. **Figure 9**

### STEP 3

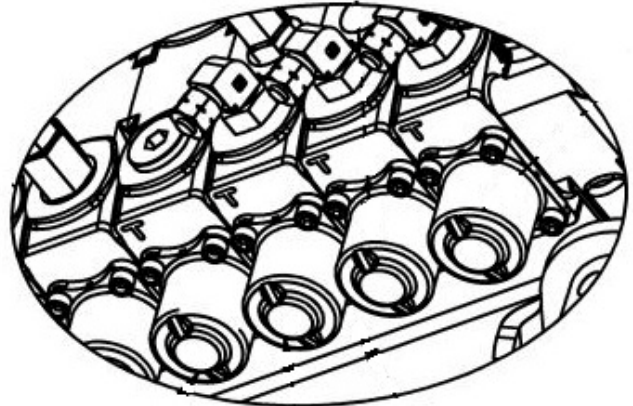
Remove the caps on the bottom of the upper control valve assembly for enable, lower boom, rotate and upper boom.

### STEP 4

Remove and replace enable valve spool with 624723. **Figure 10**



**FIGURE 9**



**FIGURE 10**

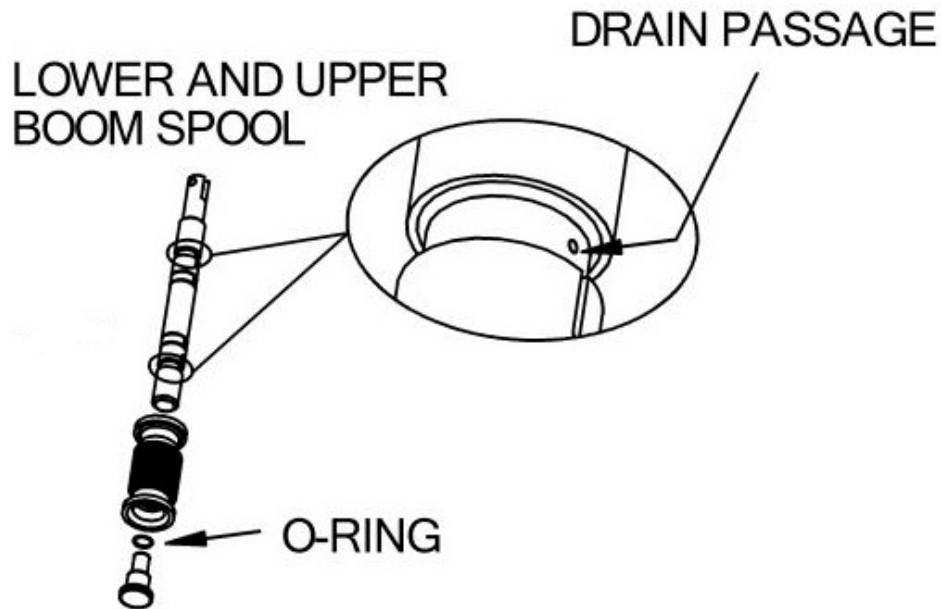


Escaping fluid under pressure can penetrate skin causing serious injury.

Relieve pressure before disconnecting hydraulic lines. Keep away from leaks and pin holes. Use a piece of cardboard or paper to search for leaks. **DO NOT** use your hand.

## STEP 5

Remove and replace the lower boom valve spool with 625288 (valve spool with black spring and drain passages). If spring is not installed, install O-ring on spring retaining bolt.



## STEP 6

Remove and replace rotate valve spool with 624724 (valve spool with chrome spring).

## STEP 7

Remove and replace upper boom valve spool with 625288 (valve spool with black spring and drain passages). If spring is not installed, install O-ring on spring retaining bolt.

## STEP 8

Re-install the caps on the bottom of the upper control valve assembly for enable, lower boom, rotate and upper boom. Torque to 5 ft-lbs.

## STEP 9

Swap pilot lines for the lower boom down with lower boom up, clockwise rotate with counter-clockwise rotate and upper boom down with upper boom up.

**Note:** Functions will be swapped until Procedure 3 Lower control rework is completed.

## STEP 10

Re-install the platform rotate spiral retaining ring.

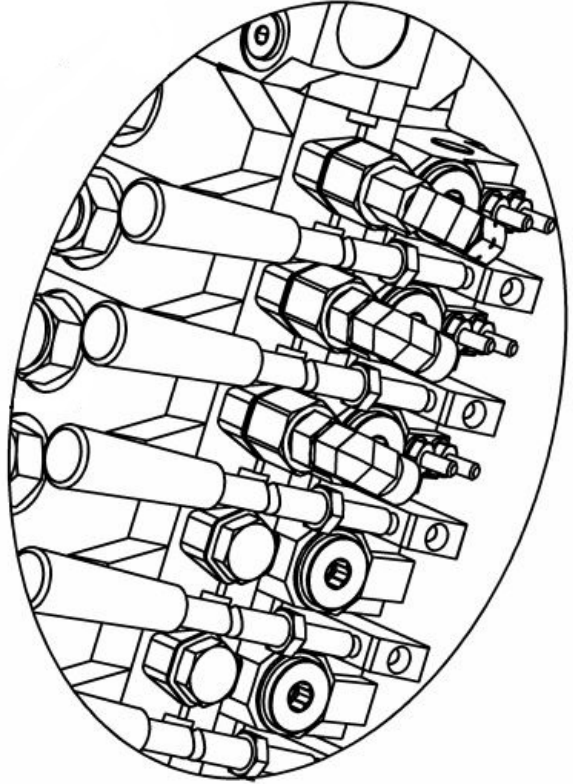
## STEP 11

To test verify the lower boom, rotate and upper boom direction matches decal on the control head.

## Procedure 3 - Lower Control Rework

### STEP 1

Remove the lower control cover, then remove the lower boom and upper boom handles.



### STEP 2

Swap the lower boom and upper boom hoses and fittings on the lower control valve assembly.

Swap the lower boom and upper boom pilot lines on the lower control valve assembly.

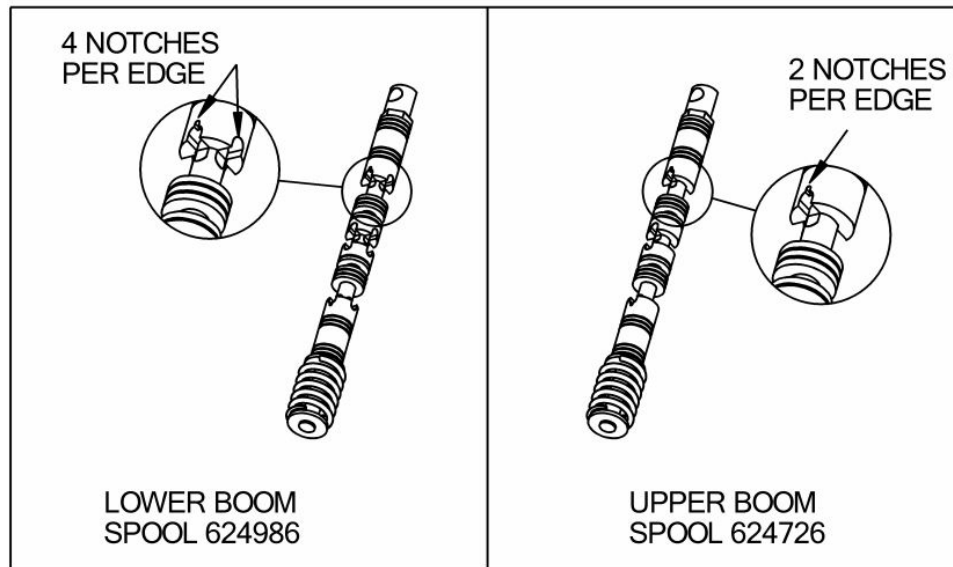
### STEP 3

Remove the caps on the back side of the lower control for lower boom and upper boom spools

Discard plug.

## STEP 4

Remove and replace the spools for lower boom and upper boom. Refer to detail E to determine lower boom and upper boom spools.



DETAIL E

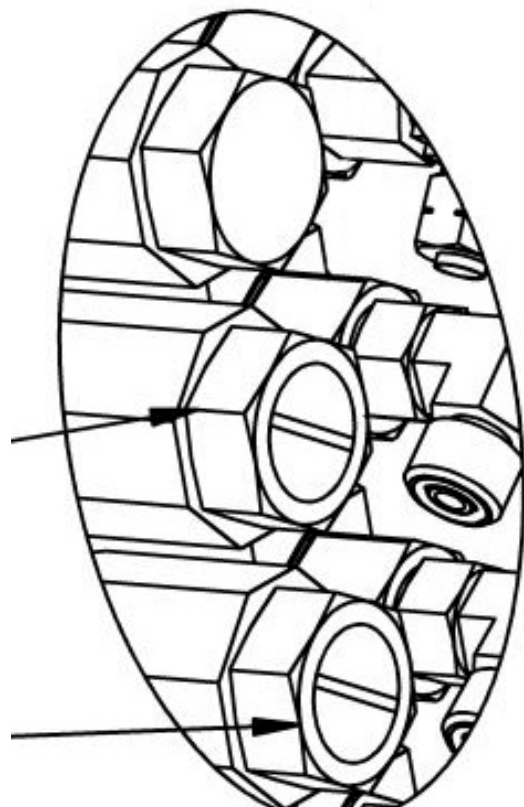
## STEP 5

Re-install handles.

## STEP 6

Install adjuster plug 624727. Turn adjuster plug in just to the point where it makes contact with the spool.

**Note:** Do not turn in adjuster plug to compress the spring back.

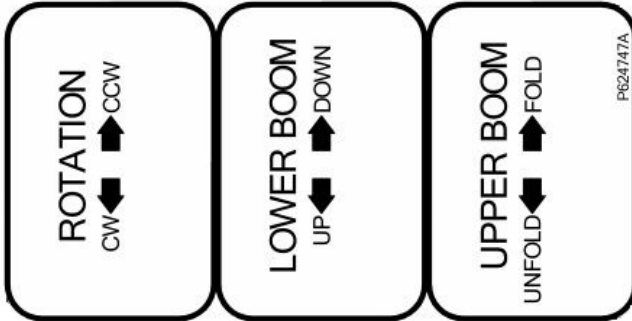


## STEP 7

Remove decal for rotate, upper boom and lower boom. Replace with decal for rotate, lower boom and upper boom.

## STEP 8

To test, verify the lower boom and upper boom directions correctly match the decal.



## Procedure 4 - Reset Compensation

### STEP 1

Set the compensation after tools, upper controls and lower controls have all been reworked.

Refer to **Tech Tip 80** for instructions to set the compensation.



FOR FURTHER ASSISTANCE,  
CONTACT THE TEREX UTILITIES TECHNICAL SUPPORT TEAM  
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