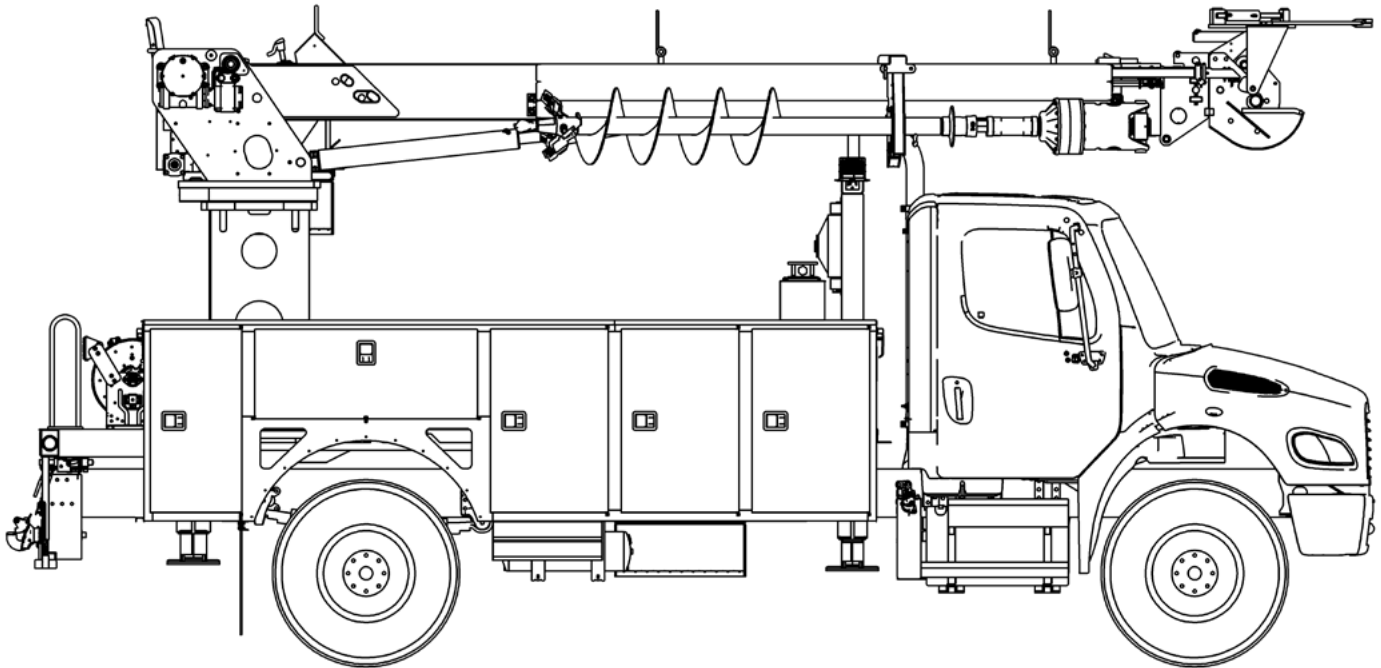




# TECH TIPS

VACUUM PREVENTION SYSTEM TESTING ON CATEGORY C DIGGER DERRICKS **NO. 29**



**SERVICE CALL:**  
VACUUM PREVENTION SYSTEM  
TESTING ON CATEGORY C DIGGER  
DERRICKS



**MODEL(S):**  
ALL CATEGORY C DIGGER  
DERRICKS WITH FOOT VALVES  
INSTALLED




**TOOLS NEEDED:**  
A JUMPER HOSE WITH PRESSURE  
GAUGE AND APPROPRIATE  
FITTINGS


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**! 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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# CONTENTS

## TECH TIP #29

### TOC

4

- | *Preoperation inspection*
- | *Operate all functions*
- | *Install jumper hose*

**INTRODUCTION**  
**STEP 1 - STEP 5**

5

- | *Install the pressure gauge*
- | *Record the values*

**STEP 6 - STEP 9**

## INTRODUCTION

The vacuum prevention system is required by ANSI Standard on units with a sheave height of 50 foot or greater to keep the hydraulic oil in the lines to prevent a vacuum from forming, which reduces the dielectric strength.

Check valves are located in the hydraulic lines to keep the oil in the line. Typically they are located just above the 'collector block' or hydraulic swivel joint. With controls below rotation, the foot valves are typically installed at the pressure and return line going into the lower control valve. The following procedure will test the check or 'foot' valves.

## STEP 1

Perform the pre-operation inspections according to the manual and company policies.

## STEP 2

Operate all unit functions to make sure hoses are filled with oil.

## STEP 3

If a tilting pole plumber is installed, it must be pinned to the 2nd with the pole guides open and NOT in the fully UP position.

## STEP 4

Install the jumper hose or pressure gauge in the configuration listed in Step 5, 6, or 7 as applicable to the unit being tested. Only one of the tests listed needs to be performed. The pressure reading should stabilize at 30-60 PSI and hold for a minimum of 30 seconds. This will indicate that the check valves will hold oil in the line.

## STEP 5 (IF EQUIPPED)

Install jumper hose with gauge between the Tool Pressure and Tool Return couplers. This test point can only be used if the tool couplers are above rotation.



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 6

Install the pressure gauge in the pole guide tilt system where it is most convenient. This will probably be at the boom tip.

## STEP 7

Install pressure gauge in the pole guide open or close system where it is most convenient. This will probably be at the boom tip.

## STEP 8

Store the booms in the travel position. Turn off the chassis engine. Cycle the control handles to bleed off any trapped pressure.



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 9

Record the value for the system tested in the inspection form for the unit tested.



## TESTING FOOT VALVES



FOR FURTHER ASSISTANCE,  
CONTACT THE TEREX UTILITIES TECHNICAL SUPPORT TEAM  
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