

TM10742 - 135D Excavator Blade Main Relief Valve Test and Adjustment

Blade Main Relief Valve Test and Adjustment

IMPORTANT:

Relief pressure setting is higher when operating blade down function. The blade down circuit relief and anticavitation valve is set higher than blade up circuit relief and anticavitation valve. The difference is noticed when checking both blade up and blade down circuits over relief.

-: Specifications

SPECIFICATIONS	
Hydraulic Oil Temperature	45—55°C 110—130°F
Engine Speed Dial Position	1650—1750 rpm
Work Mode Switch Preload	Dig Mode
Power Mode Switch Position	P (Standard) Mode
Auto-Idle Switch Position	OFF
Blade Up Relief Valve	27.5 MPa approximate 27 500 kPa approximate 275 bar approximate 3989 psi approximate
Blade Down Relief Valve	39.2 MPa approximate 39 200 kPa approximate 392 bar approximate 5685 psi approximate
Blade Main Relief Valve Pressure Change	3.8 MPa approximate per 1/4 turn 3378 kPa approximate per 1/4 turn 34 bar approximate per 1/4 turn 490 psi approximate per 1/4 turn
24 mm Lock Nut Torque	9.82 N·m 7.2 lb-ft

-: Service Equipment and Tools

SERVICE EQUIPMENT AND TOOLS
ST 6291 (13/16-16 UNF x 13/16-16 UNF x 1/4 NFPT) Tee Adapter
Gauge 70 000 kPa (700 bar) (10,000 psi)
JT02156A Digital Pressure/Temperature Analyzer
JT02160 Transducer, 70 000 kPa (700 bar) (10,000 psi)
24 mm Combination Wrenches

The purpose of blade main relief valve is to limit the maximum hydraulic system pressure in the blade circuit. The valve is

checked and adjusted to protect components from damage caused by excessive pressures.

1.



CAUTION:

Avoid injury from escaping fluid under pressure. The hydraulic oil tank is pressurized. Stop engine and relieve pressure in the system before disconnecting hydraulic lines.

Stop engine and release hydraulic oil tank pressure by pushing pressure release valve at top of hydraulic oil tank.

2. Disconnect delivery line from blade pump. [See Blade Hydraulic System Component Location](#) for blade and line connection location. (Group 9025-15.)
3. Install tee adapter and connect delivery line to tee adapter.
4. Install JT02156A Digital Pressure/Temperature Analyzer and JT02160 Transducer or 70 000 kPa (700 bar) (10,000 psi) gauge.
5. Warm hydraulic oil to specification. [See Hydraulic Oil Warm-Up Procedure](#) . (Group 9025-25.)
6. Run machine at specification.

Item	Measurement	Specification
Hydraulic Oil	Temperature	45—55°C 110—130°F
Engine	Speed	1650—1750 rpm
Work Mode Switch	Position	Dig Mode
Power Mode Switch	Position	P (Standard) Mode
Auto-Idle Switch	Position	OFF

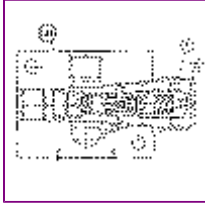
7. Slowly operate blade function over relief. Record blade main relief valve pressure reading.

8. **NOTE:**

If blade circuit main relief valve does not meet specification adjustment can be made.

Adjust the blade main relief valve pressure as needed.

Item	Measurement	Specification
Blade Up Relief Valve	Pressure	20.6 MPa approximate 20 600 kPa approximate 206 bar approximate 2990 psi approximate
Blade Down Relief Valve	Pressure	39.2 MPa approximate 39 200 kPa approximate 392 bar approximate 5685 psi approximate



9. TX1035360-UN: Blade Main Relief Valve

LEGEND:

- 1 - 24 mm Lock Nut
- 2 - Adjusting Screw
- 136 - Blade Main Relief Valve

Loosen 24 mm lock nut (1).

10. Turn adjusting screw (2) to change blade main relief valve setting. Turn clockwise to increase pressure. Turn counter clockwise to decrease pressure.
11. Hold adjusting screw. Tighten 24 mm lock nut to specification.

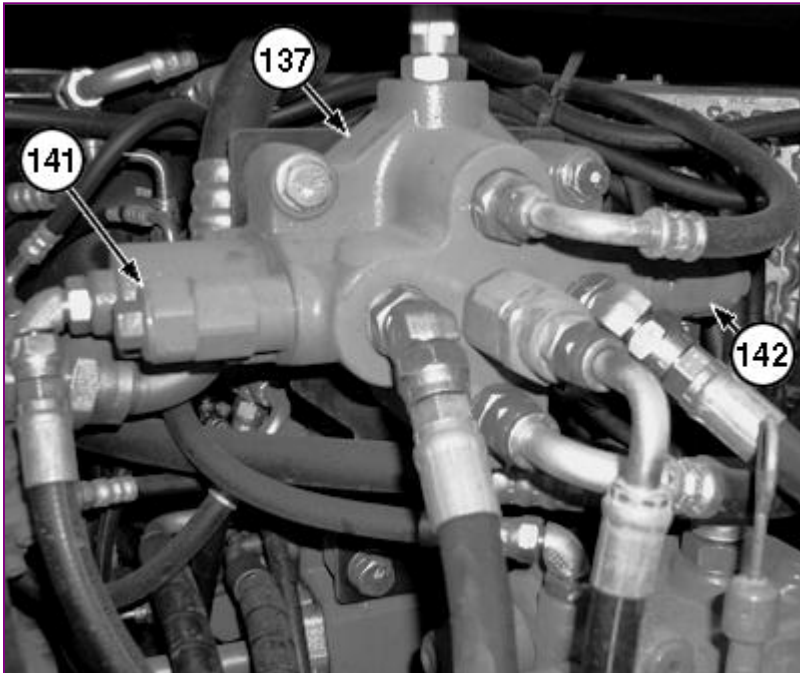
Item	Measurement	Specification
24 mm Nut	Torque	9.82 N·m 7.2 lb-ft

12. Check pressure again.

13.



Do not adjust circuit relief valves.



TX1035386A-UN: Blade Control Valve Circuit Relief and Anticavitation Valves

LEGEND:

- 137 - Blade Control Valve
- 141 - Blade Up Circuit Relief and Anticavitation Valve
- 142 - Blade Down Circuit Relief and Anticavitation Valve

If pressure specification cannot be achieved by adjusting blade main relief valve replace circuit relief and anticavitation valves (141 and 142).

14. Check pressure again.