SERVICE MANUAL

1037
Bale Wagon

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Hydraulic systems - Adjust – Main relief valve

For the hydraulic system schematic, see **Hydraulic systems - Hydraulic schema (35.000)**.

Main relief valve – Check

1. Install a pressure gauge in the gauge port **(C)** in the tee between the **(B)** port of the first table valve and the **(D)** port of the lock-out valve.

NOTE: *Use a pressure gauge with a minimum pressure rating of* ***20684 kPa (3000 psi)*** *or* ***207 bar***

On later models, install the pressure gauge in the gauge port **(A)** on the bottom of the aluminum manifold used to house the main system relief valve.

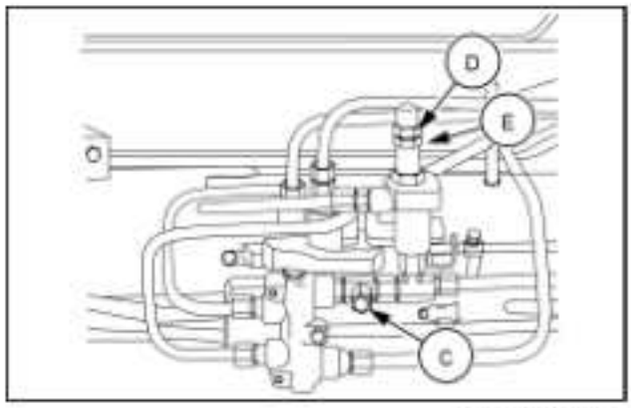
2. If required, adapt the pressure gauge to the straight thread gauge port **(C)**, with the parts outlined in **Hydraulic systems - Adjust – Priority relief valve (35.000)**, minus the adapter (**512527**).

NOTE: *Use one adapter (* ***512519****) and one O-ring (* ***128825****).*

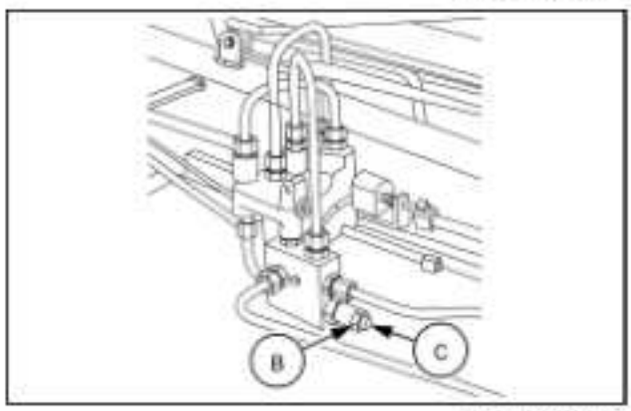
3. Start the tractor, and then engage the Power Take-Off (PTO). Slowly bring the PTO speed up to the rated speed of **540 RPM**.
4. Pull the second table manual control and hold until the system bypasses.

The pressure should read **13455 - 14835 kPa** (**1950 - 2050 psi**) or **134.5 - 148 bar**.

5. Disengage the PTO, turn off the tractor engine, and remove the key.



1



2

Main relief valve – Adjust

To adjust the main pressure relief valve:

1. Remove the acorn nut from the relief valve **(D)**.
2. Loosen the jam nut **(E)** or **(B)**.
3. Turn the adjusting screw clockwise to increase the pressure, or counterclockwise to reduce the pressure.

   NOTE: *Make small incremental adjustments of a 1/2 turn.*
4. Once the pressure is within the specified range, tighten the jam nut.
5. Install the acorn nut onto the relief valve.

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Hydraulic systems - Inspect – Hydraulic pump (Cessna)

General information

1. Clean and dry all parts with a suitable solvent.
2. Remove any nicks and burrs from all parts with emery cloth.

   The following parts should be replaced at every major overhaul.

   - Diaphragm
   - Back-up gasket
   - Diaphragm seal
   - Protector gasket
   - Shaft seal
   - All O-rings

Gear assembly

1. Inspect both the drive gear and idler gear shafts at the bearing points and seal areas for rough surfaces and excessive wear.
2. If the shafts measure less than **17 mm** (**0.6850 in**) in the bearing area, then the gear assembly should be replaced.

NOTE: *One gear assembly may be replaced separately. The shafts and the gears are only available as assemblies.*

3. Inspect the gear face for scoring and excessive wear.
4. If the gear width is below the following value for the corresponding pump displacement, then the gear assembly should be replaced.

Pump displacement	**6.9 cm³/rev (0.423 in³/rev)**	**8.3 cm³/rev (0.507 in³/rev)**	**9.9 cm³/rev (0.602 in³/rev)**	**11.9 cm³/rev (0.729 in³/rev)**	**14.3 cm³/rev (0.870 in³/rev)**
Gear width	**8 mm (0.309 in)**	**9 mm (0.371 in)**	**11 mm (0.441 in)**	**14 mm (0.535 in)**	**16 mm (0.636 in)**
Pump displacement	**23.0 cm³/rev (1.402 in³/rev)**	**20.5 cm³/rev (1.250 in³/rev)**	**24.7 cm³/rev (1.505 in³/rev)**	**29.7 cm³/rev (1.810 in³/rev)**	
Gear width	**19 mm (0.767 in)**	**23 mm (0.924 in)**	**43 mm (1.707 in)**	**35 mm (1.330 in)**	

5. Make sure that the snap rings are in the grooves on either side of the drive gears and idler gears.
6. If the edges of the gear teeth are sharp, break the edge with emery cloth.

Front and back plates

1. The oil grooves in the bearings in both the front plate and the back plate should be in line with the dowel pin holes and **180 °** apart. This positions the oil grooves closest to the respective dowel pin holes.
2. If the inner diameter of the bearings in the front plate or the back plate exceed **18 mm** (**0.691 in**), the front or the back plate should be replaced.

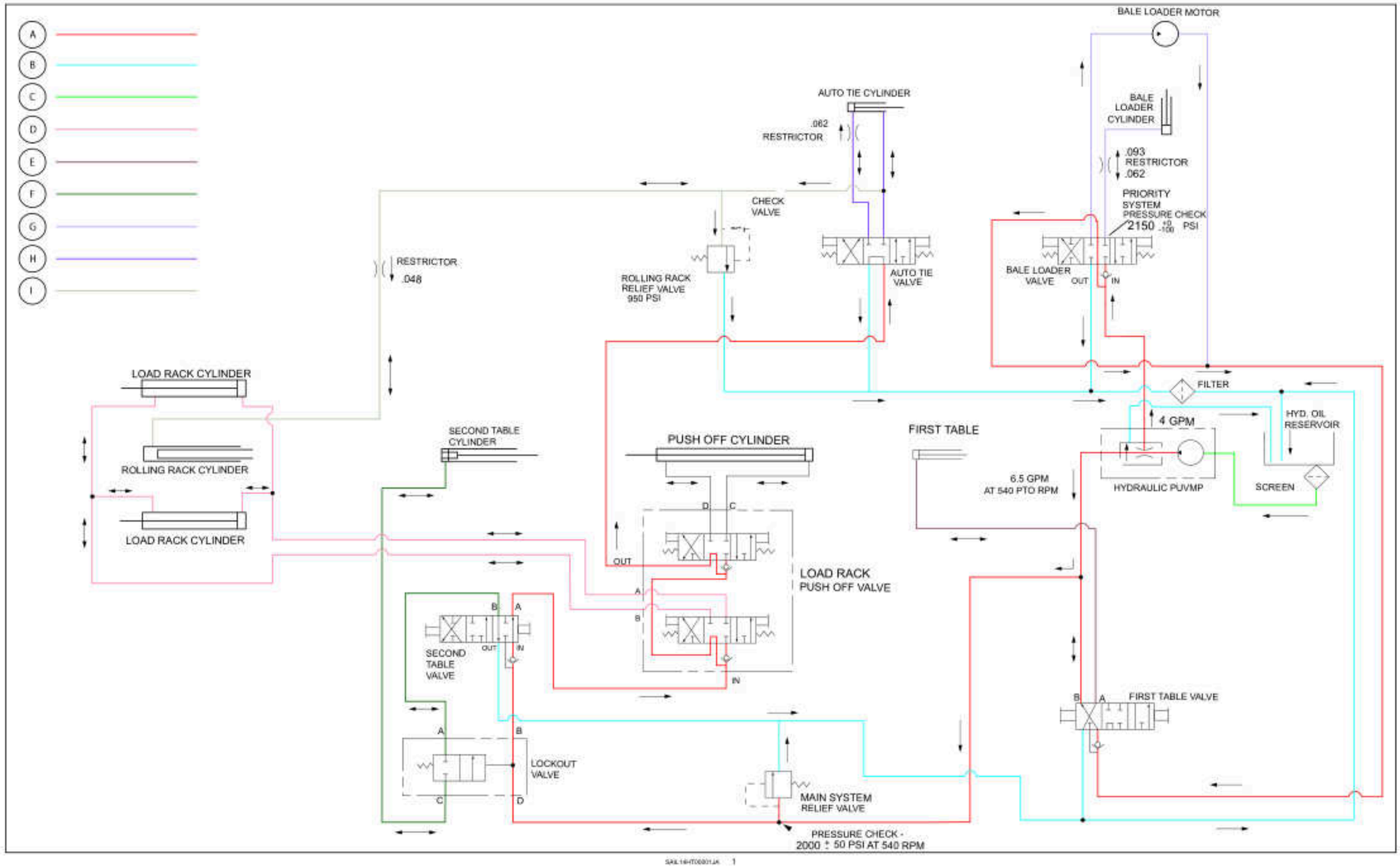
NOTE: *The bearings are not available individually.*

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Control valve - Troubleshooting

Problem	Possible Cause	Correction
Sticky valve spool.	Misaligned control linkage.	Correct alignment.
	Foreign matter in spool bore.	Remove spool and clean bore.
External leakage.	Damaged O-rings.	Disassemble valve and replace O-rings.
Work load lowers with spool in "slow-raise" position.	Damaged lift check plunger.	Replace lift check plunger.
	Damaged lift check seat in body.	Replace spool and body assembly.
	Damaged O-ring on lift check plug.	Replace O-rings.
Load drops with spool in centered position.	Damaged cylinder packing.	Replace cylinder packing.
	Line to cylinder leaking.	Tighten fittings or replace hose.
	Damaged O-ring in "circuit control" chamber.	Remove relief valve and replace O-rings and back-up washer.

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