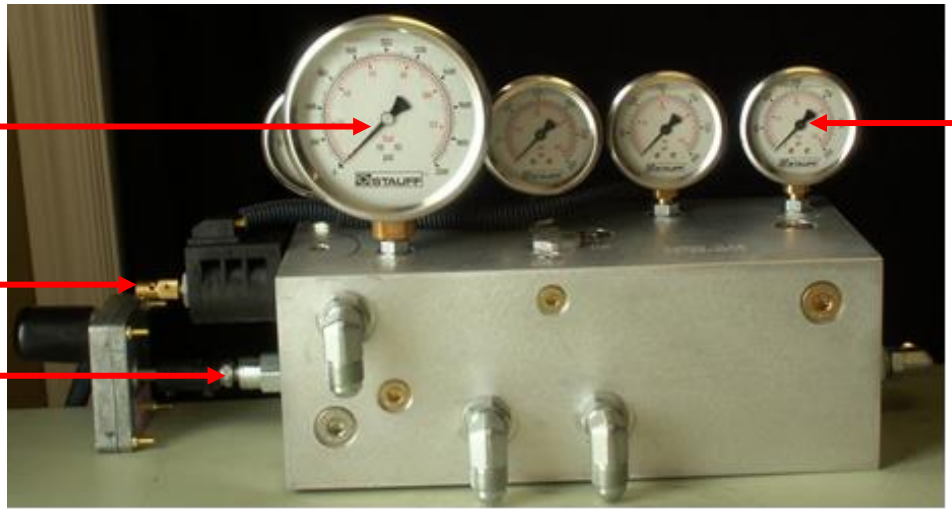
NON-SMART OPENER LEAK DOWN AND BYPASS TUTORIAL

On/Off Valve Function Test Procedure

1. Start by unfolding the drill and floating all hydraulic circuits on the tractor.
2. Next, close the hand ball-valve on the back of the main block behind the shank down gauge.
3. Lift the openers all the way up and unhook the opener hoses from the tractor.
4. Start a timer to see how long it takes for pressure to build on the large shank down gauge and for the openers to start dropping. If it builds pressure within 10 minutes, we want to know what the pressure change is and how long it took to get there. This is a sign of an opener cylinder internal seal leaking.

Note: If the opener down pressure builds, proceed to the cylinder bypass test procedure.

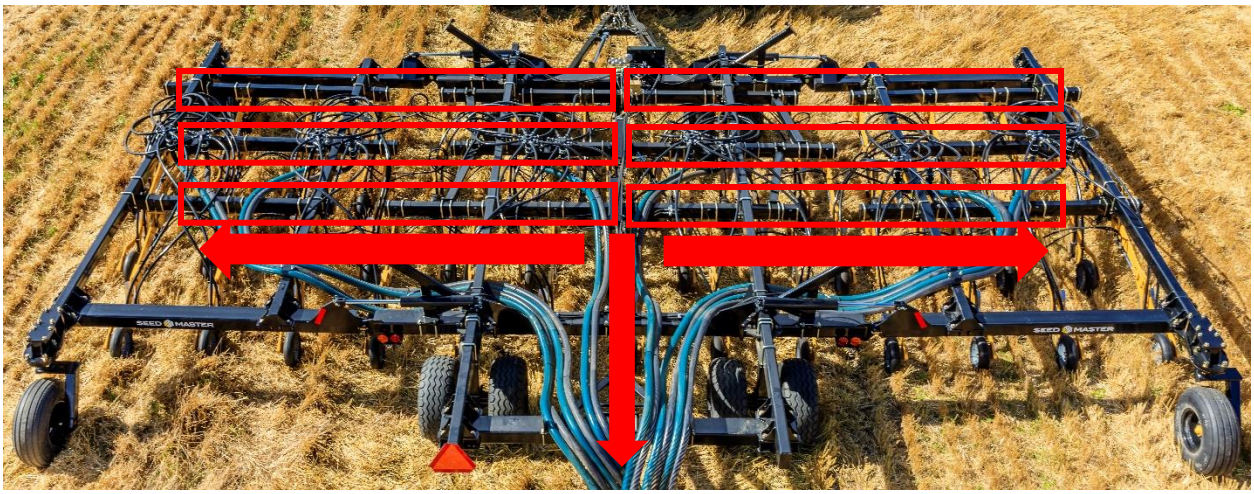
5. If the openers stay up and no pressure is built within 10 minutes, open the hand valve again.
6. If the openers start to drop, this is a sign of the on/off valve bypassing on the main block.
7. If the openers do not drop and the gauges do not change, the on/off valve is good.
8. Activate the system pressure and turn on the opener pressure switch.
9. Confirm that the openers drop. If they do not, check for power, ground, and on/off valve function.
10. If the openers start to drop when opener pressure is turned on, wait one minute while watching the large shank down gauge to see if it will build pressure.
11. If the opener pressure does not build, inspect the shank pressure adjustment relief valve.
12. If the openers pressure up, then increase and decrease the relief valve manually to confirm operation while tractor remote is disconnected.
13. If the openers function properly and pressure up and down, reconnect the tractor and test again. If there is a problem maintaining pressure, this is a sign of a tractor remote bypassing.



NON-SMART OPENER LEAK DOWN AND BYPASS TUTORIAL

Cylinder Bypass Procedure

1. Shut off all active hydraulics.
2. Close the hand ball-valve at back of the main hydraulic block.
3. Set the tractor remote which is raising and lowering the openers to constant flow on your tractor.
4. Set that same remote's flow control to max flow.
5. Lock the remote which is raising and lowering the openers with a constant flow to the raising position.
6. After at least 20 minutes of the tractor running and remote lifting your openers in the up position with constant flow, go to the main frame of the drill and look at the first, second, and third row of openers on the drill. There is a main set of hydraulic lines that runs from the first, to second, to third in the center of the machine. This gives us six quadrants on the drill.
7. Starting from the middle, check all six of the first opener cylinders on each quadrant for heat. A best practice is to use a digital temperature read out.
8. Find which one of the six is hotter than the rest, then work your way out from cylinder to cylinder until you get to the last hot cylinder.
9. The last cylinder will be the bypassing cylinder.
10. Replace and test again to ensure that you do not have multiple bypasses.



We thank you for maintaining your SeedMaster equipment. If you have any questions, please contact your SeedMaster Certified Dealer directly.