SEEDMASTER DRILL SETTING TUTORIAL

Opener Settings

The SeedMaster opener is a dual knife design. The lead knife places fertilizer and handles fracturing the soil to open the furrow. The second knife places seed. It is designed with an angled carbide to open the seed furrow while moving soil over to cover the fertilizer furrow ensuring product separation and safety. The packer wheel controls the depth of the seed and fertilizer knives. To adjust the depth of the opener, there are markings on the packer plate which identify ¼" depth adjustments. As seen in the images, the factory setting is set to 3/4" seed depth represented by the indentation on the packer plate. You can adjust the packer wheel to increase or decrease seed and fertilizer depth as desired. On drills manufactured from 2016 and newer, the depth adjustment plate has become SeedMaster's Quick Depth Adjust. Utilizing our Quick Depth Adjust Wrench, depths can be set accurately and consistently across the drill in 1/8" increments (Figure 2). The fertilizer knife depth can be increased on its own by 3/8" beyond the factory set point. This is done by removing the fertilizer knives from the opener and reinstalling each one in the bottom hole.

Figure 1

Figure 2

Once all the openers have been set to the user's desired depth, we need to confirm there is enough hydraulic pressure applied to keep the fertilizer knife forward and fully engaged. A good starting point is a hydraulic pressure of 1000 psi which can be increased and decreased as desired. If the hydraulic pressure is too high, the openers will look rigid and won't contour to their full capability and can be decreased. If the pressure is not adequate, the fertilizer knives will begin to trip backwards in the soil. Increase the hydraulic pressure until you see the knives pull forward and stay fully engaged. After that, the hydraulic force for the packing pressure can be adjusted to set the seed bed soil pack to the appropriate level for soil type, conditions, crop requirement, and user preference.

Note: To increase seed bed packing, increase the amount of hydraulic pressure to the openers.

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Packing Force

Packing Force can be adjusted on your drill either manually or automatically depending on its date of manufacture. Manual adjustment leaves the setting up to the user to set pressures up and down utilizing either a switch box or touchscreen monitor. Automatic adjustment occurs with the use of either an Auto Adjust Packing Force Sensor (MY2015 and earlier), or a Hydraulic Packing Pressure Transducer (MY2016 and later). The user inputs the pressure they desire, and the sensors keep the system operating at that set value.

When operating an Auto Packing Force Sensor (Figure 3), it is important to remember to zero the packing sensor before putting the openers down and applying hydraulic packing pressure. To begin setting in the field, set the hydraulic packing pressure at the starting point of 1000 psi referenced on page 1 of this tutorial. Switch the Auto Packing Force Sensor to Manual mode and note the actual packing pressure in pounds. Using the Opener Pressure gauge to reference hydraulic pressure, increase and decrease the PWM value on your monitor as desired. If the hydraulic pressure is too high, the openers will look rigid and won't contour to their full capability and can be decreased. If the pressure is not adequate, the fertilizer knives will begin to trip backwards in the soil. Increase the hydraulic pressure until you see the knives pull forward and stay fully engaged. After that, the hydraulic force for the packing pressure can be adjusted to set the seed bed soil pack to the appropriate level for soil type, conditions, crop requirement, and user preference. Once the appropriate hydraulic pressure has been determined, the corresponding Auto Packing Force Sensor value can be recorded and set. Switch your sensor back to Auto mode and begin seeding. Note anything over 200lbs may not be achievable.

Figure 3

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When operating a Hydraulic Packing Pressure Transducer (Figure 4), it is important to remember to zero the sensor before applying opener pressure. To begin setting in the field, switch it to Manual mode and note the actual hydraulic packing pressure in PSI (pounds per square inch) on the monitor. Increase the pressure manually and see if the packing pressure increase on the manual gauge on the hydraulic block matches that of the reading on your monitor. It should increase and decrease together in manual mode while seeding. If the hydraulic pressure is too high, the openers will look rigid and won't contour to their full capability and can be decreased. If the pressure is not adequate, the fertilizer knives will begin to trip backwards in the soil. Increase the hydraulic pressure until you see the knives pull forward and stay fully engaged. After that, the hydraulic force for the packing pressure can be adjusted to set the seed bed soil pack to the appropriate level for soil type, conditions, crop requirement, and user preference. Once the appropriate hydraulic pressure has been determined, the corresponding can be recorded and set on your monitor. Switch back to Auto mode and begin seeding. Note anything over 1400 PSI may require adjustment of all drill hydraulic functions to ensure proper drill performance.

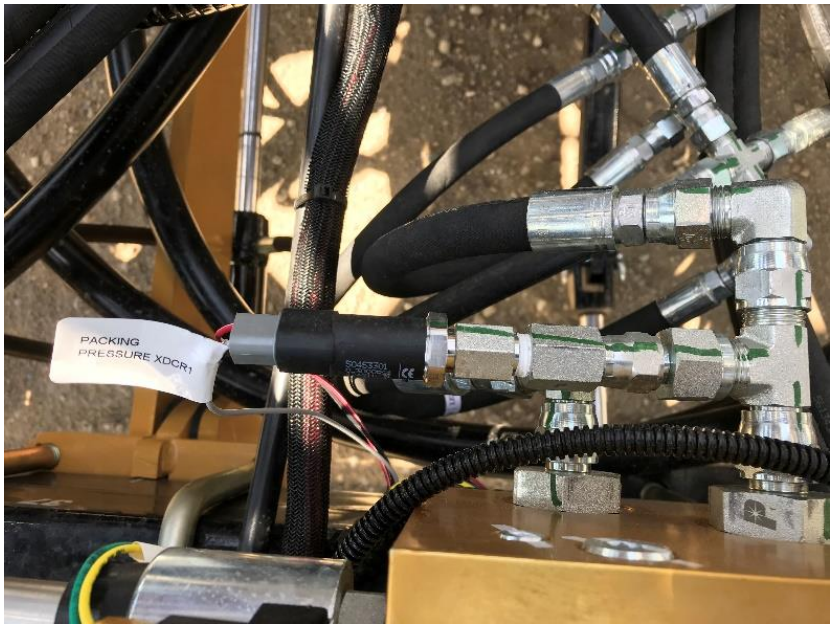

Figure 4

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Hydraulic Pressure Settings

The System pressure should remain active with a constant flow from the tractor adjusted to maintain pressure in the range of 2500-2900psi without fluctuation. System pressure controls all active functions of the drill: unfolding, wing-down pressure, lift kit pressure, opener pressure (without Smart Openers), metering, and any additional options.

Figure 5

The wing-down pressure needs to have enough pressure to allow the drill to contour properly and counter act the opener pressure. The wing down pressure can be adjusted with the system pressure active.

Note: The wing down pressure may need to be increased if the wings begin to float and not contour properly while in the seeding position. The wing down pressure may need to be decreased if the wings become too rigid while in the seeding position. Wing down can change the frame height affecting the opener performance in each section of the machine.

The wing down pressure gauge is for reference. Visual inspection of the frame height, evenness, and product placement is sometimes the best way to decide if an adjustment is required.

Figure 6

Lift kit pressure is only required for seeding in wet conditions. If the lift kit has active pressure on it while seeding it is, in fact, lifting the front of the machine for added flotation. The lift kit can change frame height affecting opener performance. This pressure can be adjusted lower if flotation is not required.

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Opener pressure can be adjusted while seeding. This pressure keeps the openers in the ground and packing pressure on the packer wheels.

It is recommended to start at 1000 psi of opener pressure and then begin to manually adjust. Visually inspect the openers and determine if enough hydraulic pressure is being applied to keep the fertilizer knife forward and fully engaged.

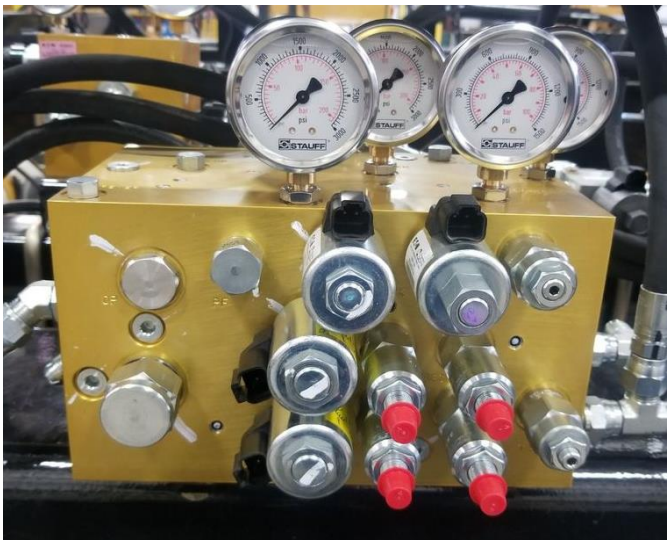

Figure 7

To check penetration and product placement, stop while everything is active with the openers in the ground. Check behind the seed and fertilizer knives and scratch out behind the packer wheel. This will help determine if the knife depths are adequate, if product is placed at the bottom of the furrows, and if the seed bed is packed properly. If the knives are not at the level desired, adjust the packer tire up or down accordingly. If there is no product at the bottom of the furrows, adjust the cart fans accordingly. If the seed bed is not packed properly, adjust the opener pressure up or down accordingly.

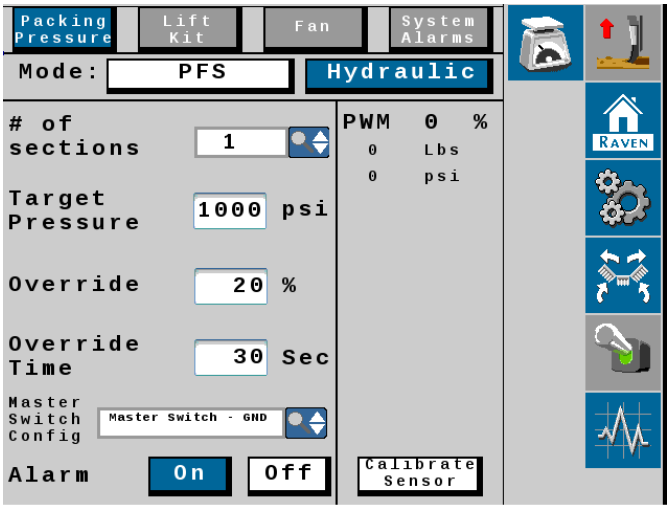

Figure 8

Once the drill reaches 1400 psi of opener pressure for packing or placement, it is recommended to adjust the openers a notch deeper and then start over with determining the required packing pressure for the machine. At 1400 psi, there is enough packing pressure to start manipulating the frame of the drill. This in turn requires attention to wing down pressure to ensure the machine is contouring and seeding as the operator wishes the machine to perform.

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