

Swanson Portable Plot Thresher



Model B-1

The Swanson Portable Plot Thresher is designed as a portable, intermediate sized thresher. It is suitable for threshing experimental plot samples where larger machines are not practical.

Transportation and Installation

Transporting

- Make certain the thresher is correctly outfitted to comply with all local regulations and codes for towing and transporting on public roadways.
- Firmly attach hitch to towing vehicle, checking that all locking mechanisms are firmly seated and safety pin is in place.
- Make sure that the front leveling jack is fully retracted before towing.
 - Failure to do so could damage the thresher and/or cause unsafe towing conditions.
- Tire pressure should be 30 psi
- Operate towing vehicle at a safe speed.

Positioning

- Position the thresher so that it is level.
 - This allows uniform distribution of the product that falls upon the shaker pan, resulting in best possible separation.
- Avoid placement of the thresher in positions that allow high velocity winds to enter the thresher from the rear.
 - This may cause irregular cleaning action and chaff blow back.
 - High crosswinds may cause similar problems as well.
- Chock the tires for added stability and safety.
- Check to see that the clutch is disengaged before trying to start engine.
- Do not operate the thresher in a closed building; make sure work area has proper ventilation (gasoline engine driven unites only).

Set-Up

- Place a suitable receptacle under seed discharge spout.
- If equipped, lower rear stabilizers to needed position.
 - You may need to detach the thresher from the towing vehicle and lower the leveling jack to position the rear stabilizers, then raise the leveling jack to seat the rear stabilizers firmly on the ground.
 - It may also be necessary to then re-hook up the thresher to the towing vehicle for added stability during threshing.
- Before starting make sure all belt guards are in place.

Set-Up (Continued)

- Throttle must be in idle position.
 - Failure to do so may cause the machine to engage prematurely.
- Check to make sure the safety kill switch is in the on position.

Operation

- Start the engine per engine manufactures recommendations (cold engines may require chocking) and let the engine worm up until it will run with the choke off.
- Slowly engage the thresher and then slowly raise the engine speed to the rpm needed to thresh your product.
- Place the crop to be threshed on the feeder pan.
- Use care and uniformly meter the crop into the feeder housing. Do not put hands into feeder housing; severe injury will result.
- Do not overload the thresher.
 - Keep the cylinder working smoothly with even feeding.
 - Best results are achieved by feeding the crop into the thresher heads first.
- It may be necessary to further clean the sample depending on the type of material and the results desired.
- Stop the threshing process by returning the throttle to the idle position and then disengage the clutch and hit the safety kill switch on the motor.

Adjustments

Speed

- The throttle on the gas powered motor controls the overall speed of the unit.
- The thresher cylinder speed is adjusted by two adjustable speed pulleys.
- To adjust these you will need to disconnect all power sources and remove the safety shield on the left side of the machine.
- You then have to remove the cylinder drive belt to make the needed adjustments.
 - It may be necessary to use a different size belt after adjustments are made.
- Initial cylinder speed settings are provided in the cylinder / concave settings chart.
- Using a handheld tachometer could be helpful to properly set and maintain the speed of the threshing cylinder.

Speed (Continued)

- Cylinder speed is critical for proper threshing.
 - If the speed is too slow, incomplete threshing of the crop may result. If the speed is too high, seed damage may occur.

Concave Clearance

- Concave clearance is adjusted by the two bolts on each side of the top of the concave gate and by the cylinder adjustment bolts on both sides on the threshing unit.
- Initial settings are provided in the cylinder / concave settings chart.
- Concave clearance is critical for proper threshing.
 - If the clearance is too narrow, seed damage may occur.
 - If the clearance is too wide, incomplete threshing of the crop may result.

Note: Different combination of cylinder speed and concave clearance will produce different threshing results. Threshing (crop) conditions will change throughout the course of a day and adjustment may be necessary.

Other Adjustments

Fan

- The fan can be adjusted by two adjustable speed pulleys.
- To adjust these you will need to disconnect all power sources and remove the safety shield on the left side of the machine.
- You will then have to remove the fan drive belt to make the needed adjustments.
 - It may be necessary to use a different size belt after adjustments are made. Normal operating range for the fan is around 775 rpm.
- You can adjust the volume of air by using the air gate control handle on the right side of the fan housing.
- Additional control can be attained by raising or lowering the air gate on the back of the threshing unit.

Sieve

- The height and position of the internal baffle can be adjusted to help control the rate of material flow over the sieve.
 - The sieve allows mechanical separation of seed and trash.
- Raise the back section of sieve to attain an uphill material flow to increase cleaning ability and slow material flow across the sieve.
- Lower the back section of sieve to attain an even material flow over the sieve and decrease cleaning ability and hasten material flow across the sieve.
- It may be necessary to raise or lower the front of the unit with the leveling jack to attain even more adjustments of product flow through the machine.

Shake

- The shake can be adjusted by two adjustable speed pulleys.
- To adjust these you will need to disconnect all power sources and remove the safety shield on the left side of the machine.
- You will then have to remove the shake drive belt to make the needed adjustments.
- It may be necessary to use a different size belt after adjustments are made.
- Normal operating range for the shake is around 290 strokes per minute.

INITIAL CYLINDER / CONCAVE SETTING CHART

Effective speed range of the standard threshing cylinder drive is ~400 to ~1500 RPM (± 100).

Crop	Cylinder RPM Range	Front Bar to Cylinder
Alfalfa	750 - 1600	1/16 - 3/16
Barley	900 - 1400	3/16 - 5/16
Beans, Edible	200 - 700	1/2 - 5/8
Beans, Soy	550 - 950	5/16 - 1/2
Buckwheat	900 - 1300	3/8 - 1/2
Canary Grass	1000 - 1300	1/16 - 3/16
Canola	900 - 1200	1/8 - 3/16
Clover	750 - 1600	1/16 - 3/16
Corn	400 - 700	7/8 - 1 1/4
Flax	1000 - 1600	1/16 - 3/16
Grass, Most varieties	1200 - 1600	1/16 - 1/8
Lentils	550 - 850	1/4 - 1/2
Lespedeza	950 - 1200	1/16 - 1/4
Lupine	550 - 800	1/8 - 3/8
Mustard	900 - 1100	1/8 - 3/8
Oats	1100 - 1500	1/8 - 5/16
Peas, Field	450 - 650	1/2 - 3/4
Pearl Millet	1050 - 1450	1/8 - 3/16
Radish Seed	950 - 1200	1/8 - 3/16
Rape Seed	1100 - 1600	1/16 - 3/16
Rice	900 - 1100	1/8 - 5/16
Rye	1150 - 1400	1/8 - 5/16
Safflower	600 - 900	1/8 - 3/8
Sorghums	750 - 950	3/8 - 5/8
Sunflower	550 - 750	1/2 - 5/8
Timothy	1100 - 1500	1/8 - 3/16
Trefoil, Birds Foot	1000 - 1100	1/8 - 3/16
Wheat	1000 - 1200	3/16 - 5/16

Concave settings are measured between the highest point on the threshing cylinder rasp-bar, and the first bar on the concave. This distance can be set easily by placing a block of the desired thickness in this area, and adjusting the concave until it clamps the block between it and the cylinder. Then remove this block by hand after locking the concave in position.

MAINTENANCE

DAILY

- Check engine oil. (If so equipped)
- Check tension and condition of v-belts; adjust or replace where necessary.
- Inspect for loose hardware (bolts, setscrews in sheaves, etc.).
- Grease variable speed sheave. (Do not over-grease)
- Lubricate shaker drive block.

EVERY 25 OPERATING HOURS

- Change engine oil. (If so equipped)
- Clean engine air cleaner. (If so equipped, may require daily attention depending on conditions)
- Grease all bearings provided with fittings. (Do not over-grease, one pump in ball bearings)
- Check tire pressure.
- Clean accumulated dirt and/or debris from the machine.
- Check the level of the electrolyte in the battery. (If so equipped)
- Oil the shaker arms.
- Check tension of conveyor belt. (If so equipped)

ONCE A YEAR

- Repack the wheel bearings with high melting point grease.
- Check clutch and variable speed unit for excessive wear or damage.
- Change oil in air compressor. (If so equipped)