

DE Engineers Seed Cleaner Operation, instructions & help guide.

Congratulations on your purchase of a quality grain cleaner for better grain. Please take time to read this help sheet.



Main points:

1. You must check all grub screws after the first couple of hours running, failure to tighten the bearings on the drive rollers can damage the screens.
2. Before using the cleaner set cleaner chassis level or slightly elevated at front or bin end by lowering support legs. Decreasing the angle of the machine will keep the grain in the screens longer providing a better sample. Large amounts of oversize trash can be drafted off by increasing the machine angle so the trash does not have time to fall through scalp screens. Do not lift the cleaner with the jacking stand while grain is in the bin.
3. Adjust the choke to change the depth of grain in the screens and less grain in the screens will always provide a cleaner sample.



4. Angle the diverter under the inlet auger to even the flow from left to right and adjust the metal slide on the centre chute (in the inlet box) to stop most of the grain from entering the middle screen.



5. On air models close the width down until grain flows evenly across the full width.



Air can be used to take off lighter material mainly in lupin or pea cleaning though is not recommended for canola. When grain is falling evenly across the width of the machine, increase the amount of air through the fall of grain by moving the air shut off handle clockwise (to the right) until good grain is near to blowing over the flap into the seconds bag. More very light material can be blown off by increasing the amount of air used and adjusting the flap to retain good grain that is now blowing further.



Canola/ Lupin slides are located in the inlet box of air machines only. To use these; open the width flap all the way loosen wing nuts and slide down top and bottom plates then slide top plate to approximately 15mm wide opening then tighten wing nuts to secure. The gap should be wide enough to allow pods to flow into the screens without blocking.



Canola brooms should be used to prevent the screens from blocking with squashed canola seeds. If the brooms run off the end of the machine while cleaning, tie a small rope or chain to the last broom on the outlet end back to the inlet support frame to keep the brooms in line. Canola pods or other oversize trash can be separated from clean grain and seconds by blocking the internal chute to the second's auger with the plate provided allowing it to fall out the end of the machine.



Pod chute

14% large admix in canola

Down to 0.5% admix

By opening up the sieves and closing down the wind on the header a dirty sample can be harvested and cleaned taking out large/small admix, pods, rye grass, stones and insects in one pass. This method of harvesting ensures the minimum amount of good seed is blown back into the paddock while retaining weed seeds decreasing contamination.



Engine speed should be between 1900-2200rpm for normal cleaning, if more cleaning is needed increase engine speed and close down choke, this will cause the grain to hit more screen area increasing efficiency. Toggle switch should be in the up position to run empty.

If the limit switch does not turn off the motor, bend it away from the inlet auger as its pad may have too much weight on the micro switch. Alternatively if it will not re-start push the switch towards the auger so the switch pad falls away from micro switch.



Barley cleaning for delivery is much faster without scalp barrels as the grain will fall onto the scalp barrel without landing onto the main screen for cleaning, scalp barrels are predominately to take out oversize trash to prevent dockage or for seed only. Faster engine speeds from 2200 rpm to 2700 rpm can result in approximately 5-8% extra screenings while shutting down the choke will increase efficiency at a given throughput of cleaning.

Limit switch

Three barrel machines have averaged 68% screenings down to 25% at 15-20 tons per hour, 4 barrels have achieved 50% down to 20% screenings at 20 tons per hour and the Mega machine has cleaned from 45% screenings down to 25% screenings at approximately 35-40 tons per hour.

NB/- make sure the header sample is clean enough to flow properly in the hopper, this may result in a few more skinned grains as whiskery barley with too many husks slows down the cleaning rate.

Wheat screens by using 6.3mm round-hole scalp barrel in wheat.

White-heads, brome grass, short wheat straws and back bones can be removed. By increasing the angle of the machine and reducing the throughput of grain, you can make a near perfect job of cleaning wheat for seed. Scalp ends are removable so you can retain straw to increase tonnage but should be installed to separate oversize trash from clean grain in the event of contamination. Cleaner grain can be achieved for seed by blocking the latter part of the scalp screen to draft off lighter trash that floats on the flowing grain before it can pass through the scalp screen (this can be done by wrapping the last 5-6 feet of scalp screen with plastic wrap), though to attain the best seed sample always harvest a clean paddock with lots of wind on the header so it is clean to start with.

Canola screens use a 1.2mm main screen for paddock cleaning and a 1.8mm or 2.0mm main screen for bull seed. These larger screens provide a seed comparable to hybrid seed. The scalp screen is usually a

3.25mm round hole for a near perfect sample taking off straw, pods, insects and stones though a 4.5mm scalp screen may double the speed but increases the amount of trash in the sample eg, on one farm the 3.25mm holes let through 2 ladybirds while the 4.5mm screens let 15 ladybirds through per sample while the maximum allowed is 20. To remove small conical snails we use a 2.3mm slot scalp screen. Brooms replace the rollers for cleaning the screens and these can be improved by cutting bristles shorter with a shearing comb when worn.

Oats can be cleaned using a 2.1mm wheat main screen with 4mm x 25mm scalp screen.



Sub clover uses a 1.2mm main

Using a 90mm plastic pipe in the scalp barrel keeps the screen cleaner. Cut the pipe the same length as the scalp screen and block the inlet end to prevent from filling with grain.

Ergot: when cleaning any smaller seeds it is preferable to remove the inside (scalp) screen so the barrels can rotate faster without dropping grain onto the scalp screens. This greatly increases the amount of holes the grain comes into contact with increasing cleaning rates. You can expect nearly 30t/hr while reducing a 10cm sample down to 2.5-3cm.



Homemade Screen lifting frame.

Maintenance:

Grease bearings annually or when changing screens.

Keep all drive chains lightly greased.

Re-tighten pulley grub screws after the 1st day of running.

When fitting the ceramic bush in the outlet auger centre boss, cool the bush in a freezer before pressing into place.



DE Engineers subscribes to the general standards specified by W.A.O.H.&S. For this reason, we strongly recommend that all personnel associated with this equipment be trained in the correct operational and safety procedures required for this grain cleaner. DE Engineers also recommends that periodic reviews be standard practice. For your convenience, we include the sign-off sheet so you can record your periodic reviews.

SEED CLEANER QUOTES FOR RATES AND PERCENTAGES FROM FARMERS

2 Barrel machine:

Barley 33% down to 25% at 20t/hr- Gnowangerup

Wheat 10-17% seconds down to 2-5% at approx 20t/hr

3 Barrel machines:

Wheat from:

14% down to 5% @ 35 t/hr – Mukinbudin

12% DOWN TO 1.5% @ 35T/hr- Jerrimungup

21% down to 3% @ 20t/hr taking out frosted wheat seconds –Willaura

14% down to 5-6% @ 35t/hr – Mukinbudin

1.5-25% down to .5% 30 bags of screenings in 10 tonnes - Corrigin

4% down to 1% using 6.3mm round scalps (1700rpm) @ 24t/hr

Wheat taking out ryegrass from .8% to .3% @ 25t/hr –Cadoux

Barley from:

50% down to 20% @ 20 t/hr – Gibson



12-18% down to 6-7% @ 25 t/hr (2700 rpm)– Tammin Malt 1 to Soshu @ \$20/t

18-19% down to 11-12% - Wongan Hills

43% to 12% @ 10/thr, Barley 65% down to 16% @ 8t/hr

35% down to 9% @ 20t/hr @ 2700rpm – Newdegate.

27-35% down to 7-9% Soshu – Ravensthorpe.

40% down to 10-20% @ 63kg/hl to 65kg/hl (kilograms per hectalitre) @ 12t/hr –, Newdegate

37% down to 8% - Holt Rock.

Lupin:

95% of pods husk and radish out magnificent job 20t/hr easily, loses a few big ones @ 2000rpm complete paddock cleaning – Wickipin.

Sheep manure, blue lupins and rocks from un saleable to premium @ 8t/hr (sheep in lupin paddocks)

Canola:

Taking canola to less than 1% admix at 40 tons per hour keeping up with 2 headers using 3.25mm scalp barrels.

9% down to 1% admixture @ 12t/hr removing 60-70kg ryegrass into seconds per hectare (1400rpm) – New Norcia.

3.25% down to 0.5% admix taking out 160 bags of pepper flakes from 129/t canola

15% to under 1% admix and every single bit of radish. The sample was better than any Hannaford screener has produced – Cadoux.

1.5% large admix to 0.1% using 3.25mm scalp

1.5% large admix to 0.6% using 4.7mm scalp

4 Barrel machine:

20% down to 5-8% at 20t/hr plus

Barley 68% down to 25% at 15-20t/ph @ 2600rpm 46-50% down to 20% @ 2200rpm- Kulin

4 Barrel Mega machine:

35-40 t/hr taking out 25-45% screenings from Barley to Malt (9760 header in 10 bag crop) made \$48000 extra in 3 days Barley to Soshu (1500 acres)- Newdegate

QUOTES:

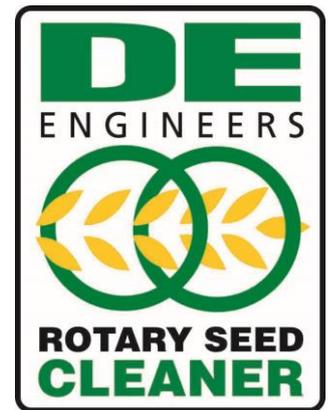
Kukerin- 7mm square scalp barrel does marvelous job on Lupin seed- Bolgart purchased 2nd hand machine, cleaned 1500t and made \$33000 from selling seconds.

15% down to 2% @ 25-30t/hr. Down to 10% increases by \$40/t down to 2% increases margin by \$48/t (canola I think)

Barley, using an Inland 2.65 screen tested seconds had 74% seconds 26% malt barley over 2.5mm DE screen and using a 2.6mm Barley screen will lose approximately 15% good grain.

3.25 canola scalp holes left 2 ladybirds per sample, the larger scalp holes left 15 ladybirds per sample while the maximum allowed is 20.- Pingelly.

Dear customer, this guide has been compiled from customer comments and ideas. Please send any helpful hints including rates, motor rpm, photos, etc as I am hoping to compile a database of information with your help to cover all grains for your benefit.



Contact details:

DE Engineers 131 Clayton St Bellevue, 6056 WA

PH 08 9274 2632 FX 08 9274 6618

Email; info@deengineers.com.au