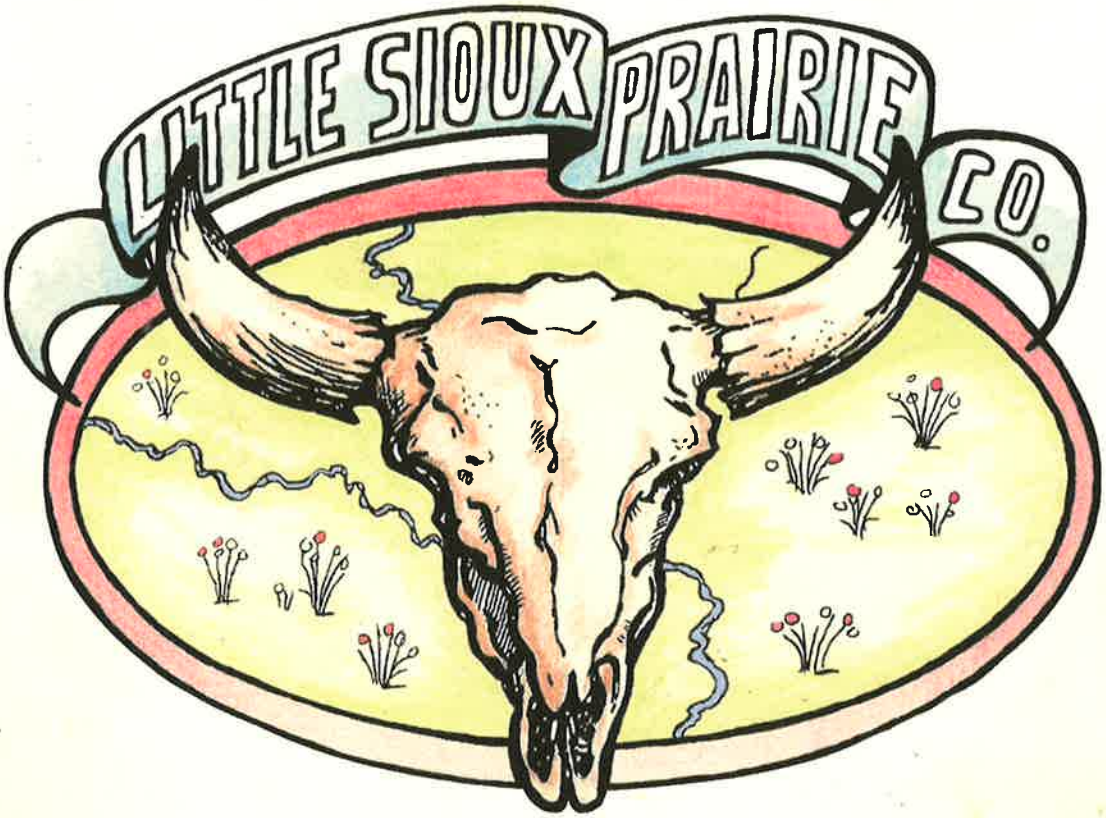


"THE DEW DROP DRILL"

LITTLE SIOUX PRAIRIE CO.
2150 280TH STREET
SPENCER, IOWA
51301
712-264-1186
info@dewdropdrill.com
www.dewdropdrill.com

INTRODUCTION

READ THIS OWNER'S AND OPERATOR'S MANUAL THOROUGHLY BEFORE OPERATING THE EQUIPMENT. Follow recommended precautions and safe operating practices. Failure to do so could result in personal injury or equipment damage or failure. READ, UNDERSTAND, AND FOLLOW ALL SAFTY INSTRUCTIONS BEFORE USING THIS EQUIPMENT.

EQUIPMENT LIMITED WARRANTY

LITTLE SIOUX PRAIRIE CO. ("Manufacturer") warrants to the original purchaser that the Farm Equipment will be free of defects in material and workmanship under normal use for a period of one (1) year from the time of delivery. This warranty is limited to replacement or repair, at the Little Sioux Prairie Co. facilities in Spencer, Ia., of such parts as shall under normal use and service appear to have been defective in material or workmanship. This warranty is null and void if parts that other than the Manufacture's parts are used. This warranty does not extend to Farm Equipment and parts that have been subject to misuse, accident, tampering, alteration or installation in a manner not approved by the Manufacturer in writing. **This warranty is exclusive, and the manufacturer makes no other warranty, express or implied, including but not limited to any warranty of merchantability or fitness for a particular purpose.**

Parts claimed to be defective shall be returned to the Manufacturer at Spencer, Iowa, transportation prepaid. If upon inspection by the Manufacture, the part (s) are determined to have been defective, the Manufacturer will replace or repair such defective part (s) without charge except for transportation. Prior to returning any Farm Equipment or part (s) alleged to be defective, the purchaser shall notify the Manufacturer in writing of the claimed defect. **This is the exclusive remedy for any breach of warranty.** The sole purpose of the remedy shall be to provide the purchaser with the replacement or repair of defective part (s). This exclusive remedy shall not be deemed to have failed its essential purpose so long as the Manufacturer is willing and able to replace or repair the defective part (s).

No person, agent, distributor, or dealer is authorized to give any warranty other than the one herein expressed on the Manufacturer's behalf or assume for it any liability pertaining to Farm Equipment. **In no event shall manufacture or its dealers be liable for any amount in excess of the price paid by the purchaser for the Farm Equipment or for any incidental or consequential damages of any kind, whether for breach of any warranty, for breach or repudiation of any other term of condition of sale, for negligence, on the basis of strict liability of otherwise.**

A defect, within the meaning of this warranty, in any part of the Farm Equipment shall not, when such part is capable of being repaired or replaced, operate to condemn the entire equipment.

This warranty is expressly in lieu of all warranties, guarantees, allegations, or liabilities expressed of implied, by the Manufacture, its dealers or its representatives.

IMPORTANT SAFETY INFORMATION

Look for Safety Symbol

The SAFETY ALERT SYMBOL indicates there is a potential hazard to personal safety involved and extra safety precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. In addition to design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

BE AWARE OF SIGNAL WORDS

Signal words designate a degree or level of hazard seriousness. The signal words are:

DANAGER!

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

WARNING!

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION!

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

KEEP RIDERS OFF MACHINERY

Riders obstruct the operator's view.

Riders could be struck by foreign objects or thrown from machine.

- Never allow riders on implement.
- Never allow children to operate equipment.

SAFETY

FOR YOUR PROTECTION AND FOR YOUR OWN SAFETY and to avoid harm to yourself and others, please observe the following safety precautions.

1) **Do not** ride on the drill/planter!
2) **Do not** operate drill/planter when other people are near the drill/planter!
3) **Do not** obstruct or paint over safety decals, and keep safety decals clean and easily visible. Replace any safety decals that are faded or damaged!
4) **Do not** operate machinery without guards and safety devices as injury may result!
5) **Do not** OPERATE drill/planter with the lids open – injury may result!
6) **Do not** tow over 20 MPH as tires, wheels, and or bearings fail as a result!
7) **Do not** operate without chain guards as injury may result!
8) **Use extra caution** when operating close to fences, tree lines, ditches and streams!
9) **Use extra caution** when moving farm equipment on roadways!
10) **Reduce speeds** on inclines and rough terrain!
11) **When servicing** the drill/planter (when it attached to the towing vehicle), turn off the vehicle and set the **Brake!**
12) **When servicing** the drill/planter (when detached from the towing vehicle), block both front and back of both wheels and secure the tongue!
13) **NEVER work** in or near seed boxes or change sprockets and chains while towing vehicle is running.
14) **Slow down** when making turns!
15) **Use extreme caution** when working near or handling DISKS BLADES. ***SHARP EDGES ON DISKS BLADES COULD RESULT IN SERIOUS INJURY!*** Make sure remote control for *disk rack height adjustment* is secure and cannot be activated when working on or setting disks blades!
16) **Check tire** clearance between towing vehicle and tongue of drill/planter!
17) **NEVER OPERATE EQUIPMENT UNDER THE INFLUENCE OF DRUGS OR ALCLOHOL.**

SAFETY

HIGHWAY AND TRANSPORTATION PRECAUTIONS

1) **Adopt** safe driving practices: Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency stop to be safe and secure. **Keep** speed to a minimum. **Reduce** speed prior to turns to avoid the risk of overturning.
2) **Comply** with state and local laws governing highway safety and movement of farm machinery and public roads.
3) **Use** approved accessory lighting, flags, and necessary warning devices to protect operators of other vehicles on the highway during day and night transporting.
4) **Local laws** should be checked for all highway lighting and marking requirements.
5) **When towing** on the roadway a slow moving vehicle (SMV) identification emblem should be used.
6) **Tires** are designed for all terrain use and are not rated for highway speeds or use.
7) **Rotate jack** on tongue or remove jack before moving vehicle.
8) **Plan** your route to avoid heavy traffic.
9) **Be a safe** and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.

PRACTICE SAFE MAINTENACE

- Understand procedures before doing work. Use proper tools and equipment. Refer to this manual for additional information.
- Work in clean and dry area.
- Turn off engine, lock brakes or put into park, and remove key before performing maintenance.
- Allow implement to cool completely.
- Inspect all parts. Make sure all parts are in good condition and installed properly.
- Remove buildup of grease, oil or debris.
- Remove all tools and unused parts from implement before operation.

SAFETY AT ALL TIMES

THOROUGHLY READ AND UNDERSTAND THIS MANAUL BEFORE OPERATING IMPLEMENT. READ ALL INSTRUCTIONS ON SAFETY DECALS.

- Be familiar with all implement functions.
- Operate implement from the driver's seat only.
- Do not leave ATV or tractor unattended with engine running.
- Do not dismount a moving ATV or tractor. Dismounting a moving ATV or tractor could cause serious injury or death.
- Do not stand between the ATV or tractor and implement during hitching.
- Keep hands, feet and clothing away from power-driven parts.
- Wear snug-fitting clothing to avoid entanglement with moving parts.
- Watch out for wires, trees and obstacles. Make sure all persons are clear of working area.
- Do not turn ATV or tractor to tight, causing implement to ride up on wheels.

SAFETY DECALS

- The maintenance and care given to the safety decals and features will result in a "user friendly" machine. It is important that decals be replaced if they become damaged or lost. It is also important the decals be cleaned more frequently than the drill/planter.
- When new options are added, it is important to add all decals or safety features and to replace any decal that is hidden by the new option.
- When applying decals to the equipment, be sure to clean the surface to remove any dirt or residue. Firmly adhere the decals to the clean surface.
- Keep safety decals in good condition. Replace torn, missing, or defective decals. If replacement safety decals are needed, they may be ordered.

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

OVERVIEW OF THE DEW DROP DRILL

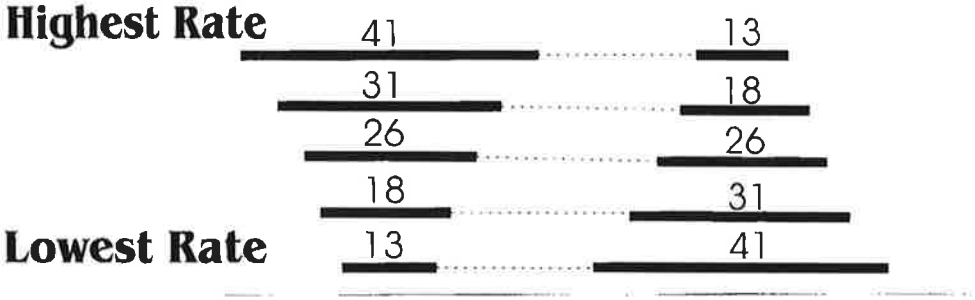
A standard 1 7/8 inch ball hitch coupler is used to hook up the drill/planter to the towing vehicle. The adjustable top link is used to level the drill/planter to accommodate different hitch heights and to be used to fine-tune the disk/tine angle. There are two rows of disks mounted on the disk rack. The disk rack allows the changing of the angles of the disks for more or less tillage of the seedbed. The front row of disks have a setting of zero (0) degrees and ten (10) degrees. This row cuts the soil and turns it outward. The second row of disks have settings of zero (0) degrees, ten (10) degrees, twenty (20) degrees. This row turns the soil back in towards the center of the seedbed. On the rear of the disk rack is a row of harrow tines, they do the last turning and leveling of the soil. The disk rack is raised and lowered by an electric cylinder that is controlled by the operator on the tow vehicle via a remote control box.

Seed that is metered from the seed boxes falls into a drop shoot that delivers the seed right behind the harrow tines. With the forward movement of the drill/planter and the tilling of the soil, the tines are rolling the soil and the seed is folded right in with the soil and mixed together. A visual check back over the site you should see about 20% of the product. This process gives you a three (3) foot random, **NO ROWS** natural seed placement. Also home harvested seed with straw or crop residue have NO effect with the delivery of the seed, and **NO plugged drop tubes** and no voids in the your plantings.

Note: Seed needs to be free of all hard large foreign matter! (rocks sticks ect.)

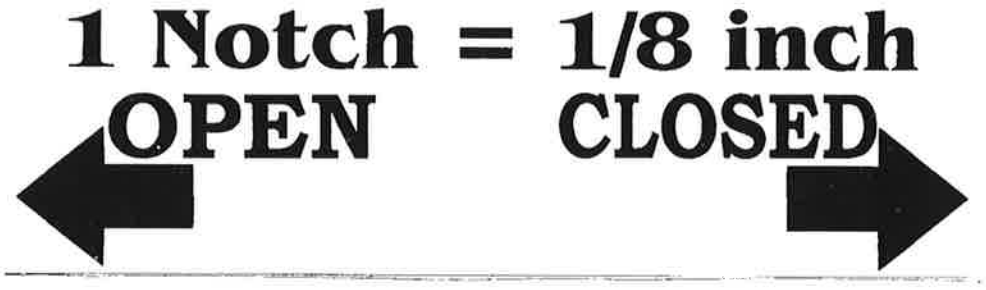
The drill/planter has two seed boxes, the fluffy or large seed box and the small seed box. The fluffy seed box uses picker wheel sprockets to pull the seeds from the seed box and agitators to help keep the seed from packing and seed mixtures from settling and separating. The output of the fluffy box may be changed by a series of sprocket changes or gear ratios. With three sets of sprockets, five application rates may be obtained by changing their position or sets of sprockets.

SPROCKET CONFIGURATION



REAR SHAFT **FRONT SHAFT**

The small seed box uses fluted metering cup assembles to meter the seeds and application rates. The shift lever on the front of the box has nine settings, which can be locked in place to insure an accurate flow of seeds. The shift lever has a locking slide and nine settings, each notch on the shift lever equals 1/8th inch of movement of the fluted spools.



Note: picture of decal as used for the shift lever.

As the lever is shifted right the fluted spools are exposed or shifted left the fluted spools are covered to control the seed rates. Adjusting the lever when the seed box is full, **care should be taken** not to crush seeds in the seed cups. It may be necessary to turn the feed shaft with a wrench when setting the shift lever. This may be done the same as way as when applications rates are calibrated (described later). If the shift lever is difficult or impossible to move right or left, it may be caused from dust and or dirt in the seed cups or a build up of seeds in the flutes. It may be necessary to clean out the seed box and seed cups before shifting the lever. An application of WD-40 or a spray lubricant may be needed. Avoid an oily lubricant, as it will only attract more dirt and debris.

We do not recommend the use of fertilizer in your seed boxes!

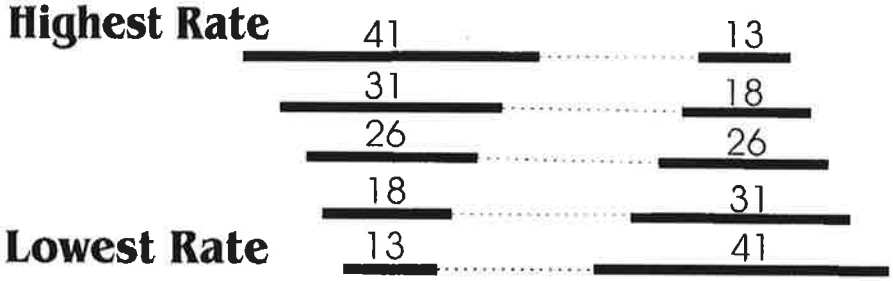
Because of the wide variations in quality and texture of different seeds and mixtures, it is impractical to supply seed rate charts with your drill/planter. With a little experience, each user will find that calibrating the drill/planter for each job at hand is relatively simple and easy to do and understand.

DO NOT transport or haul the drill/planter with seed in the boxes, as this will cause settling and packing, which is hard on drive chains, sprockets, bearings, and shafts when planting is resumed.

APPLICATION RATE CALCULATION

To calculate the rate at which seeds are released from the seed boxes is a simple procedure. Fill the seed box with the product to be used, place a container under the drop shoot. There is a hex nut that is attached to the rear shaft inside the right hand chain guard. This 9/16 nut should be turned **clockwise 15 turns**. Make sure all seed has fallen to the container by looking in the front of the drop shoot. Weigh the product collected; multiply the weight in ounces by **3.125** and that sum that is equals **Pounds Per Acre.**

SPROCKET CONFIGURATION



Application Rate Calculation

Collect seed dropped from drop shoot.
Turn rear shaft 15 turns (9/16 nut) clockwise.
Multiply weight in ounces by 3.125.
(Equals pound per acre.)

Note: picture of decal inside right hand chain guard.

When checking the small seed rates the sprockets may be left off of the shafts for the fluffy seed box and turn the same 9/16 nut, the drive chain for the small seed box is independent of the fluffy seed box. To calculate the fluffy seed box shift the small seed lever closed to stop the seed from being metered.

SPROCKETS

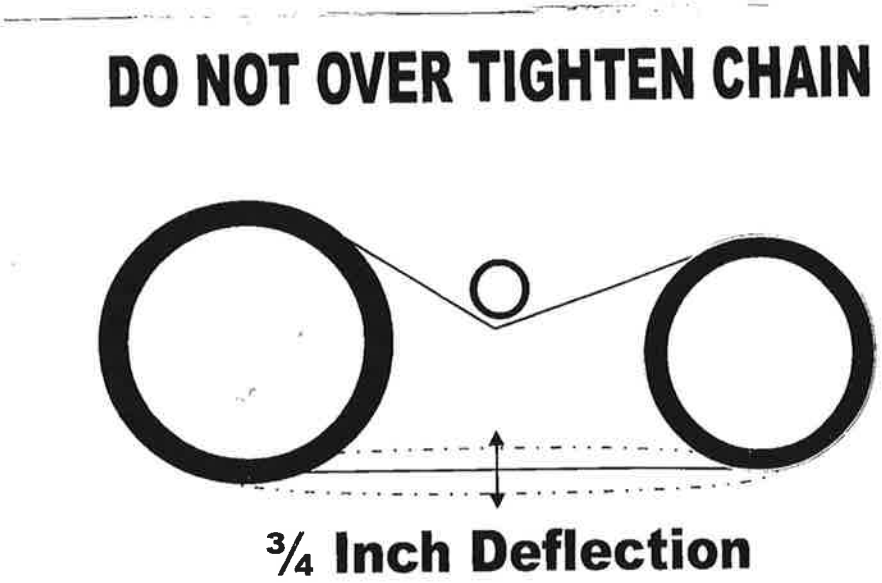
BEFORE CHANGING SPROCKETS: read and understand **PRACITCE SAFE MAINTAINS**, described earlier.

The sprockets for the fluffy seed drive and the drive shafts are inside the right hand chain guard, and the extra sprockets are stored inside the left hand cover behind the removable access panel. The two snap locks hold the panel in place and two sets of sprockets are stored on two mounting pins and held on place by lynch pins. **When changes have been made replace all covers and chain guards.**

Note: A small amount or grease or lubricant may be used on the inner bore of the sprockets to keep any moisture or corrosion from making it hard to remove sprockets form shafts.

When changing sprockets the chain idler must be adjusted.

Proper adjustment is very important, if improperly adjusted, bearings, chains, and shaft damage may occur. The minimum chain deflection must be followed. **3 / 4 of an inch or more must be maintained.** A chain can run very lose without any harm to the drill/planter; the chains turn at a slow speed.



Note: picture of decal inside right hand chain guard.

There are four (4) sets of chains and sprockets sets on the drill/planter.

1. The main drive chain from the drive tire to the clutch sprocket.
2. The drive chain for the small seed box.
3. The fluffy seed drive chain inside the right hand chain guard.
4. The agitator shaft/ picker wheel shaft, inside the left hand cover.

All four chain sets have idlers on them, and with time and wear they may have to be adjusted. And a regular lubrications schedule should be maintained.

DRIVE CLUTCH

The right tire of the drill/planter delivers the power via chain to the clutch assembly. Your ground speed controls the rate of seed drop, when at a standstill no seed is dropped. The clutch is engaged and disengaged with an electric cylinder that is controlled by the operator on the tow vehicle via a remote control box. The cylinder pushes the clutch dogs together and drives the clutch shaft, which turns the sprockets for the small and fluffy seed boxes. At times when engaged the dogs may not be in alignment, but as soon as forward movement starts the clutch dogs will spring in to place. When viewed from the operators seat the square drive shaft for the small seed metering cups have red and yellow indicator stripes that make it easy to view and to see that the shafts are turning or not turning.

WARNING WHEN BACKING DRILL

It has been found that when backing up with the drill **one must disengage the seed box drive** clutch. When backing up seed damage will occur by turning the seed metering devices backwards.

ELECTRIC COMPONTENTS

The electric components of the drill/planter include:

1. The remote control switch, used to raise and lower the disks and engage and disengage the drive clutch.
2. Deep cycle 12 volt battery
3. Circuit breaker with manual reset (30 Amp)
4. Relays and wiring terminal strip
5. Disk rack linear actuator
6. Clutch linear actuator

The remote control switch is on a 15 ft. cable and is attached to the drill/planter at the wiring terminal strip located inside the left hand cover behind the removable access panel. The two snap locks hold the panel in place. If at any time the controller is damaged it may be replaced by removing the wire ends on the terminal strip and switch them with ends from the new controller. The battery is located on the rear left side of the drill/planter and will need to be recharged periodical. The circuit breaker is located on the front of the battery holder and it has a reset button that is on the bottom of the circuit breaker. If at any time there is a short circuit in the system the circuit breaker will protect the other components from damage, the problem that has caused the short circuit needs to be remedied and then the reset may be pushed in to reset the breaker and return power to the system. There are two (2) relays that are located just above the terminal strip inside the left hand access panel. One relay supplies power to raise the disk rack and the other to lower the disk rack. These relays may be replaced if they fail; they are a common relay that most automotive parts stores should have on hand or from Little Sioux Prairie Co. The disk rack linear actuator used to lift the disk rack is a heavy-duty actuator and

should give you many years of service. It is rated at 250 pounds of lift and has an internal slip clutch that will protect the actuator from over loading. The clutch linear actuator is used to engage and disengage the clutch sprocket and it protected by internal limit switches.

FYI (FOR YOUR INFORMATION)
THIS IS A LIST OF PARTS THAT MAY NEED REPLACING IN TIME. WE GIVE YOU THE PARTS NUMBERS SO THAT YOU CAN PURCASE THEM LOCALY FOR YOU CONVENCE.

THE DISK BLADES ARE CASE IH PARTS	1277-891C1	SINGLE DISK
	B95381	TWIN PACK (2)

THE TINES ARE A LINDAY TINE, THE ONLY NUMBER I HAVE IS FROM THE **JOHN DAY CO,** MOST IMPLEMENT SHOPS SHOULD HAVE THIS COMPANY AVAILABLE.
JOHN DAY NUMBER 6473-44053
FYI (For your information)

We have had many customers ask about using the Dew Drop Drill for planting food plots, and specifically some of the heavy grain mixes with corn and sorghums and such. One such example of this is Pheasant Forever "Midwest mix". It contains corn, sorghums, sunflowers, and buckwheat. The problem is that nothing has been designed to handle this heavy seed mix and meet the application rates listed for these products with a one pass type drill/planter. We have developed a "**work-around**" for this problem.

For an example we will use the P. F. Midwest mix. The application rate for this mix is about 14 pounds per acre. When this is run thru the Dew Drop Drill in the Fluffy Seed box and set at the lowest application rate it calculated out to 42 pounds per acre. To "**work-around**" this you need to a add filler by volume, of an inert substance, be it cracked corn, rolled oats, ect.

Example 1: To figure the amount of filler to use take 42 lb/acre (from above) and divide it by the target rate of 14lb/acre and the sum is 3, or a 1/3 ratio.

1 pail of seed mix add 2 more pails of cracked corn = 3 pails

Example 2: If your figure was 35lb/acre divide by 14lb/acre = 1 / 2½ ratio

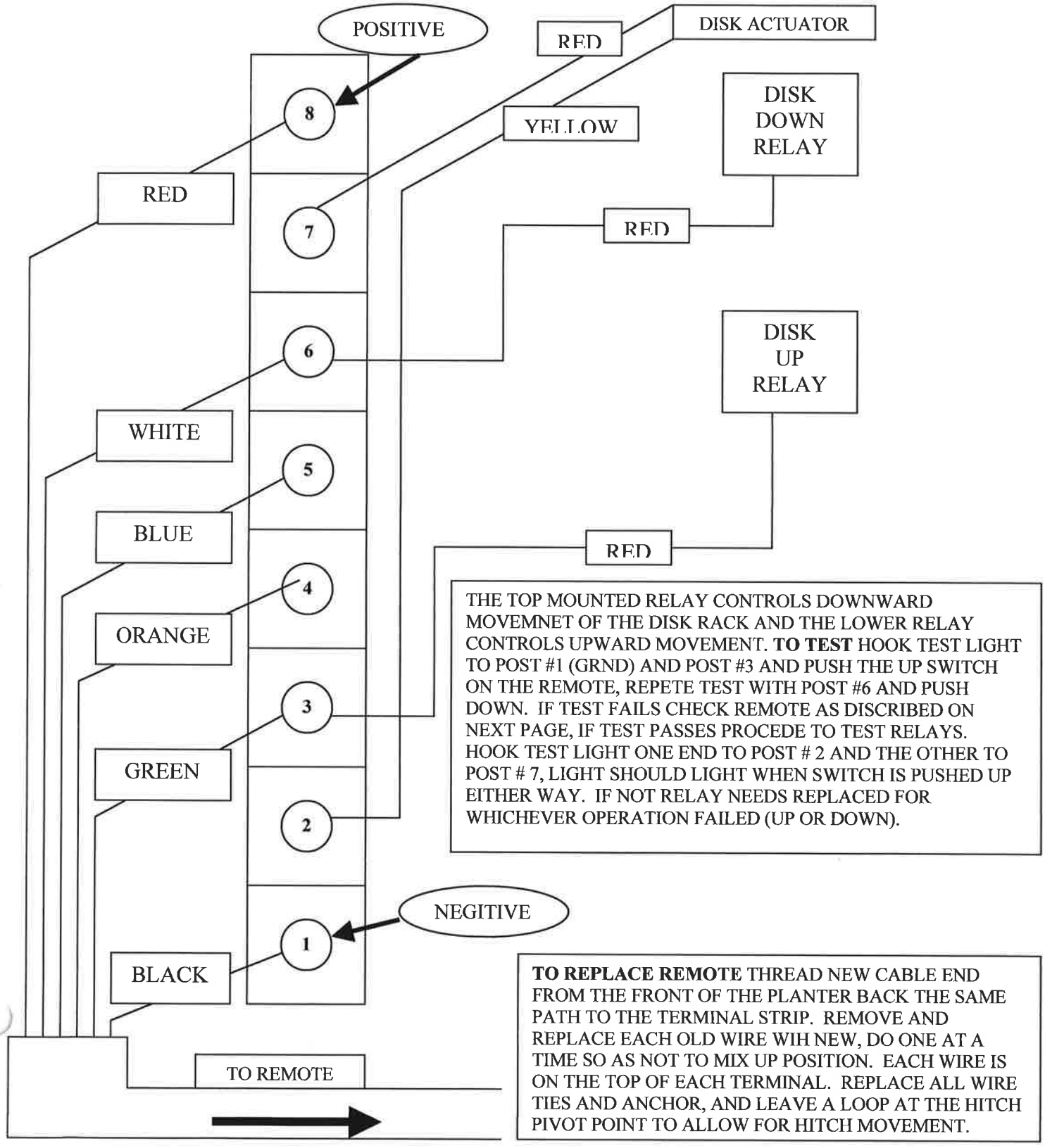
1 pail of seed mix add 1 ½ more pails of cracked corn = 2 ½ pails

It sounds confusing but is really is fairly easy.

In closing we at **Little Sioux Prairie Co.** would like to thank you for your purchase of **"The Dew Drop Drill",** and feel that you should have many years of trouble free operation. We look forward to hearing feedback and input from you, our customers. Revised 11-06

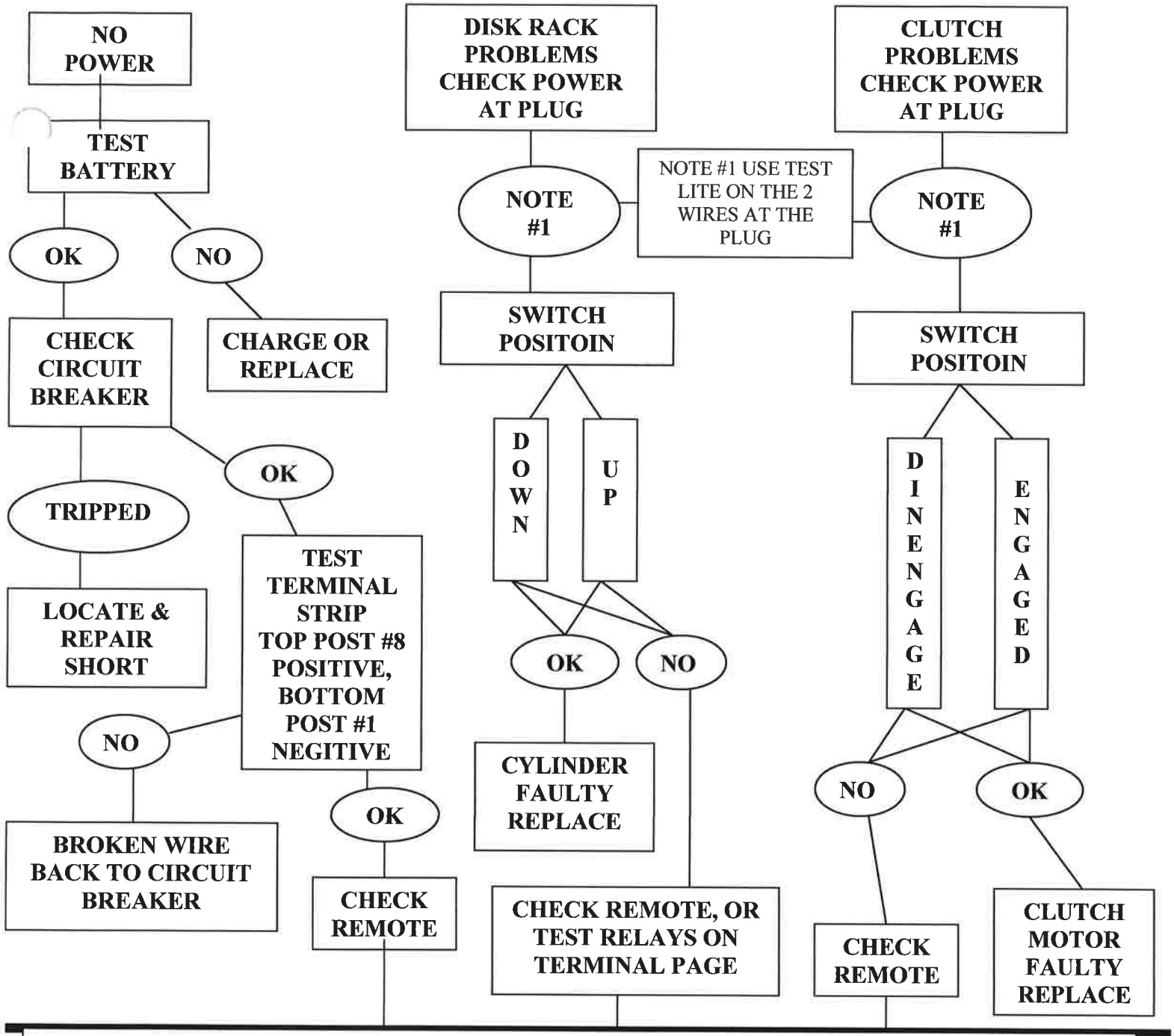
WIRING AND COMPONETS OF THE DEW DROP DRILL

THE ELECTRICAL SYSTEM ON THE UNIT IS **NOT** LIKE THE SYSTEM FOUND ON CARS & TRUCKS, IT HAS A FLOATING GROUND, THE FRAME IS NOT PART OF THE SYSTEM OR GROUND. TO REVERSE 12 VOLT D.C. MOTORS BOTH LEADS MUST CHANGE POSITIONS.
(POSTIVE TO NEGITIVE AND VISA-VERSA).
THE LARGE ACTUATORS UP AND DOWN POWER REQUIRMENT IS CONTROLED BY 2 RELAYS MOUNTED INSIDE THE LEFT HAND COVER, WHICH ALSO CONTAINS THE 8 POST TERMINAL STRIP WHERE ALL CONNECTIONS ARE MADE AT. THE DIAGRAM BELOW AND THE FLOW CHART ON THE FOLLOWING PAGE SHOULD STEP YOU THRU ANY PROBLEMS, IF NOT JUST GIVE US A CALL.

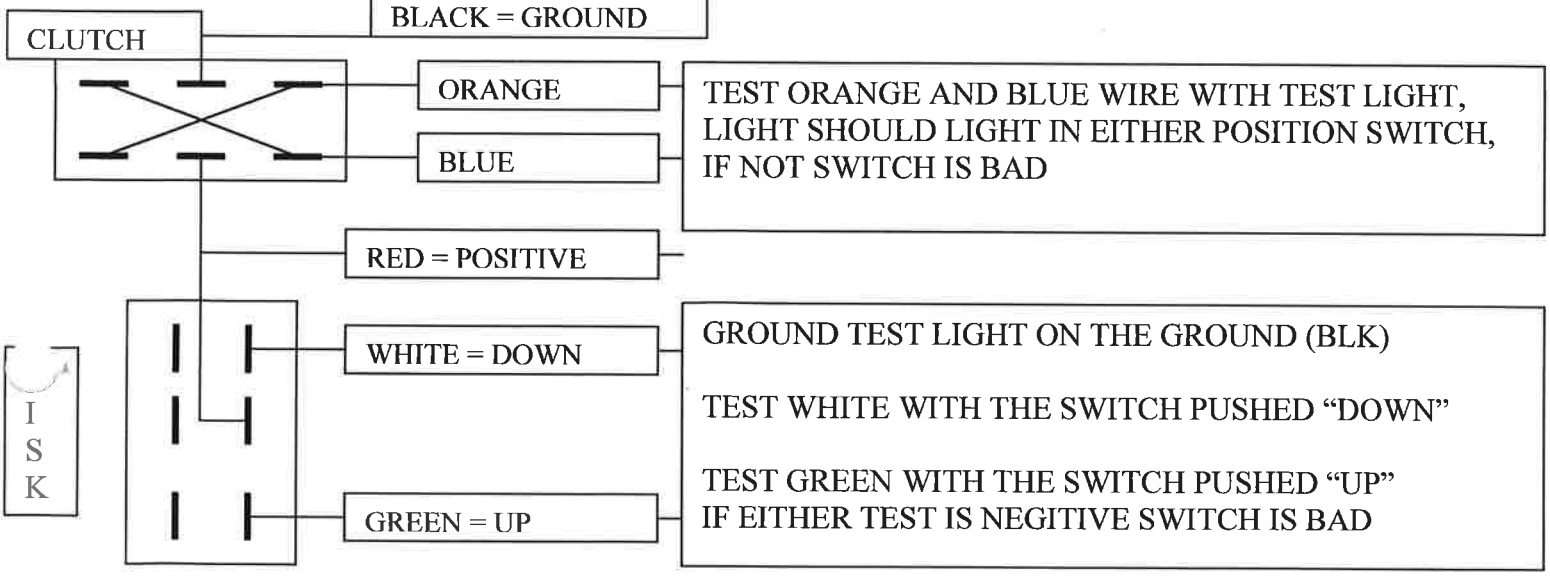


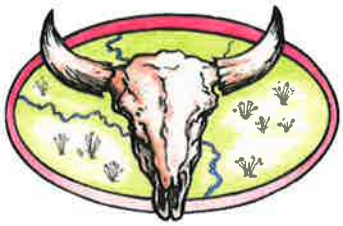
THE TOP MOUNTED RELAY CONTROLS DOWNWARD MOVEMNET OF THE DISK RACK AND THE LOWER RELAY CONTROLS UPWARD MOVEMENT. **TO TEST** HOOK TEST LIGHT TO POST #1 (GRND) AND POST #3 AND PUSH THE UP SWITCH ON THE REMOTE, REPETE TEST WITH POST #6 AND PUSH DOWN. IF TEST FAILS CHECK REMOTE AS DISCRIBED ON NEXT PAGE, IF TEST PASSES PROCEDE TO TEST RELAYS. HOOK TEST LIGHT ONE END TO POST # 2 AND THE OTHER TO POST # 7, LIGHT SHOULD LIGHT WHEN SWITCH IS PUSHED UP EITHER WAY. IF NOT RELAY NEEDS REPLACED FOR WHICHEVER OPERATION FAILED (UP OR DOWN).

TO REPLACE REMOTE THREAD NEW CABLE END FROM THE FRONT OF THE PLANTER BACK THE SAME PATH TO THE TERMINAL STRIP. REMOVE AND REPLACE EACH OLD WIRE WIH NEW, DO ONE AT A TIME SO AS NOT TO MIX UP POSITION. EACH WIRE IS ON THE TOP OF EACH TERMINAL. REPLACE ALL WIRE TIES AND ANCHOR, AND LEAVE A LOOP AT THE HITCH PIVOT POINT TO ALLOW FOR HITCH MOVEMENT.



WITH TEST LIGHT CHECK RED & BLACK FOR POWER, IF NO POWER CABLE BROKEN OR CHECK TERMINAL





LITTLE SIOUX PRAIRIE CO.

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Fax 712-262-2690

Instructions for Remote Replacement

Read all instructions first

Remove 4 bolts and the left hand side cover to expose wiring terminal strip

Cut all wire ties from the hitch and backwards down frame to loosen cable and free the wire of the remote **:NOTE DO NOT REMOVE WIRE ENDS FROM TERMINAL YET**

Tread new switch wire back the same path and into compartment

Remove nylon acorn nuts and replace 1 wire at a time and with the new wire of the same color until all 6 wires are replaced

Install new anchor and wire tie in compartment and make sure all wires are tied in and secure

Remove old switch and cable and secure new cable like the old one and leave a loop of wire at the hitch pivot point to allow for hitch movement

Replace cover and bolts and remaining wire ties and this should complete operation