



**PNEUMATIC SEED APPLICATOR
MODEL 7020/7030/7040/7055**

OPERATOR'S MANUAL

DO NOT USE OR OPERATE THIS EQUIPMENT UNTIL THIS MANUAL
HAS BEEN READ AND THOROUGHLY UNDERSTOOD

PART NUMBER 81006942 Rev. C

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81006942RevC

2/18

Manual/81006942RevC

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TO THE PURCHASER

This product is designed and manufactured to give years of dependable service, when properly maintained and used for the purpose for which it is intended. Never allow anyone to operate this equipment until they fully understand the complete contents of this manual. It is the responsibility of owner's, who do not operate this equipment, to insure the operator is properly instructed and understands the contents of this manual. It is also the owner's responsibility to insure that anyone operating this equipment is mentally and physically capable of so doing.

Important information is contained in this manual to help insure safe and efficient operation.

If you have any questions about this manual, or the equipment discussed therein, contact your HINIKER dealer. Additional copies of this manual may be obtained through your Hiniker dealer.



THIS IS THE SAFETY ALERT SYMBOL. IT ALERTS AN OPERATOR TO INFORMATION CONCERNING PERSONAL SAFETY. ALWAYS OBSERVE, AND HEED, THESE INSTRUCTIONS, OTHERWISE DEATH, OR SERIOUS INJURY CAN RESULT!

All references to LEFT or RIGHT means viewing the equipment from the rear and facing the tractor.

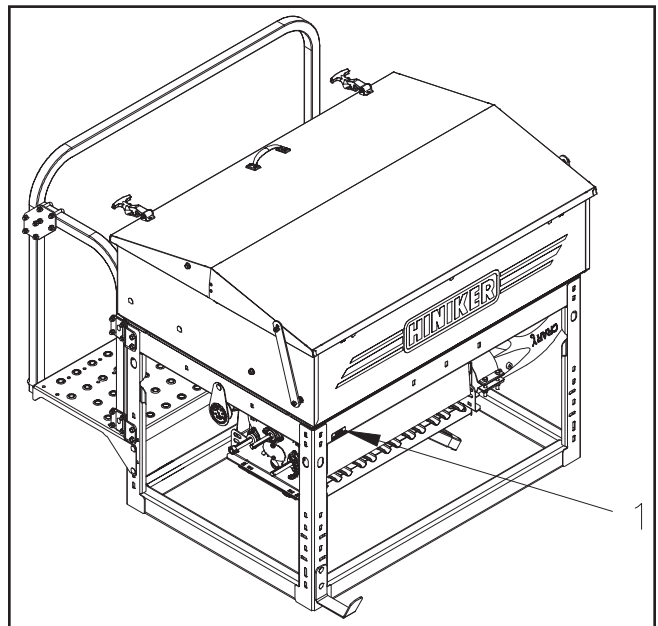
ALWAYS OBTAIN ORIGINAL HINIKER SERVICE PARTS BECAUSE SUBSTITUTE PARTS COULD ADVERSELY AFFECT EQUIPMENT PERFORMANCE AND WARRANTY.

All photos in this manual refer to paragraph(s) proceeding the photo.

A DELIVERY REPORT IS TO BE FILLED OUT BY YOUR HINIKER DEALER WHEN YOU ACCEPT THIS EQUIPMENT. ONE COPY IS TO BE GIVEN TO YOU. DO NOT ACCEPT THIS EQUIPMENT UNTIL YOU ARE SATISFIED ALL ITEMS THEREON HAVE BEEN CHECKED, AND YOU UNDERSTAND THEM.

Check that your dealer has forwarded the HINIKER delivery report copy, along with the machine serial number, because it helps maintain maximum service and warranty benefits. This does not put you on any mailing list and information thereon is not available to others.

Your machine's serial number plate is at (arrow 1).



DWG. NO. 7407

Record the following information for later reference when obtaining service parts:

Purchase Date: _____

Purchaser's Name: _____

Dealer's Name: _____

Machine Serial #: _____

SAFETY



THIS IS THE SAFETY ALERT SYMBOL. IT ALERTS AN OPERATOR TO INFORMATION CONCERNING PERSONAL SAFETY. ALWAYS OBSERVE, AND HEED, THESE SYMBOLS AND INSTRUCTIONS, OTHERWISE DEATH, OR SERIOUS INJURY CAN RESULT!

Operator safety is a principle concern in equipment design and distribution. However, many accidents occur because a few seconds of thought, and a more careful approach to handling, were ignored.

ACCIDENTS CAN BE AVOIDED BY KNOWING, AND FOLLOWING, THE PRECAUTIONS CITED IN THIS MANUAL.

For better viewing, certain photos may show a safety shield open or removed. This equipment should never be operated without factory installed shields in place.

Replace any decals that are not readable, or missing. Keep decals free of dirt, grease, etc.

Throughout this manual, and on all safety related decals, a safety alert symbol, along with the signal word **CAUTION**, **WARNING**, or **DANGER** will be found. These are defined as follows:



CAUTION: A reminder for proper safety practices and directs attention to following them. Decals of this class are yellow and black.



WARNING: A reminder for proper safety practices and what can happen if they are ignored. This has a more serious consequence than CAUTION. Decals of this class are orange and black.



DANGER: Denotes a most serious safety hazard. It is a reminder for observing the stated precautions and what can happen if they are ignored. Decals of this class are red and white.

There are other instructions in this manual that pertain to protecting the equipment. They are not directly related to operator safety. These have black letters on a white background to distinguish them from safety decals. They lack the safety alert symbol, but carry the words **NOTICE** or **IMPORTANT** defined as follows:

NOTICE: INFORMS THE READER OF SOMETHING THAT CAN CAUSE MINOR MACHINE DAMAGE, OR POOR PERFORMANCE, IF IGNORED.

IMPORTANT: WARNS THE READER OF POTENTIALLY MORE SERIOUS MACHINE DAMAGE, OR POOR PERFORMANCE IF IGNORED.

GENERAL

1. If the Operator's Manual is missing from this equipment, obtain a replacement from your HINIKER dealer. If you sell this equipment, insure the new owner acknowledges receipt of his manual.
2. Read this manual thoroughly. Make sure the operator understands it and knows how to operate this equipment safely. Farm equipment can kill or injure an untrained, or careless, operator.
3. Provide a first aid kit. Store in a visible, accessible location and know how to use it.
4. Do not attempt to handle and service this equipment, or direct others to do the same, unless you know how to do it safely.
5. Keep all shields and guards in place.
6. Keep hands, feet, hair and clothing away from moving parts.
7. Before servicing, adjusting, repairing or unplugging the applicator. Stop the tractor, set the parking brake and wait for all moving parts to come to a complete stop.

4 Safety

8. Escaping hydraulic/diesel fluid under pressure can penetrate the skin causing serious injury. DO NOT use your hand to check for leaks. Use a piece of cardboard. Tighten all connections before pressurizing hydraulic lines. If fluid is injected into the skin, get medical attention to prevent serious infection.
9. Discipline yourself to always visually inspect this equipment for any excessively worn, damaged, or cracked parts before starting use. Replace these with genuine HINIKER parts.
10. Do not alter this equipment to the extent of compromising safety and performance.
11. Do not assume everyone is as safety conscious as yourself.
12. NEVER allow improperly supervised minors, or anyone else, to operate this equipment. It is your responsibility to insure that any operator is mentally and physically capable of so doing.
13. Keep off machine/applicator, and insure everyone is clear before starting, actuating hydraulics, electronics, and during equipment operation.

GRANULAR CHEMICAL SAFETY

1. Read and strictly follow the manufacturer's instructions found on the product container.
2. Wear chemically resistant clothing, gloves and safety goggles.
3. Avoid contact with skin and eyes.
4. Wear a respirator as directed by the chemical manufacturer.
5. Wash thoroughly after working with chemicals, especially before eating.
6. Wash all clothing contaminated by chemicals.
7. Wash down the applicator prior to any maintenance.

HYDRAULIC SAFETY

1. Keep hydraulic components clean so that leaks can be easily identified.
2. Replace damaged hoses and fittings.
3. Use a piece of cardboard when trying to pinpoint leaks. Wear heavy gloves and a face shield.
4. Have hydraulic components repaired by a qualified repair facility. Makeshift repairs may fail suddenly creating a hazardous condition.
5. If injured by a high pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection can result.

FAN SAFETY

1. Do not operate fan unless all shields and guards are in place.
2. Stay well away from fan during operation. Keep others away.
3. Stop tractor and wait for all moving parts to come completely to a stop before making any repairs to fan or servicing its drive components.

TRANSPORT SAFETY

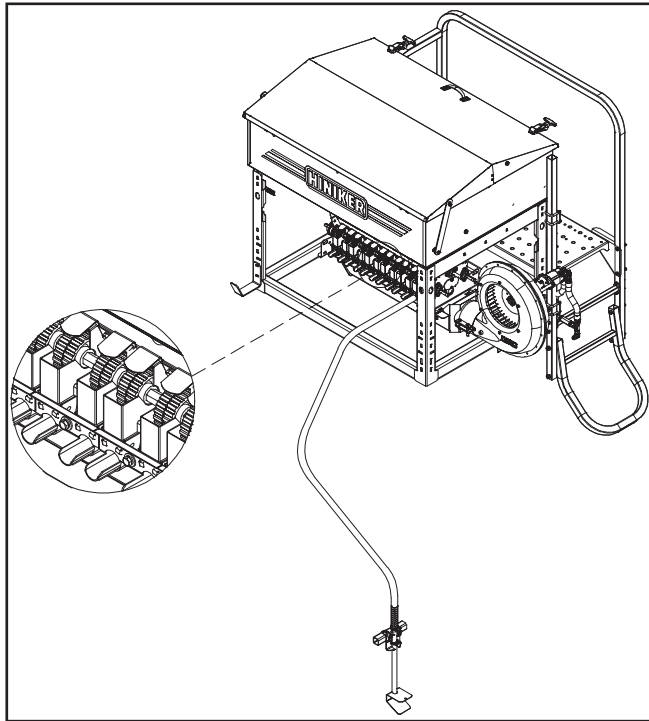
1. Be sure that an SMV (Slow Moving Vehicle) sign and all reflectors and lights required by local highway authorities are in place, clean and functional.
2. Use a hitch pin that is rated to tow implement and hopper without breaking.
3. Use safety chain to secure hitch on implement to tractor.
4. Do not exceed maximum speed rating on implement tires (generally 25 mph or 40 kph).
5. Ensure that wings are folded and latched in place.

STORAGE SAFETY

1. Store the applicator on a firm, level surface.
2. Thoroughly clean applicator before storing to avoid contaminating surrounding area with fertilizer residue.

OPERATION

Hiniker granular applicators are designed to efficiently broadcast seeds and other granular chemicals. Granular product can be metered either electrically or hydraulically. This system operates by using a hydraulically powered fan to blow metered product through an air delivery system. A series of metering wheels accurately meters product from hopper into venturis. Air passing through the manifold draws product into an airstream and sends it down a distribution hose where it can be introduced to the soil.



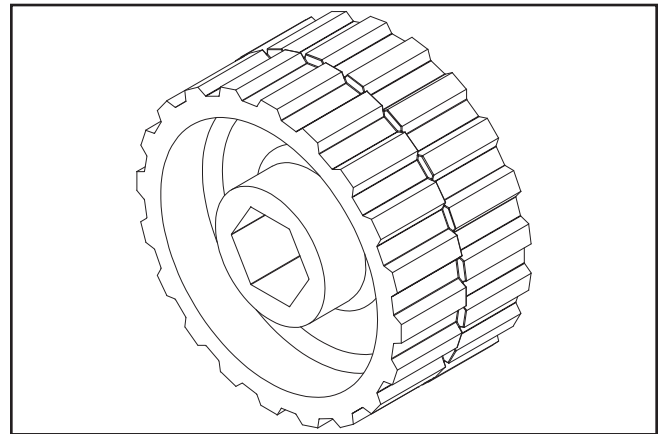
DWG. NO. 7408

This machine is intended to be anchored to vertical tillage tools, field cultivators, chisel plows, high clearance units, and much more. The rectangular base is intended to be anchored to the parent implement. Be sure to read operator manual of parent implement and adhere to all safety instructions and decals.

NOTE: When mounting on vertical tillage equipment or any other implement, be sure to mount and place unit as close to center of parent implement for even weight distribution.

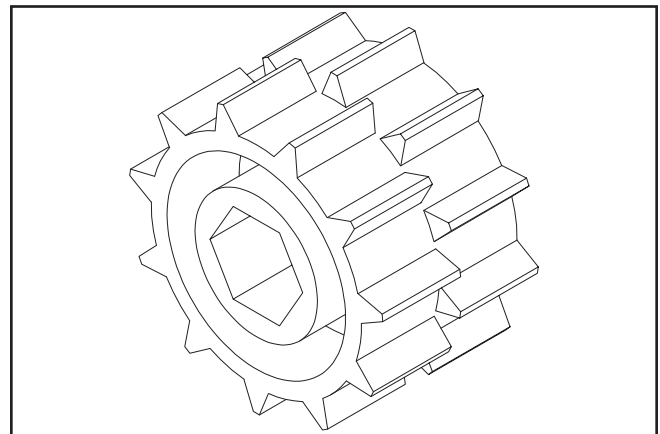
METERING WHEELS

Granular product is metered via individual metering wheels. There are (2) available types: Black – Used for small seeds (under 1/8" in diameter) such as radishes, clover, alfalfa, canola. Not recommended for fertilizer.



DWG. NO. 7409

Gray – used for large seeds (over 1/8" diameter) such as peas, hairy vetch, fertilizer, or for small grains at high planting rates (75 lbs./acre or greater).

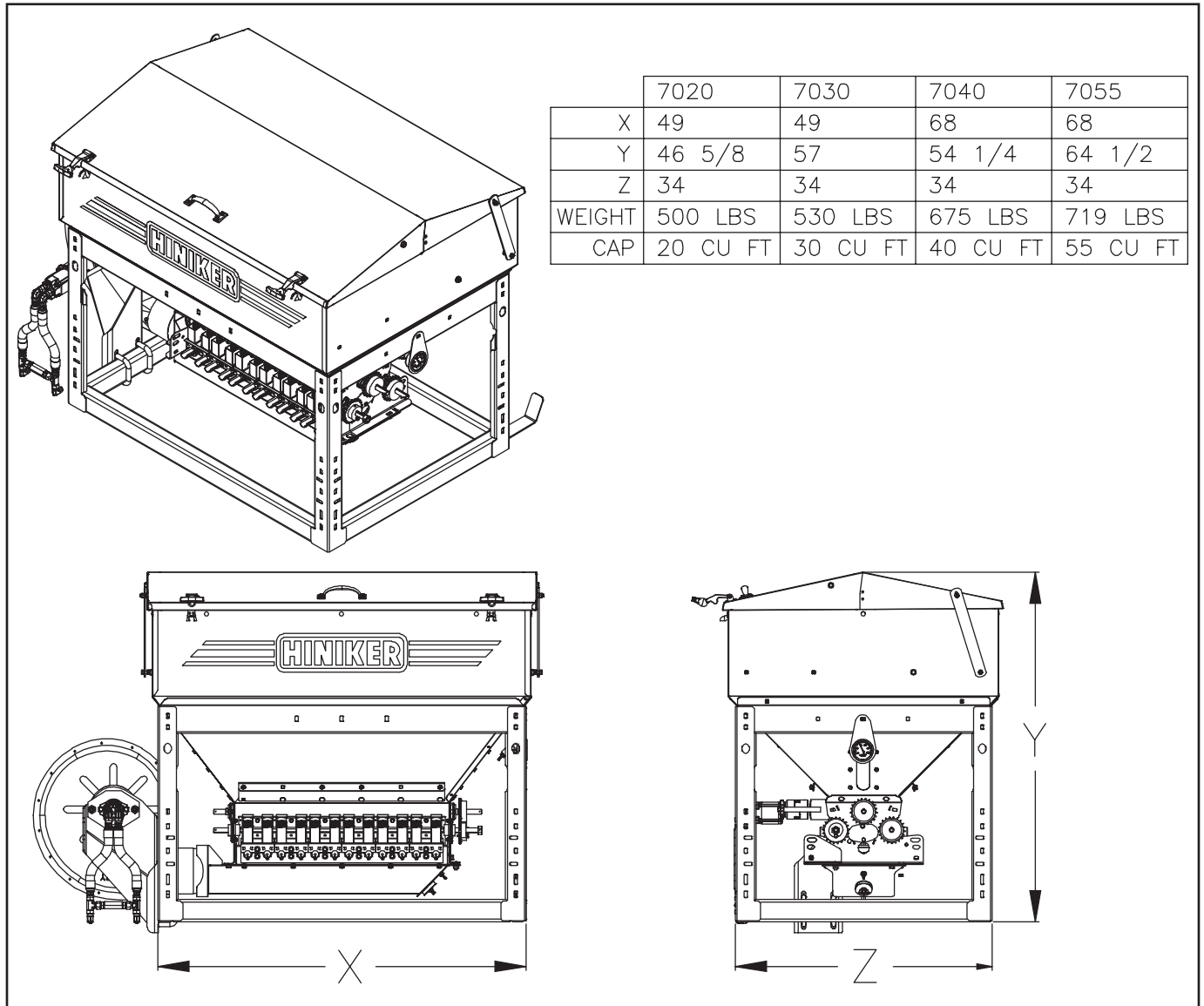


DWG. NO. 7410

HOPPER INSTALLATION

Below are overall dimensions of hopper base assembly. Take note that platform and guardrail will add onto overall width “Z” dimension of machine but can be removed if so desired.

Hopper can be mounted with “X” or “Z” side parallel with tractor travel direction. This will affect hose routing, pressure gauge location, and cover/guardrail location.



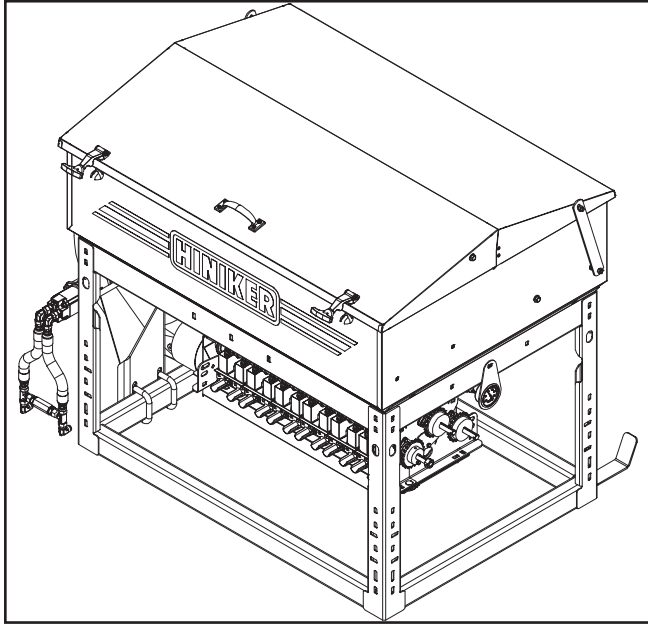
DWG. NO. 7411

With implement in transport position, check measurement of planned location to assure for proper clearance.

Determine if additional support tubing is necessary for convenient and level installation. Make sure hopper installation does not restrict operator line of sight.

8 Operation

Hopper assembly is factory assembled as shown below. Note that pressure gauge and chain drive would face tractor. This is for ease of driver to check gauge pressure and that all sprockets are turning verifying that product is being metered. This is just a recommendation and the owner can choose their preferred configuration and hopper installation.



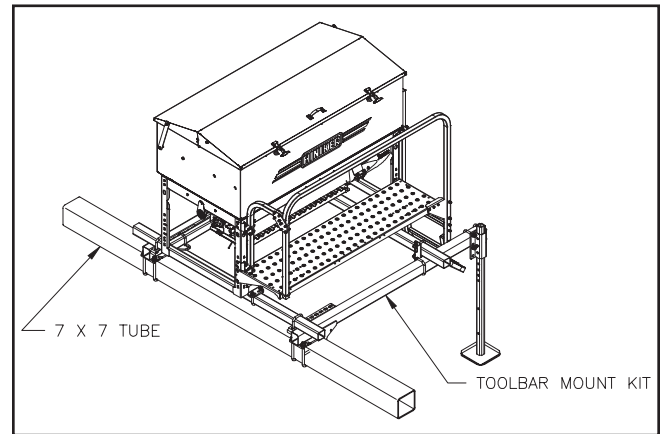
DWG. NO. 7412

HOPPER COVER/PLATFORM/GUARDRAIL

Machine assembly is designed so hopper cover can be assembled so it can open from either Left or Right (long side) of machine. Platform and guardrail can also be bolted on either side of hopper matching cover configuration.

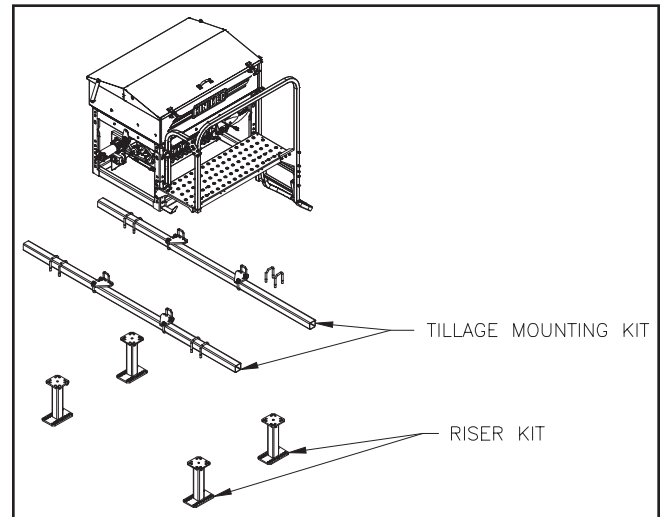
TOOLBAR/TILLAGE MOUNTS

Hiniker has kits available that allow hoppers to be mounted on many implements.



DWG. NO. 7435

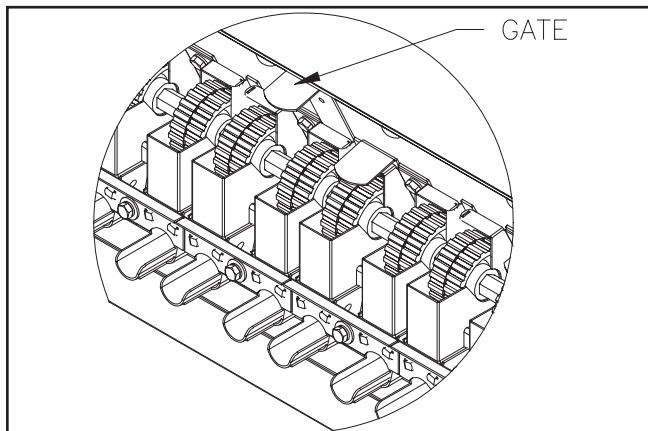
Toolbar mount kit (81006936) is designed to mount on 7x7, 5x7, or 5x5 toolbar assemblies. Additional U-bolts or mounting hardware may be necessary to complete installation.



DWG. NO. 7436

Universal mount kit (81007068) is designed to mount on most pieces of tillage equipment. Mounting plates have holes available for mounting on common frame tube widths and can be slid up and down frame tubes via mounting U-bolts. A 16" riser kit (81007069) is also available that raises hopper up 16" above obstructions close to frame tubes on implement. This kit aids, and is sometimes essential, with installation on some implements.

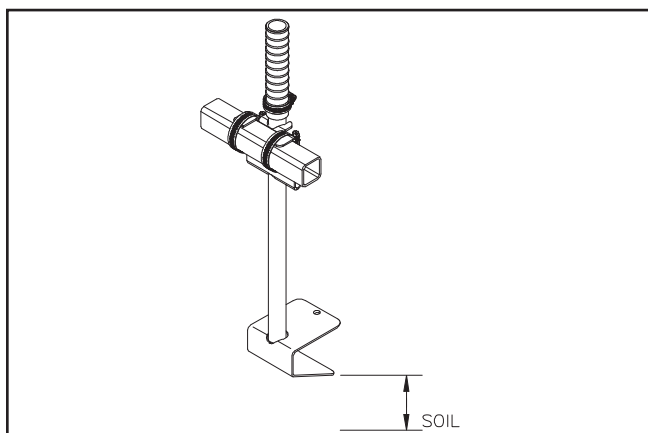
OUTLETS



DWG. NO. 7413

If all outlets are not required, close off an equal number of metering outlets on each side of applicator. This can be done by inserting provided gates to block off unneeded outlets.

OPTIONAL DEFLECTORS



DWG. NO. 7414

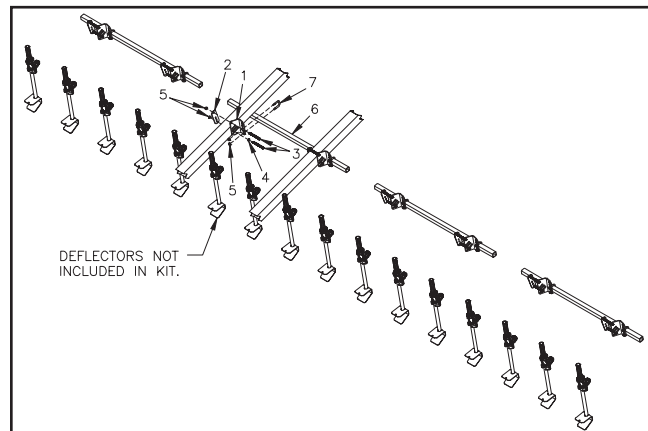
Determine optimal spacing of deflectors on machine. Deflectors should be spaced evenly. Use the most number of outlets possible for implement width while keeping them spaced as equally as possible. For optimal results allow 1 foot of tubing going straight into deflectors. In general the higher the deflector the wider the spread pattern.

Recommended deflector:

24" or less row spacing – 14" to 18" above soil

30" row spacing – minimum of 18" above soil

UNIVERSAL DEFLECTOR MOUNTING KIT



DWG. NO. 7529

Hiniker universal deflector mount kit (81007348) is intended to aid in mounting 1" seed deflectors to various pieces of tillage equipment. Typically seed deflectors are mounted so they dispense seed near rolling baskets. The provided brackets in the kit are intended to be used to mount onto frame tubes near rear of machine. Brackets are designed to bolt over 2 to 4 inch tall tubes and up to 4 inch wide tubes.

HYDRAULIC FAN

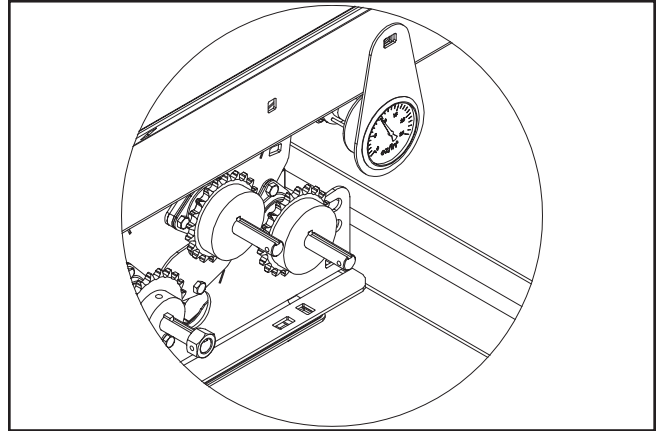
Factory set assembly includes (2) 1/2 x 13 1/2 Ft. hoses to run hydraulic fan. There is also a 1/4 x 13 1/2 Ft. hose that is the case drain for the hydraulic fan. All supplied hoses come with attached tractor couplings to plug into most tractor hydraulic systems. To obtain optimum hydraulic function some additional adjustments, fittings, extra hose length, etc may be necessary. Consult your tractors owner manual for operation of hydraulic system.

Safe and Efficient operation of the Hiniker seed applicator requires that each operator read and understand the operating procedures and all related safety precautions outlined in this section. This Pre-Operation checklist is important and provided for both personal safety and to maintain good mechanical condition of the applicator.

Pre-Operation Checklist:

1. Check implement and applicator hydraulic system. Ensure that hydraulic reservoir in tractor is filled to required specifications.
2. Inspect all hydraulic lines, hoses, fittings, and couplers. Use a clean cloth to wipe away any accumulating dirt from tractor couplers before connection to tractor's hydraulic system.
3. Inspect air delivery hoses for any wear, blockages, or restrictions. Repair or replace as necessary.
4. Inspect hopper for accumulation of any foreign material that could plug metering wheels or venturi system.
5. Check chains and sprockets for proper alignment, adjustment, and tension. Adjust as needed.
6. Check fan and manifold for any accumulation of debris or dirt. Run fan at field speed to clear hoses and outlets of foreign material.
7. Check Metering wheels. Worn metering wheels will alter rates.
8. Make sure metering shafts turn easy. Failing bearings will increase required torque and lead to shaft or machine damage.
9. Make sure all guards and shields are in place and hardware is tight.
10. Check hopper base mounting hardware to implement. Tighten fasteners as necessary.

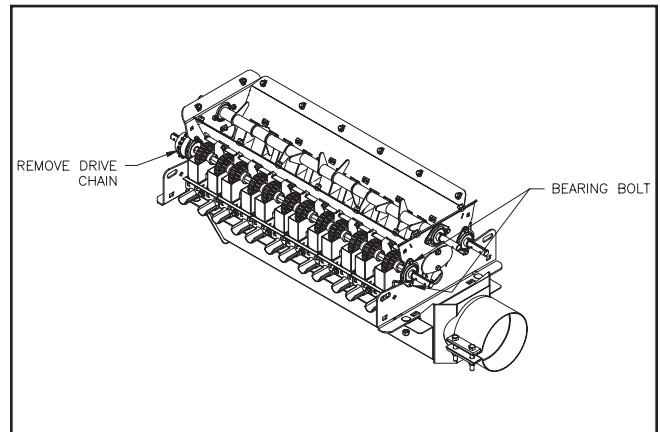
AIR PRESSURE GAUGE



DWG. NO. 7415

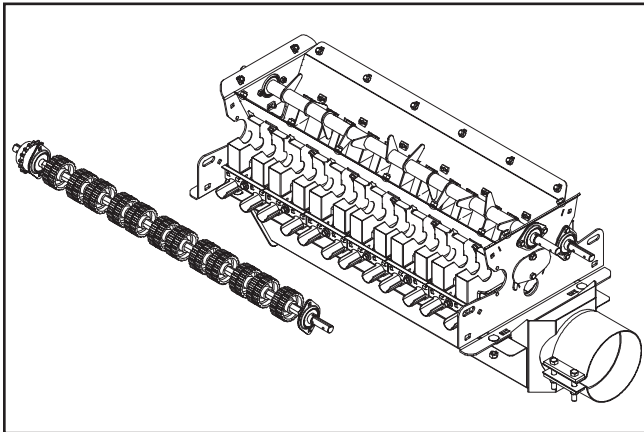
Manifold pressure gauge indicates proper fan speed by measuring fan air pressure in manifold in ounce/inches ² (oz/in²). The recommended air pressure for light seed is 8-12 oz/in².

CHANGING METERING WHEELS



DWG. NO. 7416

If a change in metering wheels is desired. The hex metering shafts can be removed and metering wheels changed. First remove drive chain from hex shafts. Loosen and remove bearing bolts on both ends of shaft. If servicing a 40 Cu. Ft. or larger hopper center bearing bolts must also be removed.



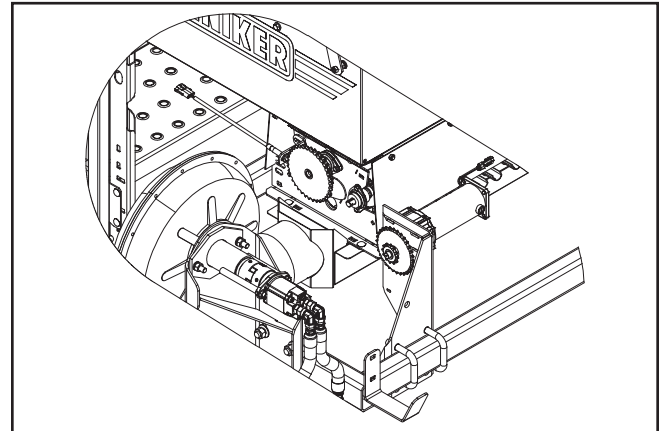
DWG. NO. 7417

Lift hex shaft with metering wheels out of shaft housing. Black wheels may need to be rotated slightly to aid in disassembly. Wheels fit tight, but can be removed from housing. Remove one end bearing and center bearing, if equipped. Remove metering wheels and assemble new wheels onto shaft. Reverse steps to assemble hex shaft and metering wheels back into housing. When shafts are reassembled verify each shaft can be rotated by hand easily. If shafts turn hard determine source of binding before reassembling drive components.

METERING DRIVES

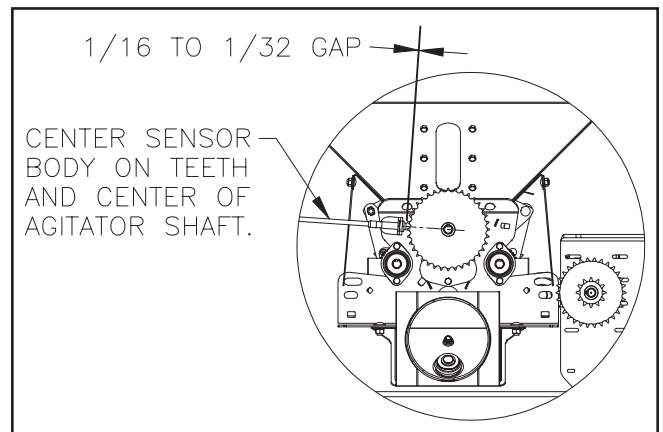
Hiniker pneumatic granular applicators have been designed with (2) different options for driving granular metering wheels which convey product. The (2) configurations are electric or hydraulic.

ELECTRIC



DWG. NO. 7506

This option consists of a 12V gearmotor, a motor driver (bolted next to motor), and roller chain to drive agitator and metering shafts.



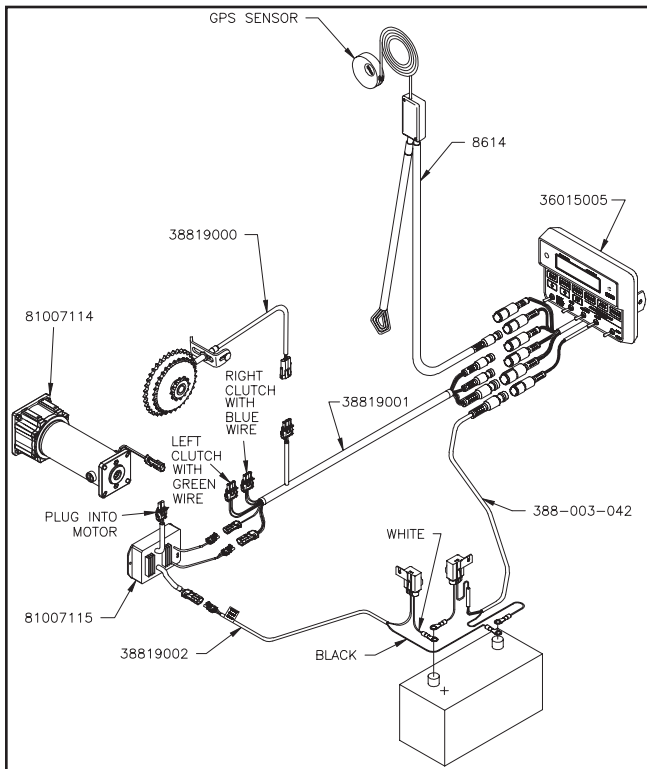
DWG. NO. 7509

A proximity sensor is provided to monitor shaft speed and is assembled next to agitator shaft. This sensor counts sprocket teeth and sends pulses to in cab controller. Shaft speed sensor should be assembled so it is 1/32 (.031) to 1/16 (.062) of an inch away from sprocket teeth. The electric drive kit also includes a GPS sensor for monitoring ground speed.

GPS placement recommendations include on top of tractor cab or any convenient place on implement where it has direct access to sky and is not shielded to satellite signal information. This option varies metering drive shaft speed for ground speed based on pounds per acre inputted into cab controller.

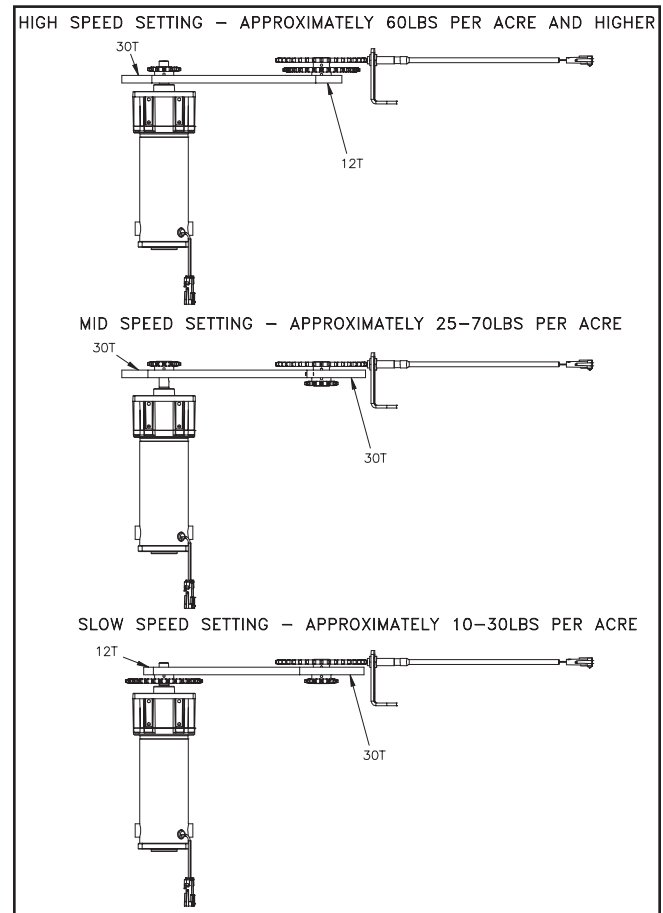
12 Operation

Drawing 7511 is an overview of the electrical portion of the drive kit.



DWG. NO. 7511

There are (3) main speeds on the Hiniker Electric drive:



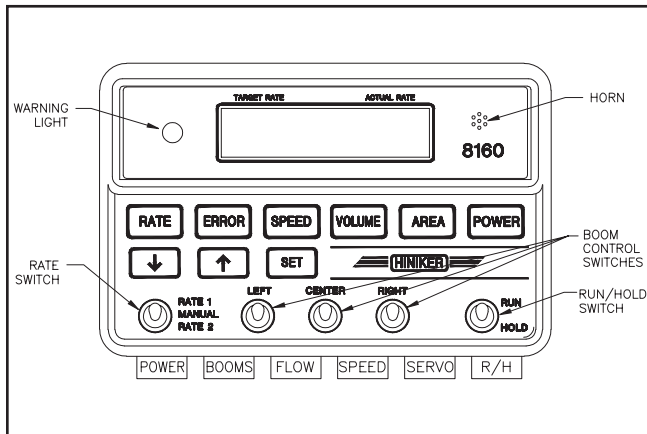
DWG. NO. 7508

- High Speed — Approximately 60 pounds per acre and higher.
- Mid Speed — Approximately 25-70 pounds per acre.
- Slow Speed — Approximately 10-30 pounds per acre.

NOTE: These are approximate settings and actual seed rates may fluctuate based on seed density, field travel speed, and row spacing.

A chain with (2) sections is provided. Use full chain length for mid speed setting. Remove short chain length if slow or high speed setting is desired.

NOTE: 36 tooth sprocket can also be used in drive to achieve further reduction in metering shaft speed (lower application rate). If 36 tooth sprocket is used in drive, sensor will need to be moved in to take shaft speed reading off 30 tooth sprocket.

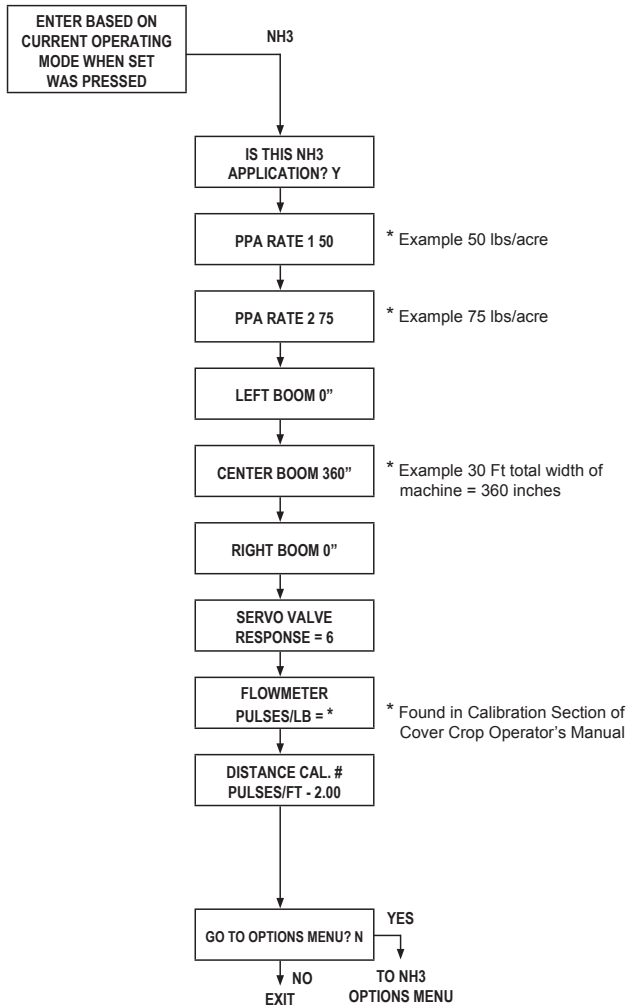


DWG. NO. 5795

This portion is a quick reference guide for operating a Hiniker 8160 controller. For further or more detailed instructions refer to 8160 operator manual included with electric drive kit. The 8160 has a capability of putting down (2) different rates by simply moving the rate toggle switch between Rate 1 and Rate 2.

14 Operation

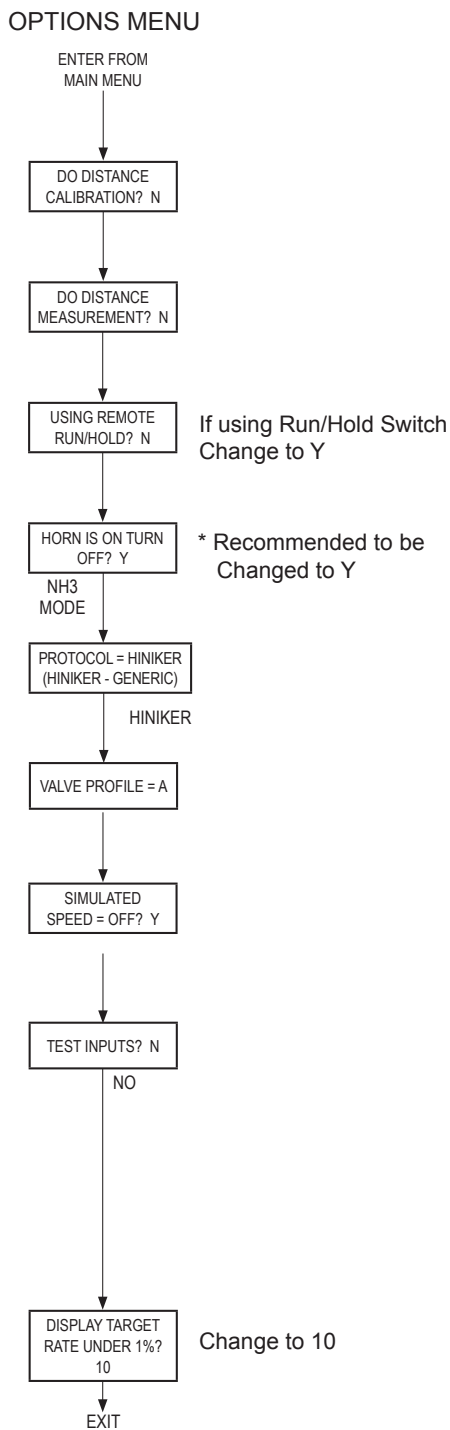
8160 MENU SYSTEM MAIN MENU



- Controller will ask is this a “NH3” application with the default answer yes. Push “SET” button to confirm answer and move onto next question.
- Answer questions using \uparrow \downarrow to change values and press “SET” button to confirm and move on to next question.
- Reference flowchart to the left for each question. Enter PPA (Pounds of seed Per Acre) Rate 1 and Rate 2, Center Boom width (inches), Pulses/LB input is, found through calibration. Refer to “Calibration” section of manual to determine input number. Push “SET” button to confirm each answer.

- For initial setup be sure RUN/HOLD toggle switch is in “HOLD” position.
- Rate toggle switch should be set to desired rate, RATE 1 or RATE 2.
- Press and hold “POWER” button.
- With controller on and RUN/HOLD switch in “HOLD” position press and hold the “SET” button.
- For planting cover crop or fertilizer run controller in NH3 mode.

NOTE: During first power up, controller will default to spray application. Push \downarrow to change to NH3 mode.



In the options portion of controller follow the prompts again changing inputs using \uparrow \downarrow and confirming answers by pressing the “SET” button. Refer to Options Menu Flow Chart for recommended answers.

Once all answers have been confirmed the 8160 controller is ready for delivering seed. Again for more detailed instructions refer to provided 8160 manual.



IMPORTANT: Seeder/Electric motor should never be turned on with hydraulic blower off. Seed tubes will fill with seed and plug if blower is off while operating motor drive.

NOTE: It is recommended to run 8160 in manual mode briefly to verify motor drive and controller are interacting correctly before putting seed in hopper.

Once an operator is ready to deliver seed turn on “Center” Boom switch verify “Left” and “Right” Boom switches are in “Off” position. Verify Rate Switch is toggled to desired Starting Rate 1 or Rate 2. Finally toggle RUN/HOLD toggle switch to “RUN” position.



IMPORTANT: if a remote run/hold whisker switch option is not used. Operator must use RUN/HOLD switch on 8160 console to seed and to turn off electric motor to stop seeding.

For stationary/testing purposes Rate toggle switch must be in manual (center position). While in manual mode pushing the \uparrow \downarrow will increase or decrease motor speed.

NOTE: It is recommended to run 8160 in manual mode on end turns and during first field pass.

NOTE: Motor may not start immediately. Controller needs a few seconds to gather data on tractor and shaft speeds before turning on motor.

NOTE: Shaft speed is very slow at low planting rates.

Clutch Kit

If a clutch kit is purchased operate with all (3) switches Left, Right, and Center in the “ON” position.

Toggle the “LEFT” and “RIGHT” switches to “OFF” position to turn off the left or right portion of the implement.

HYDRAULIC DRIVE

The hydraulic drive on a Hiniker granular applicator is a hydraulic motor with an integrated flow control valve. Designed to be driven with a customers tractor on board drive system including Raven, Greenstar, etc. This system has feedback to adjust for ground speed and variance in shaft speed. The standard hydraulic lines to run motor are 3/8 x 13 1/2 ft. Depending on location of installation additional adjustments, fittings, extra hose length, etc may be necessary.

SPECIFICATIONS

GENERAL

RPM Operating Range: 4 to 180 RPM
 Hydraulic Oil Usage: 4.9 in³/rev (80 cc/rev)
 Max Hydraulic Oil Usage: 4 GPM (15 LPM)
 Maximum Torque: 1400 inch pounds (160 Nm)
 Dimensions: 10.2 x 5.0 x 6.3 in (260 x 127 x160 mm)
 Weight: 19.8 lbs (9.0 Kg)

ELECTRICAL

Control Signal: 12 Volts pulse width modulated
 Control Frequency: 200 Hz
 Maximum Current: 1.5 Amps

HYDRAULIC CONNECTIONS

Tractor Hydraulics: Closed Center or Open Center

Hydraulic Parts:

Pressure port 1/2" SAE (7/8 UNO) Return port 1/2" SAE (7/8 UNO)

HYDRAULIC CONNECTIONS

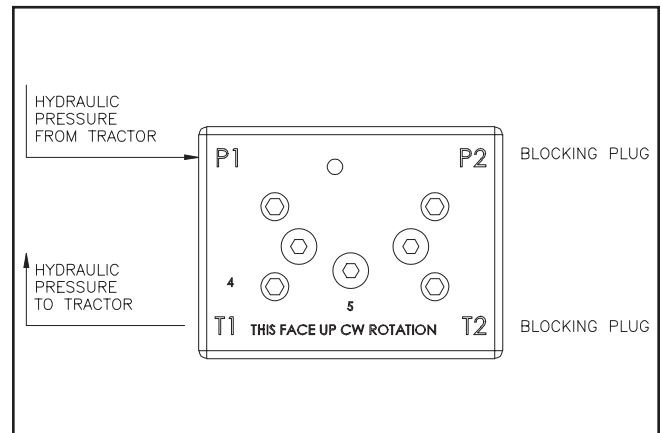
The hydraulic drive assembly is connected to tractor hydraulics dependent on if tractor has closed-center or open-center hydraulics. The hydraulic drive assembly is shipped for closed-center hydraulics. Check tractors operator's manual to confirm tractor's hydraulic type.

CLOSED-CENTER HYDRAULICS

For closed-center hydraulic connections to valve, connect as shown in (DWG. NO. 7426).

1. Connect hydraulic pressure hose from tractor to P1 valve port.
2. Connect hydraulic return hose from T1 valve port to tractor.
3. Close the P2 and T2 ports with red blocking plugs.

NOTE: All pressure and return ports on valve block are SAE #10.

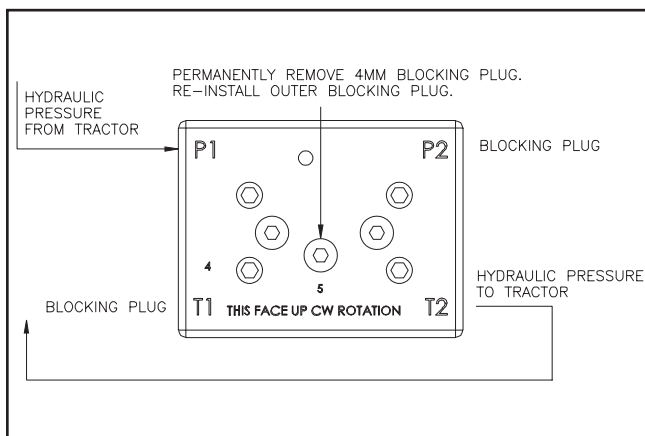


DWG. NO. 7426

OPEN-CENTER HYDRAULICS

For an open-center hydraulic connection to valve, connect as shown in (DWG. NO. 7425).

1. Remove 5 mm hex blocking plug 5.
2. Under plug 5 remove 4 mm hex blocking plug. This plug is to be permanently removed.
3. Reinstall outer blocking plug 5.
4. Connect hydraulic pressure hose from tractor to P1 valve port.
5. Connect hydraulic return hose to T2 port.
6. Close P2 and T1 valve ports with red blocking plugs.



DWG. NO. 7425

PRE-CHECK

A pre-check before connecting to controller is recommended to verify:

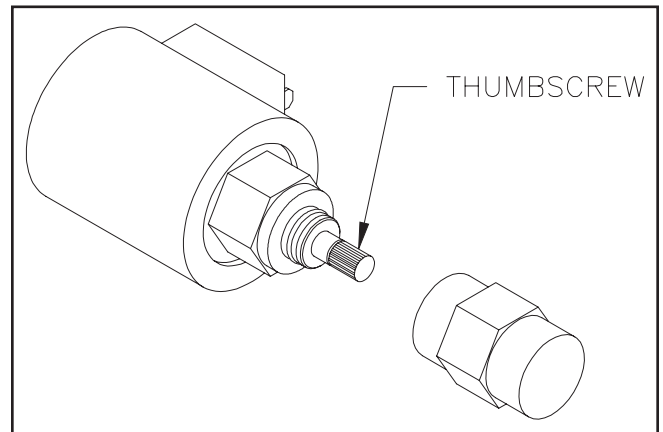
- Hydraulic hoses are properly connected
- Motor rotates in right direction

MANUAL OVERRIDE

A manual override of hydraulic valve will verify proper installation. To manually override hydraulic valve: Valve Cartridge Thumbscrew Shown in (DWG. NO. 7428)

1. Start tractor and engage hydraulics.
2. Unscrew protective cap from valve cartridge.
3. Slowly turn red thumbscrew clockwise to a maximum of 4 1/2 turns to fully open hydraulic valve.
4. Verify that hydraulic motor is rotating in proper direction.

CAUTION: After performing a manual override, red thumbscrew on valve cartridge **MUST** be turned fully counter clockwise until it stops turning for automatic control of valve.



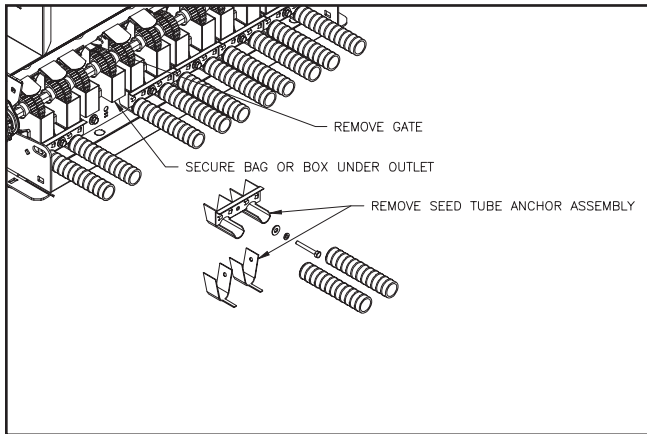
DWG. NO. 7428

To connect hydraulic motor/valve assembly and shaft sensor to on board tractor control system consult you tractor implement dealer for correct electrical harness.

CALIBRATION

Block all metering outlets except for the (1) that product will be collected from.

Remove hose clamps from (2) outlets.



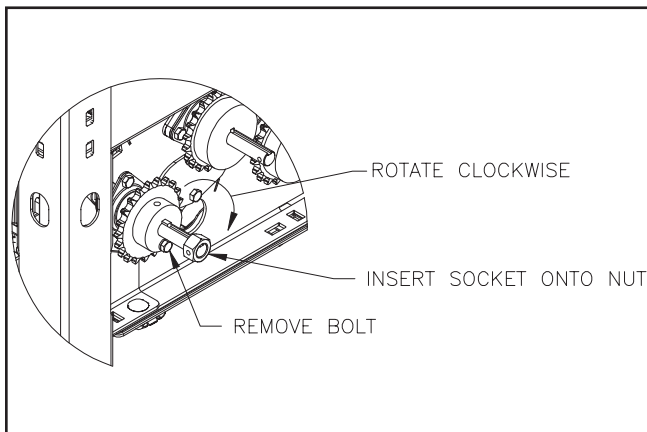
DWG. NO. 7419

Remove seed tube anchor assembly by loosening and removing 1/4 bolt. Secure a bag under exposed metering housing to catch seed as it is metered out of hopper. All outlets will be blocked but (1).

Electric Drive

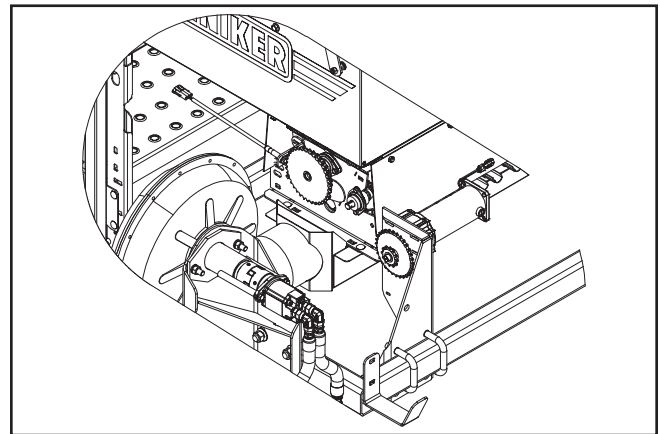
Hiniker 8160 needs a pulses per pound number in order to calibrate controller properly. To get a better average of weight/pounds metered during each shaft revolution we recommend rotating hex shaft 10 times.

To calibrate 8160 controller and determine pulses per pound follow these steps:



DWG. NO. 7418

1. Remove 1/4" bolt securing hub to drive sprocket. Drive shaft can be rotated by putting a 15/16 socket over nut secured to end of drive shaft.
2. Slowly rotate hex metering shaft clockwise (10) times and collect material from a single meter in a bag or box. Rotating slowly (close to actual metering speed) will give a more accurate number.
3. Weigh metered product subtract weight of bag or box to find final weight of metered product.
4. Determine number of outlets that will be used when machine is field operating.
5. Multiply weight collected from (10) shaft revolutions by number of desired outlets.
6. Now divide by (10) giving the weight metered every revolution for a whole machine.



DWG. NO. 7506

7. On hopper end with fan is a sensor counting teeth of a sprocket assembled onto agitator shaft. The sensor sprocket is typically a 36 tooth sprocket (every shaft revolution sends 36 pulses to cab controller). Determine number of teeth on sprocket sensor is counting. To determine pulses per pound number which will be input into controller, divide number of teeth (36 pulses per shaft revolution) by the number calculated in step 6. (Weight metered each shaft revolution).

Example:

- Desired outlets 18
- Weighed product from (10) shaft revolutions - (0.5 lbs.)
- Total weight metered out of 18 outlets during (10) revolutions (18 outlets *0.5 lbs. = 9 lbs.).
- Divide weight from (10) shaft revolutions by (10) to get lbs. metered every shaft revolution — (9 lbs./10=0.9 lbs. per revolution).
- Divide sensor sprocket teeth number (example 36) by lbs. per revolution calculated in previous step — (if sprocket has 36 teeth 36 pulses per Rev/0.9 pounds per Rev) = 40 pulses/pound.
- Input 40 pulses/pound into controller console. Once pulses/Lbs. number is determined. Refer to electric drive portion of this manual and input calculated number into 8160 controller. Machine is now calibrated and electric drive is field ready.

NOTE: It is recommended to run 8160 controller in manual mode initially to make sure motor drive is running correctly before switching to automatic rate control.

HYDRAULIC DRIVE

Refer to customer controller instruction manual for necessary information/steps to calibrate hydraulic drive.

MAINTENANCE

HYDRAULIC BLOWER

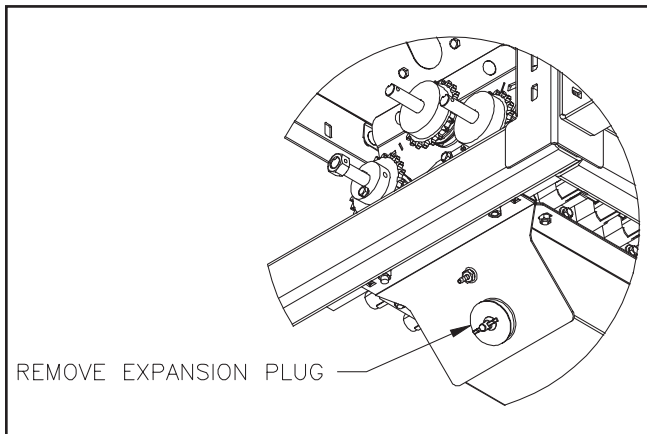
After operation in dusty conditions. Check air intake screen and remove debris. Remove air intake and check impeller blades for accumulation of foreign matter that could interfere with fan operation.

BEARINGS

Check and clean bearings frequently for accumulation of dust and fine particles. Failure to do so may cause damage to shaft or sprockets. Binding of metering shafts can cause a change in application rates and electric motor to stall.

AIR MANIFOLD

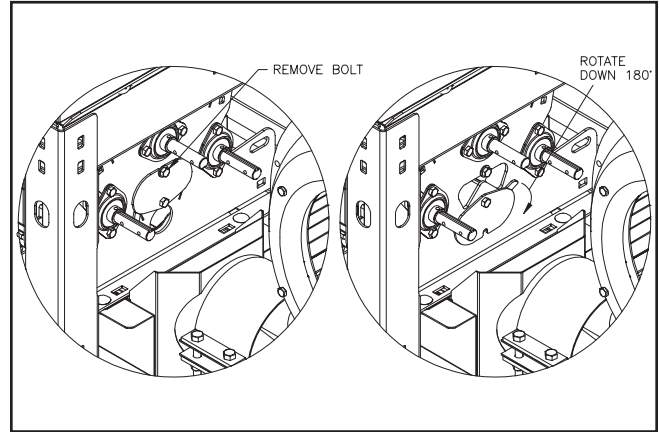
Make sure to clear manifold of collected dust or debris by removing expansion plug in manifold. Use hydraulic fan to blow out/remove dust and debris.



DWG. NO. 7420

Failure to remove foreign material in air chamber may interfere with air passage and delivery of material.

HOPPER CLEANOUT



DWG. NO. 7421

Remove 5/16 bolt on top of clean out door. Fasten a bag under clean out door area. Rotate clean out door 180 degrees. Using an air compressor, blow remaining seed from inside hopper into bag fastened on side of hopper below clean out door. Once hopper is empty rotate and secure clean out door in place.

POST SEASON MAINTENANCE

Before storing applicator for the season it is a good idea to check the following areas:

1. Remove metering wheels and clean them.
2. Clean the inside of the hopper, especially the bottom corners.
3. Purge the delivery system by running the fan at operating speed.
4. Blow out air chamber by removing expansion plug.
5. Lubricate all roller chains.
6. Remove Manifold pressure gauge. Store in a clean, dry area. Make sure to plug port.
7. Blow off material that accumulates between feed row housing and air chamber weldment.

8. Touch up any paint scratches.
9. Store applicator in a shed or cover with a tarp.

PRESEASON MAINTENANCE

Before starting the season's work, check the following areas:

Bearings

- Turn the metering system by hand. If there is binding or dragging align bearings or replace worn bearings.
- On 40 Cu. Ft. or larger machines check center bearing and bearing support for binding of shaft.

Delivery System

- Inspect applicator for accumulation of debris.
- Install manifold pressure gauge. Run fan to ensure it is working properly.
- Run fan at operating speed and check air flow at each outlet.

Metering System

- Inspect individual metering wheels for wear.
- Check sprockets for damage to teeth.
- Examine chains for alignment and tension.

HINIKER WARRANTY

The only warranty Hiniker Company (Hiniker) gives and the only warranty the dealer is authorized to give is as follows:

We warranty new products sold by Hiniker or authorized Hiniker dealers to be in accordance with our published specifications or those specifications agreed to by us in writing at time of sale. Our obligation and liability under this warranty is expressly limited to repairing or replacing, at our option, within one year after date of retail delivery, to the original purchaser, any product not meeting the specification. **WE MAKE NO OTHER WARRANTY, EXPRESS OR IMPLIED AND MAKE NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE.** Our obligation under this warranty shall not include any transportation charges or costs or any liability for direct, indirect or consequential damage or delay. If requested by Hiniker Company, products or parts for which a warranty claim is made are to be returned freight prepaid to our factory. Any improper use, operation beyond rated capacity, substitution of parts not approved by Hiniker Company, or any alteration or repair by others in such manner as in our judgement affects the product materially and adversely shall void this warranty. **NO EMPLOYEE OR REPRESENTATIVE IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY.**

HINIKER reserves the right to make improvement changes on any of our products without notice.

HINIKER does not warrant the following:

1. Used products
2. Any product that has been repaired modified or altered in a way not approved by Hiniker Company.
3. Depreciation or damage caused by normal wear, lack of reasonable and proper maintenance, failure to follow Operator Manual Instructions, misuse, lack of proper protection during storage, or accident.
4. Parts replacement and service necessitated by normal wear or maintenance including, but not limited to, belts, cutting parts, and ground engaging parts.
5. Damage or breakage caused by rocks.

A DELIVERY REPORT FORM and warranty registration form must be filled out and received by HINIKER COMPANY to initiate the warranty coverage. Failure to complete the forms will void the warranty.

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