



MORRIS

Advanced Air Seeding and Tillage Systems

**7000 Series
Third Tank**

N29124-02

**OPERATOR'S
Manual**
Assembly Instructions

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SAFETY-ALERT SYMBOL



Watch for this symbol. It identifies potential hazards to health or personal safety. It means:

**ATTENTION - BE ALERT.
Your Safety is involved.**

Familiarize yourself with the location of all decals. Read them carefully to understand the safe operation of your machine.

Three words are used in conjunction with the safety-alert symbol:



DANGER

Tells you that a hazard exists which would result in a high probability of death or serious injury if proper precautions are not taken.



WARNING

Tells you that a hazard exists which can result in injury or death if proper precautions are not taken.

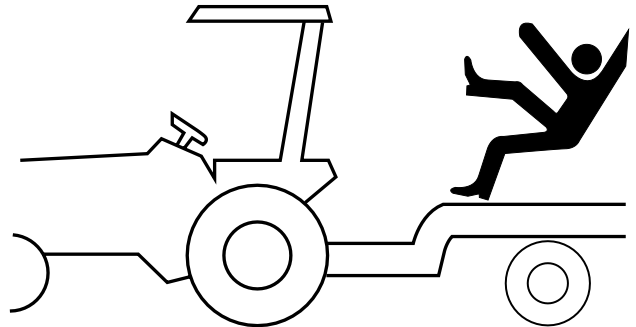


CAUTION

Tells you to remember safety practices, or directs attention to unsafe practices which could result in personal injury if proper precautions are not taken.

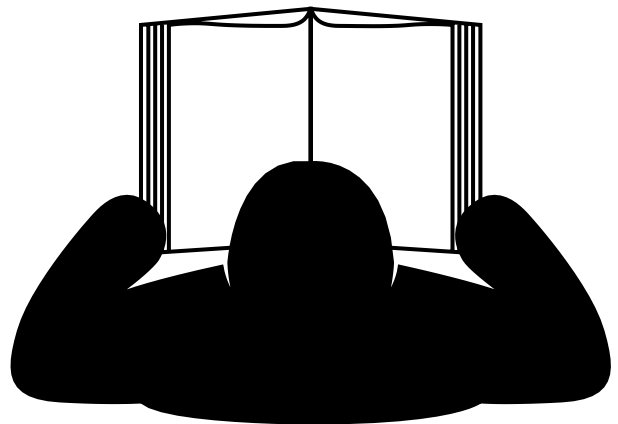
General Operation

- **DO NOT RIDE!!** No one should be allowed to ride on the implement when in motion.
- No one but the operator in the driver's compartment!!
- **Check behind** when backing up.
- **Reduce speed** when working in hilly terrain.
- Never allow anyone within the immediate area when working.
- **Stand clear** when raising or lowering wings.
- **Keep all shields in place**, replace them if removed for service work.
- Always lock auger attachment in raised position.
- Keep hands clear of tank opening when closing lid. Keep lid seal clean to ensure proper sealing.
- **Do Not enter tank unless another person is present.**



Tractor Operation

- Be aware of tractor safety procedure when working with implement.
- Review tractor manuals.
- Secure hitch pin with a retainer and lock drawbar in centre position.



Safety

Chemicals

- **Use extreme care** when cleaning, filling or making adjustments.
- **Always read** granular chemical or treated seed labels carefully and always keep label warnings in mind.
- Wear close fitting clothing and appropriate safety equipment for the job.
- **Always wear** safety goggles, breathing apparatus and gloves when handling with granular chemical or treated seed.
- **Do not feed** any treated seed to livestock. Treated seed is poisonous and may cause harm to persons or livestock.
- **Wash exposed skin immediately** - do not leave chemicals on your skin.
- **Properly store** chemicals in original containers with labels intact.
- **Do Not enter tank unless another person is present.**



Danger

Failure to comply may result in death or serious injury.

Read Operator's Manual and decals on **Ammonia** tank before operating Air Drill. Become familiar with all warnings, instructions, and controls.

Always wear gloves and goggles when transferring or handling ammonia.

Always stay clear of hose and valve openings.

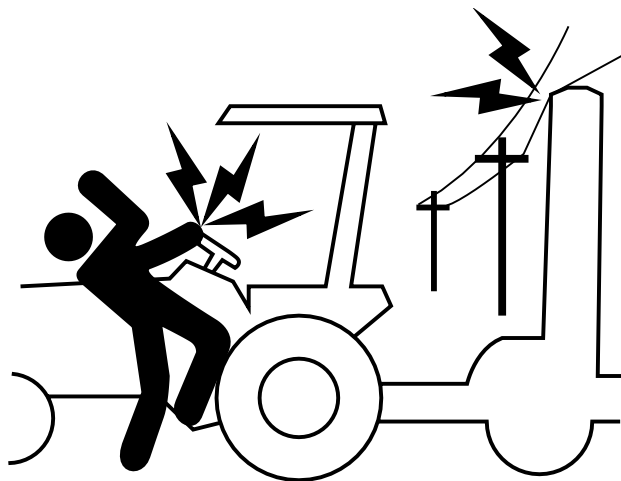
Always be sure pressure is relieved before disconnecting hoses or parts.

Always secure connecting parts and safety chains before towing ammonia trailer.

Always have ample water available in case of exposure to ammonia liquid or gases.

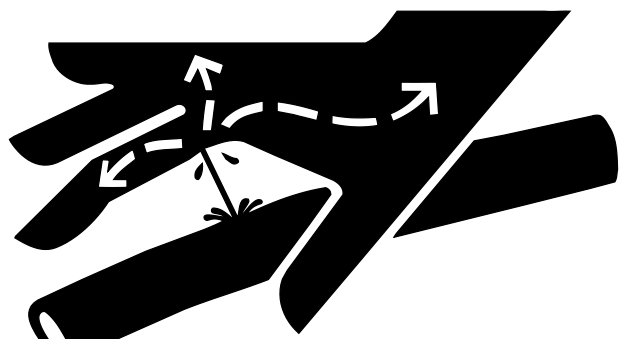
Transporting

- **Be aware** of the height, length and width of implement. Make turns carefully and be aware of obstacles and overhead electrical lines.
- Always travel at a safe speed. Do Not Exceed 20 M.P.H.
- **REDUCE SPEED** with material in Air Cart tanks. Do Not Exceed a speed of 10 M.P.H.
- The weight of the implement being towed **must not exceed 1.5 times** the weight of towing vehicle.
- Do not transport in poor visibility.
- The slow moving vehicle (SMV) emblem and safety reflectors must be secured on the machine for safe transport.
- Avoid soft surfaces, the additional wing weight on the centre wheels could cause the machine to sink.
- Ensure safety chain is attached correctly.
- Check that wings are firmly seated in transport wing stops, and lock pins installed.
- Secure transport locks on depth control cylinders.



Hydraulics

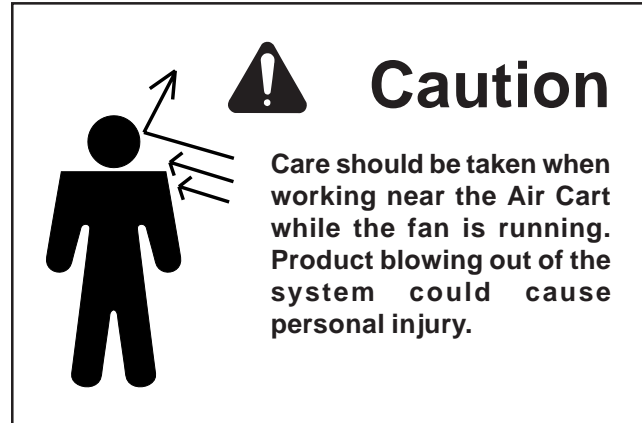
- **Do not** search for high pressure hydraulic leaks without hand and face protection. A tiny, almost invisible leak can penetrate skin, thereby requiring immediate medical attention.
- Use cardboard or wood to detect leaks - never your hands.
- Double check that all is clear before operating hydraulics.
- **Never** remove hydraulic hoses or ends with machine elevated. Relieve hydraulic pressure before disconnecting hydraulic hoses or ends.
- Maintain proper hydraulic fluid levels.
- Keep all connectors clean for positive connections.
- Ensure all fittings and hoses are in good condition.
- Do not stand under wings.



Safety

Maintenance

- **Shut tractor off** before making any adjustments or lubricating the machine.
- **Block** machine securely to prevent any movement during servicing.
- Wear close fitting clothing and appropriate safety equipment for the job.
- **Always wear** safety goggles, breathing apparatus and gloves when working on seeder filled with granular chemical or treated seed.
- **Do not feed** any treated seed to livestock. Treated seed is poisonous and may cause harm to persons or livestock.
- **Do not** search for high pressure hydraulic leaks without hand and face protection. A tiny, almost invisible leak can penetrate skin, thereby requiring immediate medical attention.
- **To prevent personal injury**, do not walk within radius of raised cultivator wings. Always ensure wing rests are locked and in place.
- Do not modify the machine.



Storage

- Store implement away from areas of main activity.
- Level implement and block up securely to relieve pressure on jack.
- Do not allow children to play on or around implement.

Decals

⚠ WARNING

Personal injury or property damage may result from loss of control.

- Always use large enough tractor with sufficient braking capacity.
 - > Weight of fully loaded implement should not be more than 1.5 times weight of tractor.
- Maximum recommended towing speed is 20 mph (32 km/h).
- Use flashing amber warning lights and SMV emblem when on public roads, except where prohibited by law.
- Refer to tractor and implement Operator's Manuals for weights and further information.

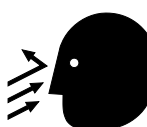
N24301

⚠ WARNING



Keep off while machine is moving or mechanism is running.

D13705



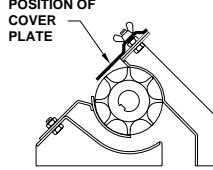
⚠ CAUTION

To avoid injury, do not open lids while fan is operating. Air gust may contain dust and particles.

N15094

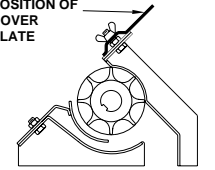
IMPORTANT

FOR FINE SEEDS ONLY:



POSITION OF COVER PLATE

FOR ALL OTHER SEEDS:



POSITION OF COVER PLATE

REFER TO OWNER'S MANUAL FOR PROPER SLIDER SETTING

N28063

IMPORTANT

BEFORE FILLING TANK

- ENSURE PROPER SLIDER CLEARANCE IS SET FOR EACH METER WHEEL
- ENSURE TANK CLEANOUT DOOR IS FULLY CLOSED.

BEFORE APPLYING PRODUCT

- SET RATE ACCORDING TO THE PROCEDURE AND RATE CHART DESCRIBED IN THE OPERATORS MANUAL.
- TAKE A SAMPLE AND ADJUST THE RATE, IF NECESSARY.

AIR LEAKS AFFECT METERING ACCURACY

- ENSURE ALL SEALS ARE PROPERLY POSITIONED AND ALL LIDS ARE TIGHTLY CLOSED.

N19025

IMPORTANT

PREVENT CORROSION

CLEAN THE METERING BODY (INCLUDING AIR PASSAGES) AND THE COLLECTOR BODY WITH MILD SOAPY WATER AND RINSE. WHEN DRY A LIGHT COATING OF DIESEL FUEL OR WD-40 SHOULD BE APPLIED BEFORE STORAGE.

N21604



Familiarize yourself with the location of all decals. Read them carefully to understand the safe operation of your machine.

Safety

Notes

Section 2: Specifications

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Specifications

7032 & 7042 Models

Third Tank

Specifications and Options

	7032	7042
Fits on Air Seeder Model	7130 - 7180	7240 - 7300
Capacity	30 cu. ft. 24.4 bushels/1,702 lbs.	40 cu. ft. 32.4 bushels/2,257 lbs.
Meter shut-off	Electric (Main)	Electric (Main)
Second clutch (Spot fertilizing on the go)	Optional	Optional
Tank Screens	Optional	Optional
Metering System - Ground Driven	Standard	Standard
Number Secondary Runs	21 to 80	21 to 80
Primary Hose - Diameter	2 1/2"	2 1/2"
Secondary Hose - Diameter	15/16"	15/16"
Tank Walk-Way	Standard	Standard
Easy Clean Out System	Standard	Standard
Monitor -(Shaft Motion and Bin Level)	Quick couples to Air Seeder Monitor Standard	Quick couples to Air Seeder Monitor Standard

Note: 7042 is not available on 7300 Tow Between

Section 3: Checklist

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Checklist

SAFETY-ALERT SYMBOL



Watch for this symbol. It identifies potential hazards to health or personal safety. It points out safety precautions. It means:

ATTENTION - BE ALERT.
Your safety is involved.

Manuals

Note: Owner Verification Form must be completed and submitted to Morris Industries within 30 days of delivery date.

Warranty Void if Not Registered

Parts Manual

Order Part Number N29259

Checklist

Please read the Operator's Manual carefully and become a "SAFE" operator.

Adopt a good lubrication and maintenance program.

General

- ___ Check if assembled correctly.
- ___ Proper chain tension.
- ___ Check hose connections
- ___ Ensure cleanout door and tank lid are connected correctly.
- ___ Both chains for the quick change transmissions are supplied: One 86 link and one 72 link.

Lubrication - Grease

- ___ Metering Drive

Lubrication - Oil

- ___ Drive chains

Tire Pressure

- ___ See maintenance, section 6

Transport

- ___ Tighten wheel bolts.
- ___ Check hose connections.

OWNER REFERENCE

Model: _____
Serial No: _____
Dealer: _____
Town: _____ State: _____
Phone: _____
OWNER/OPERATOR: _____
Date: _____



TAKE SAFETY SERIOUSLY.

DO NOT TAKE

Checklist

Notes

Section 4: Introduction

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Introduction

Introduction

This Operator's Manual has been carefully prepared to provide the necessary information regarding the operation and adjustments, so that you may obtain maximum service and satisfaction from your new MORRIS 7000 Series Third Tank.

To protect your investment, study your manual before starting or operating in the field. Learn how to operate and service your 7000 Series Third Tank correctly, failure to do so could result in personal injury or equipment damage.

If you should find that you require information not covered in this manual, contact your local MORRIS Dealer. The Dealer will be glad to answer any questions that may arise regarding the operation of your MORRIS 7000 Series Third Tank.

MORRIS Dealers are kept informed on the best methods of servicing and are equipped to provide prompt efficient service if needed.

Occasionally, your 7000 Series Third Tank may require replacement parts. Your Dealer will be able to supply you with the necessary replacement parts. If the Dealer does not have the necessary part, the MORRIS Factory will supply the Dealer with it promptly.

Your MORRIS 7000 Series Third Tank is designed to give satisfaction even under difficult conditions. A small amount of time and effort spent in protecting it against rust, wear and replacing worn parts will increase the life and trade-in value.



Keep this book handy for ready reference at all times. It is the policy of Morris Industries Ltd. to improve its products whenever it is possible to do so. The Company reserves the right to make changes or add improvements at any time without incurring any obligation to make such changes on machines sold previously.

Section 5: Operation

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Operation

CAUTION



BE ALERT

SAFETY FIRST

**REFER TO SECTION 1 AND REVIEW ALL
SAFETY RECOMMENDATIONS.**

Application

The Morris 7000 Series Third Tank applies a wide range of seed and granular fertilizer products.

Tractor

Tires

- Proper ballast and tire pressure are required when pulling heavy implements.
- Consult your tractor operator's manual and follow all recommended procedures.

Hydraulics

- Wipe all hydraulic fittings and couplers with a clean cloth to avoid contaminating the system.
- Check that hydraulic reservoir is filled to the proper level.

Drawbar

- Centre and pin in a fixed position for easier hitching and greater stability.



Do not permit smoking, sparks or an open flame where combustible fuels are being used. Keep the work area well ventilated.



Do not search for high pressure hydraulic leaks without hand and face protection. A tiny, almost invisible leak can penetrate skin, thereby requiring immediate medical attention.

Metering System

The 7000 Series Air Cart uses a combination of metering wheels and spacers shown below. The metering wheel is individually sized to correspond to the number of outlets at the connected secondary head and the spacers make up the space between the wheel and the body. Some openings may be blanked off depending on the number of secondary divider heads used on the seeding tool.

The 7000 Series Air Cart can meter all types of seeds and fertilizers by simply adjusting the slider plates. See “Slider Settings” for more details.

Different rates are easily obtained using the selection of quick change sprockets that attach to either of the two meter transmissions.

Note: Before putting product into the tanks check the following:

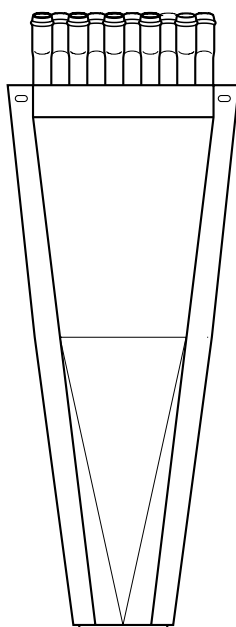
- (a) The slider plates are set correctly for product being applied.
- (b) The Clean-out doors are fully closed and sealed.
- (c) The plastic bag covering the fan is removed.

Important

Ensure distribution system is balanced. It is very important that head outlets only vary by one . (i.e. use only 7 and 8 together, 8 and 9 together, 9 and 10 together)

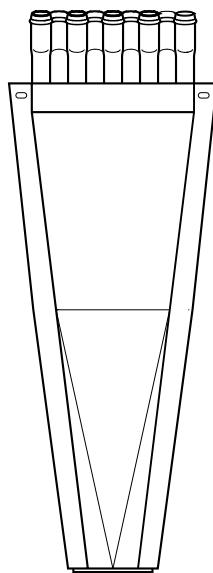
Note: The number of outlets on the divider head must match the metering wheel size.

10 Outlet Head



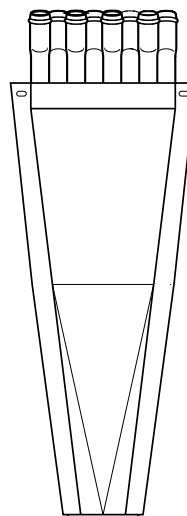
**10 Outlet
Metering Wheel
with no spacer.**

9 Outlet Head



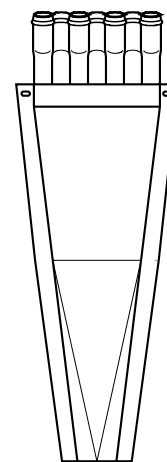
**9 Outlet
Metering Wheel
with a single
spacer.**

8 Outlet Head



**8 Outlet
Metering Wheel
with two single
spacers.**

7 Outlet Head



**7 Outlet
Metering Wheel
with a single
and one double
spacer.**

Operation

Metering System - Continued

Secondary Hose Installation

The lengths of the 15/16" diameter hoses are **very important**.

For Accurate distribution the secondary hoses have to be arranged by length symmetrically about the centre line.

The **longest** hoses **have to be** in the **centre** of the divider head. These hoses would normally feed the openers furthest away from the head.

- Ensure that the secondary hoses 15/16" diameter do not run higher than 3" above the height of the flat fan divider head.
- Allow an extra 3" of hose before cutting secondary hose for fitting in the seed boot.
- Always ensure that the secondary hoses are sufficiently long to accommodate tripping of trips.
- **Avoid sharp bends** in any of the hoses.
- Check for pinch points and clearances when folding in and out of transport.

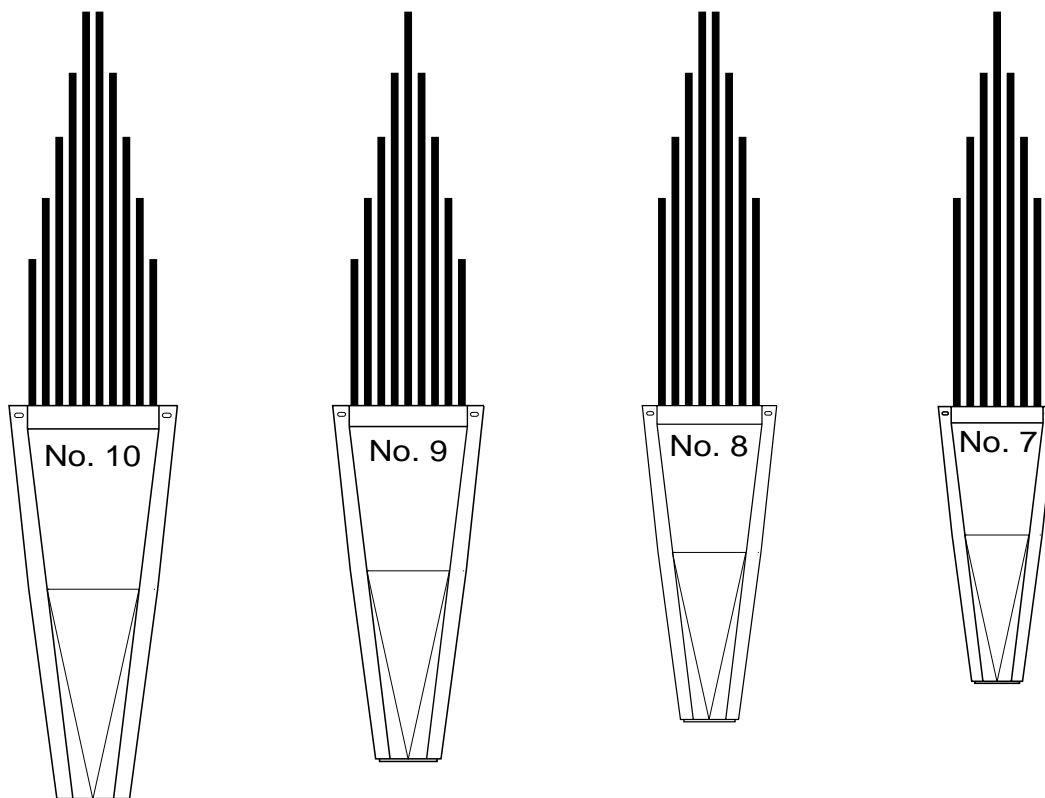
Important

Hot water is the only acceptable lubricant for the installation of the secondary hose.

The supplier advised MORRIS that WD-40 or any other lubricant (i.e. liquid detergent) will have a negative effect on the chemical stability of the hose, resulting in the degradation and failure of the hose due to Environmental Stress Cracking.

Important

Distribution uniformity will be adversely affected if hoses are incorrectly installed.



Slider Setting

The slider plates come in 4 different sizes. Each slider plate matches a specific metering wheel.

Note: The slider plates must match the metering wheel size.

The slider plates have three positions to allow all types of seeds and fertilizers to be metered.

The slider plate positions are **closed**, **open**, and **removed** as indicated on diagrams. (See next page)

- Position slider as indicated below and tighten nut to hold slider tightly in place.
- Position cover plate as indicated below and tighten wing nuts to hold cover plate in place.

Note: For Oats or Coarse Grains, if it appears bridging is occurring, remove sliders and recalibrate.

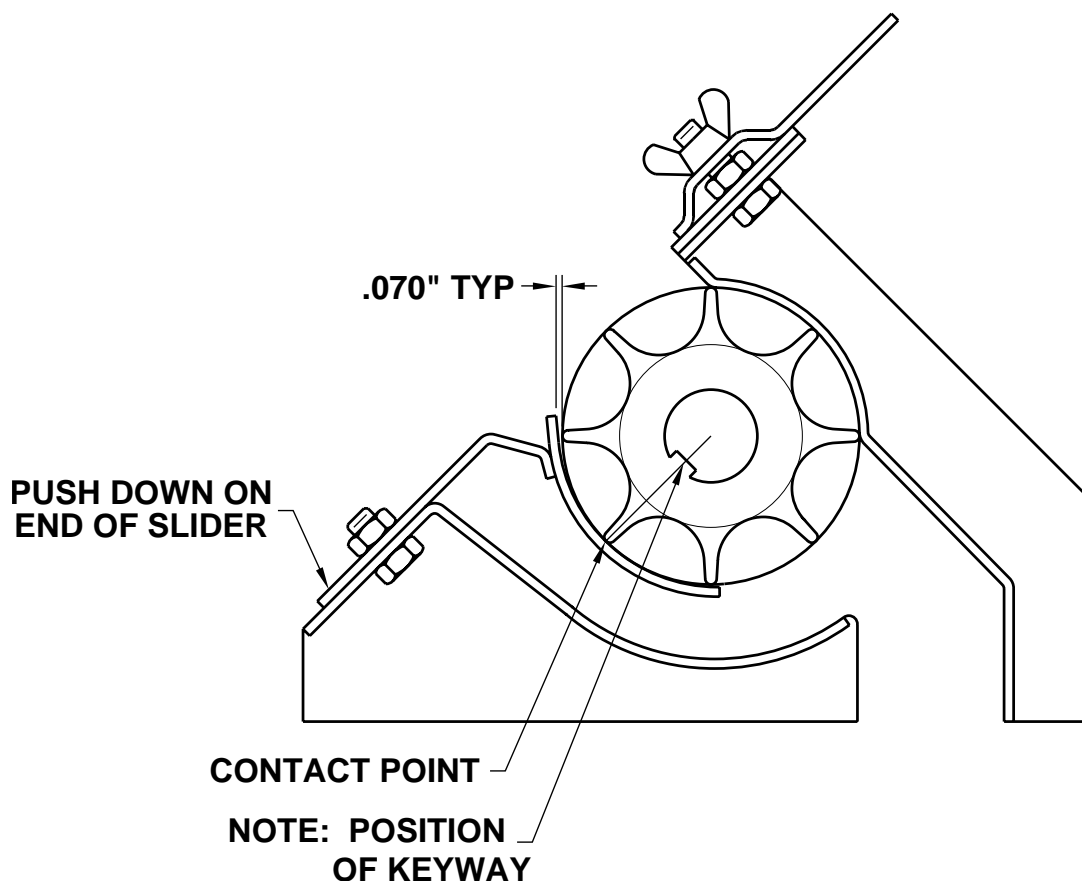
Important

When adjusting the sliders to the closed position follow the procedures below:

- 1) Locate the key-way in the metering wheel. Rotate shaft until high spot is located, this is the key-way location. Mark shaft for future reference.
- 2) Rotate metering shaft until key-way is in location shown below.
- 3) Keep the slider mounting plate flat on the metering body surface. See diagram A.

If the slider is tipped up when set to the closed position interference with the metering wheel will occur.

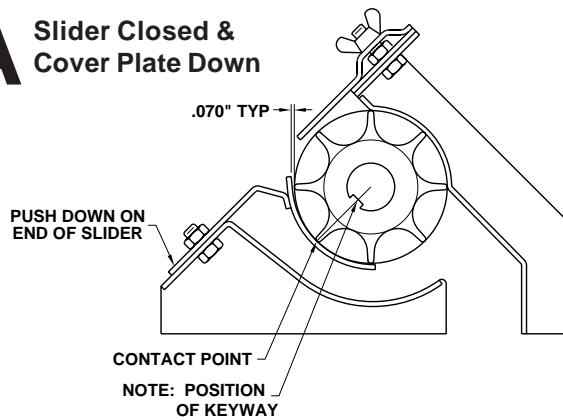
Note: In the closed position there is a gap of .070" between the metering wheel and the top edge of the slider plate.



Operation

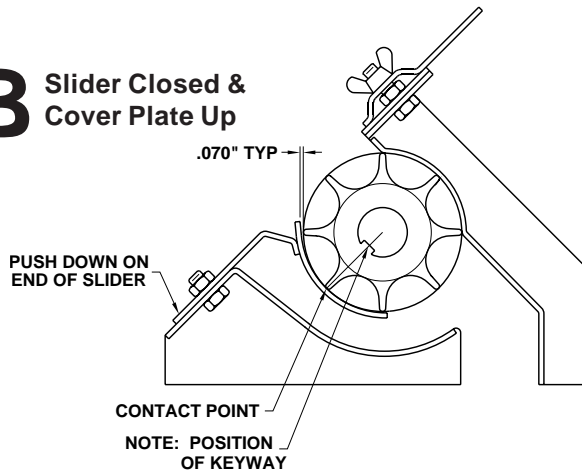
Slider Setting - Continued

A Slider Closed & Cover Plate Down

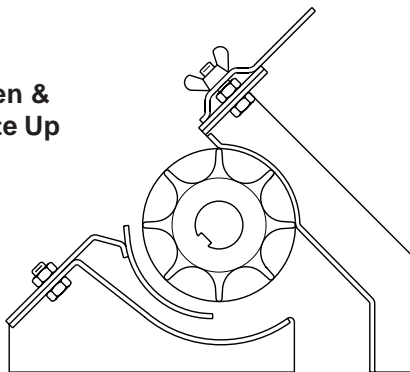


Note: For Oats or Coarse Grains, if it appears bridging is occurring, remove sliders and recalibrate.

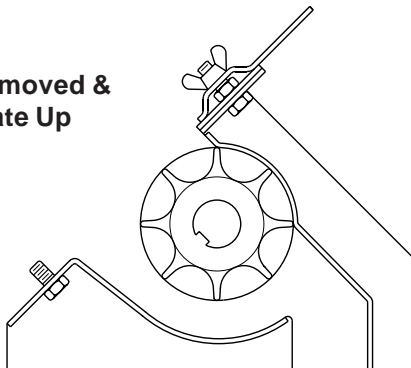
B Slider Closed & Cover Plate Up



C Slider Open & Cover Plate Up



D Slider Removed & Cover Plate Up



Slider Setting Chart

Diagram	Product	Slider Setting	Cover Plate
A	Canola Flax Mustard	Closed	Down
B	Nitragin Nodulator	Closed	Up
C	Barley Lentils Milo Oats Rice Wheat Fine Fertilizer	Open	Up
D	Beans Peas Soybeans Sunflowers 10-46-0-0 11-51-0 Fertilizers containing Sulphur and/or Potash	Removed	Up

Filling Tank

The 7000 Series Third Tank comes in two sizes:

- (1) 7032 Third Tank fits the 7130 and 7180 Air Carts. It has a capacity of 30 cu. ft. which is equivalent to 1702 lbs of 11-51-0 fertilizer.
- (2) 7042 Third Tank fits the 7240 and 7300 Air Carts. It has a capacity of 40 cu. ft. which is equivalent to 2257 lbs of 11-51-0 fertilizer.

Note: Before putting product into the tanks check the following:

(a) The slider plates are set correctly for product being applied.

(b) The Clean-out doors are fully closed and sealed.

(c) The plastic bag covering the fan is removed.

- Open lid fully on tank.
- Check and remove any debris inside tank.
- Remove clean-out door.
- Check for debris inside metering body.
- Check the slider plates are set correctly.
- Fully close and seal the Clean-out door.
- Ensure the auger screen is in place.
- Always use screen to filter debris when filling.
- Once tank is filled, clean lid seal and ensure lid seal is positioned correctly.
- Check lid for air leaks with your hands once air seeder fan is operational. See Section 6
- Check metering body for air leaks.
- Remove plastic bag which covers fan.

Note: Even small fertilizer lumps can cause problems with plugging. All possible precautions should be taken to prevent lumpy fertilizer from entering the tank.

Important

Check Metering Wheel keyways in the event the primary lines plug.

Keyways may shear if the collector becomes plugged.



Warning

Do not enter tank unless another person is present.



Inspect Metering Body

Operation

Unloading and Cleanout

To empty the Third Tank:

- Position auger under the tank to be emptied.
- Start auger. Run auger slow.
- Loosen front cleanout door on metering body.
- Regulate flow from the tank by loosening or tightening front cleanout door as required.
- Once all material stops flowing, remove cleanout door completely and brush out remaining material in the corners.

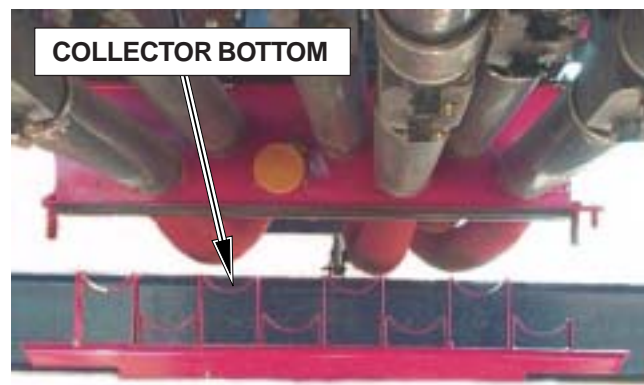
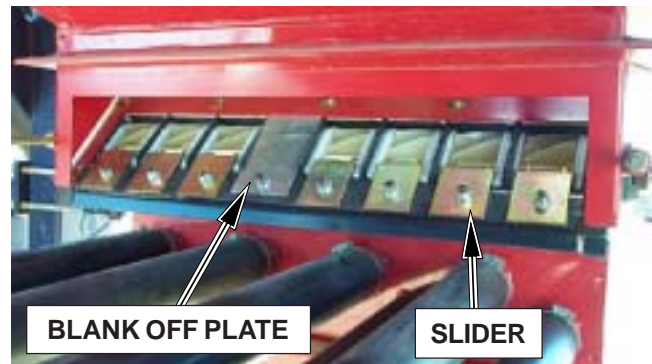
For complete cleanout:

- Remove the collector bottom and cleanout door.
- Run fan.
- Wash the tank interior thoroughly to remove any chemical traces.
- Reinstall the collector bottom and cleanout door.



Danger

Keep all shields in place. Keep hands, feet and clothing away from auger intake, failure to do so will result in serious injury or death.



Metering Rate Adjustment

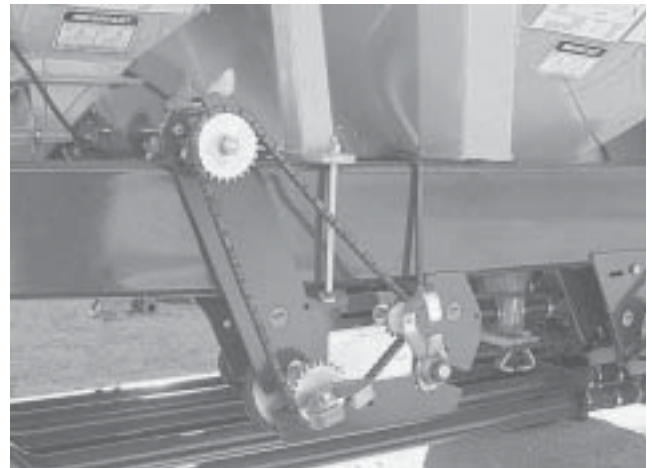
The metering rate adjustment is the same as the Air Seeder. The rate varies with the speed of the metering wheels. A new rate is achieved by changing a sprocket on the Posi-Drive Transmission for the Third Tank.

Refer to the rate charts for desired application rate and sprocket selection.

Note: The Rate Charts should only be used as a guide. Even though actual product was used to determine the chart variation in product size, density, shape, tire pressure and wheel sinkage are all factors that influence the meter rate.

- Loosen metering chain on posi-drive transmission, by loosening the idler.
- Spin off the wing nut and remove the rate change sprocket.
- Install the desired rate change sprocket and tighten the wing nut.
- Tighten the chain by adjusting the idler.

Note: Do not over tighten chain, just take slack out of chain.



Transmission

Operation

Rate Charts

Use the rate charts located on the 7000 Series Air Cart.

The charts should only be used as a guide. Specific rates can be achieved by using the rate check method as outlined under *Rate Calibration*.

To determine a seed/fertilizer rate from the chart:

- Go to the desired rate along the line marked "Standard" of a specific graph.
- Go straight up from that point to where that line is intersected by the graph. This will give the sprocket size required to give the particular rate chosen.
- At this intersection go straight across to the vertical line of the graph. This will give the sprocket size required to give the particular rate chosen.
- Change the Quick Change Sprocket and repeat the rate check to confirm the seed rate.
- Repeat the above procedure for the other tank.
- For very low or very high rates, see below.

Note: The rate charts should only be used as a guide. Variation in seed size, density, shape, tire pressure and wheel sinkage are all factors that can influence the seed rate.

Extra Low Rates

Although the charts show a minimum rate of 35 lbs. per acre for fertilizer and 20 lbs. per acre for seed, sometimes this is not low enough, especially when product is being metered from both tanks.

Rates under the values mentioned can be achieved by replacing the standard 25 tooth sprocket on the front of the transmission with either a 35 or 40 tooth sprocket.

The rates obtained when using the 35 and 40 tooth sprocket are shown on the rate charts beside the respective size sprocket.

When both tanks are being used to meter the same product **without** the Banding Kit, then the 25 tooth sprocket on each transmission must be changed. Now both transmissions will have the same size **metershaft** sprocket.

If the **Banding Kit is installed**, then only the 25 tooth sprocket on the **front or rear** transmission needs to be changed.

Rate Charts - Continued

Extra Low Rates - continued

The same metering chain can be used with these larger sprockets up to a certain size of quick change sprocket.

To determine a rate from the chart:

- Go to the desired rate along the line next to the size of metershaft sprocket used.
- Go straight up from that point to where that line is intersected by the graph line of the particular product being metered.
- At this intersection go straight across to the vertical line of the graph. This will give the sprocket size required to give the particular rate chosen.
- Change the quick change sprocket and repeat the rate check to confirm the seed rate.
- Repeat the above procedure for the other tank.

Rate	Metershaft Sprocket Size	Maximum Size of Quick Change Sprocket	Minimum Size of Quick Change Sprocket
Standard	25 Tooth	45 Tooth	12 Tooth
Low Rate (1)	35 Tooth	33 Tooth	12 Tooth
Low Rate (2)	40 Tooth	26 Tooth	12 Tooth
High Rate	15 Tooth	45 Tooth	18 Tooth

Extra High Rates

In areas where higher rates of product are required the metershaft sprocket is changed from the standard 25 tooth to a 15 tooth.

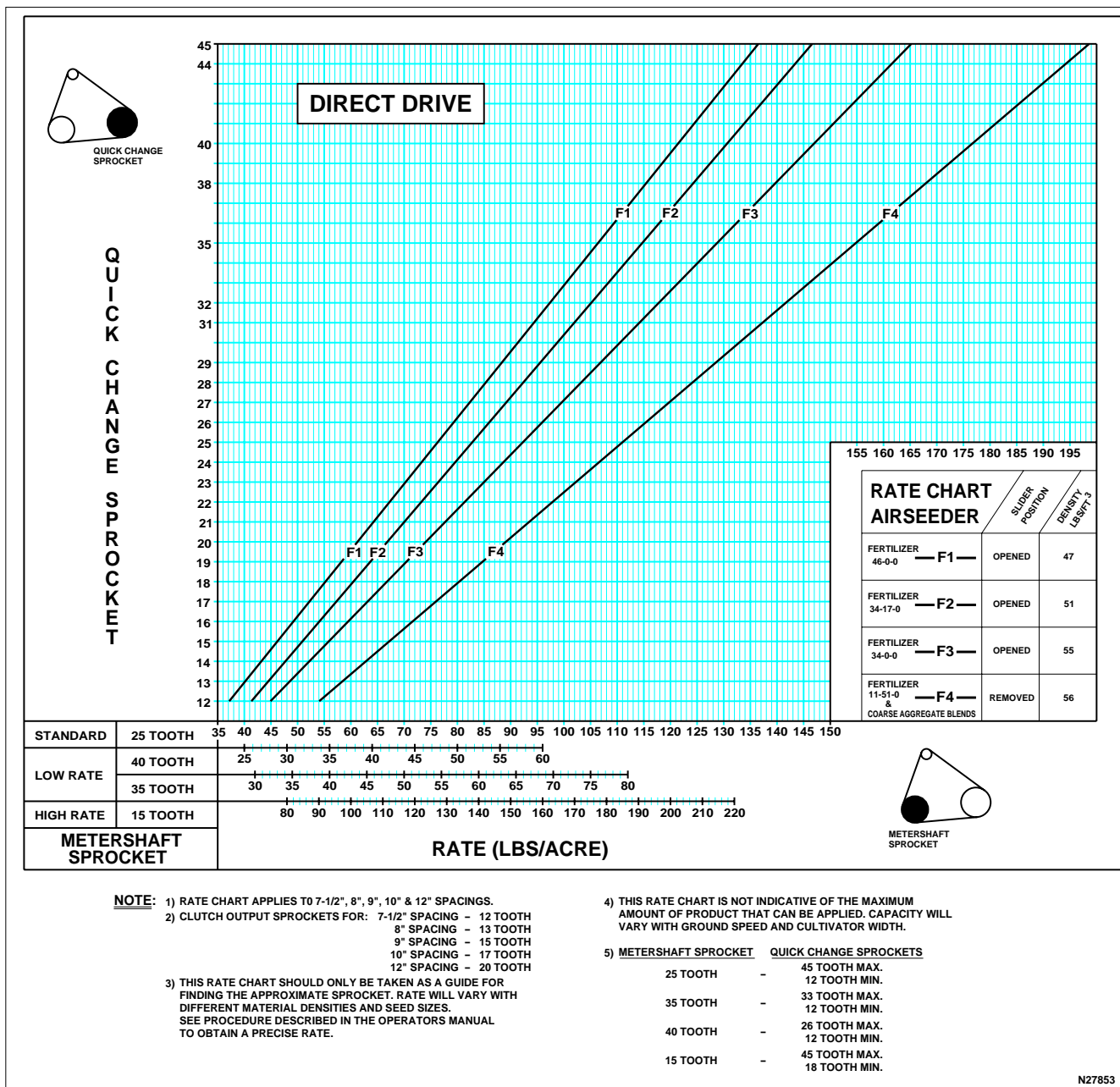
Use the method described under EXTRA LOW RATES to determine the required metering rate.

Operation

Rate Charts - Continued

Fertilizer Rate Chart

(Located on Rear Tank)



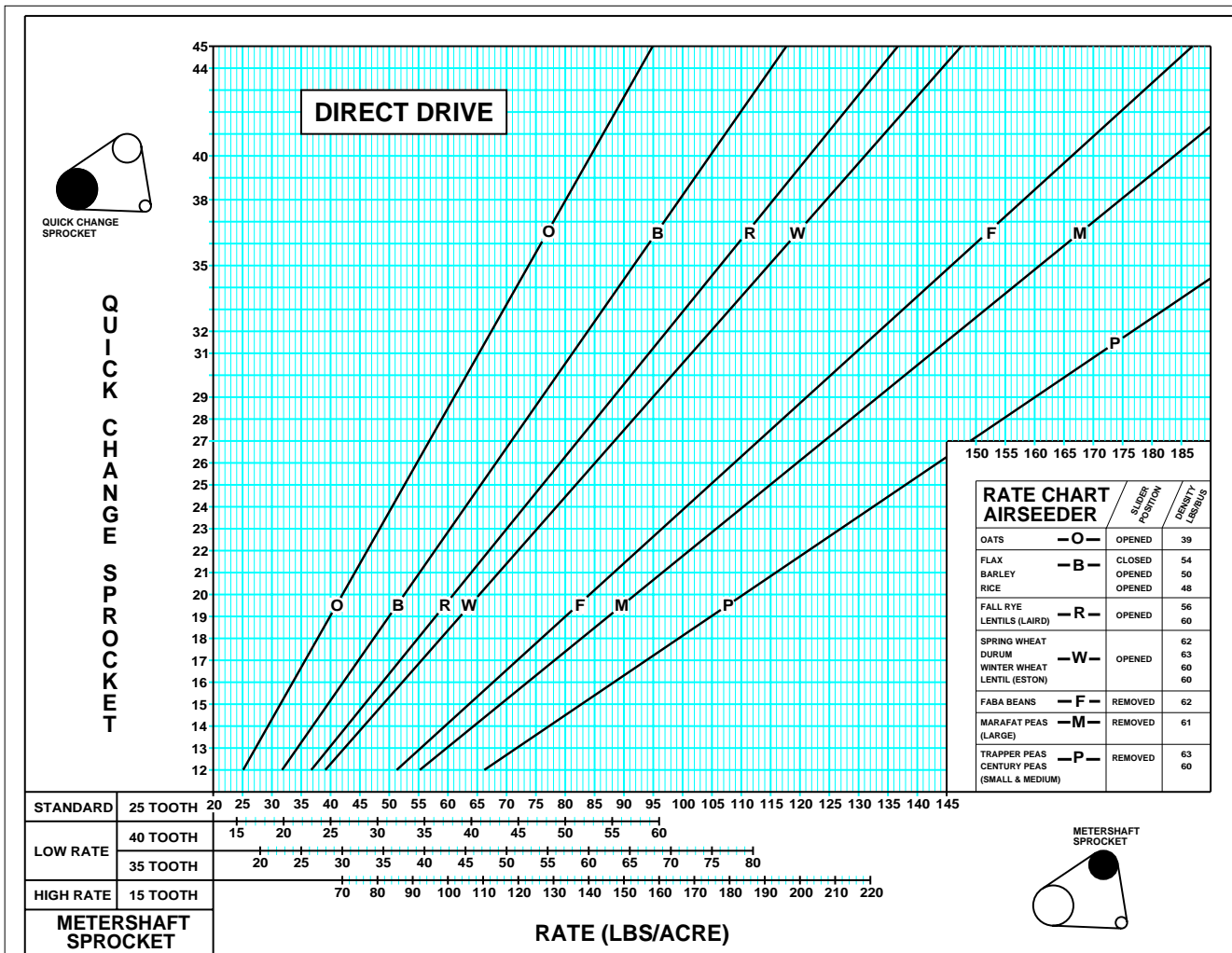
N27853

Operation

Rate Charts - Continued

Seed Rate Chart

(Located on Front Tank)



- NOTE:**
- 1) RATE CHART APPLIES TO 7-1/2", 8", 9", 10" & 12" SPACINGS.
 - 2) CLUTCH OUTPUT SPROCKETS FOR: 7-1/2" SPACING - 12 TOOTH
8" SPACING - 13 TOOTH
9" SPACING - 15 TOOTH
10" SPACING - 17 TOOTH
12" SPACING - 20 TOOTH
 - 3) THIS RATE CHART SHOULD ONLY BE TAKEN AS A GUIDE FOR FINDING THE APPROXIMATE SPROCKET. RATE WILL VARY WITH DIFFERENT MATERIAL DENSITIES AND SEED SIZES. SEE PROCEDURE DESCRIBED IN THE OPERATORS MANUAL TO OBTAIN A PRECISE RATE.

4) THIS RATE CHART IS NOT INDICATIVE OF THE MAXIMUM AMOUNT OF PRODUCT THAT CAN BE APPLIED. CAPACITY WILL VARY WITH GROUND SPEED AND CULTIVATOR WIDTH.

5) METERSHAFT SPROCKET QUICK CHANGE SPROCKETS

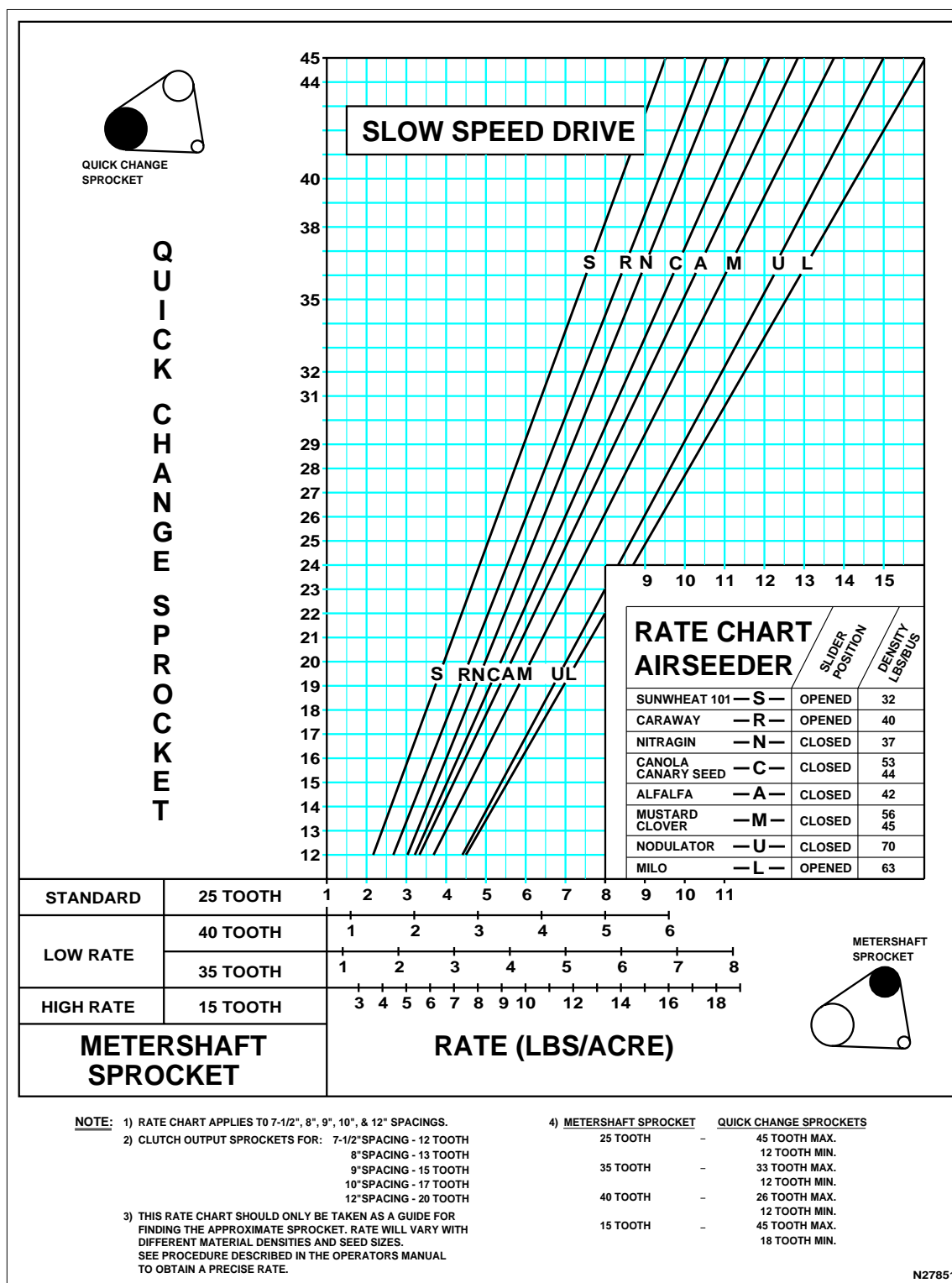
25 TOOTH	-	45 TOOTH MAX. 12 TOOTH MIN.
35 TOOTH	-	33 TOOTH MAX. 12 TOOTH MIN.
40 TOOTH	-	26 TOOTH MAX. 12 TOOTH MIN.
15 TOOTH	-	45 TOOTH MAX. 18 TOOTH MIN.

N27852

Rate Charts - Continued

Seed Rate Chart

(Located on Front Tank)



Operation

Rate Calibration

The practice of doing a rate calibration is strongly recommended as it will confirm the **actual** amounts of product being put into the ground.

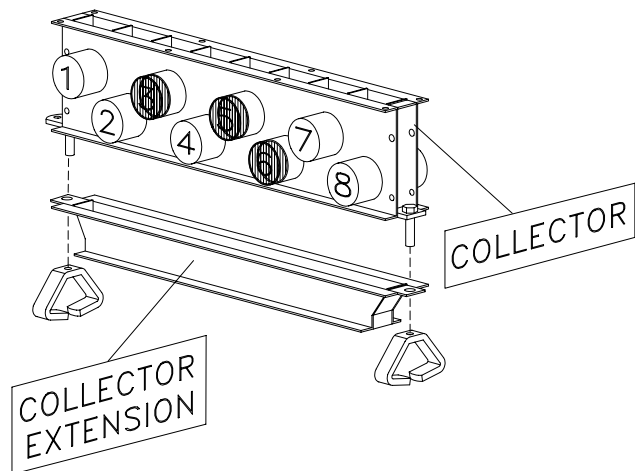
Checking the rate on the 7000 Series Air Cart is very simple.

The following procedure is one that should be followed for every rate calibration or change of product.

- Refer to calibration chart for the correct number of turns of the crank. (See page 5-18 & 5-19)
- Remove the wing nuts on the collector bottom.
- Remove the bottom of the collector and install the collector extension with the wing nuts.
- Remove the metering chain from the other transmissions that are **not** being checked.
- Check that the desired rate change sprocket is installed in the transmission.
- Turn the crank until material begins to fall through the collector extension.
- Slide rate check box onto the collector extension.
- Turn the crank in direction of the arrow (Counter Clockwise) the required number of turns.

Note: Incorrect rates will occur if crank is rotated clockwise.

Note: The fan must not be running when a rate check is performed.



For **Fine Seeds** it is recommended to take a large sample. Typically to take a sample for 1/2 acre or 1 acre.

Example:

For 1/2 acre sample for a 25 ft. wide cultivator with a 7130:

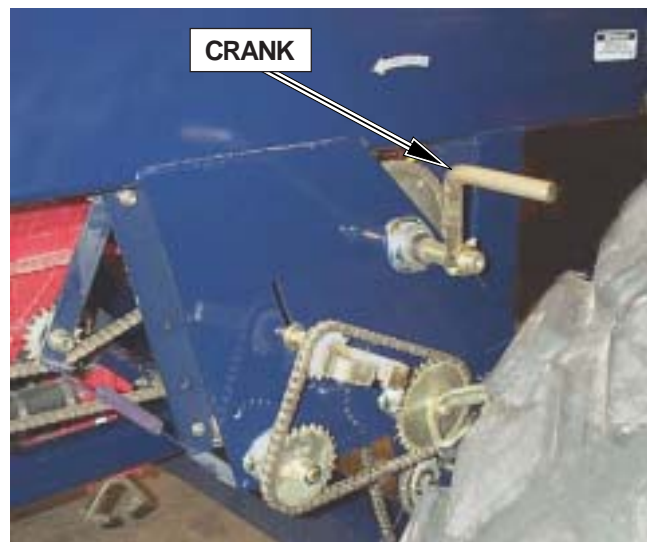
The number of crank turns required for a 1/2 acre is the number of turns required for 1/10 acre for a specific machine width x 5.

From the chart on page 5-18

Turns required for 1/10 acre = 21.08

Turns required for 1/2 acre = $21.08 \times 5 = 105.4$

Rate = lbs/acre
= 1/2 acre sample weight (lbs.) x 2



Rate Calibration - continued

- Weigh the sample by using tarp straps to hook rate check box to spring scale.

Note: Remember to subtract the weight of the rate check box from the total sample weight.

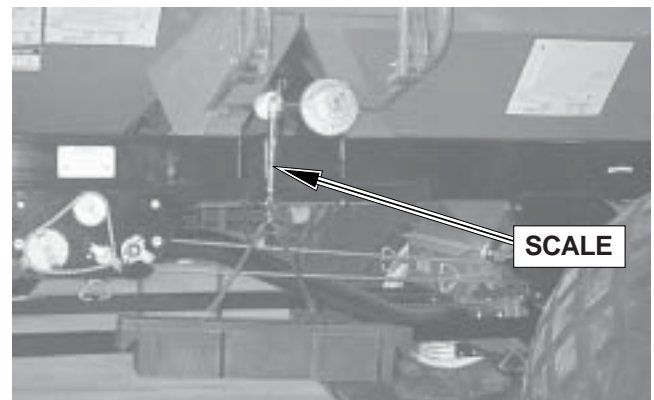
- Check this rate against rate required.

For 1/10 acre sample:

$$\text{Rate} = \text{lbs/acre} = \text{Sample Weight (lbs)} \times 10$$

- If a different rate is required then increase or decrease the size of the rate change sprocket. Increasing the sprocket size will increase the rate and vice versa.
- Replace the bottom of the collector.

Note: Arrow directions on the collector bottom must point in the same direction as the ones on the collector body.



Alternative Rate Calibration

An alternate rate calibration method takes into account wheel sinkage and variations in tire circumference.

See the Monitor Section 6 (Application Rate) in the 7000 Series Air Cart Manual. Instead of turning the calibration crank, the metering drive clutch is engaged and the seeder is pulled through a distance that equals at least 1/10 of an acre.

Note: Fan should not be running for either rate check method.



Operation

Imperial Rate Calibration Chart

7130 and 7180

Calibration Chart based on 1/10 of an Acre.

W = Machine Width (Feet)

F = Optional Mechanical Acre Tally Factor = 56/R

R = Crank Rotation - turns

for 1/10 acre = 527.1/W for 7130 with 16.5 x 16.1 All Weather Tires.

for 1/10 acre = 464.6/W for 7130 & 7180 with 21.5 x 16.1 All Weather Tires.

for 1/10 acre = 460.8/W for 7180 with 21.5 x 16.1 Sure Grip Tires.

D = Distance required for 1/10 Acre (Feet) = 4356/W

$$\text{New Crank Rotations} = \left(\frac{D \times 12}{\text{Tire Circumference}} \right) \times \frac{48}{15} \times \frac{18}{48}$$

See Rear of book for
Metric calibration chart.

7000 Series Air Seeder																
IMPERIAL RATE CALIBRATION CHART																
WIDTH [W] (ft)	AIRSEEDER MODEL						DISTANCE [D] (ft)	WIDTH [W] (ft)	AIRSEEDER MODEL						DISTANCE [D] (ft)	
	7130		7180						7130		7180					
	Tire		Tire		Sure GripTire				Tire		Tire		Sure GripTire			[D]
	16.5 x 16.1		21.5 x 16.1		21.5 x 16.1				16.5 x 16.1		21.5 x 16.1		21.5 x 16.1			
	[R]	[F]	[R]	[F]	[R]	[F]			[R]	[F]	[R]	[F]	[R]	[F]		
21	25.10	2.23	22.13	2.53	21.94	2.55	207.43	51	10.34	5.42	9.11	6.15	9.03	6.20	85.41	
22	23.96	2.34	21.12	2.65	20.94	2.67	198.00	52	10.14	5.52	8.94	6.26	8.86	6.32	83.77	
23	22.92	2.44	20.20	2.77	20.03	2.80	189.39	53	9.95	5.63	8.77	6.39	8.69	6.44	82.19	
24	21.96	2.55	19.36	2.89	19.20	2.92	181.50	54	9.76	5.74	8.60	6.51	8.53	6.57	80.67	
25	21.08	2.66	18.59	3.01	18.43	3.04	174.24	55	9.58	5.85	8.45	6.63	8.38	6.68	79.20	
26	20.27	2.76	17.87	3.13	17.72	3.16	167.54	56	9.41	5.95	8.30	6.75	8.23	6.80	77.79	
27	19.52	2.87	17.21	3.25	17.06	3.28	161.33	57	9.25	6.05	8.15	6.87	8.08	6.93	76.42	
28	18.83	2.97	16.59	3.38	16.45	3.40	155.57	58	9.09	6.16	8.01	6.99	7.94	7.05	75.10	
29	18.18	3.08	16.02	3.50	15.89	3.52	150.21	59	8.93	6.27	7.88	7.11	7.81	7.17	73.83	
30	17.57	3.19	15.49	3.62	15.36	3.65	145.20	60	8.79	6.37	7.74	7.24	7.68	7.29	72.60	
31	17.00	3.29	14.99	3.74	14.86	3.77	140.52	61	8.64	6.48	7.62	7.35	7.55	7.42	71.41	
32	16.47	3.40	14.52	3.86	14.40	3.89	136.13	62	8.50	6.59	7.49	7.48	7.43	7.54	70.26	
33	15.97	3.51	14.08	3.98	13.96	4.01	132.00	63	8.37	6.69	7.38	7.59	7.31	7.66	69.14	
34	15.50	3.61	13.67	4.10	13.55	4.13	128.12	64	8.24	6.80	7.26	7.71	7.20	7.78	68.06	
35	15.06	3.72	13.28	4.22	13.16	4.26	124.46	65	8.11	6.91	7.15	7.83	7.09	7.90	67.02	
36	14.64	3.83	12.91	4.34	12.80	4.38	121.00	66	7.99	7.01	7.04	7.95	6.98	8.02	66.00	
37	14.25	3.93	12.56	4.46	12.45	4.50	117.73	67	7.87	7.12	6.93	8.08	6.88	8.14	65.01	
38	13.87	4.04	12.23	4.58	12.12	4.62	114.63	68	7.75	7.23	6.83	8.20	6.78	8.26	64.06	
39	13.52	4.14	11.91	4.70	11.81	4.74	111.69	69	7.64	7.33	6.73	8.32	6.68	8.38	63.13	
40	13.18	4.25	11.62	4.82	11.52	4.86	108.90	70	7.53	7.44	6.64	8.43	6.58	8.51	62.23	
41	12.86	4.35	11.33	4.94	11.24	4.98	106.24	71	7.42	7.55	6.54	8.56	6.49	8.63	61.35	
42	12.55	4.46	11.06	5.06	10.97	5.10	103.71	72	7.32	7.65	6.45	8.68	6.40	8.75	60.50	
43	12.26	4.57	10.81	5.18	10.71	5.23	101.30	73	7.22	7.76	6.36	8.81	6.31	8.87	59.67	
44	11.98	4.67	10.56	5.30	10.47	5.35	99.00	74	7.12	7.87	6.28	8.92	6.23	8.99	58.86	
45	11.71	4.78	10.33	5.42	10.24	5.47	96.80	75	7.03	7.97	6.20	9.03	6.14	9.12	58.08	
46	11.46	4.89	10.10	5.54	10.02	5.59	94.70	76	6.94	8.07	6.11	9.17	6.06	9.24	57.32	
47	11.21	5.00	9.89	5.66	9.80	5.71	92.68	77	6.85	8.18	6.03	9.29	5.98	9.36	56.57	
48	10.98	5.10	9.68	5.79	9.60	5.83	90.75	78	6.76	8.28	5.96	9.40	5.91	9.48	55.85	
49	10.76	5.20	9.48	5.91	9.40	5.96	88.90	79	6.67	8.40	5.88	9.52	5.83	9.61	55.14	
50	10.54	5.31	9.29	6.03	9.21	6.08	87.12	80	6.59	8.50	5.81	9.64	5.76	9.72	54.45	

Imperial Rate Calibration Chart

7180, 7240, 7252 and 7300

Calibration Chart based on 1/10 of an Acre.

W = Machine Width (Feet)

F = Optional Mechanical Acre Tally Factor = 56/R

R = Crank Rotation - turns

for 1/10 acre = 368.9/W for 7180 with 18.4 x 26 All Weather Tires.

for 1/10 acre = 348.5/W for 7240, 7252 & 7300 with 23.1 x 26 All Weather Tires.

for 1/10 acre = 316.8/W for 7240, 7252 & 7300 with 23.1 x 26 Rice Tires.

D = Distance required for 1/10 Acre (Feet) = 4356/W

$$\text{New Crank Rotations} = \left(\frac{D \times 12}{\text{Tire Circumference}} \right) \times \frac{48}{15} \times \frac{18}{48}$$

See Rear of book for
Metric calibration chart.

7000 Series Air Seeder IMPERIAL RATE CALIBRATION CHART															
WIDTH [W] (ft)	AIRSEEDER MODEL						DISTANCE [D] (ft)	WIDTH [W] (ft)	AIRSEEDER MODEL						DISTANCE [D] (ft)
	7180		7240/7252/7300						7180		7240/7252/7300				
	Tire 18.4 x 26		Tire 23.1 x 26		Rice Tire 23.1 x 26				Tire 18.4 x 26		Tire 23.1 x 26		Rice Tire 23.1 x 26		
	[R]	[F]	[R]	[F]	[R]	[F]			[R]	[F]	[R]	[F]	[R]	[F]	
21	17.57	3.19	16.59	3.38	15.09	3.71	207.43	51	7.23	7.75	6.83	8.20	6.21	9.02	85.41
22	16.77	3.34	15.84	3.54	14.40	3.89	198.00	52	7.09	7.90	6.70	8.36	6.09	9.20	83.77
23	16.04	3.49	15.15	3.70	13.77	4.07	189.39	53	6.96	8.05	6.57	8.52	5.98	9.36	82.19
24	15.37	3.64	14.52	3.86	13.20	4.24	181.50	54	6.83	8.20	6.45	8.68	5.87	9.54	80.67
25	14.76	3.79	13.94	4.02	12.67	4.42	174.24	55	6.71	8.35	6.34	8.83	5.76	9.72	79.20
26	14.19	3.95	13.40	4.18	12.18	4.60	167.54	56	6.59	8.50	6.22	9.00	5.66	9.89	77.79
27	13.66	4.10	12.91	4.34	11.73	4.77	161.33	57	6.47	8.66	6.11	9.17	5.56	10.07	76.42
28	13.18	4.25	12.44	4.50	11.31	4.95	155.57	58	6.36	8.81	6.01	9.32	5.46	10.26	75.10
29	12.72	4.40	12.02	4.66	10.92	5.13	150.21	59	6.25	8.96	5.91	9.48	5.37	10.43	73.83
30	12.30	4.55	11.62	4.82	10.56	5.30	145.20	60	6.15	9.11	5.81	9.64	5.28	10.61	72.60
31	11.90	4.71	11.24	4.98	10.22	5.48	140.52	61	6.05	9.26	5.71	9.81	5.19	10.79	71.41
32	11.53	4.86	10.89	5.14	9.90	5.66	136.13	62	5.95	9.41	5.62	9.96	5.11	10.96	70.26
33	11.18	5.01	10.56	5.30	9.60	5.83	132.00	63	5.86	9.56	5.53	10.13	5.03	11.13	69.14
34	10.85	5.16	10.25	5.46	9.32	6.01	128.12	64	5.76	9.72	5.44	10.29	4.95	11.31	68.06
35	10.54	5.31	9.96	5.62	9.05	6.19	124.46	65	5.68	9.86	5.36	10.45	4.87	11.50	67.02
36	10.25	5.46	9.68	5.79	8.80	6.36	121.00	66	5.59	10.02	5.28	10.61	4.80	11.67	66.00
37	9.97	5.62	9.42	5.94	8.56	6.54	117.73	67	5.51	10.16	5.20	10.77	4.73	11.84	65.01
38	9.71	5.77	9.17	6.11	8.34	6.71	114.63	68	5.43	10.31	5.12	10.94	4.66	12.02	64.06
39	9.46	5.92	8.93	6.27	8.12	6.90	111.69	69	5.35	10.47	5.05	11.09	4.59	12.20	63.13
40	9.22	6.07	8.71	6.43	7.92	7.07	108.90	70	5.27	10.63	4.98	11.24	4.53	12.36	62.23
41	9.00	6.22	8.50	6.59	7.73	7.24	106.24	71	5.20	10.77	4.91	11.41	4.46	12.56	61.35
42	8.78	6.38	8.30	6.75	7.54	7.43	103.71	72	5.12	10.94	4.84	11.57	4.40	12.73	60.50
43	8.58	6.53	8.10	6.91	7.37	7.60	101.30	73	5.05	11.09	4.77	11.74	4.34	12.90	59.67
44	8.38	6.68	7.92	7.07	7.20	7.78	99.00	74	4.99	11.22	4.71	11.89	4.28	13.08	58.86
45	8.20	6.83	7.74	7.24	7.04	7.95	96.80	75	4.92	11.38	4.65	12.04	4.22	13.27	58.08
46	8.02	6.98	7.58	7.39	6.89	8.13	94.70	76	4.85	11.55	4.58	12.23	4.17	13.43	57.32
47	7.85	7.13	7.41	7.56	6.74	8.31	92.68	77	4.79	11.69	4.53	12.36	4.11	13.63	56.57
48	7.69	7.28	7.26	7.71	6.60	8.48	90.75	78	4.73	11.84	4.47	12.53	4.06	13.79	55.85
49	7.53	7.44	7.11	7.88	6.47	8.66	88.90	79	4.67	11.99	4.41	12.70	4.01	13.97	55.14
50	7.38	7.59	6.97	8.03	6.34	8.83	87.12	80	4.61	12.15	4.36	12.84	3.96	14.14	54.45

Operation

Seeding Fine Seeds (Canola, Mustard, etc.)

When seeding fine seeds such as canola or mustard, the slow speed transmission has to be engaged to ensure the low rates required for these products.

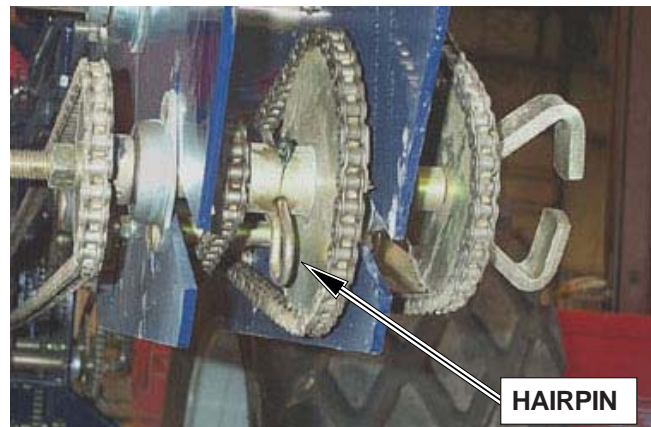
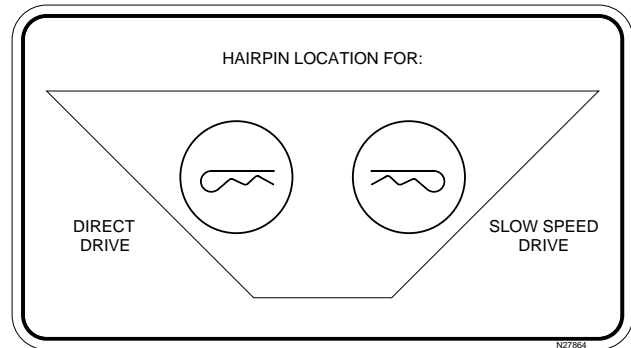
The slow speed transmission is incorporated in the **FRONT** Posi-Drive Transmission.

- To engage the slow speed, remove the large hairpin from the front shaft and install through the sleeve and shaft located at the rear of the transmission.

Note: Shaft will have to be rotated to align holes for pin insertion.

- To disengage the slow speed, reverse the above procedure.
- Rate checks can be performed the same way as for other seeds.
- Usually it is necessary to reduce the fan rpm when seeding fine seeds. See *Fan Speed* for specific fan speeds.

Note: Seed must be placed in the front tank.



Applying Inoculant

When inoculant is applied at the time of seeding, then once the Air Cart has been filled, the fill-lids should be left open and the fan run for 5-10 minutes at full rpm to dry the seed.

Calibration must be done after the seed is dried, otherwise the calibration will be incorrect.

Note: If the seed is not dried then the seed will have a tendency to bridge and not meter into the air stream.

Section 6: Maintenance

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Maintenance

SAFETY-ALERT SYMBOL



Watch for this symbol. It identifies potential hazards to health or personal safety. It points out safety precautions. It means:

ATTENTION - BE ALERT.
Your safety is involved.

General

This section deals with two goals, maximum life and dependable operation. Adopt a regular maintenance and lubrication program. Care and sufficient lubrication is the best insurance against delays.

Safety

- Always shut off the tractor and remove key before dismounting.
- Guard against hydraulic high pressure leaks with hand and face protection.
- Never work under the Implement unless it is in the down position or transport lock pins are in place and secured with hair pins. Do not depend on the hydraulic system to support the frame.
- Always wear safety goggles, breathing apparatus and gloves when working on seeder filled with chemical. Follow manufactures recommended safety procedures when working with chemicals or treated seeds.
- Do not feed left over treated seed to livestock, treated seed is poisonous and may cause harm to persons or livestock.



Securely support any machine elements that must be raised for service work.



Caution





Keep service area clean and dry. Wet or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment.

Tighten Bolts

- Before operating the Air Cart.
- After the first two hours of operation.
- Check tightness periodically thereafter.
- Use Bolt Torque Chart for correct values on various bolts.
- Note dashes on hex heads to determine correct grade.

Note: DO NOT use the values in the Bolt Torque Chart if a different torque value or tightening procedure is given for a specific application.

- Fasteners should be replaced with the same or higher grade. If higher grade is used, only tighten to the strength of the original.

Bolt Torque Chart				
Grade 5 Bolt Marking 		Bolt Size	Grade 8 Bolt Marking 	
Nm	lb. ft.		lb. ft.	Nm
11	8	1/4	12	16
23	17	5/16	24	33
41	30	3/8	45	61
68	50	7/16	70	95
102	75	1/2	105	142
149	110	9/16	155	210
203	150	5/8	210	285
366	270	3/4	375	508
536	395	7/8	610	827
800	590	1	910	1234
1150	850	1-1/8	1350	1850
1650	1200	1-1/4	1950	2600
2150	1550	1-3/8	2550	3400
2850	2100	1-1/2	3350	4550

Tires

- Inspect tires and wheels daily for tread wear, side wall abrasions, damaged rims or missing lug bolts and nuts. Replace if necessary.
- Tighten wheel bolts - refer to Bolt Torque Chart.
- Check tire pressure daily, when tires are cold.
- Correct tire pressure is important.
- Do not inflate tire above the recommended pressure.



Tire replacement requires trained personnel and proper equipment.

Maintenance

Lubrication

Greasing pivot points prevents wear and helps restrict dirt from entering. However, once dirt does enter a bearing, it combines with the lubricant and becomes an abrasive grinding paste, more destructive than grit alone.

- Apply new lubricant frequently during operation to flush out old contaminated lubricant.
- Use a good grade of **lithium based grease**.
- Use a good grade of machine oil.
- Clean grease fittings and lubricator gun before applying lubricant.

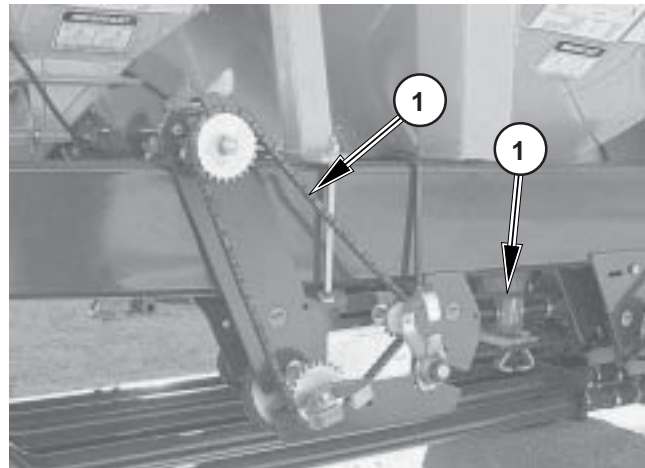
Refer to the photo below for grease fitting locations.

1. Drive Chains

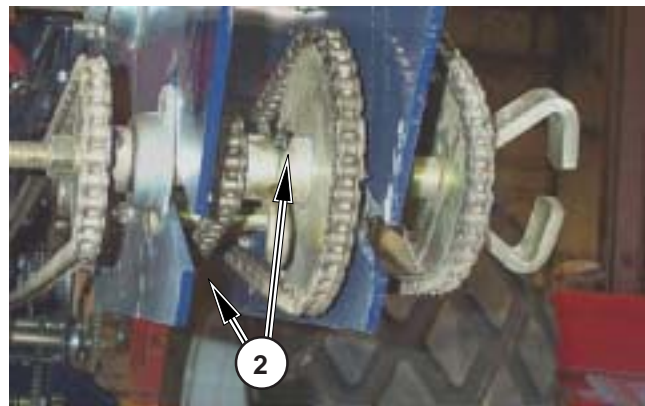
- Oil every 50 hours.

2. Slow Speed Drive

- Oil every 50 hours.



1. Drive Chains



2. Slow Speed Drive

Daily Maintenance

(Every 10 Hours)

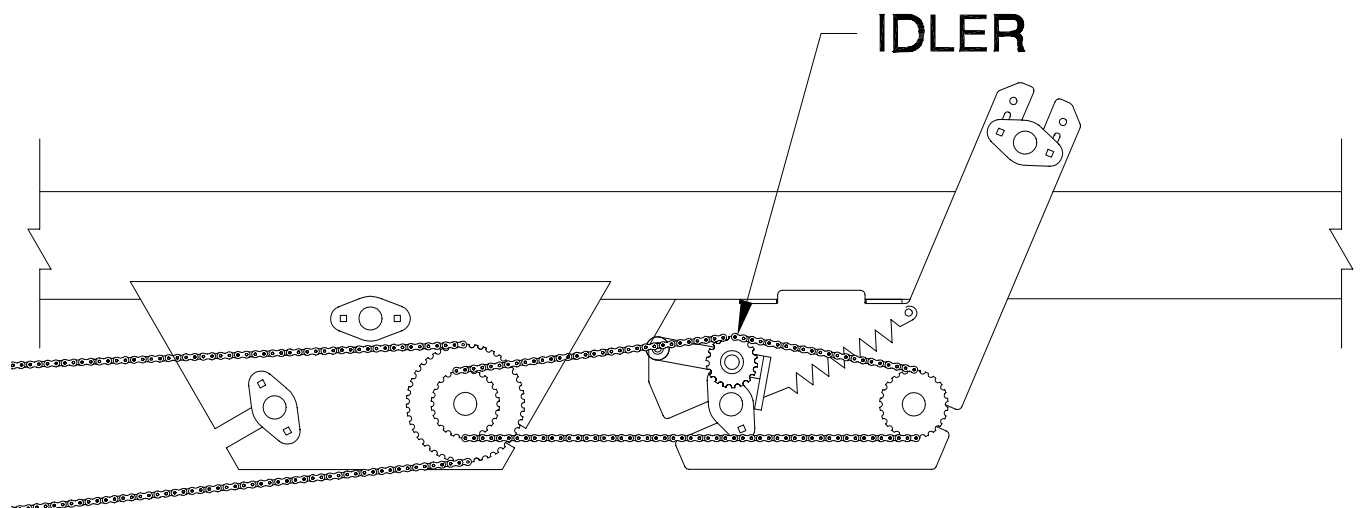
- Check for and remove any water in primary collectors after rainy weather. Remove cleanout door and collector bottom to drain water from the tanks and collectors.
- Reinstall collector bottom and cleanout door.

Important: Care must be taken when reinstalling collector bottoms to prevent damage to the inside of the collector.

- Assure fan screen is clear of debris.

Note: Start fan and run for 3 - 5 minutes prior to loading machine to get rid of accumulated moisture.

- Check lid seals for damage, and that they are sitting properly on the steel rings.
- Check plenum and metering body for leaks.
- Check that cleanout doors are sealed.
- Check that all monitor sensor wires are properly routed and retained.
- Check for plugged hoses.
- Assure drive chains are cleared of debris.



Maintenance

Air System Maintenance

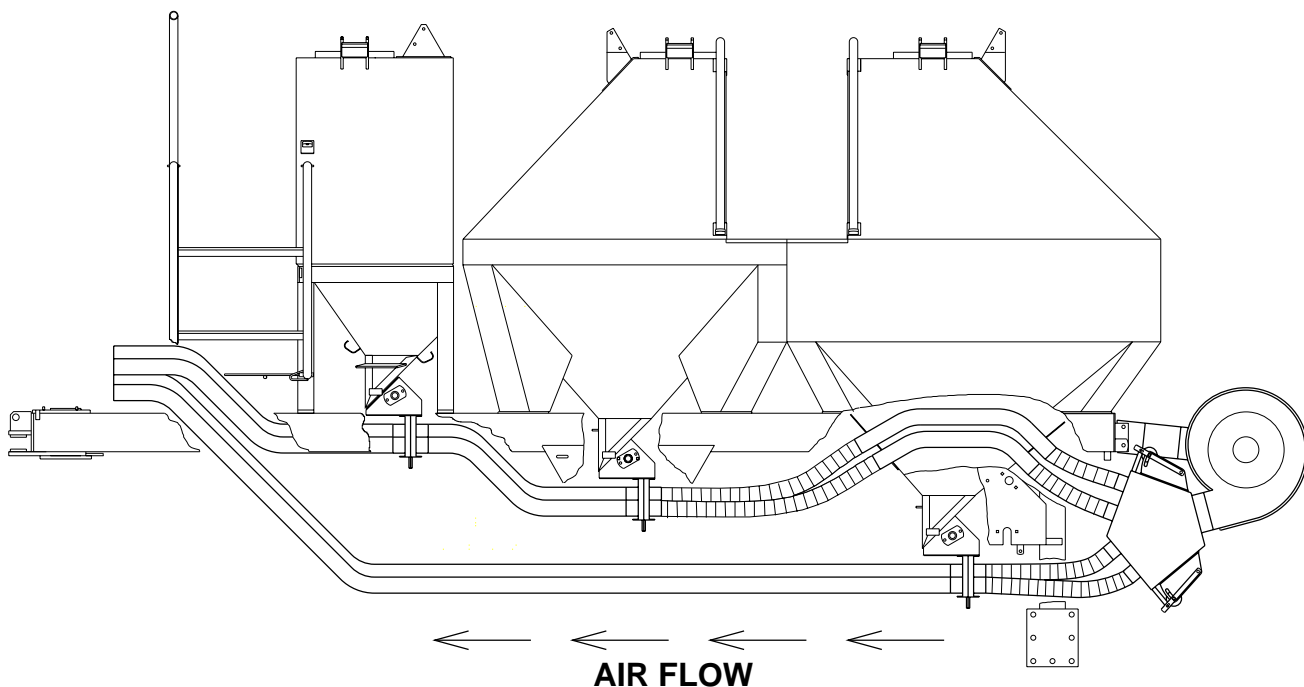
- Regularly check that all hoses are free from kinks or blockages.
- Keep fan inlet screen clear and free from debris.
- Place a plastic bag over the fan when the unit is not in use. This helps prevent moisture from entering the system.
- Check periodically and at the end of each season for air leaks at hose connections.
- Check periodically and at the end of each season for air leaks at the following:
 1. Lid Seals.
 2. Metering body to tank interface.
 3. Collector to metering body interface.
 4. Fan to plenum.
 5. Plenum to collector.
 6. Cleanout doors.
 7. Couplers between seeder and cultivator.



Caution

Care should be taken when working near the Air Seeder while the fan is running. Product blowing out of the system could cause personal injury.

Note: There must not be any air leaks from the tank. Air leakage causes air turbulence in the tank which can result in inaccurate metering rates.



Air Delivery System

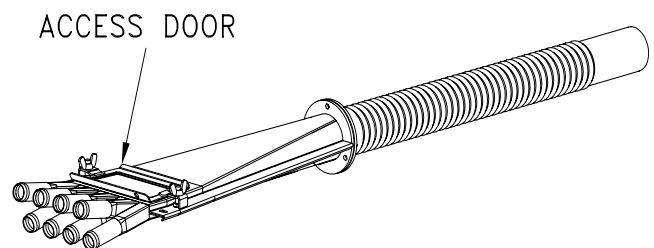
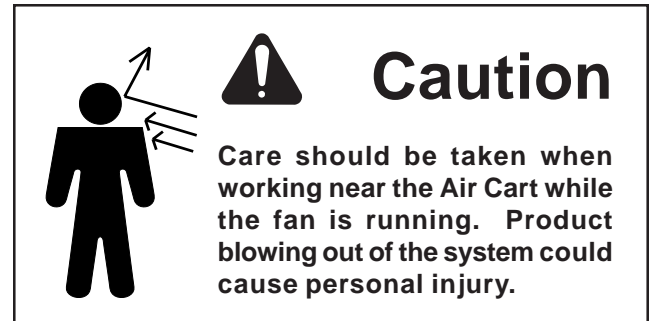
General

The air delivery system of all Air Carts is extremely important for the proper metering of product to the openers. The metering system on all pressurized Air Carts is sensitive to air leaks. **Loss of tank air pressure could affect feed rates, which could become erratic or even stop.**

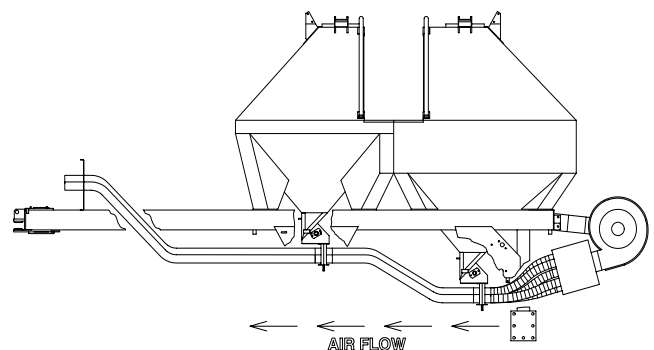
- Regularly check that all hoses are free from kinks or blockages throughout the day. To check for blockages raise seeding tool out of the ground and with the fan running turn crank a couple of turns. Equal amounts of material should be deposited under each boot if not check the following for blockage:
 1. Seed openers and secondary hoses.
 2. Divider heads by removing access doors.
 3. Primary hoses and collectors.
 4. Metering wheels for damage to key-way and the flutes of the wheel.
- Keep fan inlet screen clear and free from debris.
- Place a plastic bag over the fan when the unit is not in use. This helps prevent moisture from entering the system.
- Check periodically and at the end of each season for air leaks at hose connections.
- Check periodically and at the end of each season for air leaks at the following:
 1. Tank Lid Seals.
 2. Metering body shaft seals.
 3. Metering body to tank seals.
 4. Collector to metering body seals.
 5. Fan to plenum.
 6. Plenum to collector.
 7. Clean-out doors, for leaks and loss of seal memory.
 8. Collector door seals.
 9. Diverter Valves.
 10. Couplers between seeder and cultivator.
 11. Access Doors on Divider Heads.

Note: There must not be any air leaks from the tank. This air leakage causes air turbulence in the tank which can result in inaccurate metering rates.

- Once a year check for wear of primary and secondary hoses.



Note: Extended life can be obtained if the hoses are rotated 1/4 turn once a year.



Maintenance

Air Delivery System - continued

Tank Lids

The lid seal is probably the area that sees the most abuse due to the activity associated with filling the tanks.

With each fill the lid seals should be inspected for cuts, abrasions, debris in the seal and ensure the seal is positioned properly on the steel rim around the tank opening.

Tank Lid Adjustment

Check Tank Lid tension on *all tanks* at beginning of each season and periodically during season for air leaks. The following checks and adjustments must be made to prevent air leaks from occurring:

- Check for any foreign material embedded into seal. Clean out foreign material from seal surface.
- Check seal for cuts and abrasions. If seal is cut or severely worn, then replace seal.
- Ensure seal is positioned properly on steel rim around tank opening.
- Use a 0 - 100 lb. spring scale to check the tank lid opening force. With the lid closed place one end of the scale *one inch* from the end of the tank lid lever. Pull straight up on the scale and note the maximum force it takes to open the lid. The force needed to open the lid ***must be greater than 65 lbs.*** Adjust the lid latch adjusting bolt as necessary. The lid latch should close with a ***snap***. This will ensure that the lid is sufficiently tight and prevent any leaks.
- Re-check for leaks. If lids still leak turn down bolt one or two more turns. Re-check for leaks.

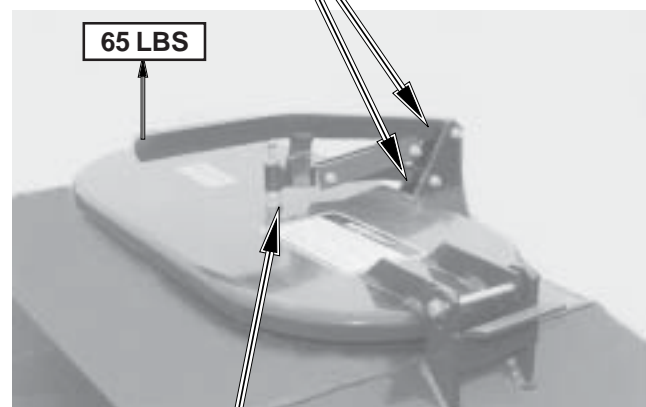


Important

It is imperative that no air leaks occur in the Air Cart tank as even the smallest air leak from the lid will lead to material bridging in the tank thereby causing misses in the field.

Note: When Air Cart is not in use, leave lid latches loose to help maintain resilience of the seals.

These bolts and lock nuts must be tightened to maintain a friction fit so the lid latch stays stationary when in open position.



Adjust the lid latch adjusting bolt to obtain a force *greater than 65 lbs* to open the lid.

Air Delivery System - continued

Air Leak Check

It is **imperative that no air leaks occur** in the Air Cart tank. Any air leaks could cause loss of tank air pressure affecting feed rates, which could become erratic or stop.

To prevent this from occurring, it is strongly recommended that a pressure test be conducted prior to seeding time. This can be performed very easily and simply by completing the following steps:

- Clean fan impeller and adjust tank lids.
- Disconnect the 2 1/2" diameter primary hoses from the rear of the cultivator at the primary hose coupler(s) by loosening the four 3/8" bolts.
- Install the blank off plate that is supplied with the Air Cart at each coupler and retighten the 3/8" bolts. If the blank off plates are not readily at hand a piece of cardboard can be used in its place.
- Once the blank off plates have been installed, start the fan and run at 4,500 rpm.

Check the following areas for air leaks:

1. Tank lid seals.
2. Metering body shaft seals.
3. Metering body to tank seals.
4. Collector to metering body seals.
5. Fan to plenum and plenum to collector.
6. Clean-out doors, for leaks and loss of seal memory.
7. Collector door seals.
8. Diverter valves and double shoot mounting plates.
9. Tanks union plate.
10. Tank site glasses.

Air leaks can be detected by spraying a soapy water solution onto the seal area. If bubbling of soap occurs, the seal has a leak. Another method is to use your hand to feel for any air movement around the seal. This method requires a calm day, as the wind can make it difficult to detect a small leak.

- If any of the above areas leak, remove the parts and replace the seal. Ensure upon reassembly that the parts are tightened sufficiently to prevent air leakage.
- Remove the blank off plates before using the Air Cart.

Once the pressure test is complete, check the following areas for air leaks:

11. Couplers between seeder and cultivator.
12. Access doors on divider heads.

Important

It is imperative that no air leaks occur in the Air Cart tank, as even the smallest air leak will lead to material bridging in the tank, thereby causing misses in the field.

Note: When Air Cart is not in use leave lid latches and clean-out doors loose to help maintain resilience of the seals.

Maintenance

Air Delivery System - continued

Fan

Debris can build up on the fan screen and blades causing reduced output of the fan. The lack of air flow even at higher fan speeds will cause material plugging of the air system.

The build up of material during operation can be by the following:

1. Fan rpm will increase without increasing oil flow to orbit motor.
2. Air Cart distribution system plugging from a lack of air flow (Increasing fan rpm has little or no effect).



Fan Screen

- Assure fan screen is clear of debris. Check periodically through the day.

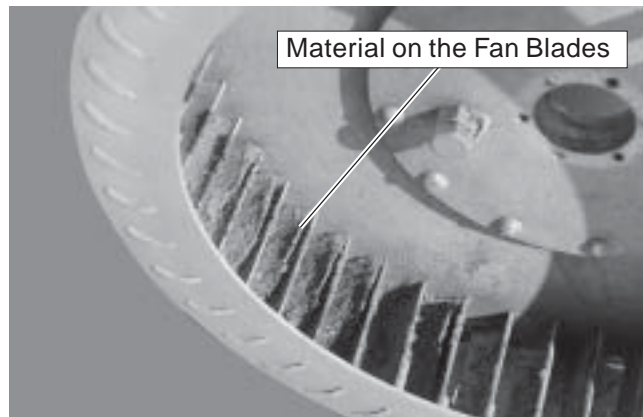
Fan Impeller

The fan blades may become plugged under high humidity/dusty conditions/high insect counts.

Under severe conditions the fan blades should be inspected daily and cleaned as required.

Under normal conditions the fan should be inspected and cleaned at least once a season.

- Care should be taken in cleaning all fan blades thoroughly to restore the fans peak performance.
- Ensure that the balance clips located on the fan blades are not removed, as this will put the fan out of balance.



Note: Material build up on the fan blades could cause the fan to be out of balance. The added vibration of the out of balance impeller will reduce the life of the fan components.

Storage

To prevent water entering the air system, cover the fan intake with a plastic bag, whenever the seeder is not in use.

Note: Be sure to remove fan cover prior to starting fan. Serious damage could result to the fan.

Clutch

A torque of 80 - 100 ft-lbs is required to slip the clutch.

To check clutch for slippage check the following:

- Check friction plates for corrosion and buff with a wire wheel if necessary.
- Check clutch coil resistance. If the meter reads below 2.40 ohms or above 2.90 ohms, then the clutch has failed and needs to be replaced.
- Check clutch current draw. If the meter reads below 4 amps, there is a problem in the electrical system leading to the clutch.
- Check clutch air gap at three locations. If it does not fall between .005" - .023", then reset using a .012" feeler gauge and N31040 shim washers.

Note: All values taken at room temperature. Voltage at 12 VDC. As temperature increases, resistance increases, and current decreases.

Maintenance

Hydraulics

Refer to Section 1 regarding hydraulic safety.

- Inspect hydraulic system for leaks, damaged hoses and loose fittings.
- Damaged Hoses and hydraulic tubing can only be repaired by replacement. **DO NOT ATTEMPT REPAIRS WITH TAPE OR CEMENTS.** High pressure will burst such repairs and cause system failure and possible injury.
- Leaking cylinders - install a new seal kit.
- Fittings - use Teflon seal tape on all NPT hydraulic joints. **Do not use Teflon tape on JIC ends.**
- Hydraulic Hose Connections - when connecting the hoses to the cylinders, tubing, etc. always use one wrench to keep the hose from twisting and another wrench to tighten the union. Excessive twisting will shorten hose life.
- Keep fittings and couplers clean.
- Check the Tractor Manual for proper filter replacement schedule.

Refer to the Trouble Shooting Section.

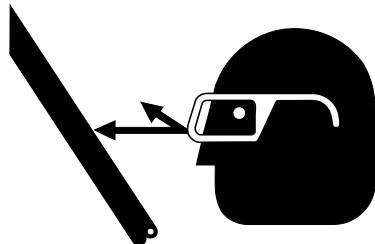


Contact your nearest Dealer for genuine repair parts. Dealers carry ample stocks and are backed by the manufacture and regional associations.



Dirt in the hydraulic system could damage O-rings, causing leakage, pressure loss and total system failure.

Note: Extreme care must be taken to maintain a clean hydraulic system. Use only new hydraulic fluid when filling reservoir.



Warning

HIGH-PRESSURE FLUID HAZARD

To prevent serious injury or death:

- Relieve pressure on hydraulic system before servicing or disconnecting hoses.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.

Section 7: Storage

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Storage

Preparing for Storage

General

- To insure longer life and satisfactory operation, store the 7000 Series Air Cart in a shed.
- If building storage is impossible, store away from areas of main activity on firm, dry ground.
- Clean machine thoroughly.
- Inspect all parts for wear or damage.
- Avoid delays - if parts are required, order at the end of the season.
- Lubricate grease fittings. (Refer to Lubricating Section).
- Tighten all bolts to proper specifications (Refer to Bolt Torque Chart).
- To prevent corrosion and damage by rodents, clean the hopper boxes and metering systems thoroughly and wash with mild soapy water solution. Rinse with water and dry thoroughly. **Refer to Metering Body Storage.**
- A light coating of diesel fuel or WD-40 should be applied to all metal metering system components before storage.
- Avoid lubricant contact with grain and fertilizer tubes.
- Relieve tension on tank lids.
- Loosen clean-out doors.
- Remove all chains and store in clean oil.
- Relieve pressure from hydraulic system.
- Raise frame, block up and relieve weight from the tires.
- Cover tires with canvass to protect them from the elements when stored outside.
- Paint any surfaces that have become worn.



**DO NOT ALLOW CHILDREN TO PLAY
ON OR AROUND THE MACHINE.**

MORRIS PAINT

Spray Cans:

Part Number	Description
W-4647	Red MORRIS Spray Can
W-4648	Blue MORRIS Spray Can
N31087	White MORRIS Spray Can

Litre Cans:

Part Number	Description
Z-10	Red MORRIS Paint/Litre
Z-11	Blue MORRIS Paint/Litre

Preparing for Storage - continued

Metering Body Storage

It is extremely important that the metering system is thoroughly cleaned before storing for any length of time.

The following procedure should be followed for both tanks:

- Empty tanks. (Refer to Unloading Tanks)
- Remove all sliders and blank off plates.
- Remove cover plate.
- Remove the collector bottom.
- Run fan.
- Wash the interior of both tanks and metering system with soapy water. Wash the collector.
- Rinse with cold water and let the unit air dry.
- Coat metal parts with diesel fuel.

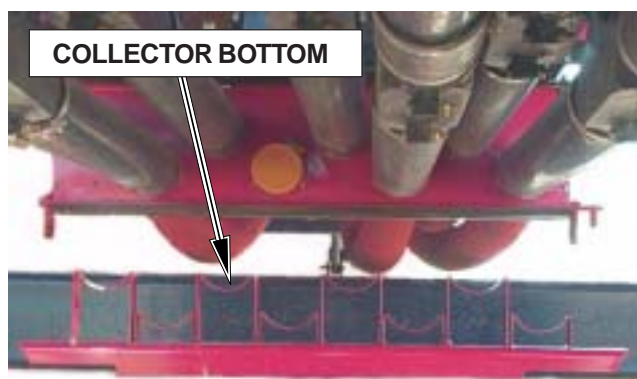
Note: Diesel fuel will not harm metering wheels.

- Reinstall all sliders and blank off plates in the same order they were removed.
- Reinstall cover plate.
- Replace the clean-out door and the bottom of the collector.
- Start the fan and operate for 5 minutes to dry out any remaining moisture in the system.
- Leave clean-out doors loose to help prevent condensation building up inside the tank.
- Leave lid latches loose to help maintain resilience of the seals.



Important

At no time should corrosive fertilizer or similar materials be allowed to remain in the tank or metering body cavity.

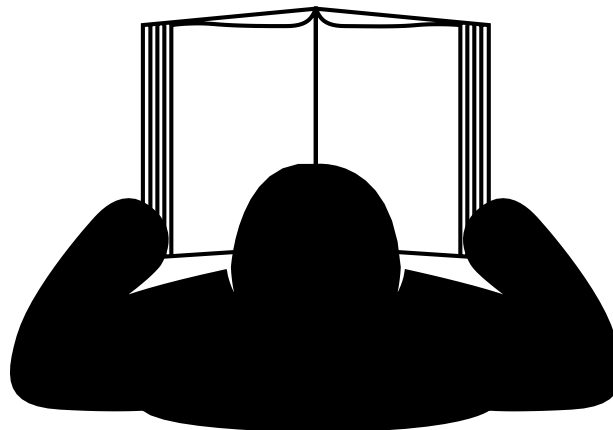


Storage

Removing From Storage

General

- Review Operator's Manual.
- Check tire pressure (Refer to Tire Pressure List)
- Clean machine thoroughly.
- Tighten lid latches.
- Tighten fan tension adjusting bolt. (Engine Drive Only)
- Lubricate and install chains.
- Spray internal parts or the metering body with WD-40 to loosen any corrosion buildup.
- Check for leaks. (Refer to Maintenance Section)
- Lubricate grease fittings. (Refer to Lubricating Section).
- Tighten all bolts to proper specifications (Refer to Bolt Torque Chart).



Monitor

Familiarize yourself with all monitor functions. Ensure all monitor *“settings”* are correctly set for the Air Cart/ Seeding Tool combination. Recognize and correct alarm conditions as indicated on the machine. See Monitor Section for more details.

Check all wire harness connections for corrosion and use a dielectric spray to clean. Inspect all sensors for proper gap. See Monitor Section for more details.

Clutch

Check friction plates for corrosion and buff with a wire wheel if necessary. Check the resistance of the clutch. See Maintenance Section for more details.

Auger

Inspect all augers used in handling the products for seeding. Run augers to clean out any debris inside auger so it does not get transferred to the tank.

Section 8: Troubleshooting

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Material not being accurately metered out of the metering body.	8-3
Material flowing thru system when unit is stationary and the fan running.	8-4
Material not being divided in distribution head.	8-4
Hydraulic fan will not turn	8-4
Fan turning too slow	8-4

Troubleshooting

Problem	Cause	Correction
General		
Delivery hoses plugged.	Insufficient air flow.	Clean fan impeller blades. Clean fan intake screen. Increase fan rpm.
	Hose sag.	Shorten hoses or add additional supports.
	Hose obstruction.	Remove obstruction from hose.
	Air delivery hose partly off manifold.	Reinstall hose properly on manifold.
	Kinked hoses.	Straighten hoses and properly secure them to framework.
	Obstruction in divider head.	Remove access door and clear obstruction from appropriate outlets - be sure to use appropriate screens when filling.
	Exceeding machine's delivery capabilities.	Reduce ground speed and speed up fan.
	Poorly mounted hoses.	Reroute hoses.
Material not being metered out.	Material caked up in tank.	Remove material and completely clean out the tank.
	Excessively wet material in tank.	Remove wet material and use reasonably dry material.
	Coupler bolt sheared	Replace with Grade 8 bolt.
	Metering clutch not engaged.	Engage switch in tractor cab.
	Metering Clutch slipping.	See <i>"Clutch Slipping"</i> below.
	Main drive chain not installed.	Install drive chain properly on Drive Sprocket.
	Drive chain or chains broken.	Install new chain. Ensure connecting link is installed correctly. Curved part of spring clip should face the direction of chain travel.
	Massive air leak in tank, resulting in material being blown up out of the metering cup.	Repair the air leak. See "Air Leaks" in Maintenance Section. See "Tank Lid Adjustment" in Maintenance Section.
	Key sheared on metering wheel.	Change metering wheel and check for cause of metering wheel shearing.

Troubleshooting

Problem	Cause	Correction
Material not being accurately metered out of the metering body.	Air delivery hoses loose, cracked or pulled off.	Tighten the hoses, replace cracked hoses or install hoses pulled off their respective locations.
	Metering Clutch slipping.	See " <i>Clutch Slipping</i> " below.
	Inlet screen to fan blocked off.	Clean off material that is blocking the fan screen.
	Metering wheel slider plate adjusted incorrectly.	Adjust sliders so they are all the same for the product being metered. See Operation Section for correct clearances.
	Material caked up above one or more of the metering cups.	Clean out caked up material.
	Excessively damp material in tank.	Use reasonably dry, fresh material only.
	Foreign obstruction in tank above metering wheels.	Remove obstruction, and always fill tanks through the screen.
	Caked up metering wheels on some or all of the metering cups.	Clean out the metering cups and wheels.
	Damaged metering wheels.	Replace broken metering wheels.
	Metering wheels mismatched to secondary outlet.	Install correct wheels to head. 1 3/4" wide wheel for 7 outlet head. 2" wide wheel for 8 outlet head. 2 1/4" wide wheel for 9 outlet head. 2 1/2" wide wheel for 10 outlet head. Be sure appropriate spacers are also used.
	Incorrect spacing sprocket.	Install correct sprocket on back of transmission. See Maintenance Section.
	Crank rotated wrong way when taking sample.	Crank must be rotated counter clockwise.
	Air Leak in System.	Adjust lids and doors as necessary. Replace damaged seals. See Maintenance Section.
	Zapper Clutch engaged.	Engage main clutch or take sample with Zapper Clutch engaged.

Troubleshooting

Problem	Cause	Correction
Material flowing thru system when unit is stationary and the fan running.	Damaged metering wheel.	Replace metering wheel.
	Pressurization hose inside tank disconnected or broken.	Install or replace pressurization hose.
Material not being divided in distribution head.	Head partially blocked.	Remove blockage and reinstall hose.
	Kinked hose running to shank	Straighten or replace hose.
	Damaged distribution section on head.	Replace head with new one.
	Bent or damaged diffuser pipe.	Straighten or replace diffuser pipe.
	Secondary hose length.	See "Secondary Hose" in Operation Section.
Clutch slipping.	Low power supply.	Ensure good connections at the power supply. Battery voltage must be 12V.
	Metering drive torque load too high.	See Maintenance Section.
	Corroded, rusty, dirty clutch.	Clean and inspect clutch.
	Faulty clutch.	Replace clutch.
Hydraulic fan will not turn	Selector valve in wrong position.	Switch the selector to fan position.
	Hydraulic hoses not connected properly to tractor.	Reverse hydraulic hoses.
	Insufficient oil flow.	Perform flow test.
Fan turning too slow	Flow to hydraulic motor.	Increase flow control setting.
	Low hydraulic pressure.	Check hydraulic pressure min. 2100 psi.

Section 9: Assembly

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Assembly

CAUTION



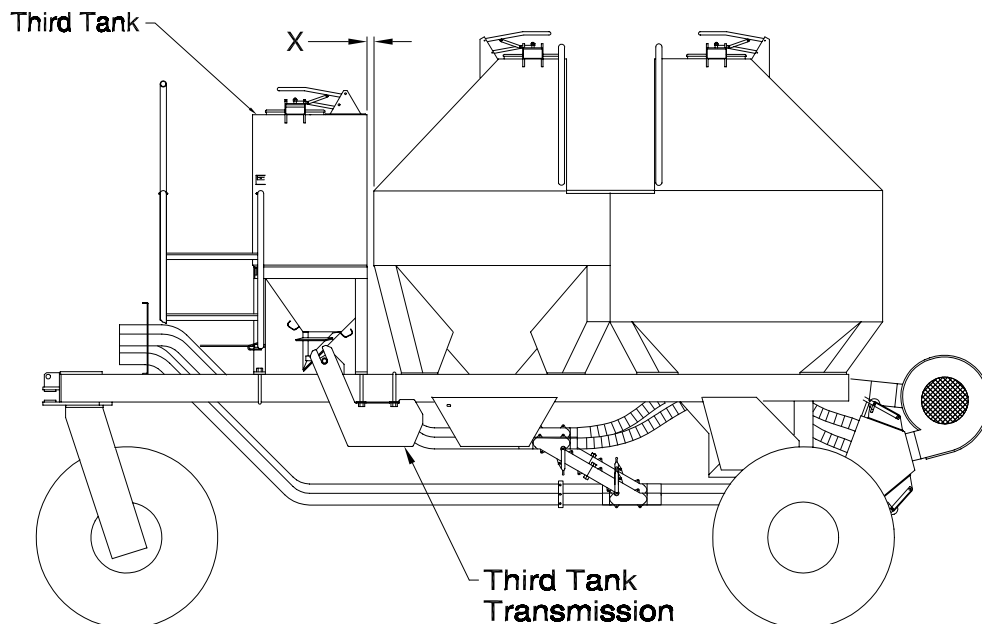
BE ALERT

SAFETY FIRST

REFER TO SECTION 1 AND REVIEW ALL
SAFETY RECOMMENDATIONS.

Tank Placement

- Place the Third Tank on the Air Cart frame.
- **Distance “X”** between the front Air Seeder Tank and the Third Tank is as follows:
 - 7180 Tow Between and Tow Behind **1 1/2” gap**
 - 7240 & 7300 Tow Between **1 1/2” gap**
 - 7240 & 7300 Tow Behind **2 3/4” gap**
- Use the U-bolts supplied to hold the tank to the frame.
- The Left Hand Rear Leg uses 1/2” bolts, securing transmission to the frame. See Transmission Installation.



Transmission Installation

1. Remove output shaft (top shaft) from Third Tank Transmission.
2. Install the Third Tank Transmission.

On the **7032** install the 1/2" x 8" bolts, 1/2" serrated locknuts through the rear tank leg and the front of the Third Tank Transmission. Fasten rear of Third Tank Transmission with 1/2" U-bolt. **Do not tighten nuts** until transmission output shaft is installed and aligned with the metershaft.

On the **7040** install the 1/2" x 10" bolts, 1/2" serrated locknuts through the rear tank leg and the front of the Third Tank Transmission. Fasten rear of Third Tank Transmission with 1/2" U-bolt. **Do not tighten nuts** until transmission output shaft is installed and aligned with the metershaft.

3. Install the idler assembly with the 3/8" x 3 1/2" bolt as shown in the diagram.
4. Install both 5 1/2" long spacers between the top two holes of the transmission (near output shaft) with 3/8" x 6 1/2" bolts and 3/8" serrated locknuts.
5. Remove the nut and lockwasher from the input sprocket (40 tooth 7130) (35 tooth 7180) (26 tooth for 7240 & 7300 with All Weather Tires) (24 tooth for 7240 & 7300 with Rice Tires).

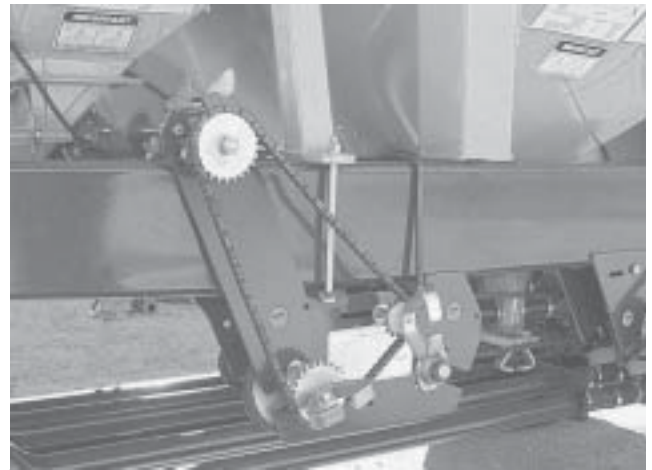
Install the 7/8" long spacer, drive pin, and a 24 tooth sprocket. (See diagram)

Re-install the nut and lockwasher.

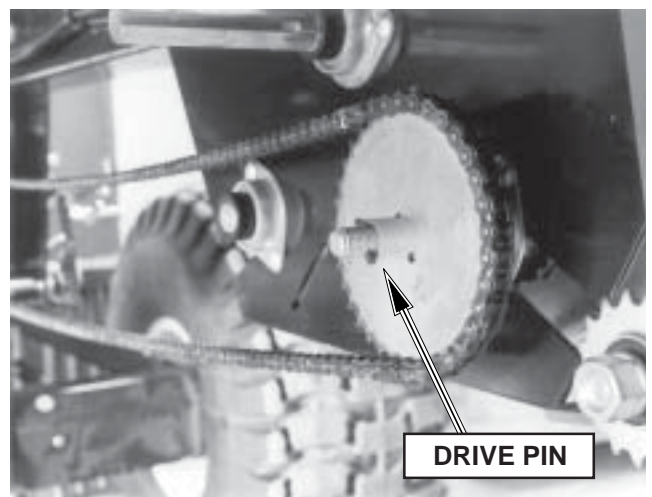
6. Install the main drive chain: 63.5" long chain - 7032, 81.5" long - 7042 between the front transmission and Third Tank Transmission.

Note: Remove offset links from drive chain on 7042 mounted at a 1 1/2 tank gap.

7. Install 3/8" x 2 1/2" bolt and two nuts in the hole near the top of the transmission plate. Connect idler spring to the idler and the bolt previously installed.



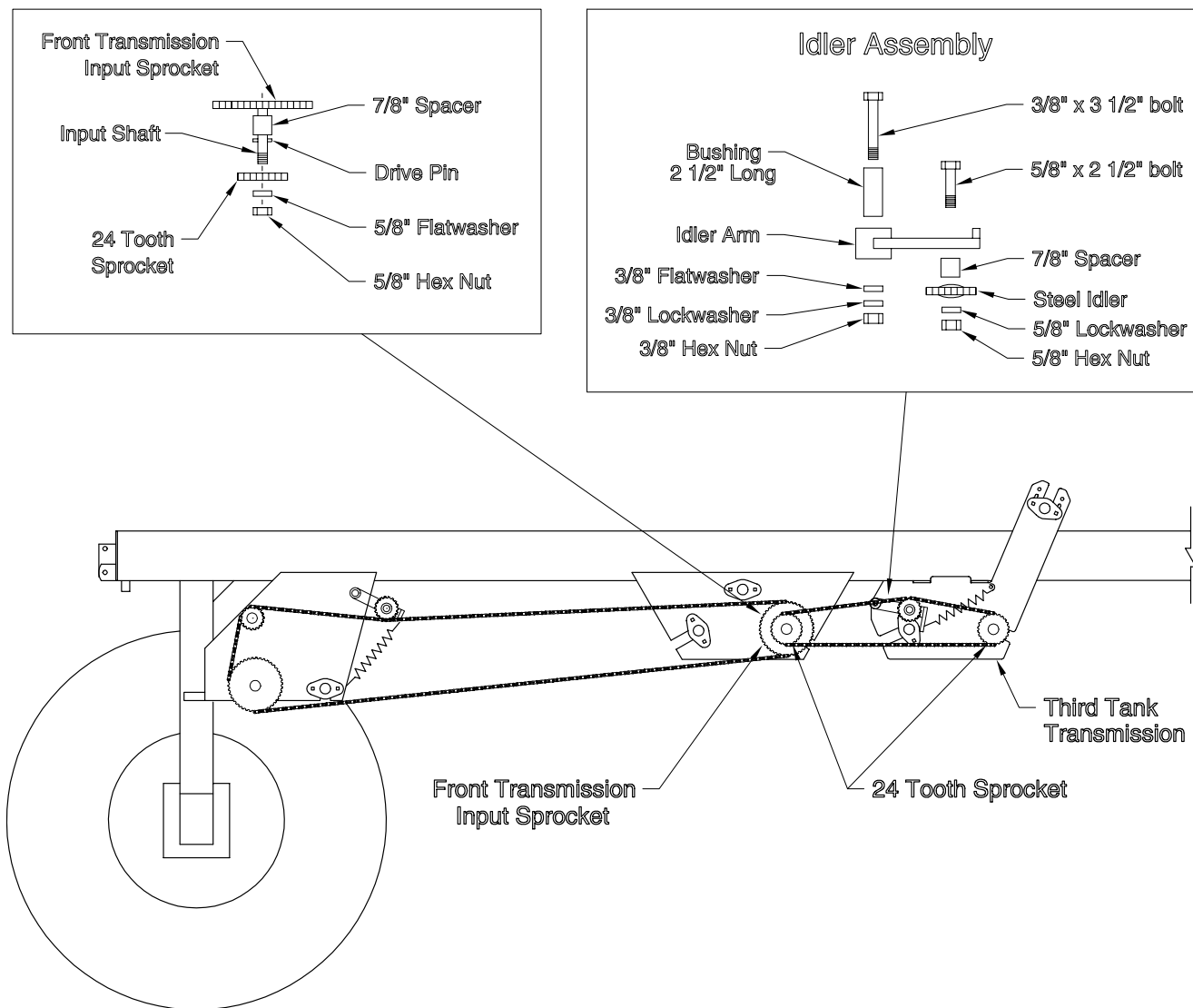
Transmission



Drive Pin

Assembly

Transmission Installation - Continued



Metering Wheels

The metering wheels come in 4 different sizes. Each wheel matches to a specific distribution head mounted on the Seeding Tool.

If the metering wheel and distribution head are not matched correctly, the distribution accuracy will be adversely affected.

Spacer plates are used to take up the extra space in each metering cup. These spacer plates vary in size according to the size of the metering wheel.

Table 1

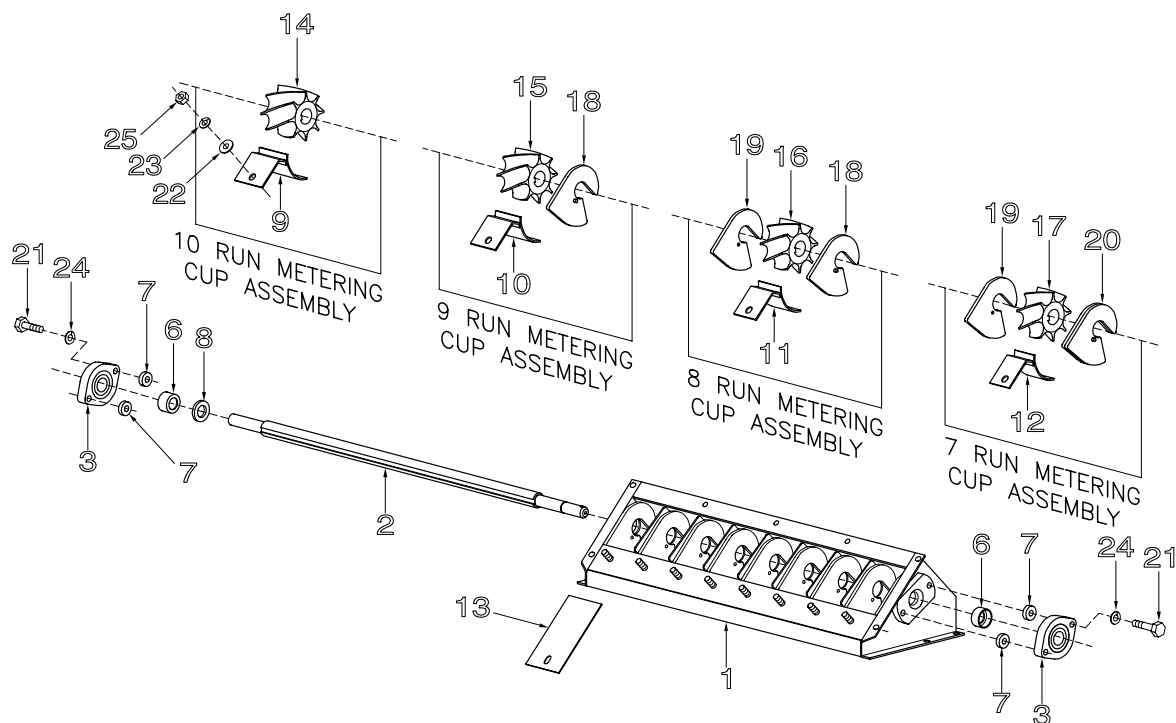
Divider Head	Metering Wheel		Spacer	
	Outlets	Number	Width	Number
7	7	1 3/4"	2	1/2" & 1/4"
8	8	2"	2	1/4" & 1/4"
9	9	2 1/4"	1	1/4"
10	10	2 1/2"	-	-

Assembly

Metering Wheels - continued

Standard Metering Body

Note: The metering wheels can be installed with the metering body mounted to the Air Cart.

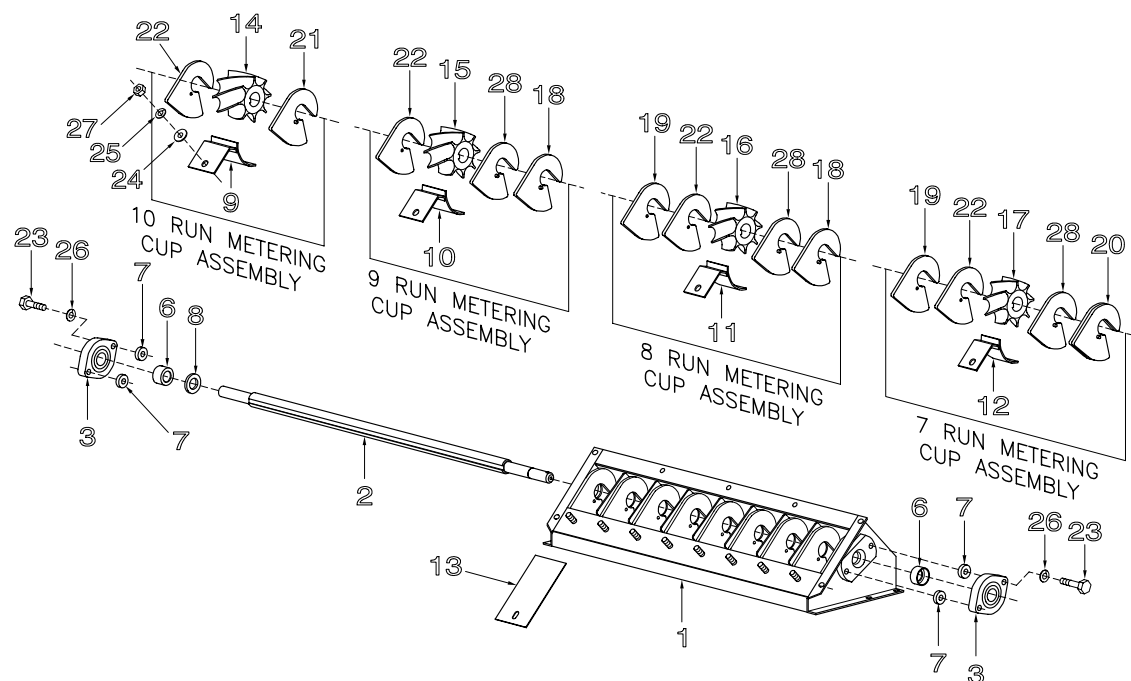


Item	Part No.	Description	No. Used
1	N27100	Metering Body	1
2	N19687	Metering Shaft - 8 Outlet	1
3	N19269	Bearing Assembly - NTN - 2 Bolt Flange	2
6	N21659	Seal	2
7	N21602	Spacer	4
8	N21612	Backing Washer	1
9	N27090	Slider - #10 Wheel	As req'd
10	N27089	Slider - #9 Wheel	As req'd
11	N27088	Slider - #8 Wheel	As req'd
12	N27087	Slider - #7 Wheel	As req'd
13	N27605	Cover - Blank Off	As req'd
14	N19526	Wheel - #10 Metering (Cream Colored)	As req'd
15	N19527	Wheel - #9 Metering (Cream Colored)	As req'd
16	N19528	Wheel - #8 Metering (Cream Colored)	As req'd
17	N19529	Wheel - #7 Metering (Cream Colored)	As req'd
18	N27099	Spacer Plate - #9 Wheel (Single - Left)	As req'd
19	N27098	Spacer Plate - #8 Wheel (Single - Right)	As req'd
20	N27097	Spacer Plate - #7 Wheel (Double - Left)	As req'd
21	W-477	Hex Bolt - 3/8 x 1 1/2 Lg	4
22	D-5488	Flatwasher - 5/16	8
23	W-522	Lockwasher - 5/16	8
24	W-523	Lockwasher - 3/8	4
25	N15114	Hex Nut - 5/16 Stainless Steel	8
2.9	7000 Series Air Seeder		Jan./98

Metering Wheels - continued

Coated Metering Body

Note: The metering wheels can be installed with the metering body mounted to the Air Cart.



Item	Part No.	Description	No. Used
1	N28928	Metering Body	1
2	N19687	Metering Shaft - 8 Outlet	1
3	N19269	Bearing Assembly - NTN - 2 Bolt Flange	2
6	N21659	Seal	2
7	N21602	Spacer	4
8	N21612	Backing Washer	1
9	N27090	Slider - #10 Wheel	As req'd
10	N27089	Slider - #9 Wheel	As req'd
11	N27088	Slider - #8 Wheel	As req'd
12	N27087	Slider - #7 Wheel	As req'd
13	N27605	Cover - Blank Off	As req'd
14	N19526	Wheel - #10 Metering (Cream Colored)	As req'd
15	N19527	Wheel - #9 Metering (Cream Colored)	As req'd
16	N19528	Wheel - #8 Metering (Cream Colored)	As req'd
17	N19529	Wheel - #7 Metering (Cream Colored)	As req'd
18	N27099	Spacer Plate - #9 Wheel (Single - Left)	As req'd
19	N27098	Spacer Plate - #8 Wheel (Single - Right)	As req'd
20	N27097	Spacer Plate - #7 Wheel (Double - Left)	As req'd
21	N28927	Plastic Spacer - Wheel (Left)	8
22	N28929	Plastic Spacer - Wheel (Right)	1
23	W-477	Hex Bolt - 3/8 x 1 1/2 Lg	4
24	D-5488	Flatwasher - 5/16	8
25	W-522	Lockwasher - 5/16	8
26	W-523	Lockwasher - 3/8	4
27	N15114	Hex Nut - 5/16 Stainless Steel	8
28	N28924	Plastic Spacer - Wheel (Without Pin)	7
	N29457	Coated Metering Body Assy (Order Through Wholegoods)	
Jan./98		7000 Series Air Seeder	2.10

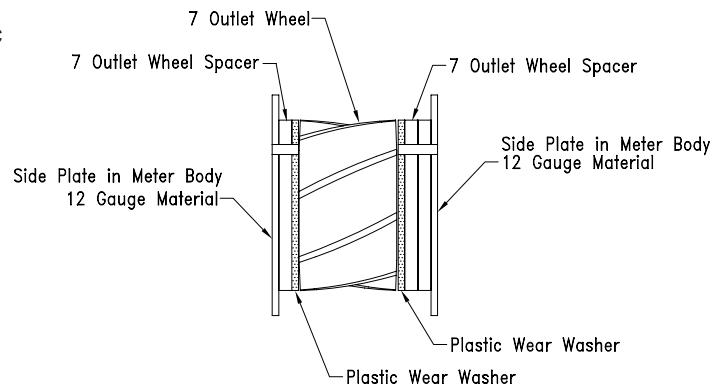
Assembly

Metering Wheels - continued

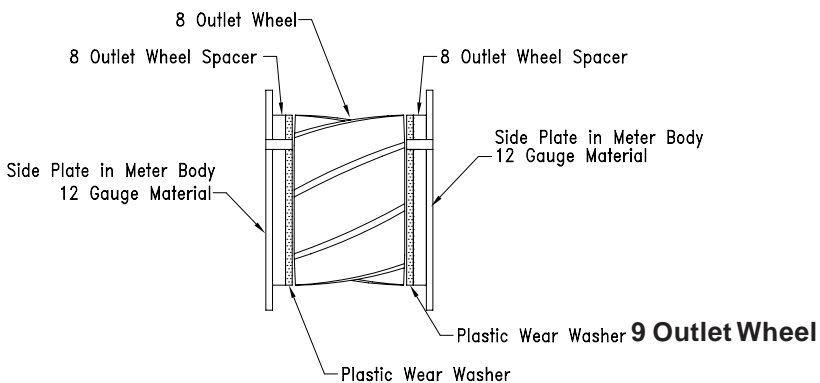
Coated Metering Body - continued

- Refer to Charts for Roll Pin specifications.
- Install the spacer plate against the welded 12 gauge plate in the metering body cavity.
- Install the other plastic wear washer on opposite side of the metering cavity.
- Install the metering wheel between the two plastic wear washers.

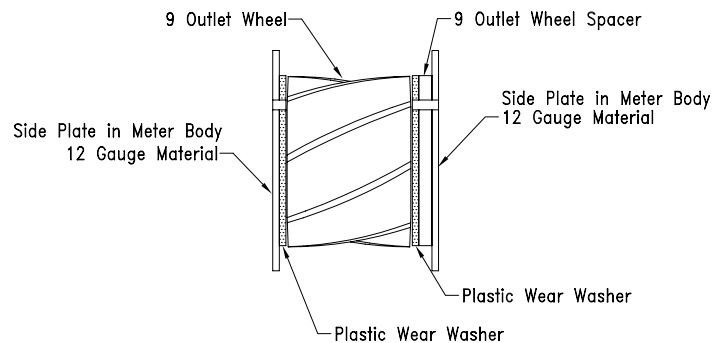
7 Outlet Wheel



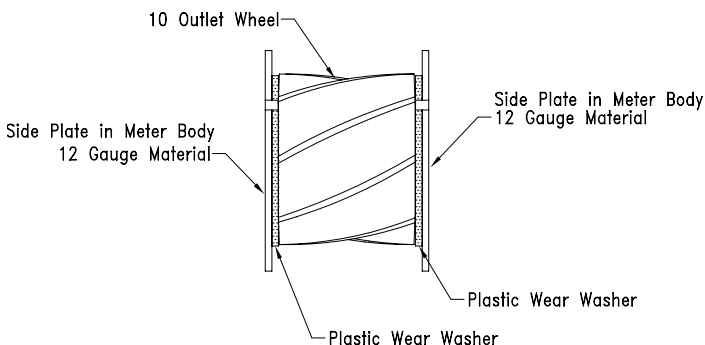
8 Outlet Wheel



9 Outlet Wheel



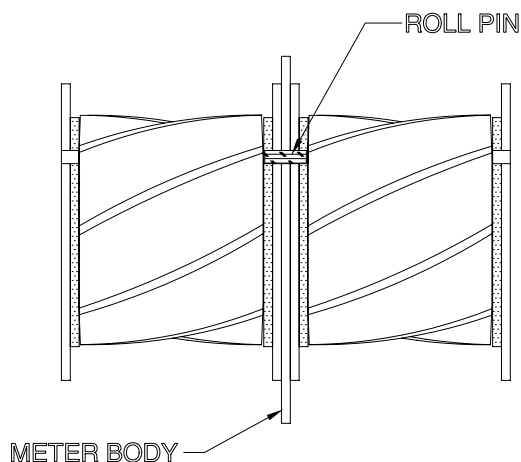
10 Outlet Wheel



Metering Wheels - continued

Coated Metering Body - continued

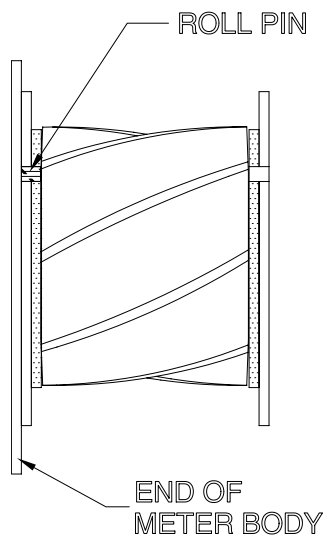
Inside Metering Body



Metering Body Roll Pin Configuration for Outlet Wheels

Left to Right	Roll Pin(s) Required
10 - Open Space	3/8" Roll Pin
Open Space - 10	3/8" Roll Pin
10 - 10	9/16" Roll Pin
10 - 9	9/16" Roll Pin
9 - 10	3/8" Roll Pin & 9/16" Roll Pin ground to 7/16"
9 - Open Space	9/16" Roll Pin
Open Space - 9	3/8" Roll Pin
9 - 9	3/8" Roll Pin & 9/16" Roll Pin ground to 7/16"
9 - 8	3/8" Roll Pin & 9/16" Roll Pin
8 - 9	3/8" Roll Pin & 9/16" Roll Pin ground to 7/16"
8 - Open Space	9/16" Roll Pin
Open Space - 8	9/16" Roll Pin
8 - 8	3/8" Roll Pin & 9/16" Roll Pin
8 - 7	3/8" Roll Pin & 9/16" Roll Pin
7 - 8	2 - 3/8" Roll Pins & 1 - 9/16" Roll Pin
7 - Open Space	3/8" Roll Pin & 9/16" Roll Pin
Open Space - 7	9/16" Roll Pin
7 - 7	2 - 3/8" Roll Pins & 1 - 9/16" Roll Pin

End of Metering Body



Roll Pin Configurations For Outlet Wheels

End of Metering Body	Roll Pin(s) Required
10 Left Side	3/8" Roll Pin ground to 3/16"
10 Right Side	3/8" Roll Pin ground to 3/16"
9 Left Side	3/8" Roll Pin ground to 3/16"
9 Right Side	3/8" Roll Pin & 9/16" Roll Pin ground to 7/16"
8 Left Side	3/8" Roll Pin & 9/16" Roll Pin ground to 7/16"
8 Right Side	3/8" Roll Pin & 9/16" Roll Pin ground to 7/16"
7 Left Side	3/8" Roll Pin & 9/16" Roll Pin ground to 5/16"
7 Right Side	7/16" Roll Pin

Assembly

Metering Wheels - continued

# Runs	Meter Wheel Size For Both Front & Rear Meter Bodies							
21	7	Blank Off	Blank Off	Blank Off	Blank Off	Blank Off	7	7
22	7	Blank Off	Blank Off	Blank Off	Blank Off	Blank Off	8	7
23	8	Blank Off	Blank Off	Blank Off	Blank Off	Blank Off	7	8
24	8	Blank Off	Blank Off	Blank Off	Blank Off	Blank Off	8	8
25	8	Blank Off	Blank Off	Blank Off	Blank Off	Blank Off	9	8
26	9	Blank Off	Blank Off	Blank Off	Blank Off	Blank Off	8	9
27	9	Blank Off	Blank Off	Blank Off	Blank Off	Blank Off	9	9
28	10	Blank Off	Blank Off	Blank Off	Blank Off	Blank Off	9	9
29	10	Blank Off	Blank Off	Blank Off	Blank Off	Blank Off	9	10
30	10	Blank Off	Blank Off	Blank Off	Blank Off	Blank Off	10	10
31	8	8	Blank Off	Blank Off	Blank Off	Blank Off	7	8
32	8	8	Blank Off	Blank Off	Blank Off	Blank Off	8	8
33	8	8	Blank Off	Blank Off	Blank Off	Blank Off	8	9
34	9	8	Blank Off	Blank Off	Blank Off	Blank Off	8	9
35	9	9	Blank Off	Blank Off	Blank Off	Blank Off	8	9
36	9	9	Blank Off	Blank Off	Blank Off	Blank Off	9	9
37	9	9	Blank Off	Blank Off	Blank Off	Blank Off	9	10
38	10	9	Blank Off	Blank Off	Blank Off	Blank Off	9	10
39	10	9	Blank Off	Blank Off	Blank Off	Blank Off	10	10
40	10	10	Blank Off	Blank Off	Blank Off	Blank Off	10	10
41	8	8	Blank Off	Blank Off	Blank Off	8	8	9
42	9	8	Blank Off	Blank Off	Blank Off	8	8	9
43	9	9	Blank Off	Blank Off	Blank Off	8	8	9
44	9	9	Blank Off	Blank Off	Blank Off	8	9	9
45	9	9	Blank Off	Blank Off	Blank Off	9	9	9
46	10	9	Blank Off	Blank Off	Blank Off	9	9	9
47	10	9	Blank Off	Blank Off	Blank Off	9	9	10
48	10	10	Blank Off	Blank Off	Blank Off	9	9	10
49	10	10	Blank Off	Blank Off	Blank Off	9	10	10
** 49 **	9	8	8	Blank Off	Blank Off	8	8	8
50	10	10	Blank Off	Blank Off	Blank Off	10	10	10

** For 49' Maxim Air Drill with 12" spacing: 6 head kit is recommended. **

Metering Body Looking From The Front When Installed

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Important

Ensure distribution system is balanced.

It is very important that head outlets only vary by one.

(i.e. use only 7 and 8 together, 8 and 9 together, 9 and 10 together)

Metering Wheels - continued

# Runs	Meter Wheel Size For Both Front & Rear Meter Bodies							
51	9	9	8	Blank Off	Blank Off	8	8	9
52	9	9	8	Blank Off	Blank Off	8	9	9
53	9	9	8	Blank Off	Blank Off	9	9	9
54	9	9	9	Blank Off	Blank Off	9	9	9
55	10	9	9	Blank Off	Blank Off	9	9	9
56	10	9	9	Blank Off	Blank Off	9	9	10
57	10	9	9	Blank Off	Blank Off	9	10	10
58	10	10	9	Blank Off	Blank Off	9	10	10
59	10	10	9	Blank Off	Blank Off	10	10	10
60	10	10	10	Blank Off	Blank Off	10	10	10
61	9	9	9	Blank Off	8	8	9	9
62	9	9	9	Blank Off	8	9	9	9
63	9	9	9	Blank Off	9	9	9	9
64	10	9	9	Blank Off	9	9	9	9
65	10	9	9	Blank Off	9	9	9	10
66	10	10	9	Blank Off	9	9	9	10
67	10	10	9	Blank Off	9	9	10	10
68	10	10	9	Blank Off	9	10	10	10
69	10	10	10	Blank Off	9	10	10	10
70	10	10	10	Blank Off	10	10	10	10
71	9	9	9	8	9	9	9	9
72	9	9	9	9	9	9	9	9
73	10	9	9	9	9	9	9	9
74	10	9	9	9	9	9	9	10
75	10	10	9	9	9	9	9	10
76	10	10	9	9	9	9	10	10
77	10	10	10	9	9	9	10	10
78	10	10	10	9	9	10	10	10
79	10	10	10	10	9	10	10	10
80	10	10	10	10	10	10	10	10

Metering Body Looking From The Front When Installed

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Important

Ensure distribution system is balanced.

It is very important that head outlets only vary by one.

(i.e. use only 7 and 8 together, 8 and 9 together, 9 and 10 together)

Assembly

Metering Wheels - continued

- Remove the monitor donut from the Right Hand Side of the metering body.
- Loosen the locking collars on the meter shaft bearings.
- Remove the bolts holding the meter shaft bearings and remove both bearings.
- Remove the meter shaft from the Right Hand Side.
- The number of primary runs will determine the specific locations of the metering wheels and blank off plates in the metering body.

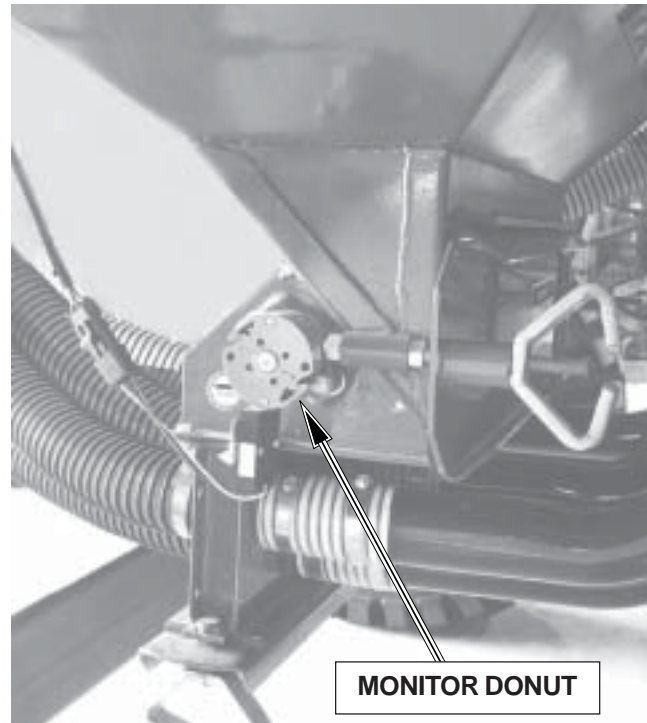
The location of each primary run must be the same for both metering bodies. See charts on page 10-8 and 10-9 for metering wheel size and location.

Assembly Hint: Mark the metering wheels on the outside of the rib that is next to the key.

- Smear an *extremely thin layer* of silicone on the pin side of the spacer plates for the 7, 8 and 9 metering cups.

The side with the silicone must be installed against the metering body.

- Place all metering wheels and spacers for the particular number of runs required into the metering body. See charts on page 10-8 and 10-9 for the location and size of each wheel for any size of unit.



Metering Wheels - continued

- Apply an *extremely thin layer* of grease to the seal lip of both seals.

Assembly Hint: Mark metering wheel size on the metering body. This will help in connecting the main distribution hose and secondary divider heads.

- Align the shaft keyway with the marks on the metering wheels. Slide the metering shaft through the metering wheels.

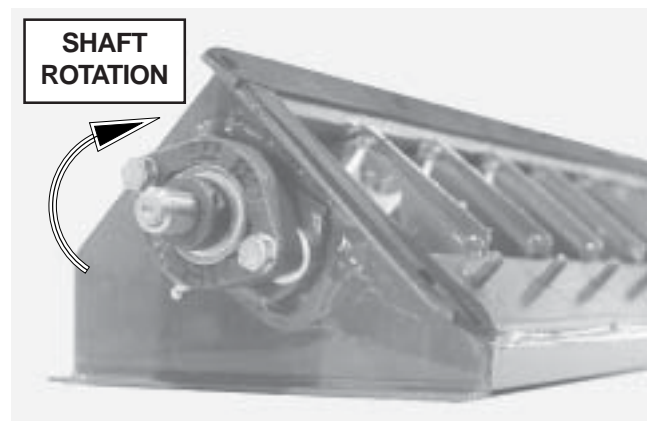
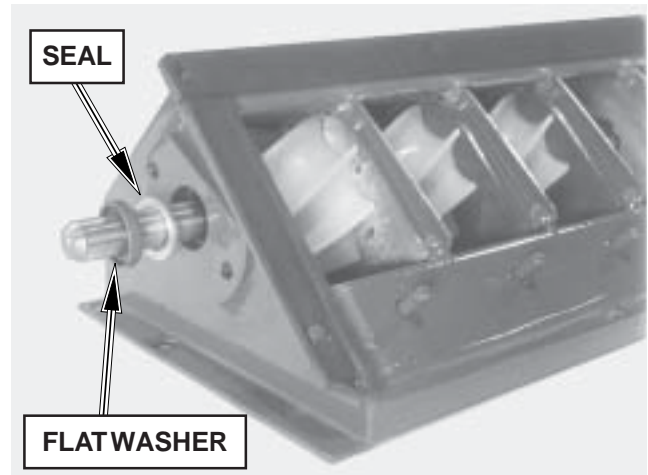
Note: Care must be taken that the key ways are aligned, otherwise damage to the key in the wheels may occur.

- The metering shaft must be pushed through until the shoulder on the shaft hits the side of the metering body.
- Install the washer on the shaft and into the housing on the Right Hand Side of the metering body.

Important: The seal must be installed as shown, with open side of the seal to the outside. Care must be taken when installing the seal. It is recommended that a brass drift be used to minimize any damage to the seal.

Note: The Left Hand Side seal is installed at the factory.

- Reinstall both meter shaft bearings and spacers with the grease fitting towards the rear of the machine.
- Tighten locking collars by turning the collars in the direction of the shaft rotation. Lock the collar by tapping the collar with a punch in the direction of rotation of the shaft.
- Reinstall monitor donut on shaft. Ensure donut is centred to the pick-up. The gap between the pick-up and the donut must be .030".



Assembly

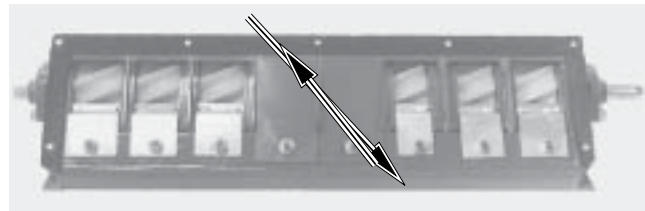
Metering Wheels - continued

- Install the slider plates to all cups with metering wheels.

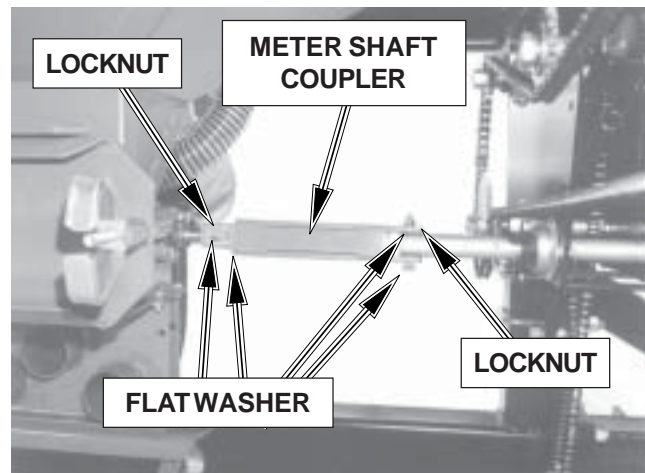
Note: Install blank-off covers on cups without wheels. Insert the top of the blank-off plate under the tank lip.

- Set sliders to top of slot. Tighten sliders with 5/16" stainless steel nut, lockwasher and flatwasher. (See "Slider Setting" under Operation Section for correct procedure)
- Attach meter shaft coupler over the meter shaft and transmission drive shaft.
- Install the 1/4" x 2 1/4" Special bolt with two - flatwashers and locknut. **Tighten locknuts to bottom of threads.**

BLANK OFF PLATE



SLIDER PLATE



Monitor Connections

- Locate wires in Air Cart wire harness at front of Air Cart.
- Connect the Bin Level Wires marked AB and ABG to the bin sensor on the Third Tank.
- Connect shaft sensor as shown. Connect the wires marked AS and ASG to the sensor.
- Re-program Monitor as outlined in the '7000 Series Air Cart' manual, under "System Installation".

Primary Hose Installation

General:

- Mount the collector to the bottom of the meter body.

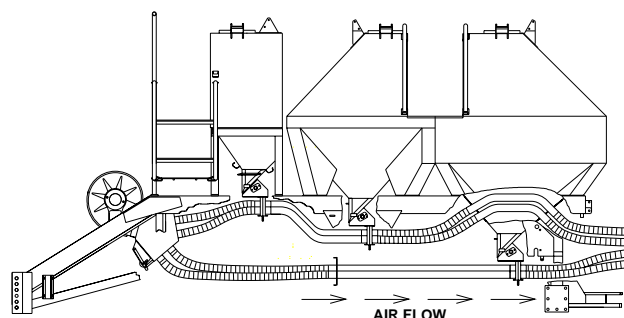
Important: Ensure the “Air Flow” decal on the collector is pointing in the correct direction.

- Assemble the collector bottom and the collector extension to the collector using the large wing nuts.

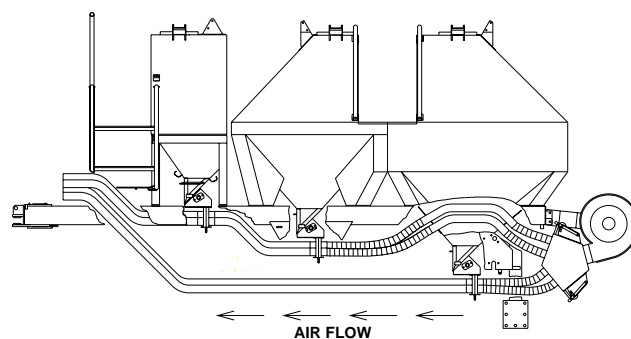
Important: Care must be taken when installing the collector bottom not to damage the inside of the collector.

- All unused ports must be blanked off using a plastic cap and hose clamp with or without the optional collector plug N28174 shown below.

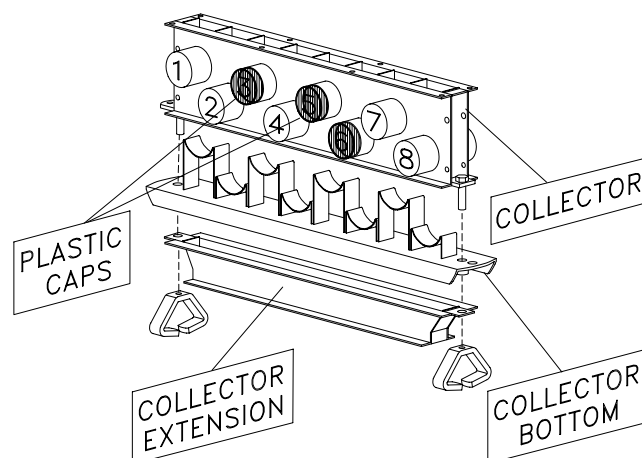
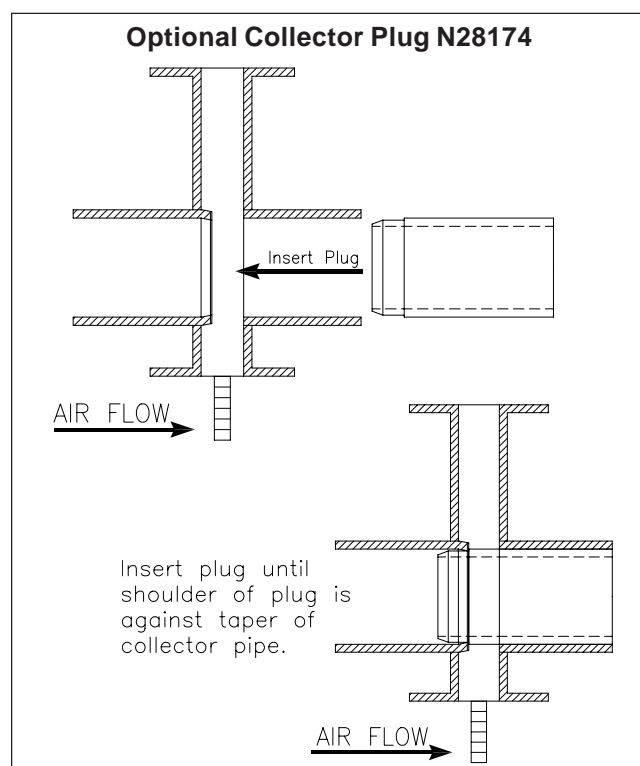
Note: The Collector Extension is required for retrieving a sample in the Rate Check Box.



Air Flow Diagram Tow Between



Air Flow Diagram Tow Behind



Note: Arrow directions on the collector bottom must point in the same direction as the ones on the collector body.

Assembly

Primary Hose Installation

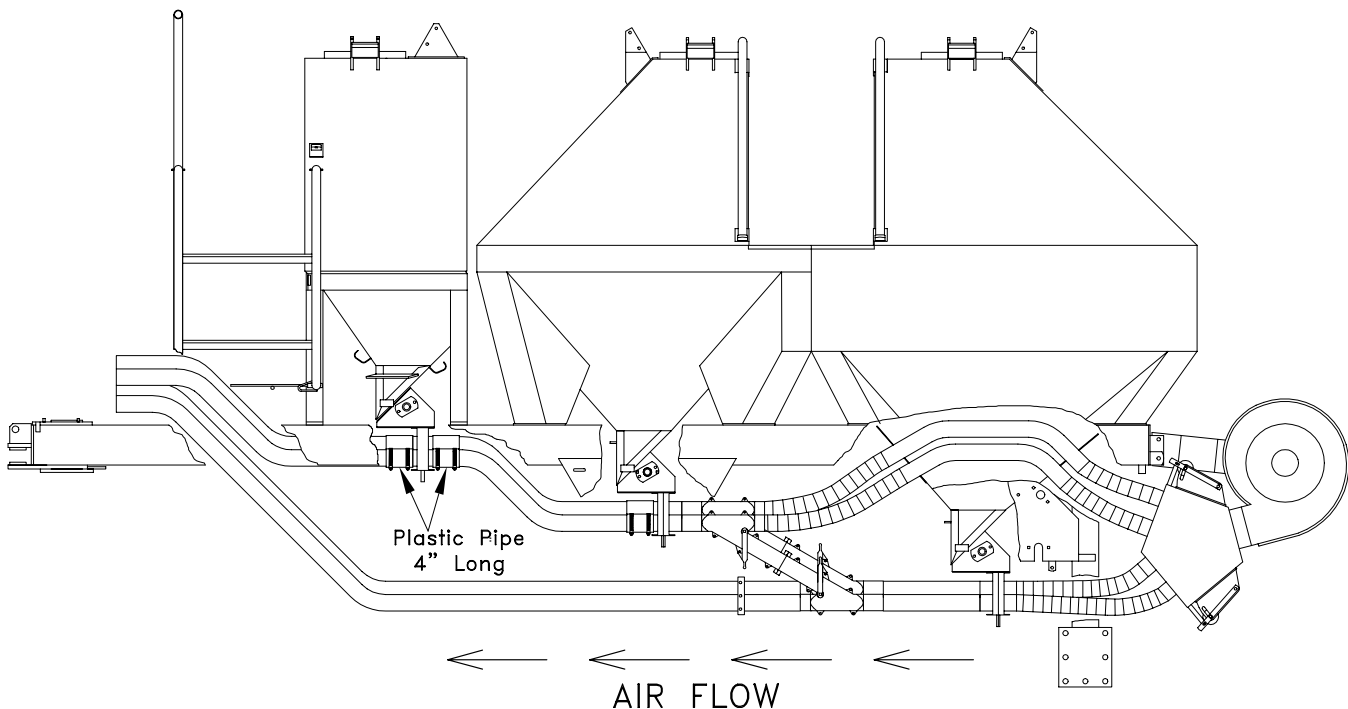
Tow Behind:

- Slide the 4" length of 2 1/2" plastic hose onto either end of the steel tubes.
- Insert the steel tubes between the collectors.
- Slide the 4" length hose onto the collector outlets.
- Secure the steel tubes with hose clamps.
- Install the front primary steel tubes to the front collector outlets with 4" length hose.
- Secure the steel tubes with hose clamps.
- Insert the bare end of the steel primary tubes into the holder and install the other end onto the respective collector outlets.
- Ensure collector outlets and tube holder holes correspond.

Important

Hot water is the only acceptable lubricant for the installation of the 2 1/2" Black Coupler Hose.

WD-40 or any other lubricant (i.e. liquid detergent) will have a negative effect on the chemical stability of the hose, resulting in the degradation and failure of the hose due to Environmental Stress Cracking.



Note: Ensure there is a 1" gap between the collector body outlets and the steel tubes.

Primary Hose Installation - Continued

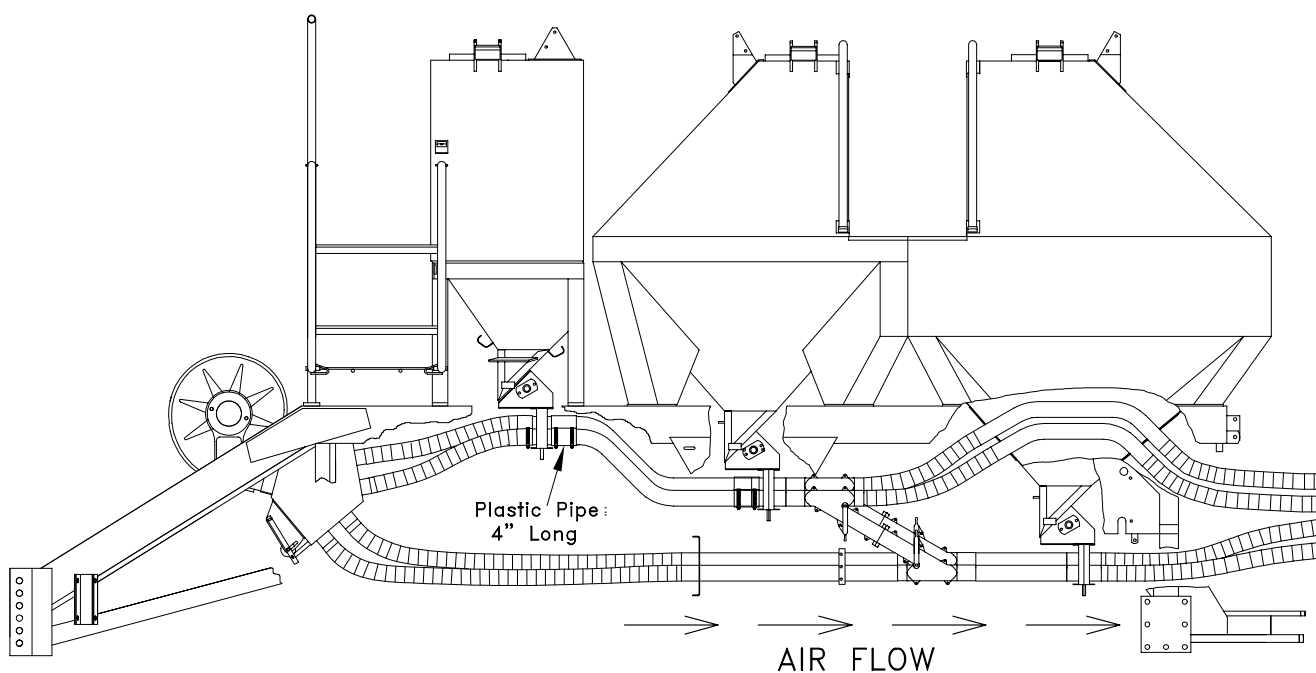
Tow Between:

- Cut the 2 1/2" diameter primary hose to the required length to connect the plenum to the collector on the Third Tank.
- Slide the 4" length of 2 1/2" plastic hose onto either end of the steel tubes.
- Insert the steel tubes between the collectors.
- Slide the 4" length hose onto the collector outlets.
- Secure the steel tubes with hose clamps.

Important

Hot water is the only acceptable lubricant for the installation of the 2 1/2" Black Coupler Hose.

WD-40 or any other lubricant (i.e. liquid detergent) will have a negative effect on the chemical stability of the hose, resulting in the degradation and failure of the hose due to Environmental Stress Cracking.



Note: Ensure there is a 1" gap between the collector body outlets and the steel tubes.

Assembly

Walkway & Stair Installation

1. Install the walkway platform to the Third Tank using 3/8" x 1 1/4" bolts, lockwashers and nuts.

The stairs can be mounted on the Right or Left side depending on operator's preference. (See Next Page)

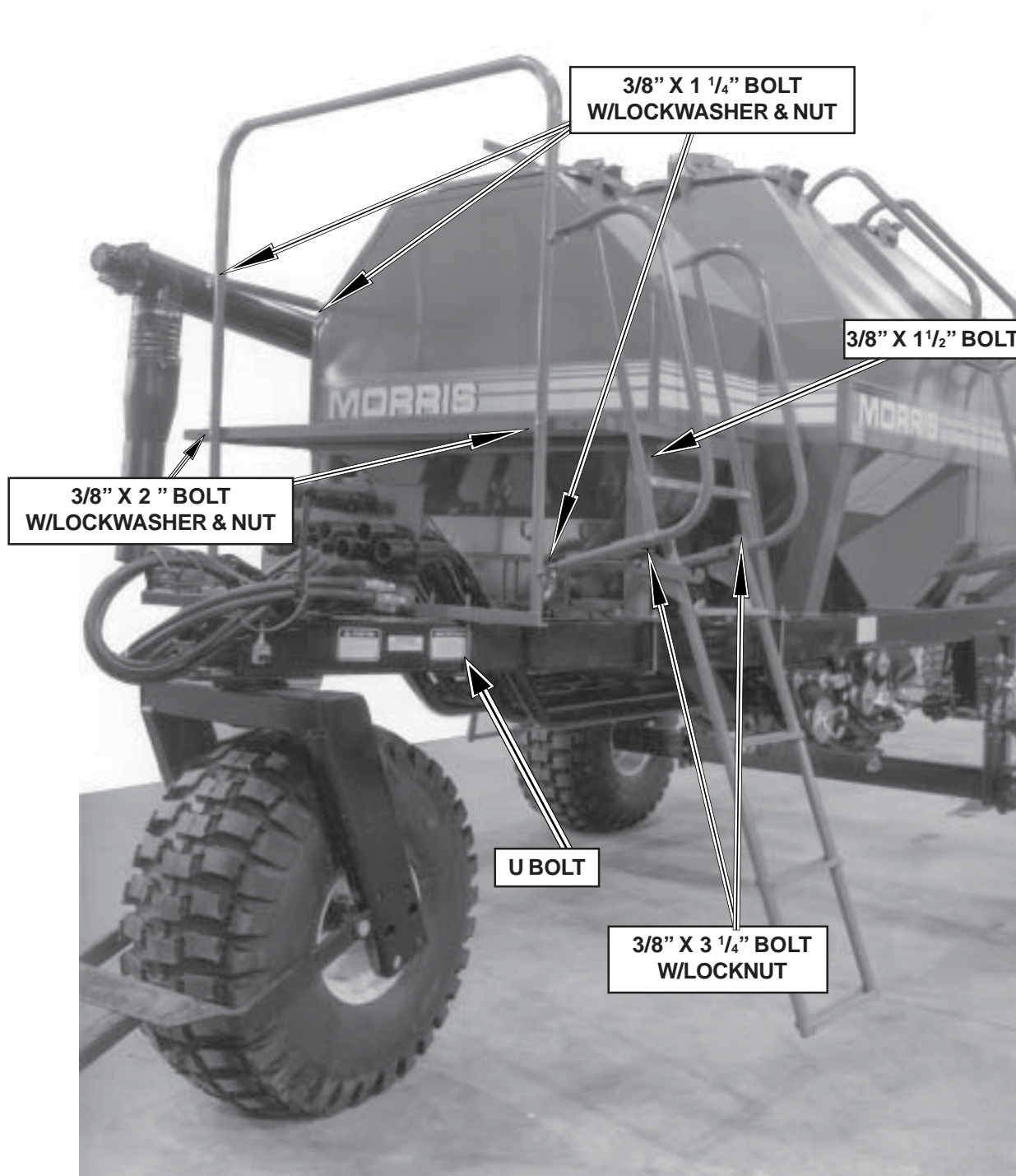
2. Install the front handrail to the Air Cart frame using 3/8" U-bolts, flatwasher, lockwasher and nut.
3. Attach the walkway platform to the front handrail using 3/8" x 2" bolts, lockwashers and nuts.
4. Attach the side hand rail to the tank and front hand rail.
5. Pre-assemble the latch assembly to the stair as shown.
6. Mount the stairs to the walkway platform using two 3/8" x 3 1/4" bolts and locknuts.

Note: Ensure the nuts are not tightened fully. This ensures the stairs can rotate freely up and down.



Walkway & Stair Installation - Continued

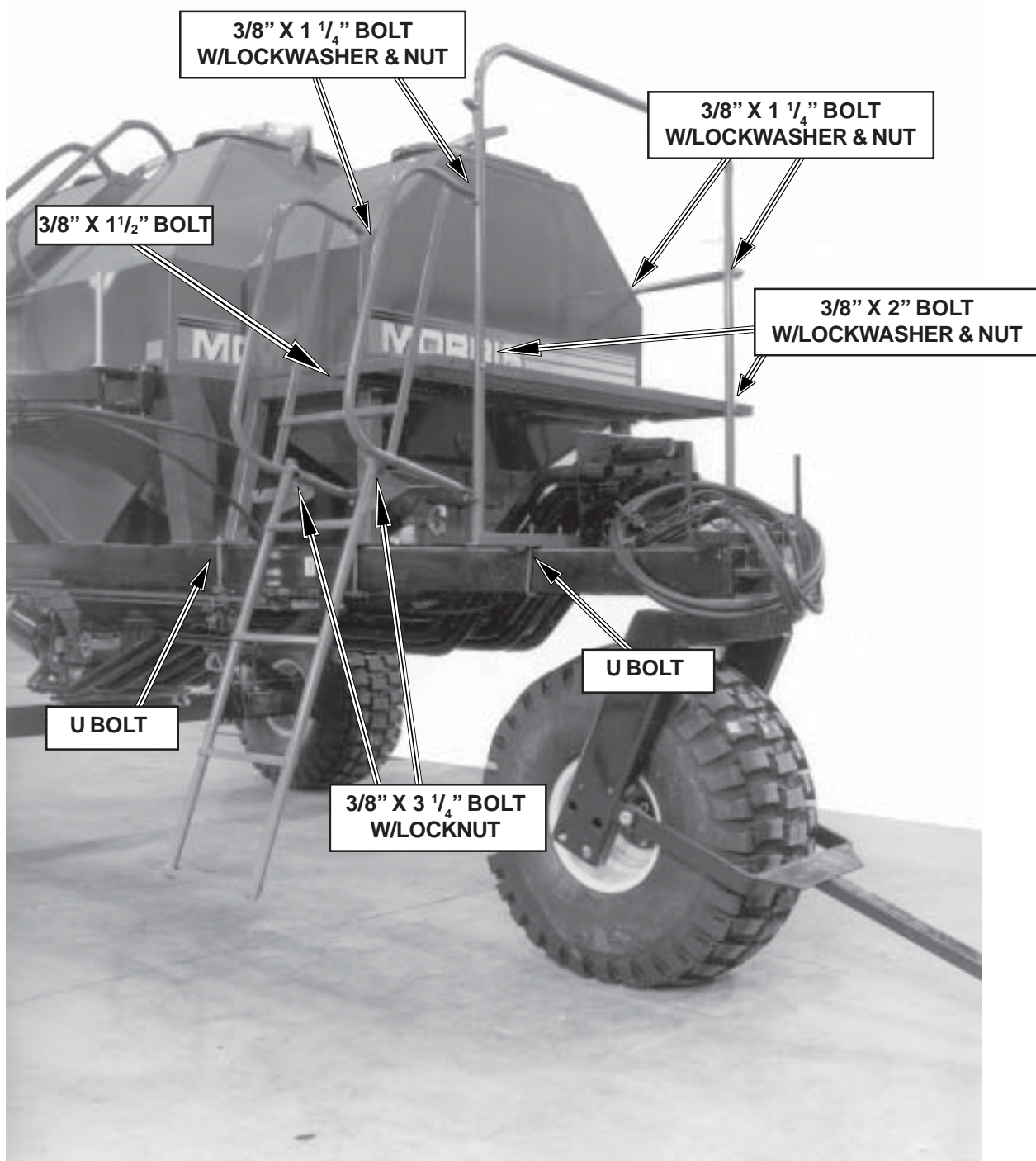
Stairs Installed on Left Side



Assembly

Walkway & Stair Installation - Continued

Stairs Installed on Right Side



Notes

Section 10: Metric

Section Contents

Metric Rate Calibration Chart	10-2
Model 7130 & 7180	10-2
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Slow Speed Seed Rate Chart: (Front Transmission)	10-5
Fertilizer Rate Chart: (Rear Transmission)	10-6
Fertilizer Rate Chart: (Located on Third Tank)	10-7

Metric

Metric Rate Calibration Chart

Calibration Chart based on 1/10 of a Hectare.

W = Machine Spread Width (metres)

F = Optional Mechanical Hectare Tally Factor = 56/R

R = Crank Rotation (turns)

for 1/10 Hectare = 397/W for 7130 with 16.5 x 16.1 All Weather Tires.

for 1/10 Hectare = 350/W for 7130 & 7180 with 21.5 x 16.1 All Weather Tires.

for 1/10 Hectare = 347/W for 7180 with 21.5 x 16.1 Sure Grip Tires.

D = Distance required for 1/10 Hectare (metres) = 1000/W

Model 7130 & 7180

7000 Series Air Seeder																			
METRIC RATE CALIBRATION CHART																			
WIDTH [W]		AIRSEEDER MODEL							DISTANCE [D]	WIDTH [W]		AIRSEEDER MODEL							DISTANCE [D]
		7130		7180								7130		7180					
		Tire 16.5 x 16.1		Tire 21.5 x 16.1		Sure Grip Tire 21.5 x 16.1						Tire 16.5 x 16.1		Tire 21.5 x 16.1		Sure Grip Tire 21.5 x 16.1			
(ft)	(m)	[R]	[F]	[R]	[F]	[R]	[F]	(m)	(ft)	(m)	[R]	[F]	[R]	[F]	[R]	[F]	(m)		
21	6.40	62.03	0.90	54.68	1.02	54.22	1.03	156.25	51	15.54	25.55	2.19	22.52	2.49	22.33	2.51	64.35		
22	6.71	59.16	0.95	52.15	1.07	51.72	1.08	149.03	52	15.85	25.05	2.24	22.08	2.54	21.89	2.56	63.09		
23	7.01	56.63	0.99	49.92	1.12	49.50	1.13	142.65	53	16.15	24.58	2.28	21.67	2.58	21.49	2.61	61.92		
24	7.32	54.23	1.03	47.81	1.17	47.41	1.18	136.61	54	16.46	24.12	2.32	21.26	2.63	21.08	2.66	60.75		
25	7.62	52.10	1.07	45.93	1.22	45.54	1.23	131.23	55	16.76	23.69	2.36	20.88	2.68	20.71	2.70	59.67		
26	7.92	50.12	1.12	44.19	1.27	43.82	1.28	126.26	56	17.07	23.26	2.41	20.50	2.73	20.33	2.75	58.58		
27	8.23	48.24	1.16	42.52	1.32	42.17	1.33	121.51	57	17.37	22.85	2.45	20.15	2.78	19.98	2.80	57.57		
28	8.53	46.54	1.20	41.03	1.36	40.68	1.38	117.23	58	17.68	22.45	2.49	19.79	2.83	19.63	2.85	56.56		
29	8.84	44.91	1.25	39.59	1.41	39.26	1.43	113.12	59	17.98	22.08	2.54	19.46	2.88	19.30	2.90	55.62		
30	9.14	43.43	1.29	38.29	1.46	37.97	1.47	109.41	60	18.29	21.70	2.58	19.13	2.93	18.97	2.95	54.67		
31	9.45	42.01	1.33	37.03	1.51	36.72	1.53	105.82	61	18.59	21.35	2.62	18.82	2.98	18.67	3.00	53.79		
32	9.75	40.72	1.38	35.89	1.56	35.59	1.57	102.56	62	18.90	21.00	2.67	18.52	3.02	18.36	3.05	52.91		
33	10.06	39.46	1.42	34.79	1.61	34.50	1.62	99.40	63	19.20	20.68	2.71	18.23	3.07	18.07	3.10	52.08		
34	10.36	38.32	1.46	33.78	1.66	33.50	1.67	96.53	64	19.51	20.35	2.75	17.94	3.12	17.79	3.15	51.26		
35	10.67	37.20	1.51	32.80	1.71	32.52	1.72	93.72	65	19.81	20.04	2.79	17.67	3.17	17.52	3.20	50.48		
36	10.97	36.19	1.55	31.90	1.76	31.63	1.77	91.16	66	20.12	19.73	2.84	17.39	3.22	17.25	3.25	49.70		
37	11.28	35.19	1.59	31.02	1.81	30.76	1.82	88.65	67	20.42	19.44	2.88	17.14	3.27	16.99	3.30	48.97		
38	11.58	34.28	1.63	30.22	1.85	29.97	1.87	86.36	68	20.73	19.15	2.92	16.88	3.32	16.74	3.35	48.24		
39	11.89	33.39	1.68	29.43	1.90	29.19	1.92	84.10	69	21.03	18.88	2.97	16.64	3.37	16.50	3.39	47.55		
40	12.19	32.57	1.72	28.71	1.95	28.47	1.97	82.03	70	21.34	18.60	3.01	16.40	3.41	16.26	3.44	46.86		
41	12.50	31.76	1.76	28.00	2.00	27.76	2.02	80.00	71	21.64	18.34	3.05	16.17	3.46	16.04	3.49	46.21		
42	12.80	31.01	1.81	27.34	2.05	27.11	2.07	78.13	72	21.95	18.09	3.10	15.94	3.51	15.81	3.54	45.56		
43	13.11	30.28	1.85	26.69	2.10	26.47	2.12	76.28	73	22.25	17.84	3.14	15.73	3.56	15.60	3.59	44.94		
44	13.41	29.60	1.89	26.10	2.15	25.88	2.16	74.57	74	22.56	17.60	3.18	15.51	3.61	15.38	3.64	44.33		
45	13.72	28.93	1.94	25.51	2.20	25.29	2.21	72.89	75	22.86	17.37	3.22	15.31	3.66	15.18	3.69	43.74		
46	14.02	28.31	1.98	24.96	2.24	24.75	2.26	71.33	76	23.16	17.14	3.27	15.11	3.71	14.98	3.74	43.18		
47	14.33	27.70	2.02	24.42	2.29	24.22	2.31	69.78	77	23.47	16.91	3.31	14.91	3.76	14.79	3.79	42.61		
48	14.63	27.13	2.06	23.92	2.34	23.72	2.36	68.35	78	23.77	16.70	3.35	14.72	3.80	14.60	3.84	42.07		
49	14.94	26.57	2.11	23.42	2.39	23.23	2.41	66.93	79	24.08	16.49	3.40	14.53	3.85	14.41	3.89	41.53		
50	15.24	26.05	2.15	22.96	2.44	22.77	2.46	65.62	80	24.38	16.28	3.44	14.35	3.90	14.23	3.94	41.02		

Metric Rate Calibration Chart

Calibration Chart based on 1/10 of a Hectare.

W = Machine Spread Width (metres)

F = Optional Mechanical Hectare Tally Factor = 56/R

R = Crank Rotation (turns)

for 1/10 Hectare = $277.9/W$ for 7180 with 18.4 x 26 All Weather Tires.

for 1/10 Hectare = $262.4/W$ for 7240, 7252 & 7300 with 23.1 x 26 All Weather Tires.

for 1/10 Hectare = $238.6/W$ for 7240, 7252 & 7300 with 23.1 x 26 Rice Tires.

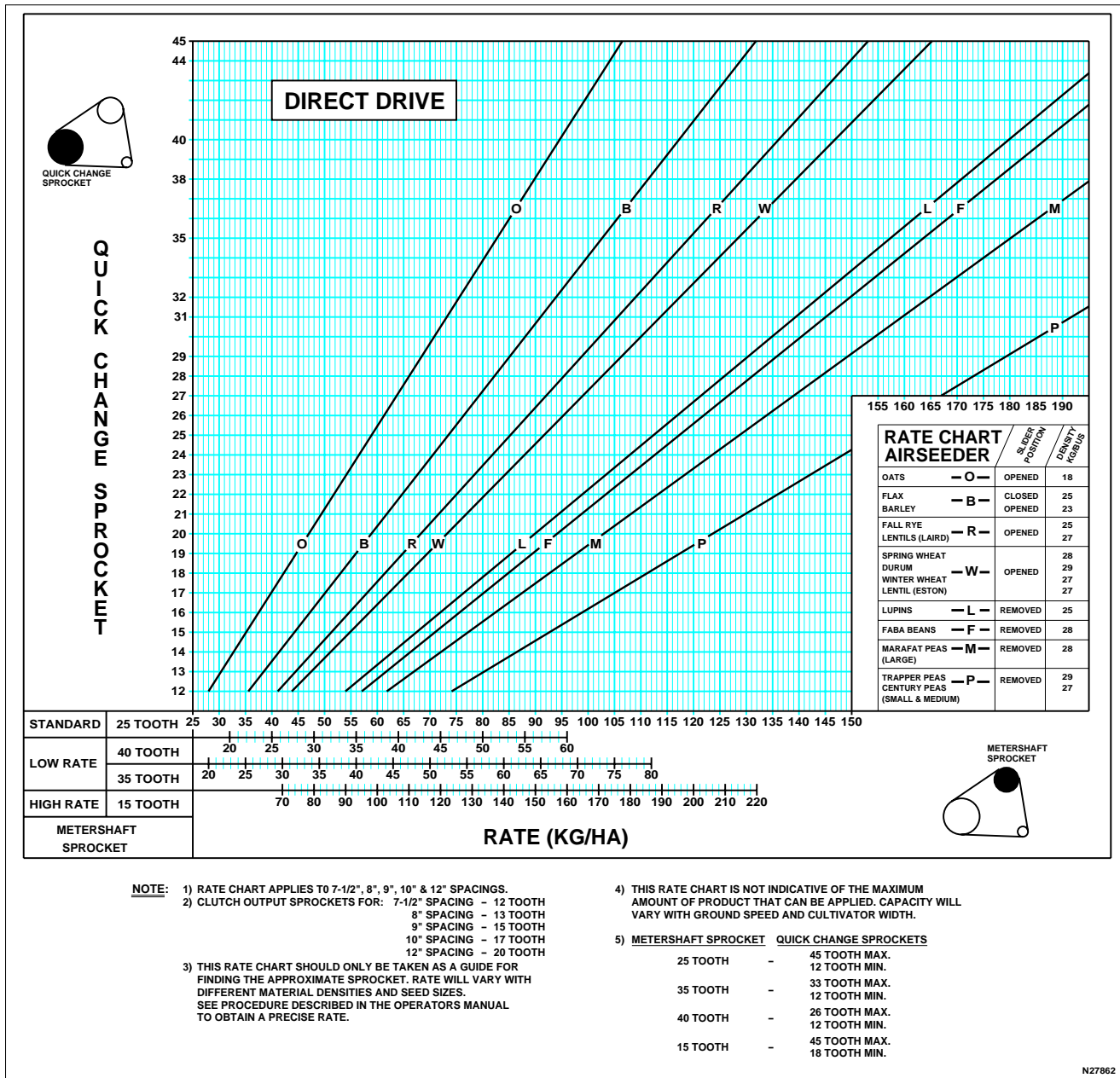
D = Distance required for 1/10 Hectare (metres) = $1000/W$

Model 7180, 7240, 7252 & 7300

7000 Series Air Seeder																	
METRIC RATE CALIBRATION CHART																	
WIDTH		AIRSEEDER MODEL						DISTANCE	WIDTH		AIRSEEDER MODEL						DISTANCE
		7180		7240/7252/7300							7180		7240/7252/7300				
		Tire		Tire		Rice Tire					Tire		Tire		Rice Tire		
[W]		18.4 x 26		23.1 x 26		23.1 x 26		[D]	[W]		18.4 x 26		23.1 x 26		23.1 x 26		[D]
(ft)	(m)	[R]	[F]	[R]	[F]	[R]	[F]		(m)	(ft)	(m)	[R]	[F]	[R]	[F]	[R]	
21	6.40	43.42	1.29	41.00	1.37	37.28	1.50	156.25	51	15.54	17.88	3.13	16.89	3.32	15.35	3.65	64.35
22	6.71	41.41	1.35	39.11	1.43	35.56	1.57	149.03	52	15.85	17.53	3.19	16.56	3.38	15.05	3.72	63.09
23	7.01	39.64	1.41	37.44	1.50	34.03	1.65	142.65	53	16.15	17.20	3.26	16.25	3.45	14.77	3.79	61.92
24	7.32	37.96	1.48	35.85	1.56	32.59	1.72	136.61	54	16.46	16.88	3.32	15.94	3.51	14.49	3.86	60.75
25	7.62	36.46	1.54	34.44	1.63	31.31	1.79	131.23	55	16.76	16.58	3.38	15.66	3.58	14.23	3.94	59.67
26	7.92	35.08	1.60	33.13	1.69	30.12	1.86	126.26	56	17.07	16.28	3.44	15.37	3.64	13.98	4.01	58.58
27	8.23	33.76	1.66	31.89	1.76	28.99	1.93	121.51	57	17.37	16.00	3.50	15.11	3.71	13.73	4.08	57.57
28	8.53	32.57	1.72	30.76	1.82	27.97	2.00	117.23	58	17.68	15.72	3.56	14.84	3.77	13.49	4.15	56.56
29	8.84	31.43	1.78	29.69	1.89	26.99	2.07	113.12	59	17.98	15.45	3.62	14.60	3.84	13.27	4.22	55.62
30	9.14	30.40	1.84	28.71	1.95	26.10	2.15	109.41	60	18.29	15.19	3.69	14.35	3.90	13.04	4.29	54.67
31	9.45	29.40	1.90	27.77	2.02	25.25	2.22	105.82	61	18.59	14.95	3.75	14.12	3.97	12.83	4.36	53.79
32	9.75	28.50	1.96	26.92	2.08	24.47	2.29	102.56	62	18.90	14.70	3.81	13.88	4.03	12.62	4.44	52.91
33	10.06	27.62	2.03	26.09	2.15	23.72	2.36	99.40	63	19.20	14.47	3.87	13.67	4.10	12.43	4.51	52.08
34	10.36	26.82	2.09	25.33	2.21	23.03	2.43	96.53	64	19.51	14.24	3.93	13.45	4.16	12.23	4.58	51.26
35	10.67	26.04	2.15	24.59	2.28	22.36	2.50	93.72	65	19.81	14.03	3.99	13.25	4.23	12.04	4.65	50.48
36	10.97	25.33	2.21	23.92	2.34	21.75	2.57	91.16	66	20.12	13.81	4.06	13.04	4.29	11.86	4.72	49.70
37	11.28	24.63	2.27	23.26	2.41	21.15	2.65	88.65	67	20.42	13.61	4.11	12.85	4.36	11.68	4.79	48.97
38	11.58	23.99	2.33	22.66	2.47	20.60	2.72	86.36	68	20.73	13.40	4.18	12.66	4.42	11.51	4.87	48.24
39	11.89	23.37	2.40	22.07	2.54	20.07	2.79	84.10	69	21.03	13.21	4.24	12.48	4.49	11.34	4.94	47.55
40	12.19	22.79	2.46	21.53	2.60	19.57	2.86	82.03	70	21.34	13.02	4.30	12.30	4.55	11.18	5.01	46.86
41	12.50	22.23	2.52	20.99	2.67	19.09	2.93	80.00	71	21.64	12.84	4.36	12.13	4.62	11.02	5.08	46.21
42	12.80	21.71	2.58	20.50	2.73	18.64	3.00	78.13	72	21.95	12.66	4.42	11.96	4.68	10.87	5.15	45.56
43	13.11	21.19	2.64	20.02	2.80	18.20	3.08	76.28	73	22.25	12.49	4.48	11.79	4.75	10.72	5.22	44.94
44	13.41	20.72	2.70	19.57	2.86	17.79	3.15	74.57	74	22.56	12.32	4.55	11.63	4.82	10.58	5.29	44.33
45	13.72	20.25	2.77	19.13	2.93	17.39	3.22	72.89	75	22.86	12.15	4.61	11.48	4.88	10.44	5.36	43.74
46	14.02	19.82	2.83	18.72	2.99	17.02	3.29	71.33	76	23.16	12.00	4.67	11.33	4.94	10.30	5.44	43.18
47	14.33	19.39	2.89	18.31	3.06	16.65	3.36	69.78	77	23.47	11.84	4.73	11.18	5.01	10.17	5.51	42.61
48	14.63	18.99	2.95	17.94	3.12	16.31	3.43	68.35	78	23.77	11.69	4.79	11.04	5.07	10.04	5.58	42.07
49	14.94	18.60	3.01	17.57	3.19	15.97	3.51	66.93	79	24.08	11.54	4.85	10.90	5.14	9.91	5.65	41.53
50	15.24	18.23	3.07	17.22	3.25	15.65	3.58	65.62	80	24.38	11.40	4.91	10.76	5.20	9.79	5.72	41.02

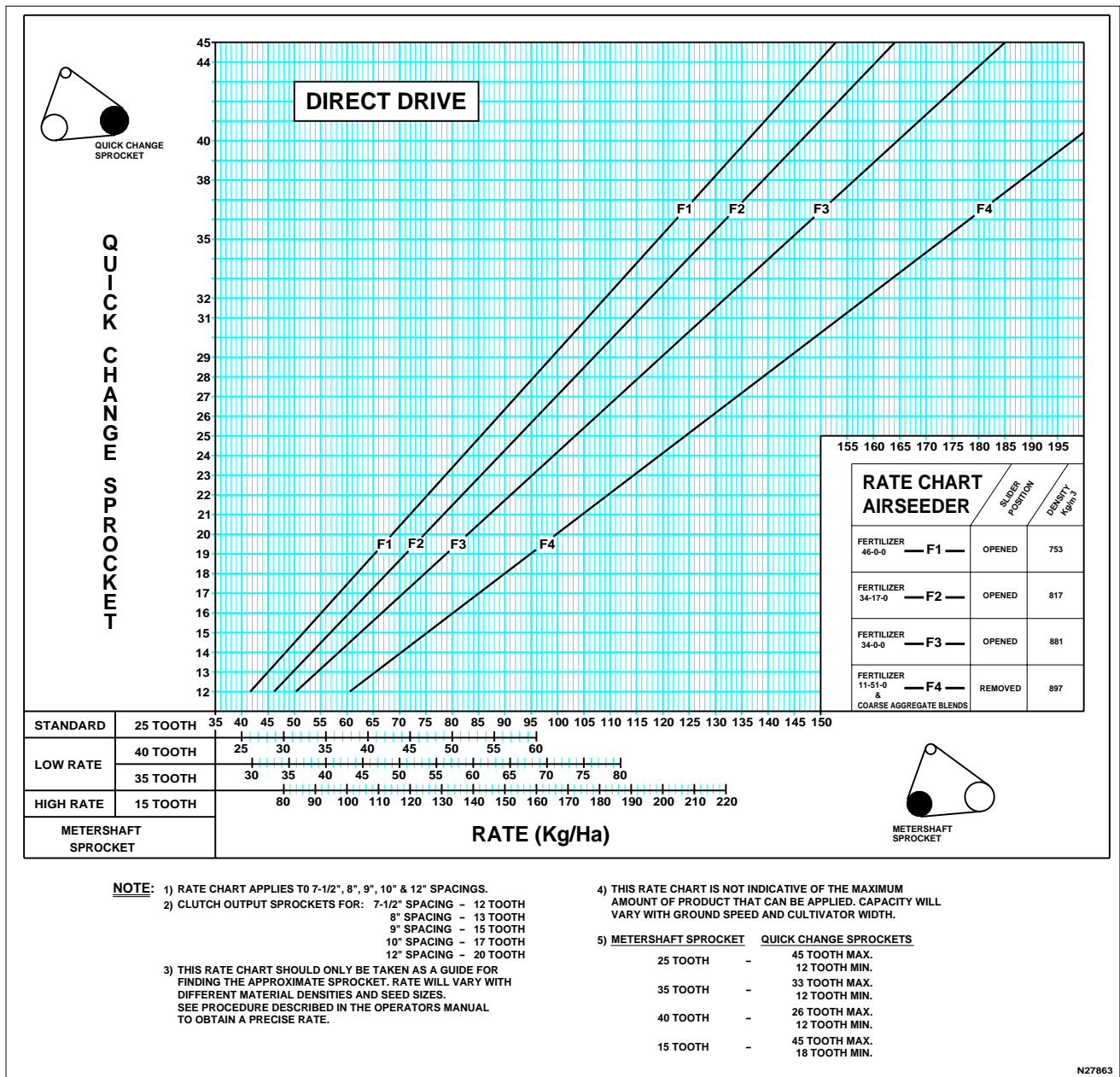
Rate Charts

Seed Rate Chart: (Front Transmission)



Rate Charts - continued

Fertilizer Rate Chart: (Rear Transmission)



Metric

Notes:



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