



OPERATIONS AND HANDLING GUIDE

Dear Valued Customer,

Thank you for your purchase of WOLF TRAX® DDP® (dry dispersible powder) micronutrients! When incorporated correctly into the fertilizer blending systems, WOLF TRAX DDP micronutrients offer many agronomic and business advantages:

- Blending procedures are similar to those used to blend typical granular micronutrients.
- Less micronutrients are required per batch.
- You achieve a very consistent distribution of micronutrients throughout the fertilizer blend.

This guide has been designed to ensure that you have all the information you need throughout the blending process.

If you have any questions or require additional information, please contact your Koch Agronomic Services (KAS) sales representative.

Sincerely,

Earl Greenhough
Product Service Manager

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QUICK REFERENCE GUIDE

- [Equipment Options Photo Gallery](#)



EQUIPMENT OPTIONS PHOTO GALLERY



A.J. Sackett Powder Feeder



Aero Matic Conveyor (AMC)



AMC with Hand Crank Dispensers



Automated System with AMC Conveyor



Doyle Top Hood



Doyle Top Hood and Shop Fox

Images provided by Koch Agronomic Services.



EQUIPMENT OPTIONS PHOTO GALLERY



Forklift Mount Drum Turner with Slide Gate



Jib Crane and Drum Handler



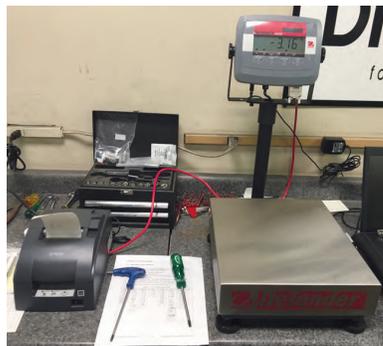
Kahlor Automation Panel



Manual Drum Feeder with Hand Crank



Microcharger — Tower Blend



Ohaus Bench Scale with Printer



Platform Scale Plus Rice Lake 480 Scale

Images provided by Koch Agronomic Services.



EQUIPMENT OPTIONS PHOTO GALLERY



Ranco Feeder



Ranco Additive Feeder



Ranco Powder Feeder with Jib Crane



Rockler Shop Fox



Slide Gate with Drum



Vinyl Curtain



Yargus Paddle Blender (for belt blending)



Yargus Batch Feeder and Autocharger

Images provided by Koch Agronomic Services.



BASICS OF WOLF TRAX[®] DDP[®] MICRONUTRIENTS

- Micronutrient Technology
 - Packaging Options
 - Physical Properties

OPTIMIZE YIELD POTENTIAL WITH MICRONUTRIENT TECHNOLOGY

WOLF TRAX® DDP® micronutrients are formulated to improve nutrient distribution and increase nutrient uptake throughout a crop's growth cycle. WOLF TRAX DDP products include:

- 18% Boron DDP
- 27% Calcium DDP
- 56.5% Copper DDP
- 46.5% Iron DDP
- 33% Manganese DDP
- 30% Magnesium DDP
- 62% Zinc DDP
- NU-TRAX P+® (4-25-0, 5% Mn, 20% Zn)
- CROPMIX™ (2% B, 1% Cu, 1% Fe, 18% Mn, 17% Zn)
- 3-TRAX™ (3% B, 13% Mn, 26% Zn)

WOLF TRAX DDP micronutrients are formulated to prevent soil or weather-induced micronutrient deficiencies that can limit yield potential. WOLF TRAX products can provide nutrient availability throughout a crop's growth cycle and give your crops a balanced nutrition plan.

EVEN DISTRIBUTION OF NUTRIENTS

With patented Evencoat® technology, WOLF TRAX DDP micronutrients are evenly coated onto each fertilizer granule. The result is an even distribution across the field and delivery of the right amount of micronutrients needed in close proximity to growing roots.

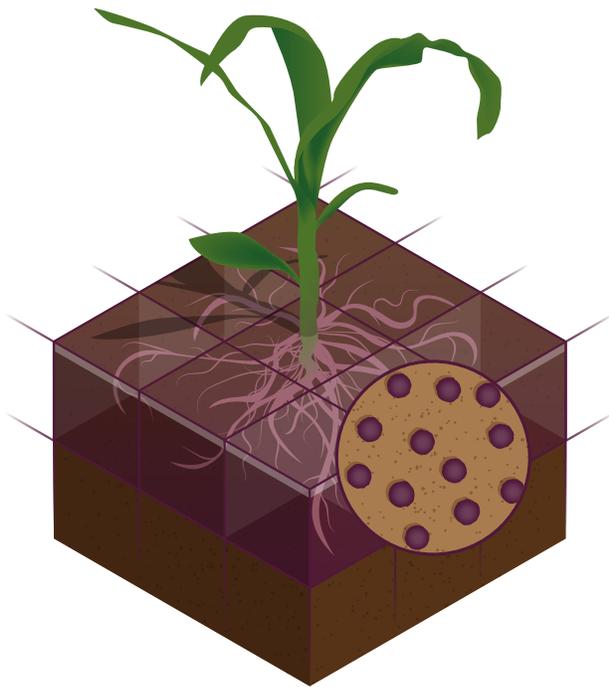


Fertilizer coated with WOLF TRAX Iron DDP

EVEN DISTRIBUTION ACROSS THE FIELD

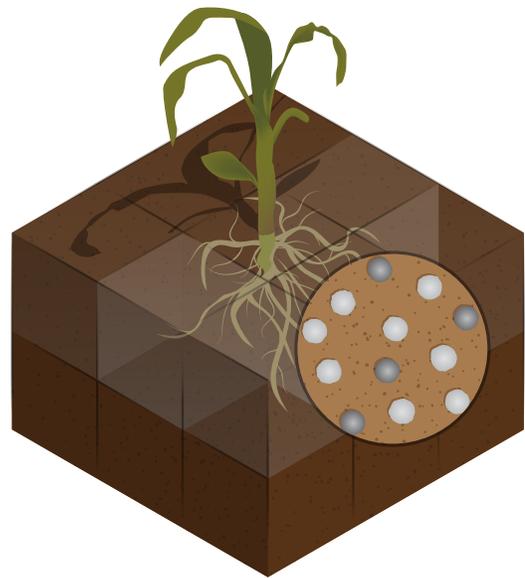
Nutrient Coated on Every Granule

With Evencoat® Technology, WOLF TRAX® products thoroughly coat each and every granule with an application in accordance to the 4R Nutrient Stewardship initiative. The result is an even distribution across the field and delivery of the right amount of micronutrients needed in closer proximity to growing roots.



EVENCOAT® TECHNOLOGY:

153 granules of fertilizer coated with WOLF TRAX Zinc DDP® at 150 lb/ac (168 kg/ha) in a 15" x 5" x 3" (38 cm x 12.5 cm x 7.5 cm) soil profile.



TYPICAL GRANULAR PRODUCT:

Two granules of a granular zinc based on 35.5% zinc at 5 lb/ac (5.6 kg/ha) in a 15" x 5" x 3" (38 cm x 12.5 cm x 7.5 cm) soil profile.

Above is a conceptual example of how different sources of zinc fertilizer are distributed across the field.

Packaging Options

WOLF TRAX® DDP® Products	Standard Box	Drum
WOLF TRAX Boron DDP	20 lb (9.07 kg)	265 lb (120 kg)
WOLF TRAX Calcium DDP	20 lb (9.07 kg)	265 lb (120 kg)
WOLF TRAX Copper DDP	40 lb (18.14 kg)	425 lb (193 kg)
WOLF TRAX CROPMIX™ DDP	20 lb (9.07 kg)	340 lb (154 kg)
WOLF TRAX Iron DDP	20 lb (9.07 kg)	340 lb (154 kg)
WOLF TRAX Magnesium DDP	20 lb (9.07 kg)	300 lb (136 kg)
WOLF TRAX Manganese DDP	20 lb (9.07 kg)	340 lb (154 kg)
WOLF TRAX Zinc DDP	20 lb (9.07 kg)	425 lb (193 kg)
NU-TRAX P+®	20 lb (9.07 kg)	340 lb (154 kg)
3-TRAX™ DDP	20 lb (9.07 kg)	340 lb (154 kg)

Physical Properties

Product	pH (solid) Aqueous	Bulk Density (loose) lb/ft³*	Bulk Density lbs/gallon*	kg/L*
WOLF TRAX 18% Boron DDP	7.5	36	4.9	0.59
WOLF TRAX 27% Calcium DDP	8.1	36	4.9	0.59
WOLF TRAX CROPMIX DDP	6.7	56	7.5	0.90
WOLF TRAX 56.5% Copper DDP	5.1	98	13.2	1.58
WOLF TRAX 46.5% Iron DDP	5.9	48	6.5	0.78
WOLF TRAX 33% Manganese DDP	7.5	60	8.0	0.95
WOLF TRAX 62% Zinc DDP	6.7	63	8.4	1.01
WOLF TRAX 30% Magnesium DDP	9.5	41	5.5	0.66
NU-TRAX P+	5.0	53	7.0	0.84
3-TRAX DDP	6.7	56	7.5	0.90

*Allow +/- 5% variation due to manufacturing process

The logo for WOLF TRAX is presented in white, bold, uppercase letters within a dark maroon rectangular background. The background has a white diagonal cutout on the right side, creating a stylized, dynamic shape.

WOLF TRAX®

HANDLING PRACTICES

- Personal Protective Equipment
 - Dust Containment

PERSONAL PROTECTIVE EQUIPMENT

When applying WOLF TRAX® DDP® micronutrients, be sure to always wear the required PPE to ensure safety when handling all types of fertilizer and WOLF TRAX DDP micronutrients.

Required PPE for handling WOLF TRAX DDP micronutrients are:

- eye shield
- gloves
- mask
- long sleeves

For an extensive list of safety instructions, please refer to the equipment manual and product label.

Opening the Box

When opening a 20 lb (9.07 kg) box of WOLF TRAX DDP micronutrients, it is important to note that the box itself is sealed and can easily be opened by pulling open the flaps of the box. The nutrients are in a heavy duty plastic bag that is sealed with a copper twist-tie. The bag is glued to the bottom of the box. When empty, the bag can be disposed of and the cardboard box can be recycled.

GOOD HOUSEKEEPING TIP

When cleaning up after application, it is best to sweep the nutrients off the floor with a broom and sweeping compound.

Before handling WOLF TRAX DDP micronutrients, please refer to the Best Use Practices for your specific equipment in this guide. If you need assistance when determining the required DDP rate, please contact your KAS sales representative. For WOLF TRAX nutrient SDS or product labels, please visit kochagronomicservices.com.

DUST CONTAINMENT

If your use of WOLF TRAX® DDP® results in unwanted dust particles within your facilities, here are some proven dust containment solutions for your operation:

Dust Collector

- Vacuum dust collector works well with WOLF TRAX DDP micronutrients.
- Adaptable to any work area.
- Filters rated for particles as small as two microns.



Vinyl Curtain

- Practical system for dust containment around weigh hopper.

Note: With weigh hopper systems where the DDP is applied on top of the granular fertilizer on the front end loader, quickly dropping the bucket of product into the weigh hopper helps drive the DDP into the granular fertilizer, which helps reduce the level of powder dispersion.



Images provided by Koch Agronomic Services.

CLOSED SYSTEMS

Closed systems are fully contained, fast, efficient, accurate and simple to operate.

- Drum couples to feeder – product automatically moves from feeder to conveyor to blender.



Low Cost Closed Systems: Manual Drum Dispensers

Low cost, effective system to gain accurate measurement of WOLF TRAX® products from drums.

- Auger can be operated from the front or back of the feeder and feed directly into a conveyor.



Closed System for Rotary Blenders

- Hood installed on belt with dust collector.



Images provided by Koch Agronomic Services.

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WOLF TRAX®

BLENDING IN A BATCH OR TOWER SYSTEM

- Blending in a Batch Blender
- Batch and Tower Blend Plant Solutions

BATCH BLENDERS

Batch blenders are the most commonly used system for blending granular fertilizers. The following includes guidelines for successful fertilizer application of WOLF TRAX® DDP® micronutrients in an upright screw type as well as a drum batch blender, and also provides answers to commonly asked questions.

Blending Instructions

1. Determine the micronutrient needs based on crop removal and yield potential. Use the provided rate charts on page 48 if needed.
2. Determine WOLF TRAX DDP lbs per ton rate based on WOLF TRAX Rate chart on page 48.
3. For optimized blending and adhesion, do not mix in more than 0.8% of the total blend weight, or 0.4% for Boron DDP.
4. Fill the blender $\frac{1}{4}$ to $\frac{3}{4}$ full with granular fertilizer products. Add the required amount of DDP Nutrient, then add the remaining granular fertilizer.
5. **FOR ROTARY BLENDERS:** When the weigh hopper is $\frac{3}{4}$ full, weigh the DDP into a pail and carefully pour the DDP into the granular fertilizer on the front end loader. Use the lip of the pail to bury the DDP into the bed of granular fertilizer.
Note: The DDP can be applied directly to the belt using drum dispensers to weigh the product, a dust hood for the belt, and a dust collector, which minimizes dust levels in handling DDP. Alternatively, DDP can be conveyed with an aeromechanical conveyor directly into the weigh hopper.
6. **FOR TOWER BLENDERS:** A system for elevating the DDP nutrients, and inserting it into the blender is needed. KAS has developed a pressurized air system which elevates DDP products into your blender from ground level. (See page 41 for more information about microchargers.)

Best Use Practices and Helpful Hints

- WOLF TRAX® DDP® may be added to the granular fertilizer alone, however, some of our customers prefer to stir the required amount of DDP into a small amount of granular fertilizer before adding to the blender.
- DDP should NOT be placed on its own directly into the loader.
- If dust is a concern, liquid fertilizer at a rate of 1 quart/ton (1 L/mt) or a light spray oil can be added to the fertilizer. (This is already a common practice in fertilizer warehouses when dealing with dusty granular products.)
- Blend times should not be changed from the blender equipment manufacturer's recommendation when mixing with WOLF TRAX products.



Batch Blender — Closed Systems



*Aero Matic Conveyor (AMC)
with Dust Collector*



Doyle Top Hood



*Automated Feeder Coupled to Autocharger
(tied to plant automation)*



*Closed System: Manual Drum Feeder to
AMC with Hand Crank Dispensers*



Closed System: Manual Drum Feeder to AMC



Remote Start Feeders with AMC Conveyor & Jib Crane
Images provided by Koch Agronomic Services.



BLENDING IN AN IN-LINE SYSTEM

- Blending in an In-Line System

In-Line Blending Systems

In-line blending systems are commonly used to apply WOLF TRAX® DDP® nutrients to dry fertilizer, and are simple to use once the system is calibrated. The blending instructions outline some key guidelines to ensure success, and also provides answers to commonly asked questions.

Blending Instructions

1. Determine the micronutrient needs per acre based on soil test recommendations.
2. For optimized blending and adhesion, do not mix in more than 0.8% of the total blend weight, or 0.4% for Boron DDP.
3. Calibrate each feeder for the product used in that feeder.
4. The WOLF TRAX bin should be located at the end of the fertilizer stream, or located where the DDP is sandwiched between granular fertilizers. The DDP cannot be applied to an empty belt or auger.
5. To adequately coat the blend, 5 to 6 feet between where the micronutrient enters the horizontal cross auger and the point at which the blend gets elevated is needed.

Best Use Practices and Helpful Hints

- A bin vibrator may be necessary to prevent the micronutrient from “bridging.” Ensure the vibrator only operates when the auger is blending, and that it only vibrates on for three seconds on, five seconds off.
- Most micronutrient bins can be easily modified to allow for a powder application.
- Feeders for WOLF TRAX® DDP® require a 4-foot double flighted auger.
- If dust is a concern, a slight amount of liquid fertilizer (1 quart/ton) or a light spray oil can be added to the blend. (This is already a common practice in fertilizer warehouses when dealing with dusty granular products).
- When purchasing an in-line blending system, it is very important to ensure that the manufacturer is aware the system will be used with a powder product. Always follow equipment manufacturer calibration instructions.
- It is also very important to communicate with the manufacturer the intended rates with which WOLF TRAX will be applied. This is important for feeder accuracy.



USAGE TIPS

- Blending Dry Fertilizers in High Humidity Conditions
 - Blending Dry Fertilizers with Liquid Additives



BLENDING DRY FERTILIZERS IN HIGH HUMIDITY CONDITIONS

BEST USE PRACTICES FOR UREA BLENDS AFFECTED BY CRITICAL RELATIVE HUMIDITY

With patented EvenCoat® Technology, WOLF TRAX® DDP® micronutrients uniformly coat the surface of every granule in a fertilizer blend to allow the micronutrients to be distributed evenly across the field. This allows the micronutrients to be delivered in the right amount needed in closer proximity to growing roots.

Critical Relative Humidities (CRH) have been well-documented to play a large role in fertilizer blending practices. CRH is the relative humidity level where the blend will absorb moisture from the atmosphere (and below which it will not absorb moisture from the atmosphere). Common fertilizer blends can drop CRH levels significantly and cause a “gummy” or “tacky” blend.

As can be seen from the chart above, CRH levels can be significantly altered with the addition of just one other product to Urea.

	Ammonium Nitrate	Urea					
Ammonium Nitrate	59.4		Ammonium Sulfate				
Urea	18.1	72.5	Diammonium Phosphate				
Ammonium Sulfate	62.3	56.4	Potassium Chloride				
Diammonium Phosphate	59.0	62.0	72.0	82.5			
Potassium Chloride	67.9	60.3	71.3	70.0	84.0		
Monoammonium Phosphate	58.0	65.2	75.8	78.0	72.8	91.6	
Potassium Sulfate	69.2	71.5	81.4	77.0	—	79.0	96.3

BEST USE PRACTICES

WOLF TRAX products do not impact the CRH of a blend, with the exception of Calcium DDP.

BEST USE PRACTICES FOR UREA/AMS BLENDS

- Do not increase standard blend times when relative humidity is above 55%, as this tends to increase the wetness of the blend.
- Add the AMS to the blend as the last component.
- If the relative humidity is above 55%, avoid including liquid additives in the blend, as these will compound the problem of blend wetness.
- If possible, delay blending in the early morning if the relative humidity is above 55%. The relative humidity will normally drop rapidly as temperatures rise.
- Avoid storing blends overnight, as the relative humidity will increase as temperatures drop.
- If K-Mag is also included in the blend, use only premium K-Mag.

GUIDELINES FOR RECOVERING BLENDS THAT HAVE BEEN PREVIOUSLY AFFECTED BY HIGH HUMIDITIES OR TEMPERATURES

Mixing Instructions:

1. Locate a blender/container suitable for tumbling fertilizer.
2. Obtain a source of diatomaceous earth or similar silica-based drying agent. A more effective drying agent is Molecular Sieves; they will keep blends dry for a longer period of time. Contact your KAS sales representative for more information.
3. Place fertilizer and drying agent into blender at a rate between 0.25% and 0.5% of drying agent per weight of fertilizer (5–10 lbs drying agent/ton of fertilizer).
4. Allow time to ensure thorough coverage, but do not increase overall blend time.
5. Check consistency of the blend. If a trace of “tackiness” is present, continue adding drying agent until fertilizer blend is in a dry, flowable state (should have no need to exceed 0.75–1.0% diatomaceous earth by weight of blend).
6. Remove fertilizer from blender and proceed with normal fertilization practices.

Best Use Practices and Helpful Hints

- For optimized blending and adhesion, do not mix in more than 0.8% of the DDP® total blend weight, or 0.4% for Boron DDP. When blending in humid conditions, be well aware of fertilizer interactions.
- Urea or AMS with excess fines are more susceptible to humidity.

BLENDING DRY FERTILIZERS WITH LIQUID ADDITIVES

Why Add Liquids to a Blend:

- Liquids get applied to dusty fertilizer to minimize dust levels.
- Liquids such as crop or canola oil will increase the adhesion levels of WOLF TRAX® DDP® micronutrients products beyond the standard of 16 lbs/ton.
 - Do not add liquids if the fertilizer is wet or the mixture is prone to take on moisture due to high humidity levels or the components in the blend.
 - If concerned about humidity levels, test a small sample of the fertilizer blend components with the liquids a day prior to blending to ensure there are no issues with the mixture becoming too moist.
- Liquid products are used as fertilizer enhancers. These products can also help improve the adhesion of WOLF TRAX DDP.

Quantities of Liquids to Add:

- For fertilizer enhancers, follow the manufacturer's recommended label rate.
- To increase adhesion levels or control dust, apply the liquids such as crop oil or canola oil at a maximum rate of 0.2% or 2 quarts per ton (2 litres per metric tonne).

Order of Application:

- In an in-line system such as a volumetric or loss-in-weight blend plant, apply the liquid prior adding WOLF TRAX products. Allow for the liquid coated fertilizer to become tacky prior to adding the WOLF TRAX DDP. Generally, six feet of blending auger space between applying the liquid and applying WOLF TRAX DDP will allow the liquids to spread and become tacky. Note: Liquids can be added after the DDP has been applied, as long as there is enough blend time before and after the liquids are applied.
- In a batch blender, the liquids can be added either prior or after WOLF TRAX DDP. Mix thoroughly after each component is added to ensure uniform coverage.
- For fertilizer stabilizers, follow the manufacturer's label instructions regarding mixing times.
 - When adding liquid fertilizer stabilizers, avoid adding WOLF TRAX to blends where AMS and urea are in the blend if relative humidity is greater than 55%.
- If adding crop or canola oil, allow up to 1 min/ton blend time to spread the liquid.

Note: Dust from some DDP products, CROPMIX™, 3-TRAX™, and Copper DDP, may present an explosion hazard when accumulated or suspended in air under certain conditions. Combustion risks must be managed. Users of this product may be subject to NFPA 652: Fundamentals of Combustible Dust, which includes a requirement to perform a dust hazard analysis.



In-Line Blender — Closed Systems



Ranco In-Line Feeders



A.J. Sackett In-Line Feeder



Kahlor Automation Panel

Images provided by Koch Agronomic Services.



HANDLING AND EQUIPMENT SOLUTIONS

- Manual Drum Dispenser System
- Equipment Summary — Feeders
 - Microcharger Information
 - Autocharger Information
- Equipment Summary — Conveyors
- Equipment Summary — Miscellaneous

MANUAL DRUM DISPENSER SYSTEM

The Manual Drum Dispenser System is a powder feeder hopper designed to seal an open drum. The powder feeder is operated by manually turning a hand crank. Once attached to a drum, the drum and feeder can be turned and set on a stand, ready to measure product. Set up properly, the system allows for excellent dust containment and highly accurate, efficient measurement of the product.

Drum Stand and Powder Feeder – Hopper/Measuring Auger

The process for handling a drum is as follows:

- Remove the lid from a full drum of product, place the drum feeder hopper on top of the drum and secure in place with the metal locking ring that comes with each drum.
- Attach and lift up the drum with a forklift mounted drum handler, flip the drum upside down, and place the drum into the stand.
- Set up a scale and shrouding for dust containment when dispensing into a pail.
- To measure the WOLF TRAX® product, turn the hand crank until the target weight is hit. The system has a 32 inch by 32 inch footprint.



Images provided by Koch Agronomic Services.



Feeder hopper and auger

Manual Drum Dispenser (C/W Scale)

FEATURES

- A simple, efficient method to handle and measure WOLF TRAX® products. Ideal for operations that handle over four skids of product per year.
- When used with a scale, allows for fast and accurate dispensing of product with full containment of dust.
- Designed to eliminate bridging issues.

BEST SUITED FOR

- Batch blender systems.



Images provided by Koch Agronomic Services.

AGI Loss-In-Weight Remote Start Drum Dispenser System

FEATURES

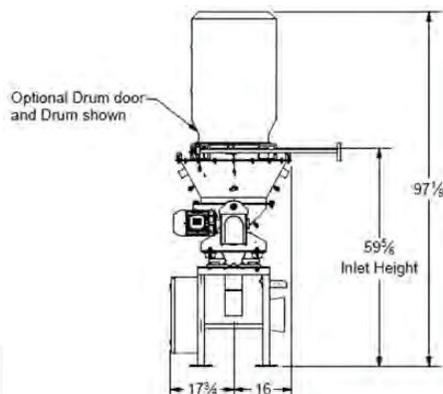
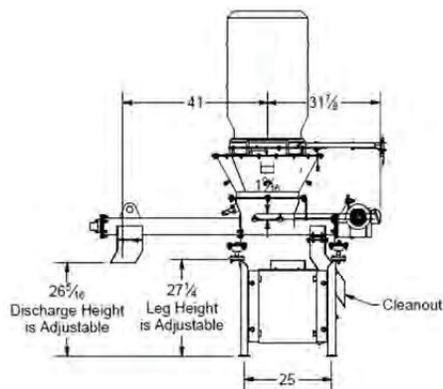
- Loss-in-weight feeder. Operator sets target weight.
- When ready to dispense WOLF TRAX® DDP® into front end loader bucket, hit remote start.
- Unit runs and automatically shuts off after target weight is reached.

BEST SUITED FOR

- Any type of batch blender system.
- Yargus in-line blend plants.



Images provided by Koch Agronomic Services.



Additional Features

- Remote start and auto shut off.
- Drum coupler with slide gate system for dust control and handling ease.
- Vibrator to ensure efficient product flow.
- Can be tied into existing PLC based automation system.
- Option to control multiple feeders with one panel for plug-and-play automation.
- Engineered control panel to ensure years of safe operation.
- Constructed of 304 SS.
- Available in 240V single-phase or 240/480V three-phase power.

Additive Bin

FEATURES

- Single (8.6 cu ft/245 liter) or double (4 cu ft/114 liter) fiberglass bin.
- Accurate volumetric system with variable speed control.
- Recommend stainless steel frame, vibrator, twin timer.

BEST SUITED FOR

- In-line blending systems.



Images provided by Koch Agronomic Services.

Stainless Steel Dry Additive Feeder

FEATURES

- Drum coupler with slide gate option available.
- 14 cu ft hopper capable to hold two drums of WOLF TRAX® DDP® plus an additional drum of DDP attached to top of feeder.
 - Internal agitator eliminates bridging issues.
 - Loss-in-weight feeder — can be used on in-line blenders and batch blenders with wireless remote start option.

BEST SUITED FOR

- In-line blending systems.
- Batch blending systems.



Images provided by Koch Agronomic Services.

CT Powder Feeder (21 Gallon/80 Liter)

FEATURES

- Used 120 volt supply. Can achieve 24 lb (11 kg)/min application rate.
- Portable — good for fertilizer blend plants where space is an issue.

BEST SUITED FOR

- Attaching to an auger.
- Use on a volumetric blender or auger mounted for on-farm treating of fertilizer with WOLF TRAX® DDP®.



Images provided by Koch Agronomic Services.

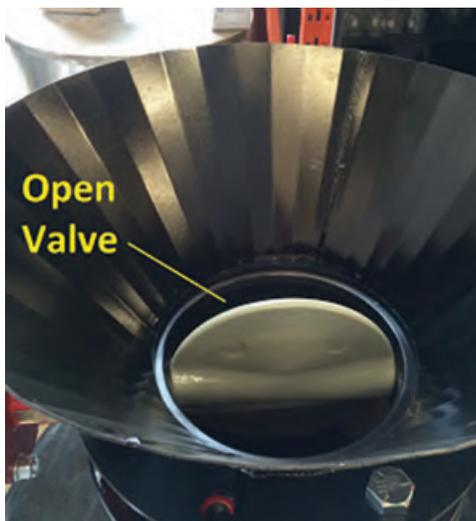
Microcharger

The easiest way to elevate WOLF TRAX® DDP® nutrients to your tower blender is through the use of air.

The microcharger is a pressurized air system, developed to elevate WOLF TRAX DDP nutrients into your blender from ground level.

The microcharger is capable of conveying 100 lbs of WOLF TRAX product up to 100 feet vertically. The system has been designed for fast loading of WOLF TRAX product and conveys product without bridging issues. All units are engineered and certified for use in any United States jurisdiction.

The microcharger convey process works as follows: turn a lever to open the top 8-inch butterfly valve, load the pre-weighed WOLF TRAX products, close the valve, pressurize the microcharger (40–80 psi), open the bottom convey line valve. It takes about 10–30 seconds for the entire product to be conveyed.



Images provided by Koch Agronomic Services.

Note: The Microcharger is not certified for use in Canada.

Autocharger

FEATURES

- Automated pneumatic conveyor.
- When coupled with a remote start drum dispenser, this system offers a completely closed WOLF TRAX® DDP® handling system that can be operated remotely from the control room.
- Can be operated as a push button control system, or completely tied into the blend plant's automation.
 - Available in 1.3 cu ft (36 liter) or 3.8 cu ft (107 Liter).
 - Conveys up to 110 feet (30 m) vertical distance.

BEST SUITED FOR

- Tower blenders.



Images provided by Koch Agronomic Services.

Aero-Mechanical Conveyor (AMC)

FEATURES

- For mid- to high-volume plants.
- Product conveyed aero-mechanically in tube conveyor.
- Ties into any plant's automation – capable of conveying a 20 kg batch in roughly 8 seconds.
- Can also be set-up as a stand alone application.
- Starts with a wireless remote fob with automatic shut off.
- WOLF TRAX® DDP® batches can be pre-weighed into a hopper and conveyed as required by a click of the wireless remote fob by the loader operator.

BEST SUITED FOR

- Batch blending systems.



Images provided by Koch Agronomic Services.

Forklift Mount Drum Turner

FEATURES

- Designed for raising and turning drums onto feeders.

BEST SUITED FOR

- Handling drums (where there is room for the forklift to access feeders).



Images provided by Koch Agronomic Services.

Jib Crane (Chain Hoist and Below-the-Hook Drum Turner)

FEATURES

- Used where space is too tight for a forklift drum turner to access the feeders or where the forklift is not available for handling the drums.

BEST SUITED FOR

- Batch blending systems.



Images provided by Koch Agronomic Services.

48 inch by 48 inch Platform Scale Plus Rice Lake 480 Scale

FEATURES

- Can place under each feeder or under the central hopper.
- Comes with scale indicator that shows net weights – accurate to 0.5 lb increments.

BEST SUITED FOR

- Batch blending systems.



Images provided by Koch Agronomic Services.

Shop Fox Dust Collector

FEATURES

- Powerful vacuum dust collector. Adaptable to any work area.
- Filter is rated for particles as small as 2 microns.

BEST SUITED FOR

- Batch blend plants.



Images provided by Koch Agronomic Services.

Slide Gate

FEATURES

- Creates a closed system for dust containment.
- Innovative design allows the drum to couple directly to the DDP® feeder.
- Available on most feeder options.



Images provided by Koch Agronomic Services.

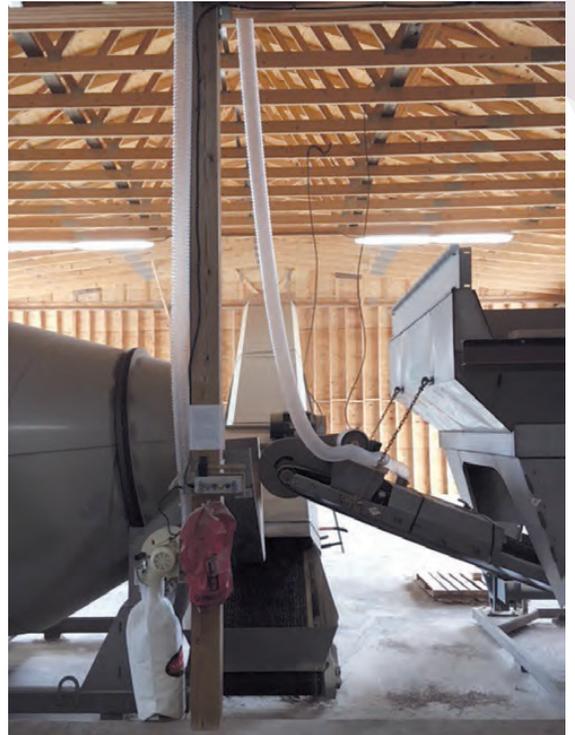
Doyle Dust Hoods (Belt and Blender)

FEATURES

- Helps convert the 'open system' rotary blender to a closed system for dust containment.
- Ports added to allow dust collector to pick up volatile fine particles.
- Available for the weigh hopper discharge belt and above the blender mouth.

BEST SUITED FOR

- Rotary blenders.



Images provided by Koch Agronomic Services.

AGI Paddle Blend Box

FEATURES

- Used for blending of macro fertilizers and WOLF TRAX® products conveyed on a belt system.
- High throughput capacity.

BEST SUITED FOR

- In-line belt transport.



Images provided by Koch Agronomic Services.



MANUAL WEIGHING

- Scoops and Scales

SCOOPS AND SCALES

Once you know how much WOLF TRAX® DDP® micronutrients you need, it's important to have a reliable measurement system in place. There are a few methods for accurately weighing proper amounts of DDP nutrient into your blends.

Hand Scoops

- Other fertilizer blenders use hand scoops as they are inexpensive, metal, lightweight and easy-to-use.
- When using scoops, it is important to weigh the DDP prior to adding it to the fertilizer blend.

Pre-Weighing

- Some customers use a simple system of pre-weighed containers. For example, a bucket or other container can be filled with DDP nutrients and weighed. The appropriate fill line is then identified on the inside of the container. For example, you can determine the volume used by 1, 2, 5, or 10 lb increments.
- You then simply scoop the required amounts for blending.
- This approach does require some set up time, and please use caution – DDP nutrients all have different densities, and therefore separate measurement containers for each nutrient are absolutely necessary.





CONVERSION CHART

- Crop Nutrient Removals
 - Blending Chart

WOLF TRAX RATE CONVERSION CHART

Crop Nutrient Removals

WOLF TRAX[®] DDP[®] products are high efficiency fertilizers, enabling lower application rates than traditional sources and better aligned to crop need. The below charts are to be used to estimate WOLF TRAX DDP blending rates.

- Step 1. Use crop nutrient removal (Table 1) as a starting reference to determine target DDP product use rate (lbs DDP/ac).
- Step 2. Locate target rate in the far left column. Locate the planned dry fertilizer carrier application rate (lbs/ac) in the top row.
- Step 3. Determine the corresponding DDP blending rate in lbs DDP/ton from Table 2.

Table 1. Crop grain nutrient removals and corresponding DDP product use rates (lbs/ac)

Crop	Yield Goal	Unit	Zinc (Zn)		Boron (B)		Copper (Cu)		Manganese (Mn)		Iron (Fe)	
			Crop Removal	DDP 62%	Crop Removal	DDP 18%	Crop Removal	DDP 56.5%	Crop Removal	DDP 33%	Crop Removal	DDP 46.5%
Corn	250	bu/ac	0.25	0.52	0.20	1.08	0.10	0.23	0.15	0.25	0.69	
Soybean	80	bu/ac	0.08	0.17	0.10	0.52	0.08	0.18	0.10	0.80	2.21	
Wheat	150	bu/ac	0.54	1.13	0.15	0.81	0.12	0.27	0.36	1.14	3.15	
Alfalfa	6	ton/ac	0.606	1.27	0.12	0.65	0.12	0.27	0.66	1.20	3.32	
Sorghum	150	bu/ac	0.06	0.13	0.18	0.97	0.012	0.03	0.06	0.42	1.16	
Canola	40	bu/ac	0.33	0.69	0.23	1.24	0.04	0.09	0.35	0.80	2.21	
Potato	500	cwt/ac	0.15	0.31	0.10	0.54	0.05	0.11	0.20	1.10	3.04	
Sunflower	50	bu/ac	0.17	0.36	0.09	0.49	0.09	0.20	0.09	0.17	0.47	
Cotton	3	bale	0.09	0.19	0.09	0.49	0.06	0.14	0.45	0.12	0.33	



WOLF TRAX RATE CONVERSION CHART

Blending Chart

Table 2. WOLF TRAX Blending Chart (value in table are expressed as lbs DDP/ton)

Target lbs DDP/acre	Dry Fertilizer Carrier (lbs/ac)										WOLF TRAX DDP Combinations			
	50	100	150	200	300	400	500	600	700	800	900	1000	Boron DDP	Other DDP lbs of DDP/ton
0.10	4.00	2.00	1.33	1.00	0.67	0.50	0.40	0.33	0.29	0.25	0.22	0.20	1	14
0.20	8.00	4.00	2.67	2.00	1.33	1.00	0.80	0.67	0.57	0.50	0.44	0.40	1.5	13
0.30	12.00	6.00	4.00	3.00	2.00	1.50	1.20	1.00	0.86	0.75	0.67	0.60	2	12
0.40	16.00	8.00	5.33	4.00	2.67	2.00	1.60	1.33	1.14	1.00	0.89	0.80	2.5	11
0.50		10.00	6.67	5.00	3.33	2.50	2.00	1.67	1.43	1.25	1.11	1.00	3	10
0.75		15.00	10.00	7.50	5.00	3.75	3.00	2.50	2.14	1.88	1.67	1.50	3.5	9
1.00			13.33	10.00	6.67	5.00	4.00	3.33	2.86	2.50	2.22	2.00	4	8
1.50				15.00	10.00	7.50	6.00	5.00	4.29	3.75	3.33	3.00	4.5	7
2.00					13.33	10.00	8.00	6.67	5.71	5.00	4.44	4.00	5	6
2.50						12.50	10.00	8.33	7.14	6.25	5.56	5.00	5.5	5
3.00						15.00	12.00	10.00	8.57	7.50	6.67	6.00	6	4
3.50							14.00	11.67	10.00	8.75	7.78	7.00	6.5	3
4.00							16.00	13.33	11.43	10.00	8.89	8.00	7	2
4.50								15.00	12.86	11.25	10.00	9.00	7.5	1
5.00									14.29	12.50	11.11	10.00	8	0
6.00										15.00	13.33	12.00		
7.00											15.56	14.00		
8.00												16.00		

- Maximum adhesion for WOLF TRAX Boron DDP is 8 lbs/ton. Maximum adhesions for all other WOLF TRAX DDP products is 16 lbs/ton.
- Maximum blending rates may be increased when using a liquid adhesion agent.
- A combination of multiple DDP products in one carrier must not exceed the maximum adhesion rate of 16 bs/ton.
- Consult with your KAS Sales Representative for combinations that include Boron plus other DDP products.



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COMMONLY ASKED QUESTIONS

COMMONLY ASKED QUESTIONS

WILL I SEE A LOT OF DUST USING WOLF TRAX® DDP®?

Typically you will not experience an increase in fertilizer dust due to the addition of DDP products. Dry fertilizer always contains some dust. When you first add DDP® you may notice a “blooming” as each fertilizer granule gets coated. DDP is designed to not clump together, so after each granule is coated, the DDP will not form additional layers on coated fertilizer but will be attracted to uncoated fertilizer granules. During the blending process, the DDP will move around freely until all fertilizer granules are evenly coated. This is normal and will take a few seconds to dissipate. Refer to page 14 for dust containment solutions.

DOES THE DDP PRODUCT STICK TO THE SIDES OF THE BLENDER OR THE BUCKET OF THE LOADER?

Some granular fertilizer should always be in the blender before the DDP is added. If granular fertilizer is present, it will attract the DDP better than the metal in the loader.

DO I NEED TO INCREASE MY BLEND TIME?

If you are blending multiple macronutrient products, you should not need to increase blend time much, if at all. DDP disperses rapidly through a blend. If coating a single macronutrient product, you should let the blender run as long as you would with blending multiple macros.

CAN I BLEND MORE THAN ONE DDP PRODUCT (E.G., BORON DDP AND ZINC DDP)?

Yes. For optimized blending, do not exceed the 0.8% by weight coating concentration for all DDP nutrients combined (0.4% for Boron DDP). Before adding any additions, make sure to follow the guidelines listed on the rate chart on page 47 to stay within max holding capacity.

CAN I PRE-COAT UREA OR POTASH WITH DDP AND PUT INTO STORAGE?

DDP that has been pre-coated on urea or potash stores without any problems, but check with your KAS sales representative. Best practice is to apply a bag of silica-based drying agent to the first few tons of coated fertilizer at the bottom of the storage pile.

CAN I ADD DDP TO ANOTHER PRODUCT AND HAVE IT CARRIED INTO THE BLEND AUGER?

This is possible, however, care must be taken when calibrating the DDP rate. You must also ensure that there is an adequate amount of granular fertilizer product available so that all the DDP is adhering to a fertilizer granule, and not left on its own. If excess DDP is not adhered to a granule, dust problems may develop.

CAN I USE MY EXISTING MICRONUTRIENT BIN?

Yes, however, some modifications are usually required. If your micro bins have a six-inch or larger single flighted auger, they typically do not run slow enough to accurately apply DDP. There are several simple solutions available either off the shelf, or for on-site modifications. For more information, please contact your KAS sales representative.

WILL THE MICRONUTRIENTS “BRIDGE” OR “HANG UP” IN THE FEEDER?

If handling over 60 lbs of product in the feeder, add a vibrator to the bin. Ensure the vibrator only runs when the auger is blending and pulses on for 3 seconds/off for 5 seconds while running, using a flip flop timer. Smaller amounts than 60 lbs should not cause a bridging issue unless the product is stored in the bin overnight.

COMMONLY ASKED QUESTIONS

HOW MUCH BLEND AUGER IS NEEDED TO THOROUGHLY COAT THE MACRO BLEND?

Most fertilizer products are adequately coated in as little as five to six feet of auger.

WHERE DO DDP NUTRIENTS NEED TO BE INTRODUCED IN THE SEQUENCE OF PRODUCTS?

DDP® should be introduced to the horizontal blend auger after at least one of the granular nutrients. However, most are applied at the end of the NPK macro hoppers. Never apply DDP to an empty belt or auger.

WHAT IF I AM USING A CONVEYOR BELT WITH NO BLEND MECHANISM?

If you are using a conveyor belt with no blend mechanism, it is important to discuss with your KAS sales representative prior to coating. Solutions are available.