# FERTILIZER SPREADER MOD. FS/PFS



**OWNER'S MANUAL** 

 $\square$  Read the Operator's manual entirely before using the machine  $\square$ 

# **Technical Information 70179**

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ТҮРЕ	FERTILIZER SPREADER
MODEL	FS/PFS
SERIAL NUMBER	
MANUFACTURING YEAR	

.....

Place and Date of issue (Day/Month/Year)

SIGNATURE

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# 1. INTRODUCTION

Fertilizer spreaders are used for the distribution of material in the field. They can be used with tractors of small/medium power.

It is recommended to carefully read this operator's manual for use and maintenance and follow the recommendations to help ensure safe and efficient operation.

This manual has been written, in order to give the customer the information and safety rules on the machine, as well as usage and maintenance instructions that allow you to use the machine to its full potential.

The manual must always be handy, so as to consult it, in order to check the operational cycle. If it gets lost or damaged, it will be necessary to request a new copy.

In case of any difficulties interpreting text or tables, or if the drawings /sketches are not clear enough, please get in touch with the manufacturer or dealer of the machine for clarification.

## 2. GENERAL INFORMATION

#### 2.1. USING THIS MANUAL

This manual gives all the information for the use and maintenance of the spreader. The optimal performance depends on proper maintenance and usage. Some pictures in this manual show details or accessories that could be different from those of your spreader. Some components could be removed in order to assure the clarity of the pictures. Some warning labels are put on the spreader and the operator should keep them in a perfect visual condition, replacing them when they are no longer readable.



This safety alert symbol indicates a hazard and means

ATTENTION! STAY ALERT! YOUR SAFETY IS INVOLVED.

For replacement parts, the customer must use original parts offered from the manufacturer. (See pages 26-27 for available OEM parts)

#### 2.2. INFORMATION ON THE SPREADER

The models introduced in this manual have been designed for distribution of material in the field. The spreader is only to be used for agricultural applications.

It is only recommended for use during daylight hours. If it is required for nocturnal use or with poor visibility, it must use the lighting system of the tractor or the equipment to which the spreader is connected.

Any arbitrary modification made to this spreader relieves the manufacturer from any responsibility for damages or injury that may be caused to the operators, to third parties, or to things.

#### 2.2.1. NAME PLATE

On the hopper of every spreader, a nameplate is affixed showing the model number and serial number.

When spare parts are needed, it is important to refer to the model of the spreader and the serial number on the nameplate.



#### Location of the nameplate on the spreader

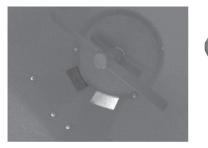
#### 2.2.2. CHARACTERISTICS OF THE SPREADER

The FS has a metal hopper and the PFS has a plastic hopper. Both of these models feature a steel frame.

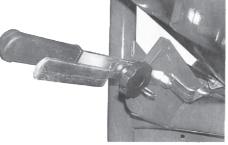
Both the FS and the PFS models are equipped with a spreader disc with four adjustable vanes. The different positions of the vanes allows for maximum spreading precision, depending on the material being used.



Spreader disc



Agitator

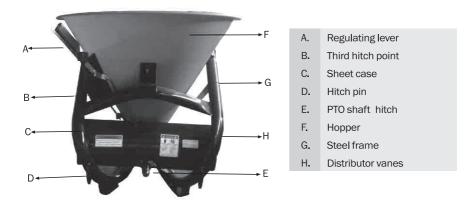


Lever system

The spreader is connected through a gear box ratio (1:1) with gears in order to provide power to turn the spreader disc.

The PFS version has a plastic hopper instead of steel which is interchangeable.

#### 2.2.3. TERMINOLOGY



#### 2.2.4. TECHNICAL DATA

#### TECHNICAL CHARACTERISTICS

	FS / PFS
Hopper capacity (litres /gallons) (Kg/lbs)	220/58 285/628
Weight of the machine (Kg/lbs)	54/119
Loading height (meters/inches)	1.01/40
Hopper width (meters/inches)	1.00/39.37
Spreading width (meters/ft) Granular Crystalline	12-14/39-46 6-7/20-23
Power required at540 rpm (Kw/Hp)	8/6

# 3. IMPORTANT SAFETY INFORMATION

# THE FOLLOWING SAFETY RECOMMENDATIONS ARE TO INSURE YOUR SAFETY: THEREFORE IT IS NECESSARY TO READ THEM CAREFULLY, MEMORIZING AND ALWAYS APPLYING THEM.

The present warnings in this manual must be followed to use the spreader safely. All instructions must be integrated by common sense and by the experience of the operator's indispensable measures to prevent accidents.

The machine must be used by a single operator, 18 years or older.

All the listed instructions must be carefully followed.

Any modifications or changes to the machine without written authorization from the manufacturer, excludes the manufacturer of any and all liabilities.

Check for correct functioning of the spreader before every use.

#### General advice

- Read this manual carefully before proceeding to start, operate, or maintain the spreader.
- The manual must always be handy, so as to consult it, in order to check working cycle and safety information. In case of loss or damage, it will be necessary to ask for another copy.



#### ATTENTION!

Any maintenance, adjustments and cleaning must be done with the spreader on the ground (in a stable condition), turning off the tractor engine and removing the key.

 Read carefully the warning labels applied on the spreader and follow the instructions. In case of wear and tear or insufficient readability of the warning labels, clean them up or replace them.
Place the warning labels in the correct position, as shown in paragraph 3.1 (page 13)

#### ATTENTION!



The operator, during the period of use, maintenance, repair, handling or storing of the spreader, must wear proper safety attire and follow safety instructions as listed in the manual.

• During loading phase, there is the danger of powder inhalation produced by the material. It is suggested to use tractors with filters on the ventilation system of the cabin, or use suitable safety masks.

- The spreader is designed for use by a single operator who, during its use, must always stay in the seat of the tractor.
- Never operate this spreader if you are tired, sick or while under the influence of alcohol, drugs or medication.



#### DANGER!

It is forbidden to climb or to transport somebody when the spreader is in motion. Do not place any limbs inside the hopper for any reason.

- Keep the spreader clear of foreign bodies (debris, tools, miscellaneous), as they could damage the operations or the operator. Unit should be cleaned after each use due to possible corrosiveness of material spread.
- Check tractor to ensure that it is in good working condition prior to connecting to spreader.
- Before connecting or disconnecting spreader to a tractor, ensure that the spreader is stable on compact level ground and hopper is empty.



#### WARNING!

During transport, operation, stocking, and servicing, operators must follow all safety warnings and labels for all equipment involved at all times.



#### ATTENTION!

The manufacturer and Distributor is not liable for damages or injury caused by improper use of spreader.

The manufacturer is not responsible in case of:

- Improper use of the spreader
- Improper maintenance
- Using parts not specific to the product
- Not following all the instructions
- Not following all safety rules during use

#### Connection of the spreader to the tractor

- The third hitch point of the tractor and the fertilizer spreader must coincide or must be adapted.
- Make sure that the PTO shaft is engaged correctly after every linkage operation of the spreader and that it does not come uncoupled when the spreader is lowered in order to fill the hopper.



#### ATTENTION! DANGER!

Check that all shields of the PTO shaft are complete and in good condition.

- In case of breakage or deterioration of the PTO shaft shielding, please replace PTO immediately.
- The presence of the spreader can influence the maneuverability of the tractor, in particular during transport.

#### Operation of the spreader

- Check the spreader before engaging. Begin work only if the spreader is in perfect working condition.
- Before using the spreader, please be sure that all the safety devices are correctly installed and in good condition.



#### ATTENTION!

During work, please be sure that for a radius of 50 meters (164 feet) there are no obstacles, including people or animals . When you work in proximity of roads or public places, it is ABSOLUTELY mandatory to keep away from people and to increase the precautions.



#### ATTENTION!

The operator must prevent anybody from entering danger area and work with the maximum caution. If somebody enters, please stop the tractor engine immediately.

- Before every use, please check the wear of the vanes and the spreader disc. Check that all the components (screws, bolts, etc.) are in place and tight.
- The spreader must never be unattended when it is moving.
- Always keep the spreader in good operating condition and perform regular maintenance.



#### ATTENTION!

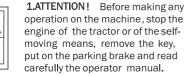
Not for Highway use or Transport.

#### 3.1. SAFETY SIGNAL



### ATTENTION !

Be sure that the warning labels are readable. Clean them up using a cloth, water and soap . Replace the damaged labels placing them in the correct position, as subsequently described.





3.ATTENTION! Check the sense of rotation and the number of revolutions (540 rpm) of the tractor power before placing the pto shaft.



5.ATTENTION! DANGER! Possible throwing of material and/or objects, please do not stop or come up to the machine. Keep a safe distance of 50 meters, at least , from the machine.



2. ATTENTION! DANGER of entangling and dragging. Do not put hands near the running gear box.



4. **ATTENTION!** DANGER of crushing. Do not step between the machine and tractor when the tractor engine is running.

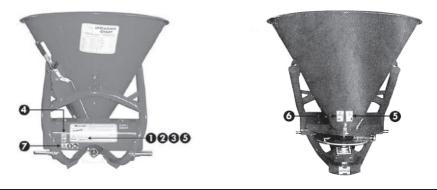


6.ATTENTION! DANGER of shearing. Do not approach limbs to the spreader disc when the machine is running.



7.ATTENTION! Use the individual Protection Devices, as required.

#### Where to place the safety decals on the machine



# 4. CONNECTIONS

Before coupling the spreader to the 3-point hitch, position the safety devices on tractor, so that it is not possible to involuntary and/or accidentally raise or lower the arms.

The 3-point hitch of the tractor and spreader must coincide or must be adapted.

Serious injury may occur if you come in close proximity of the lift arms of the 3-point hitch of the tractor due to the cutting points.

Do not use external controls to lift the spreader.

#### 4.1. CHECK THE RAISING ABILITY OF THE TRACTOR



#### DANGER!

It is necessary to check the raising ability and the stability of the tractor (before carrying out the connection with the spreader) in order to avoid overturning and/ or the loss of traction.

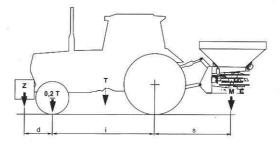
#### 4.2. CONNECTION TO THE 3-POINT HITCH OF THE TRACTOR



ATTENTION!

Before exiting the tractor, disengage the PTO shaft, stop the engine, and apply the parking brake.

For the connection of the spreader to the tractor, please complete the following steps.



- Back tractor into position by lining up lift arms and category 1 pins. Attach lift arms to category 1 pins and secure with lynch pins.
- Attach top link using appropriate pin.
- The spreader disc should be positioned at approximately 70cm (27inches).
- Attach the PTO shaft to the splined shaft of the gearbox of the spreader and then to the tractor PTO.



#### ATTENTION!

The PTO shaft should always be connected last to the tractor power take off and disconnected first, when work is stopped.

#### 4.3. DRIVELINE INSTALLATION

Before using the PTO shaft, please consult the use and maintenance manual attached to the PTO shaft.

Please use PTO shafts with integral shields.

The PTO shaft should be greased periodically.

- Observe the assembly of the PTO shaft, as indicated by the manufacturer and shown on the outer cover of the shield tractor drawing on the external tube of the PTO shaft towards the power take-off of the same tractor.
- Fasten the anti-rotation chains and make sure that the safety spring/push pin is correctly placed and locked in the right location.



#### ATTENTION!

Check the rotation and the speed of the power take-off of the tractor to be at 540 rpm, as the spreader is recommended for this speed.

The length of the PTO shaft must be adapted to the type of tractor used. The manufacturer or distributor is not responsible for any damages caused by incorrect assembly or modification and use of the PTO shaft.

# 5. SPREADER USE



ATTENTION! Before use, please check that gears are adequately greased.



#### ATTENTION!

During the use of the spreader, please ensure that for a radius of 50 meters /164 feet where there are no obstacles, including people or animals. If someone or something enters, stop the tractor engine immediately.

#### ATTENTION!



#### ATTENTION!

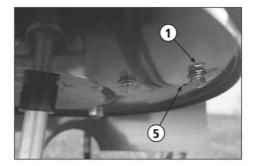
- Engage & disengage power take off only when the tractor is at idle speed.
- After engaging, gradually increase speed to achieve 540 RPM.
- $\cdot\,$  Calculate the lbs./acre that you wish to spread before starting to work.
- When spreading in humid conditions, be aware that damp material may not spread uniformly or correctly. Clogging and inaccurate distribution will occur.
- $\cdot\,$  Avoid spreading during windy days in order to improve the uniformity of the distribution.

#### 5.1. ADJUSTMENTS

It is not possible to have an exact spreading chart for the centrifugal equipment, as the distributed quantity depends on the speed, the radius of distribution, the quality and humidity of the material being spread, and on the roughness of the land. The material must always be stored properly to keep its physical characteristics unchanged. It is necessary to set the regulation lever of the spreader before starting the distribution, adding in the possible limits, to keep it constant during spreading. The spreading charts contain the information, in order to determine the quantity to be spread in the field; these must be completed by competent operators.

#### 5.1.1 HOW TO ADJUST THE SPREADER VANES

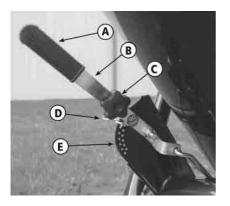
In order to assure an even distribution on both sides of the spreader, depending on the different specific weights of the material used, the distributor vanes on the disc can be set to different positions. When all the vanes are put in hole 1 (as shown in the picture), the distribution of the material is increased towards the left, compared to the way the tractor is moving. If the vanes are put in hole 5, the distribution will be more towards the right. When moving the vanes from 1 to 5 at the same speed, there will be an increase of the distributing width. This adjustment must be made according to the type of material used.



Spreading disc's distributor vanes regulation

The material spreading is controlled through the regulation lever that moves the opening section on the bottom of the hopper.

In order to carry out the regulation, after consulting the spreading chart, according to the type of product to spread and to the spreader speed, it is necessary to move the lever "A" along the graduated scale "E" and locking it in the chosen position with the pin "D".



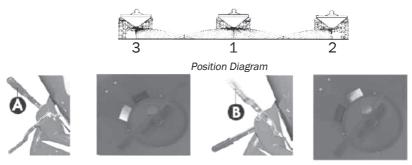
	OF C	0°EN O	2,200	3.4	5 - 6 - 7 - 8		S	51	י		EA H						G
TRA	CTOR	NORKIN			QUAN	πтγ	SPREA	D IN LBS			1		WORKING WIDTH (FEET)	QUAN	ITTY SPE		BR/ACRE
	eed PH)	WIDTH (FEET)	2	3	4 4	VARIO 5	6	TE SETT	1NGS 8	8,5	WHEAT	3	52	000	46 28 20	129 77 55	268 161 115
LARGE GRANULAR FERTILIZER	2,5 5,0 7,5	60		123	201	318	929 465 310	1014 507 338	1140 570 380	1248 624 416	ALFALFA & CLOVER	7 3 5 7	31	0 43 26 19	20 163 98 70	55 340 204 146	115 645 387 277
MEDIUM	2,5 5,0	53				709	925 463	1025 513	1118 559	1182 591	FESCUE & RYEGRASS	3 57	19	000	0 0 0	85 51 36	161 97 69 642
FERTILIZER	7,5						309	342	373	394	RED CLOVER	357	31	44 25 19	100 72	333 200 143	385 275
FINE GRANULAR FERTILIZER	2,5 5,0 7,5	40	112 56 37	95	165		747 374 249	842 421 280	963 482 321	1051 526 351	KENTUCKY BLUE GRASS & BERMUDA GRASS	3 5 7	12	30 18 13	131 78 56	311 186 133	650 396 283
CRYSTAL. (AMMON.	2,5 5,0	23	113	184	280	445	1236 618	1354 677	1522 761	1632 816	SUDAN GRASS	3 5 7	52	000	49 29 21	131 79 56	271 163 116
SILPHATE) THOMAS	7,5		75	123	187	297	412	451	507	544	BARLEY	3 5 7	49	000	25 15 11	81 49 35	186 111 80
MEAL (BASIC SLAG)	4,0 8.0	20					1270	Ξ	1685 843	Ξ	RYE	3 5 7	40	000	25 15	81 49 35	186 111 80

Before using the spreader make sure that the shutters could close the holes completely with lever in "closed" position. Otherwise adjust it through the nuts.

In order to spread from both sides (ref. 1), "A" and "B" levers must be in the same position, connected through the knob "C". In order to carry out the spreading only through the left side (ref. 2), it is necessary to disconnect the two levers removing the "C" knob, set lever "B" in the chosen position, determined by the Spreading Chart, and bring lever "A" towards the higher part in order to close the shutter on the right side. In order to spread only one on to the right side (ref. 3), move lever "B" up, in and regulate the quantity to spread with lever "A".



(ref. 1)



Distribution on right side (ref. 3)

Distribution on left side (ref. 2)

#### 5.2. HOPPER LOAD

It is advised, not to carry out the hopper loading manually, but to use a lift or suitable mechanical means.

Do not travel for long distances with a full load. Do not put full bags of material in the hopper during transport to the field. Do not overload the capacity of the spreader and compress the material.



#### WARNING!

The hopper must be loaded only after having connected the spreader to the tractor.

#### 5.3. SPREADING MATERIAL IN THE FIELD



WARNING!

The operator must wear proper safety attire during periods of use, maintenance, repair, transport, or storing of the spreader.

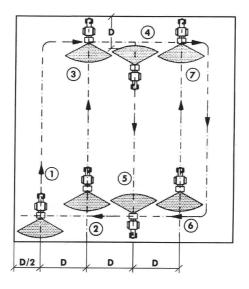
After connecting the spreader to the tractor and having carried out the necessary adjustments, it is possible to begin work.



#### ATTENTION!

Before disconnecting the spreader and before every operation of maintenance and regulation, set the parking brake, turn off the engine, remove the ignition key from the dashboard and wait for all moving parts to stop.

- Position the tractor at the beginning of the field you intend to work, to a distance (D/2) that is half of the working width that is used (point 1).
- Drive in the field distributing the material on all the perimeter.
- Stopping the tractor at one distance (D) from point 1, equivalent to the set working width (point
- 2). Beginning the spreading proceeding in line, straight to point 3.
- Turn the tractor and drive a (D) distance, equal to the working width (point 4).
- Repeat procedure until all the plot is covered.



#### 5.3.1. COMMON SPREADING PROBLEMS

- · Drive speed.
- Incorrect spreading width.
- The spreading disc is not in a horizontal position compared to the land.
- Drive speed is different from those suggested by the spreading tables, or not suitable for that particular type of material.
- Lack of cleaning vanes and disc.

#### COMMON PROBLEMS

- Poor quality material.
- Wet or very humid material.
- Incorrect material composition or it does not correspond to what it is suited for.
- Presence of excessive material clumps may cause negative yield on spreading.
- Debris in the material.

#### COMMON PROBLEMS DUE TO THE SPREADER

- Spreading exits clogged.
- Parts of the spreading discs assembly worn or damaged.

# 6. GENERAL MAINTENANCE

The general maintenance criterion we suggest are based on company experience and on advice and suggestions from customers. A good maintenance routine keeps operating costs low and allows for a long spreader life.



#### WARNING!

When working on spreader, whether for maintenance, repair or cleaning, spreader must be on the ground in a stable condition, tractor's engine should be turned off, brakes set, keys turned off and removed from ignition.

If damage occurs, the operator must stop the spreader immediately, assess the problem, and proceed with proper actions to fix the spreader. Do not use flammable fluids.



#### WARNING!

When doing maintenance, always wear proper safety attire and follow safety steps in the manual.

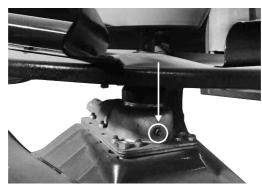
In case of unusual vibrations, verify the condition of the distributor on the spreading disc, the tightness of all the nuts and bolts and the lubrication of the gear box. After every 8 hours of spreading time, tighten all nuts and bolts. Any excessive vibration of the machine is dangerous and damaging for the entire spreader.

#### 6.1. LUBRICATION

Grease before every use and after every 8 hours of spreading.

It is important that the grease zerks are well cleaned from mud or other debris before injecting with grease. Lubricate with lithium grease at the points shown in the picture.





Point to grease

#### 6.2. REPLACEMENT OF THE DISTRIBUTOR VANES

If the distributor vanes of the disc break or get damaged, it is necessary to replace them with new ones. Unscrew the nuts and replace the damaged vane.



#### 6.3. STORAGE

It is good practice to keep up maintenance and fix repairs. Store the spreader in a dry, sheltered place away from any chemicals. Fertilizers are generally corrosive. For this reason, it is important that no particles remain in the spreader for long periods of time. Before storing the spreader, it is important to:

- Thoroughly wash the spreader and inside the hopper.
- Look over the spreader in order to check for any structural damage. Verify
- that the safety labels are present, clean and readable. If not, replace
- them. Grease all mechanical parts.

#### 6.4. SPARE PARTS

For replacement parts for the spreader, the customer must use original parts offered (see page 26-27 for serviceable parts list) from the manufacturer by ordering them directly from manufacturer or authorized dealer. When ordering, it is necessary to have the serial number and model number from the nameplate.

# 7. WARRANTY

The manufacturer warrants to the original purchaser that the implement is free from defects in both material and workmanship under normal use and service for a period of one (1) year for noncommercial use. Any use by commercial, state, and municipalities will void warranty.

This Warranty shall not be interpreted to render the Manufacturer liable for damages of any kind, direct, consequential, or contingent to property. Furthermore, Manufacturer shall not be liable for damages resulting from any cause beyond its reasonable control. This Warranty does not extend to loss of crops, any expense or loss for labor, supplies, rental machinery, or for any other reason.

This Warranty does not apply to any part or product which, in the Manufacturer's judgment, shall have been misused or damaged by accident or lack of normal maintenance or care, or which has been used for purposes for which the product is not designed. Manufacturer reserves the right to make changes in materials or design of the product at any time without notice.

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

Warranty specifications:

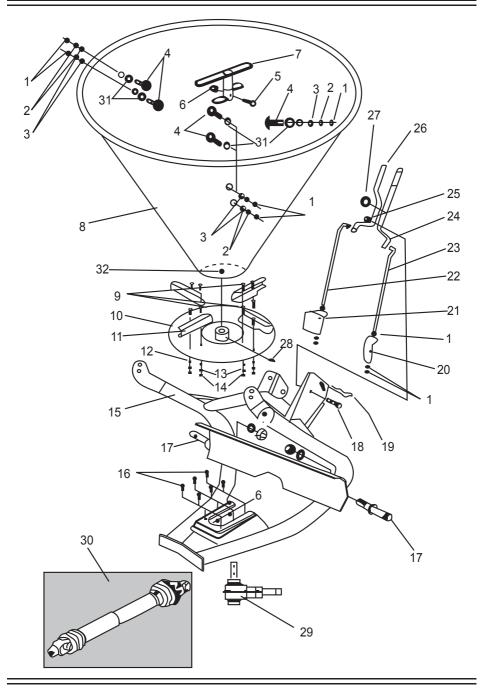
- Must show proof of purchase within 1 year of purchase date.
- Photos must be provided to ensre proper warranty claim.
- Claims under this Warranty must be made to an authorized dealer, and must be submitted within 30 days of failure.

The above information must be provided in order for us to process your claim and for you to receive a Return Manufacturers Authorization # (RMA) from manufacturer. Any product determined to be defective and has been issued an RMA # by the manufacturer will be picked up and returned to our facility for conplete inspection and disposition of liability. Once a warranty claim is accepted, the manufacturer will issue full credit or exchange the product at no cost to the store or customer.

## KEEP FOR YOUR RECORDS

Record the model number, serial number, and the date of purchase with original sales receipt. This information will be helpful to your dealer if parts or service are required.

MODEL NUMBER	
SERIAL NUMBER	
DATE OF PURCHASE	
DEALER	



Ref. #	Description	Part #	Service
1	M10 Zinc Hex Nut	204N	NO
2	10mm Zinc Lock Washer	198N	NO
3	10mm Zinc Flat Washer	194N	NO
4	M10 X 25 Zinc Snap Head Bolt	133B	NO
5	M8 X 45 Zinc Hex Head Bolt	134B	NO
6	M8 Zinc Self - Locking Nut	201N	NO
7	Agitator	996M	YES
8A	PFS Plastic Hopper Tub (5 bu)	674P	YES
8B	Metal Hopper Tub (5 bu)	674M	YES
9	M8 X 16 Hex Head Bolt	132B	NO
10	Spreading Disc (Spinner)	681M	YES
11	Fan Vane	671M	YES
12	8mm Zinc Flat Washer	193N	NO
13	8mm Zinc Lock Washer	205N	NO
14	M8 Zinc Hex Nut	199N	NO
15	Frame	663M	NO
16	M8 X 20 Zinc Hex Head Bolt	129B	NO
17	Cat # 1 Pin (Link Pin & Nut)	762M	NO
18	M12 X 35 Zinc Hex Head Bolt	764M	NO
19	4.5mm Zinc Split Pin	765M	NO
20	Left Shutter	766M	YES
21	Right Shutter	767M	YES
22	Right Tie Rod	768M	YES
23	Left Tie Rod	769M	YES
24	Left Lever	770M	YES
25	M10 Zinc Self - Locking Nut	771M	NO
26	Right Lever	772M	YES
27	Lever Lock Knob	773M	YES
28	8 X 40 Spring Pin	774M	NO
29	Gearbox (Steel Housing)	686M	YES
30	Complete PTO Assembly	687M	YES
31	Hopper Washer	200N	NO
32	Rubber Sleeve	991M	YES

# FS/PFS SPREADER BREAKDOWN (Version: 20140505)