ALL HYDRAULIC TRUCK SPEADER OPERATORS MANUAL

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PLEASE NOTE

PARTS ORDERS PLACED BY 2 PM WILL BE SHIPPED SAME DAY (AS ITEMS ARE AVAILABLE)

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INTRODUCTION

Congratulations! You have just purchased the finest, most trouble-free spreader on the American Market today. The Speedy Spread truck spreader was designed with the experience gained in over 25 years of building spreaders. This unit was designed for simplicity of operation, superior spread accuracy and low maintenance requirements. Like any piece of equipment, operator attention and required maintenance will result in better application and longer life; these points will be explained in the following pages.

OPERATION OF SPREADER

The Speedy Spread spreader requires very few controls to operate. To start the spreader, first engage the truck PTO. Nothing on the unit will operate until this is accomplished. Next start the spinners by pulling the handle on the spinner control valve or by using the optional electric spinner control system.

The conveyor chain on the Speedy Spread is driven by a hydraulic motor direct mounted onto a 6:1 speed reducer. This is controlled by a Mid-tech or Raven control system. Please see the **SET-UP** section of this manual or consult your Mid-Tech or Raven manuals for operation of the rate system.

SPREAD PATTERN

The most important goal to achieve with a truck spreader is spread pattern accuracy. Several factors influence spread pattern. These include blade design, blade pitch, material placement on spinners, spinner speed, material being spread, and swath width. These items can all be adjusted to some degree.

Material placement on the spinners is one of the most important adjustments. This is accomplished by the crank ant the rear of the spreader. Bringing the delivery chute toward the crank (rear) results in less material behind the truck and more material out to the sides. The desired pattern for on pass is a slight pyramid with the highest point at the truck center and tapered out to the edge. See diagram under “How To Check Your Spread Pattern”. Be sure the fertilizer insert is installed in the delivery chute when spreading fertilizer. This insert is stored on the passenger side of the spreader body near the rear.

Another important item is spinner speed. Generally, spinner speed should not exceed 800 RPM. Ideal spinner speed is 750 RPM. The spinner speed is checked by using a hand-held tachometer. The Mid-Tech 6100 series is equipped with a fan RPM sensor that allows the speed to be monitored on the control unit. Spinner speed is adjusted by turning the hydraulic speed control valve. This valve is mounted on top of the spinner on/off valve. Turing the knob to a higher number increases the spinner speed. The PTO should be engaged and the truck engine turning at operating RPM while this adjustment is being made.

Swath width is one of the most neglected spread factors. Incorrect swath widths result in incorrect spread patterns as well as giving incorrect rates. Care should be made in keeping the width constant. Drivers should periodically check their width to make sure they are keeping it constant. A complete overlap improves distribution and help to reduce driver error.

Material blend is something over which the spreader operator has little control. Material with fine particle size will not spread well; therefore care should be taken to limit “fines”. Care should also be taken to make sure material is not allowed to sift through body opening and miss the spinners. After several years of use this may require replacing the pan notches at the conveyor sprocket. DO NOT operate the spreader with holes in the blades or loose blades. Check the chute to make sure it is centered and both sections are clean.

LUBRICATION

There are very few lubrication points on the GFE spreader. There are 6 zerk type grease fittings. These grease fitting should be serviced at least once every thirty days. There are two on the front take-up bearings; two on the rear conveyor shaft and two on the bottom of the spinner housings. No lubricant is needed on the take-up rods or conveyor chain.

The gear oil in the Rawson Gearbox should be changed at least twice a year; ideally it should be changed whenever the truck is serviced. Use approximately one cup of 80/90 weight gear oil.

Mid-Tech 6000 and 6100 Quick Guide

To Set Application Rate:

Put mode selector switch on **Operate**. Turn the selector to **Application Rate**. Use the INC.- DEC. switch to set the desired application rate in lbs/acre.

To Set Product Density:

Put mode selector switch on **Set-up**. Turn the selector to **Application Rate**. Use the INC.- DEC. switch to set the product density.

To Set Gate Calibration:

Put mode selector on **Set-Up**. Turn the selector to **Total Applied**. Use the INC.- DEC. switch to set gate calibration according to the gate calibration chart.

To Set Spread Width:

Put mode selector on **Set-Up**. Turn the selector to **Impl. Width**. Turn on the master switch. Use the INC. - DEC. switch to input the spread width in inches. Information should only be entered in **BOOM 1**.

Mid-Tech 6000 and 6100
Distance Calibration
Quick Guide

Mark off 400 feet in a straight line.

Put mode selector switch on **Operate**. Turn the selector to **Distance**. Use the DEC. switch to zero out the total distance.

Position truck at the first marker of the 400-foot path.

Put mode selector on **Operate**. Leave the selector to **Distance**. Drive the 400-foot path at a constant speed. Stop at the end of the 400-foot path. The console will show you a number that is close to 400 feet; it may be over or under.

To get the new calibration number use this formula.

400/number showing on console x Current Speed Cal = the new cal. Number

Put mode selector switch to **Set-up**. Leave the selector on **Distance**. Use the INC.-DEC. switch to set the new calibration number.

* Note* For the Tee-Jet GPS speed sensor the Cal # should be 760

Raven 460 Granular Quick Guide

1. Enter Boom Width. 600" for Fertilizer and 480" for Lime.

2. Enter the product density in the "Meter Cal" location on the console.

3. Enter the gate calibration number. Depress and hold "Meter Cal" for about 5 seconds until the display flashes. Depress the Self Test button to add a decimal point. Enter your gate calibration number.

4. Enter your desired rate in the rate 1 or rate 2 location on the console.

Raven
Distance Calibration
Quick Guide

Mark off 400 feet in a straight line.

Position truck at the first marker of the 400-foot path.

Press the **Distance** key. Enter 0 for the distance.

Drive the 400-foot path at a constant speed. Stop at the end of the 400-foot path. The console will show you a number that is close to 400 feet; it may be over or under.

To get the new calibration number use this formula.

400 / number showing on console x Current Speed Cal = the new cal. Number

Input this number as the new **Speed Cal** number.

Note For the Tee-Jet GPS speed sensor use a starting Cal # of 606

Viper Pro
Quick Reference Sheet

1. **Turn power on to the Viper.**
2. **On the "CAN Initialization Results" screen press Start Viper (as long as the nodes being used are found)**
3. **Press Product Control – this will access the CAN Controller Status screen.**
4. **Select the 3rd box down from the top – this will access the Node 1 Settings screen. This is where you provide – Rate, Density, and Gate Calibration.**
5. **Press the box with the current value to change to your appropriate setting – The three settings that must be set are as follows.**
   Rate Cal = Rate you want to apply.
   Density = Density of the product you are applying.
   Spreader = The gate calibration number.
6. **Press OK once the values are set.**
7. **Press OK once more to access the main screen.**
8. **Press MENU > SETUP > LOCAL > PROFILE > LOAD PROFILE. Select the profile that you want and press OK. You will be prompted to restart the Viper, press OK then press YES to exit the program, then press EXIT TO MENU, then select VIPER PRO.**
9. **Repeat step 2(You will not lose any product information)**
10. **To start a job – Press MENU > START JOB > NEW JOB or FROM FILE, if it is a new job the job will be auto named with today's date, if you wish to change the name press ←← and input your new job name. Then press NEXT.**
11. **Product Selection Screen – Press NEXT.**
12. **Product #1 Setup Screen – Enter your product name or choose from previous names you have entered by pressing the ▼. If you are using Variable Rate Control then select VRC and browse your card for the correct file. Select the rate from the rate field. then press OK. This will return you to the main screen.**
13. **Touch the RT RA section of the screen on the lower left of the Viper to turn the Product Nodes on to the automatic function. Now the chain and or spinners will respond to your toggle switch.**
14. **To end your job press MENU > CLOSE JOB > YES.**
15. **To exit the Viper and power down press MENU > EXIT > YES, once at the Program Selection Screen press the blue power button on lower left of the Viper.**

ENVIZIO PRO QUICK REFERENCE

1. AFTER POWERING UP THE ENVIZIO PRESS TO START.

2. TO START A NEW JOB OR CONTINUE AN OLD JOB PRESS

3. PRESS TO CREATE A NEW JOB. YOU CAN USE THE DATE AS YOUR JOB NAME OR YOU MAY CREATE A NAME USING THE ON SCREEN KEY PAD. (IF YOU ARE CONTINUING A JOB SELECT IT FROM THE LIST) PRESS TO ACCEPT THE JOB.

4. PRESS

TO SELECT YOUR GUIDELINE (LIGHTBAR) PATTERN. SELECT THE PATTERN YOU WOULD LIKE, THIS WILL RETURN YOU TO THE PREVIOUS SCREEN.

5. PRESS

TO SET THE RATE AND PRODUCT NAME. SELECT

RATE CONTROL.

6. PRESS

TO SELECT THE PRODUCT YOU WILL BE USING. THEN PRESS TO ACCEPT AND RETURN TO THE PREVIOUS PAGE.

7. PRESS

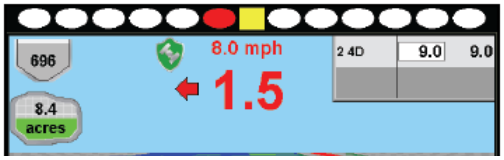
TO SET THE APPLICATION RATE. USE THE ON SCREEN KEY PAD AND THEN PRESS TO ACCEPT THE RATE;

8. PRESS THE TO ACCEPT THE PRODUCT SETUP.

NOTE IF YOU ARE USING A VARIABLE RATE PRESCRIPTION MAP YOU WILL NEED TO PRESS

TO ACCESS A LIST OF MAPS. SELECT THE MAP THAT YOU WANT TO USE AND THEN PRESS YOU WILL NOT NEED TO SETUP THE PRODUCT NAME OR THE RATE.

9. PRESS THE TO START THE JOB AND ENTER THE APPLICATION SCREEN.

10. PRESS 

THE UPPER RIGHT CORNER OF THE SCREEN TO ACCESS THE IN JOB PRODUCT CONFIGURATION SCREEN.

11. PRESS THE TO ACCESS THE PRODUCT CONTROL CONFIGURATION SCREEN.

12. PRESS

TO ACCESS THE CALIBRATION SETTINGS.

13. PRESS

AND USE THE ON SCREEN KEYPAD TO SET THE DENSITY, PRESS TO RETURN TO THE CALIBRATION SCREEN.

14. PRESS

AND USE THE ON SCREEN KEYPAD TO SET THE SPREADER CONSTANT (GATE CALIBRATION) PRESS TO RETURN TO THE CALIBRATION SCREEN.

15. PRESS TO ACCEPT CHANGES.

16. PRESS TWO MORE TIMES TO GET BACK TO THE APPLICATION SCREEN. USE THE CHAIN MASTER SWITCH TO TURN THE BED CHAIN ON AND OFF.

CLOSING THE JOB AND POWERING OFF THE ENVIZIO

1. PRESS THEN TO EXIT THE JOB.

2. PRESS TO CLOSE THE JOB.

3. PRESS TO CONFIRM CLOSING THE JOB.

4. TO START A NEW JOB GO TO STEP 1.

5. TO POWER OFF THE ENVIZIO PRESS AND FOLLOW THE ON SCREEEN INSTRUCTIONS.

Fine Tuning the Gate Calibration Number

Load the spreader body with material.

You need to weigh your truck at this point so you will know how much material has actually left the body as opposed to what the console says has been applied.

Set your console up as you normally would for a job: rate, density and gate calibration number.

Zero out the total applied number in the console.

Put the unit in test speed (Mid-Tech) or put the unit in self test (Raven).

- With a 6000 or 6100 console you will need to keep the dial on **Test Speed**.
- With a Raven console you must not move the truck as this will kick you out of self test.

With the PTO engaged rev. the truck to operating RPMs and turn on the **Master Switch**. The chain will be moving at this point. Keep the truck at operating RPMs until the spreader is almost empty. Turn off the **Master Switch** to stop the chain.

Weigh the truck again and subtract your original weight to find out how much material has actually been applied.

Check the consoles **Total Applied** to see the indicated amount applied according to the computer.

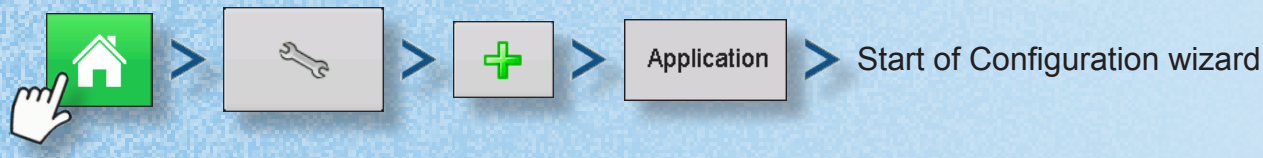
Divide the indicated amount (what the computer says) by the actual amount (what the scales say) and multiply by the current Gate Calibration number.

Indicated / actual x Gate Cal. = New Gate Cal

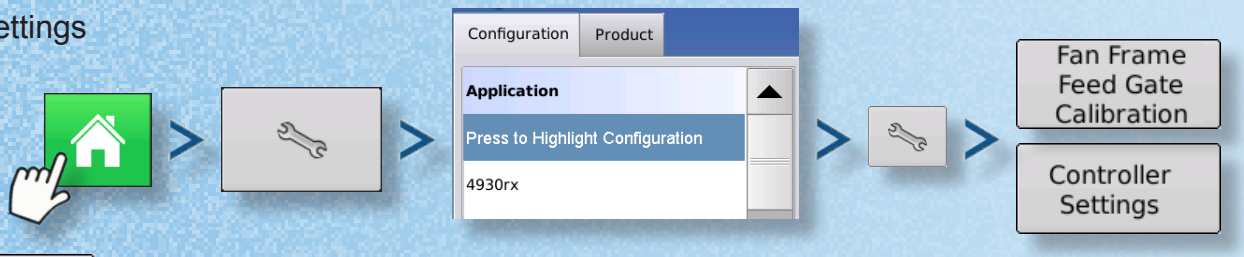
Input the new Gate Calibration number in the console.

DirectCommand™ Spreader

Create Configuration

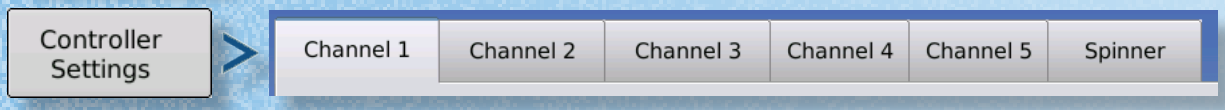


Enter Settings



Fan Frame Feed Gate Calibration

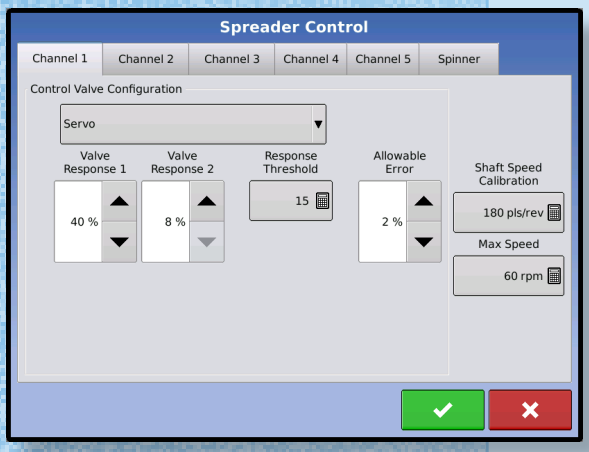
Fan Frame Feed Gate Calibration
calibrate fan frame feed gate



There is a tab for every channel of control with Control Valve Configurations and related settings.

Note: Five channels of control are only available with 5 channel Spreader Control Module.

Servo Valve



Valve Response 1
fast speed of valve, decrease to slow response time, default = 40%

Valve Response 2
slow speed of valve, decrease to slow response time, default = 8%

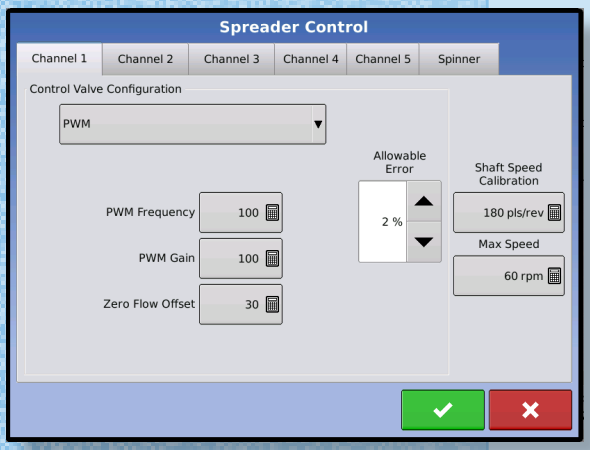
Response Threshold
point where system switches between using Valve Response 1 and Valve Response 2, increase to slow response time, default = 15

Allowable Error
error allowed before making rate control adjustments

Shaft Speed Calibration
pulses/revolution of metering shaft

Max Speed
maximum allowable RPM of product conveyor

PWM Valve



PWM Frequency
frequency valve is pulsed at, settings come from manufacturer, typical range: 100-125 Hz

PWM Gain
decrease to slow response time

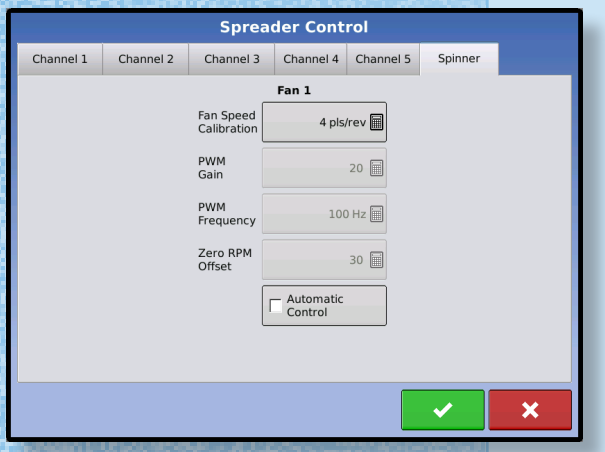
Zero Flow Offset
duty cycle used to start moving conveyor, if setting is too high conveyor will not turn off, default = 30

Allowable Error
error allowed before making rate control adjustments

Shaft Speed Calibration
pulses/revolution of metering shaft

Max Speed
maximum RPM of product conveyor

Spinner Tab



Fan Speed Calibration
pulses/revolution of spinner

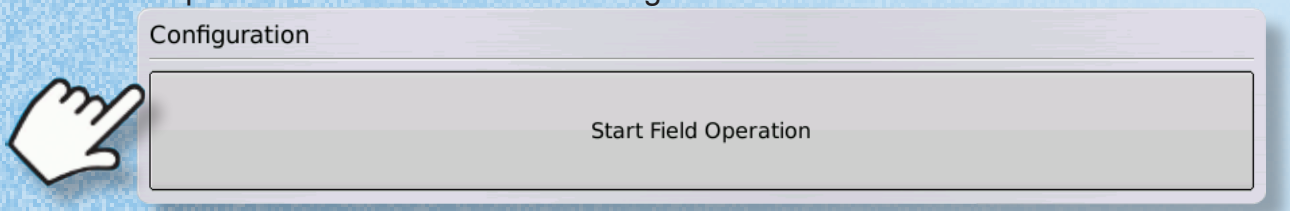
PWM Gain
decrease to slow response time

PWM Frequency
frequency valve is pulsed at, settings come from valve manufacturer, typical range = 100-125 Hz

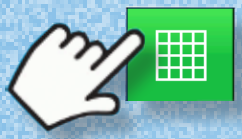
Zero RPM Offset
duty cycle used to start rotating the spinner, if setting is too high spinner will not stop rotating, default = 30

Automatic Control
select to control the spinner speed

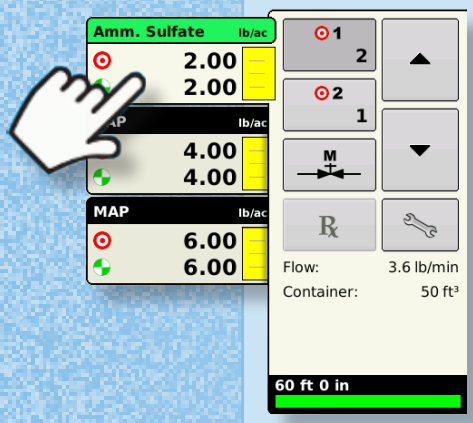
To start the Field Operation Wizard and load a configuration:



To view run screen:



Product Control Toolbox

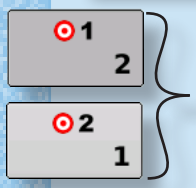


To change values shown on Product Tab and in Product Control Toolbox go to the next page where the Rate Control Settings screen is explained.

Target Rate
the desired amount of product to apply

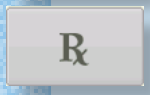
Actual Rate
actual rate of product being applied as determined by the flow sensor

Product in Bin



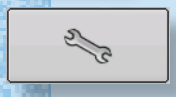
Target Rate #1 & #2
preset application rates that allow a quick change between rates

Manual Valve Control
allows operator manual control of valve



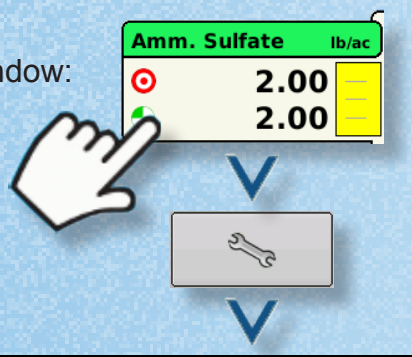
Prescription
allows rates to be determined by a loaded prescription

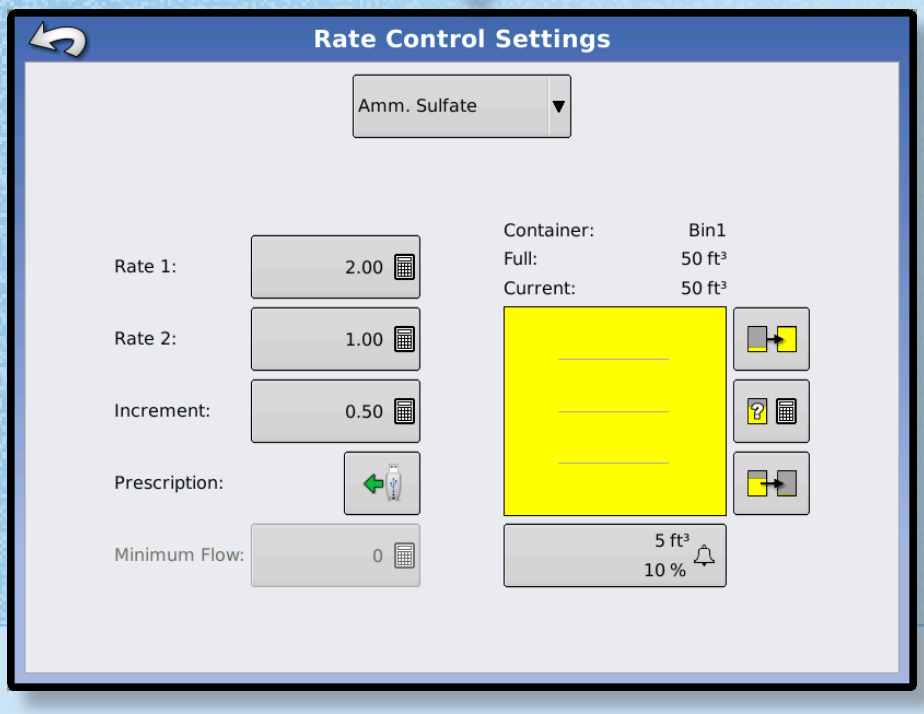
Up and Down Arrows
allow rates to be adjusted manually



Settings button
opens Rate Control Settings screen (explained on next page)

To access the Rate Control Settings window:





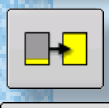
Rate 1 and Rate 2
allows operator to set desired target rates

Increment
values used when using up and down arrows in the Product Control Toolbox

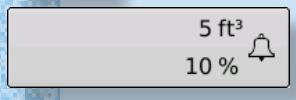
Prescription
press to load a map-based prescription file

Bin Full
press to fill container

Bin Partially Filled
press to specify container amount

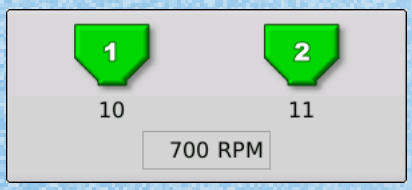


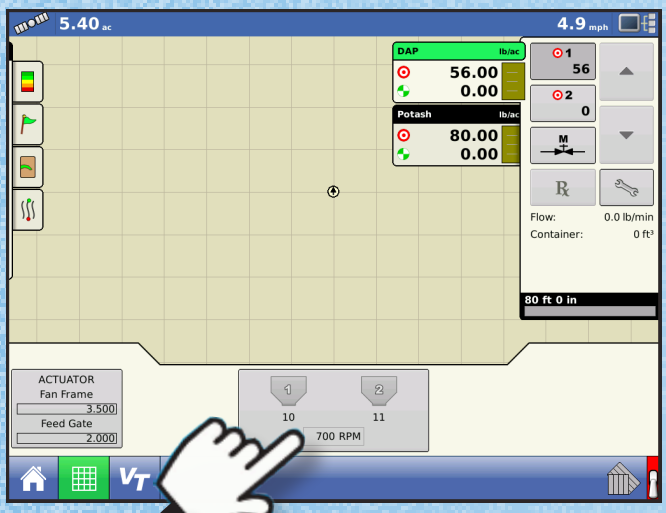
Bin Empty
press to empty container

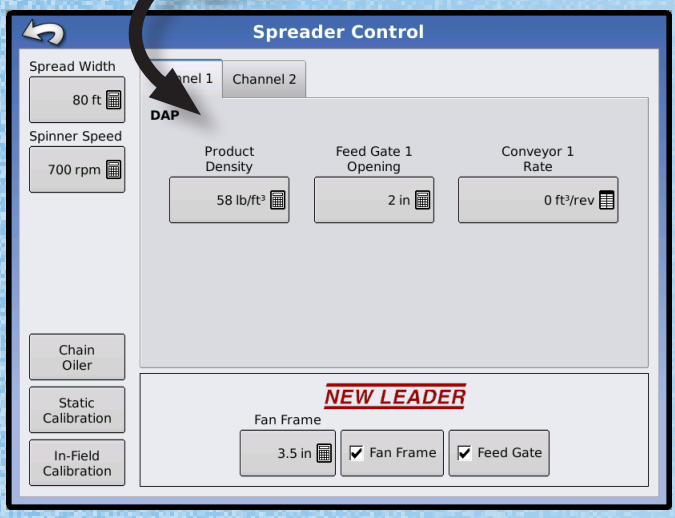


Tank Alarm Setting
can set % remaining or amount remaining for low container alarm

DirectCommand™ Spreader







Fan Frame & Feed Gate Actuator Setting
optional settings used by New Leader module

Fan Frame
enables the fan frame actuator, displays distance between spinner bed and spinner assembly

Feed Gate
enables the feed gate actuator

Spreader Control button
- on/off state of control channel
- shaft speed RPM
- spinner fan speed RPM

Press button to display Spreader Control window.

Spread Width
use numeric keypad to edit value

Spinner Speed
speed is controlled automatically based upon this setting when system uses an optional PWM spinner speed control valve

Chain Oiler
automatically perform oiling routine by pressing button and following the steps

Static Calibration
performs automated routine to calibrate each metering circuit while machine is stationary

In-Field Calibration
performs automated routine to adjust the calibration number for the selected metering circuit if there is a difference between the amount of product logged compared to what was actually applied

Product Density
value (lb/ft^3), is stored for each product. Use the numeric keypad to edit value.

Feed Gate Opening
measure depth of product on conveyor to ensure accurate value

Conveyor Rate
volume of product dispensed (ft^3/rev) by one revolution of the meter drive shaft

Gate Calibration Number
For Rawson Gearbox Rate Sensor

Gate Setting	Cal. #	Gate Setting	Cal. #
1	do not use	5	94.1
2	do not use	5.5	86.8
2.5	196.5	6	78.5
3	156.9	6.5	74.0
3.5	137.5	7	67.5
4	118.2	7.5	62.9
4.5	106.2	8	59.2

Gate Calibration Number
For 360 Rear Shaft Rate Sensor

Gate Setting	Cal. #	Gate Setting	Cal. #
1	do not use	5.5	516.5
2	do not use	6	473.4
2.5	1136.4	6.5	437.0
3	946.9	7	405.8
3.5	811.5	7.5	378.7
4	710.2	8	355.0
4.5	631.2	8.5	334.3
5	568.1	9	315.5

Gate Calibration Number
For 180 Raven Rear Shaft Rate Sensor

Gate Setting	Cal. #	Gate Setting	Cal. #
1	do not use	5.5	NA
2	710	6	237
2.5	NA	6.5	NA
3	473	7	203
3.5	NA	7.5	NA
4	355	8	175
4.5	NA	8.5	NA
5	284	9	158

Fine Tuning the Gate Calibration Number

Load the spreader body with material.

You need to weigh your truck at this point so you will know how much material has actually left the body as opposed to what the console says has been applied.

Set your console up as you normally would for a job: rate, density and gate calibration number.

Zero out the total applied number in the console.

Put the unit in test speed (Mid-Tech) or put the unit in self test (Raven).

- With a 6000 or 6100 console you will need to keep the dial on **Test Speed**.
- With a Raven console you must not move the truck as this will kick you out of self test.

With the PTO engaged rev. the truck to operating RPMs and turn on the **Master Switch**. The chain will be moving at this point. Keep the truck at operating RPMs until the spreader is almost empty. Turn off the **Master Switch** to stop the chain.

Weigh the truck again and subtract your original weight to find out how much material has actually been applied.

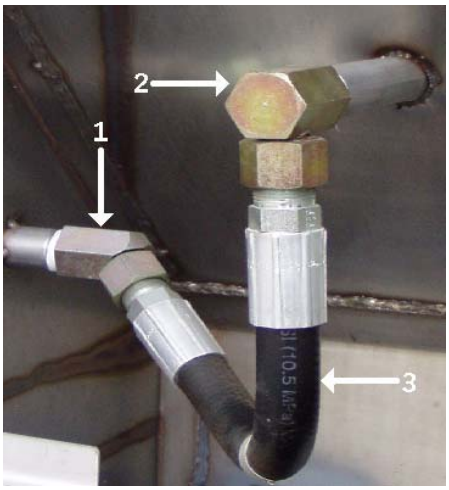
Check the consoles **Total Applied** to see the indicated amount applied according to the computer.

Divide the indicated amount (what the computer says) by the actual amount (what the scales say) and multiply by the current Gate Calibration number.

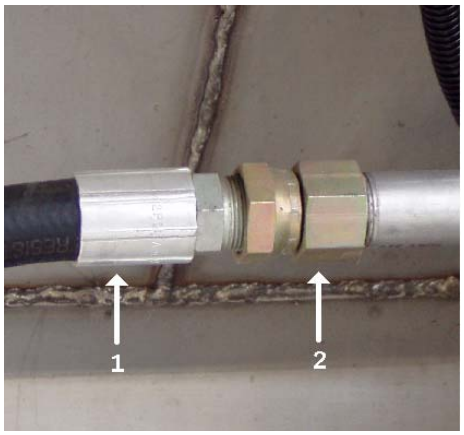
Indicated / actual x Gate Cal. = New Gate Cal

Input the new Gate Calibration number in the console.

Passenger Side Front and Rear Hydraulics

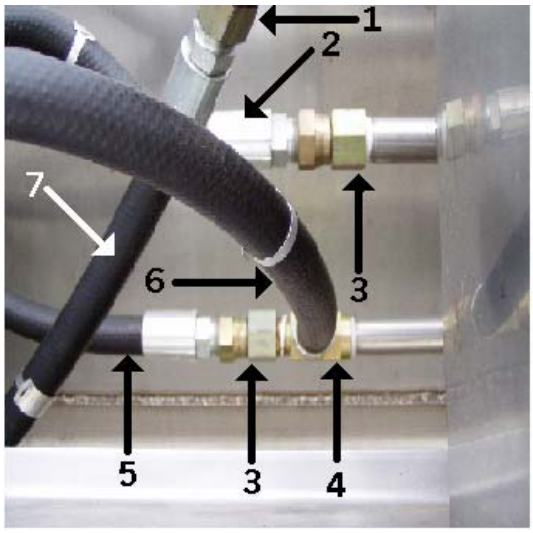


Ref. #	Part #	Description	Qty.
1	S-6-61	¾ x 45 female adapter	1
2	S-6-53	¾ x 90 female adapter	1
3	S-6-39	¾ x 15” hyd. hose	1

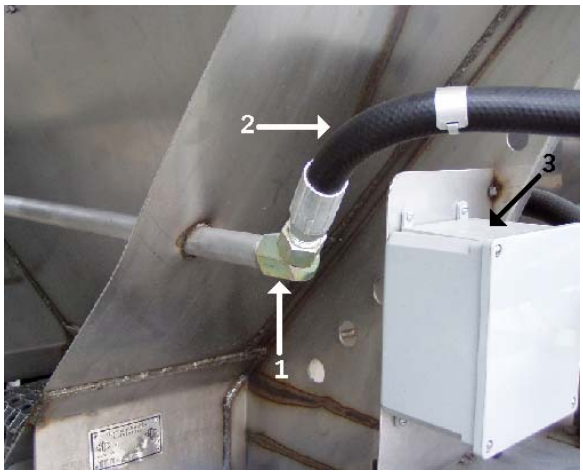


Ref. #	Part #	Description	Qty.
1	S-6-27	¾ x 36 hyd. hose	1
2	S-6-49	¾ female adapter	1

Drivers Side Front Corner and Front Pipe Hydraulics

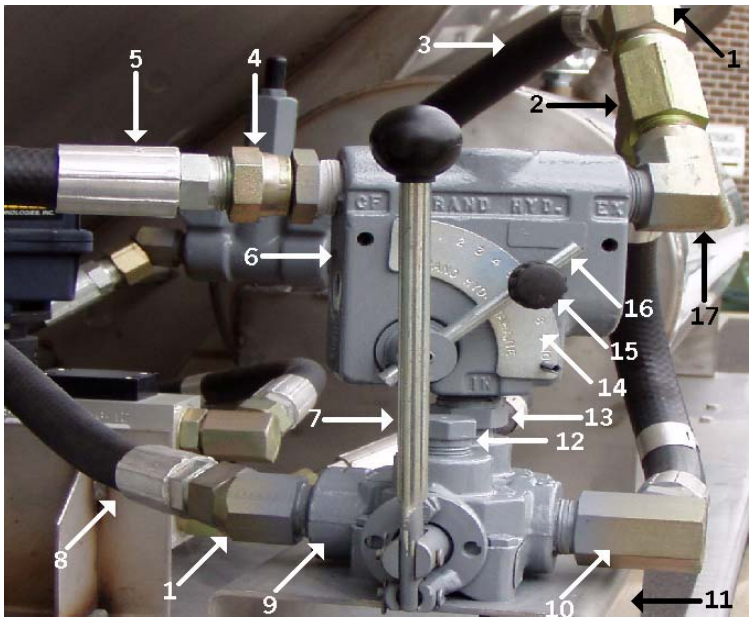


Ref. #	Part #	Description	Qty.
1	S-6-54	¾ x 45 male adapter	1
2	S-6-39	¾ x 15 hyd. hose	1
3	S-6-49	¾ female adapter	2
4	S-6-16	¾ service tee	1
5	S-6-26	¾ x 36 hyd. hose	1
6	S-6-130	¾ x 23 hyd. hose	1
*7	S-6-29	¾ x 84 hyd. hose	1
*7	S-6-60	¾ X 96 hyd. hose	1
*7	S-6-73	¾ x 108 hyd. hose	1



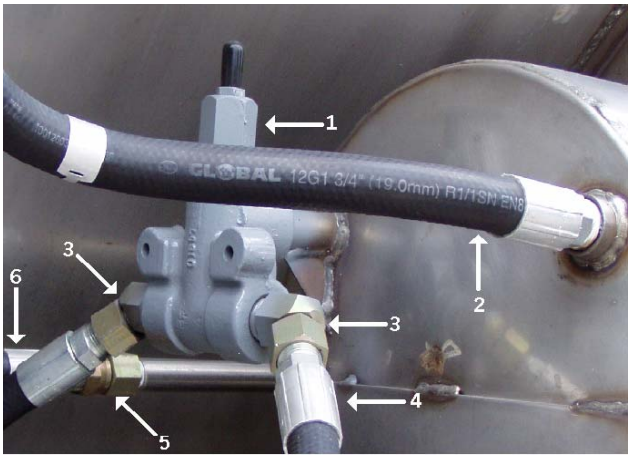
Ref. #	Part #	Description	Qty.
1	S-6-61	¾ x 45 female adapter	1
2	S-6-39	¾ x 15” hyd. hose	1
3	S-22-14	6x6x4 pvc box	1

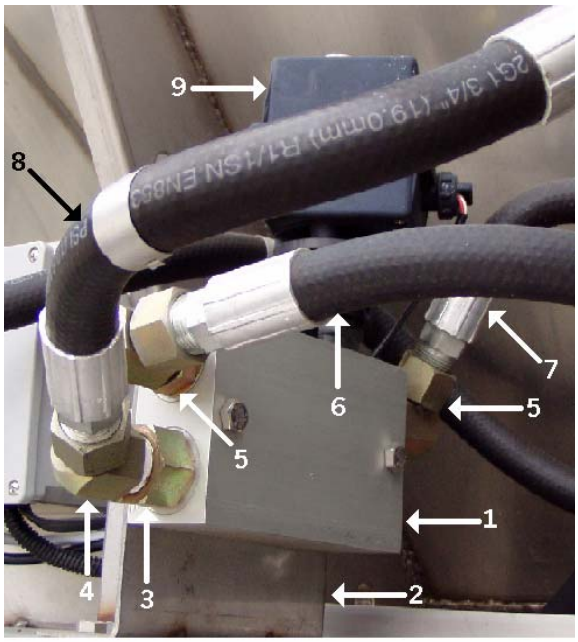
Hydraulic Controls



Ref. #	Part #	Description	Qty.
1	S-6-54	¾ x 45 male adapter	2
2	S-6-16	¾ service tee	1
3	S-6-27	¾ x 26 hyd. hose	1
4	S-6-47	¾ male adapter	1
5	S-6-39	¾ x 15 hyd. hose	1
6	S-6-62	flow control valve	1
7	S-5-59A	handle	1
8	S-6-26	¾ x 36 hyd. hose	1
9	S-6-59	on/off valve	1
10	S-6-50	¾ x 90 male adapter	1
11	S-6-3S	mounting bracket	1
12	S-6-40	½ plug	1
13	S-6-95	½ x ¾ nipple	1
14	S-6-62B	indicator plate	1
15	S-6-62C	thumb screw	1
16	S-6-62A	handle	1
17	S-6-50	¾ x 90 st. elbow	1
ns	S-6-62K	valve repair kit	1

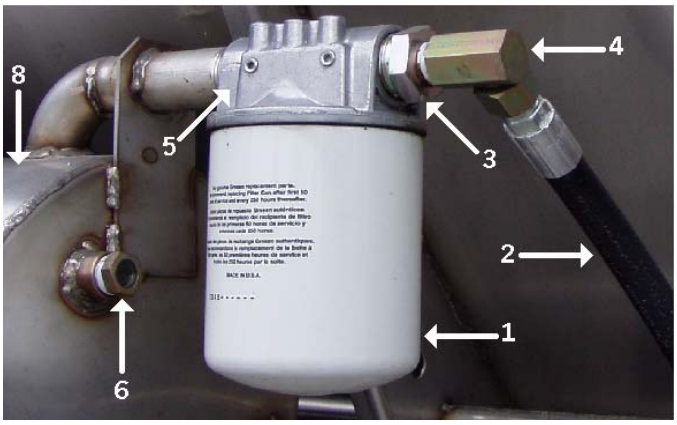
Ref. #	Part #	Description	Qty.
1	S-6-6	relief valve	1
2	S-6-27	¾ x 26 hyd. hose	1
3	S-6-54	¾ x 45 male adapter	2
4	S-6-39	¾ x 15” hyd. hose	1
5	S-6-49	¾ female adapter	1
6	S-6-39	¾ x 15” hyd hose	1

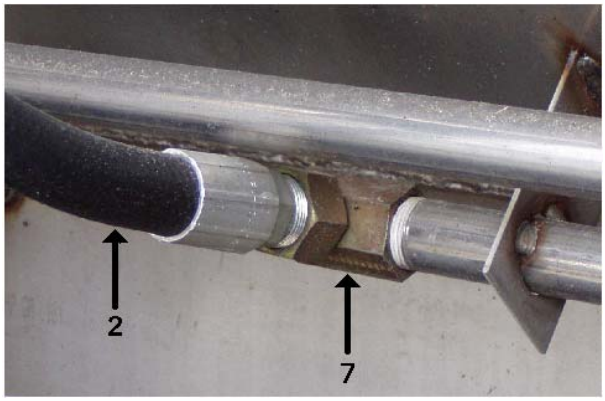




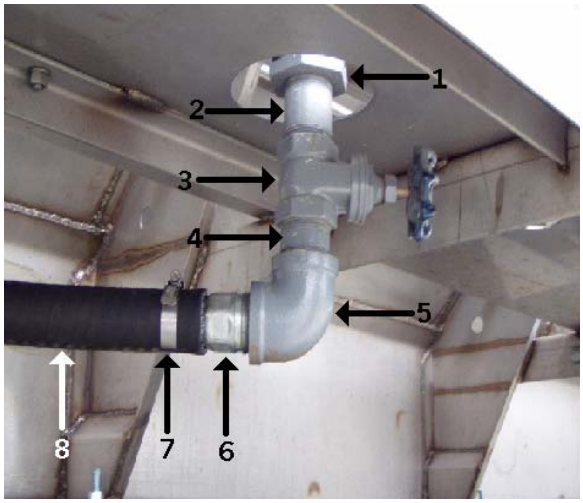
Ref. #	Part #	Description	Qty.
1	S-22-21	EXRII hyd. valve	1
1a	S-22-21C	EXRII manifold only	1
2	S-22-22	EXRII bracket	1
3	S-6-181	¾ str. x ¾ bushing	1
4	S-6-54	¾ x 45 male adapter	1
5	S-6-183	¾ str. x 90 male adapter	2
6	S-6-130	¾ x 23” hyd. hose	1
7	S-6-39	¾ x 15” hyd. hose	1
8	S-6-39	¾ x 15” hyd. hose	1
9	S-22-21A	EXRII motor only	1
10	N-25-0275	5/16 x 2 ¾ ss bolt	2
ns	N-25-0001	5/16 ss nut	2
ns	N-25-0002	5/16 ss lock washer	2
ns	S-22-21F	Spool O-Ring Kit	1

Hydraulic Oil Tank



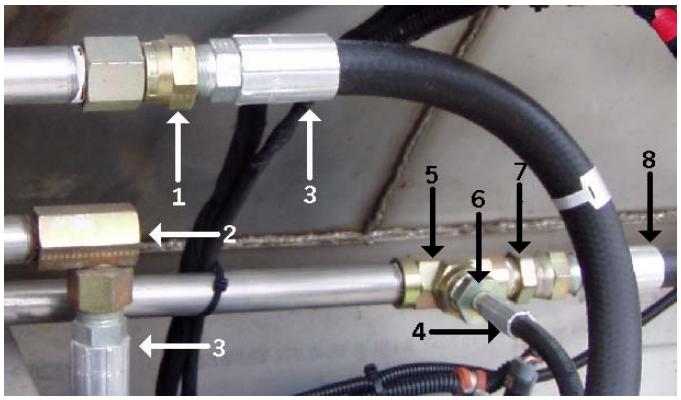


Ref. #	Part #	Description	Qty.
1	S-6-114	hyd. oil filter	1
2	S-6-27	¾ x hyd. hose	1
3	S-6-11	1¼ x ¾ bushing	1
4	S-6-50	¾ x 90 male adapter	1
5	S-6-142	hyd. oil filter assembly	1
6	S-6-135	oil level sight plug	1
7	S-6-53	¾ x 90 female adapter	1
8	S-6-4	hyd. oil tank	1

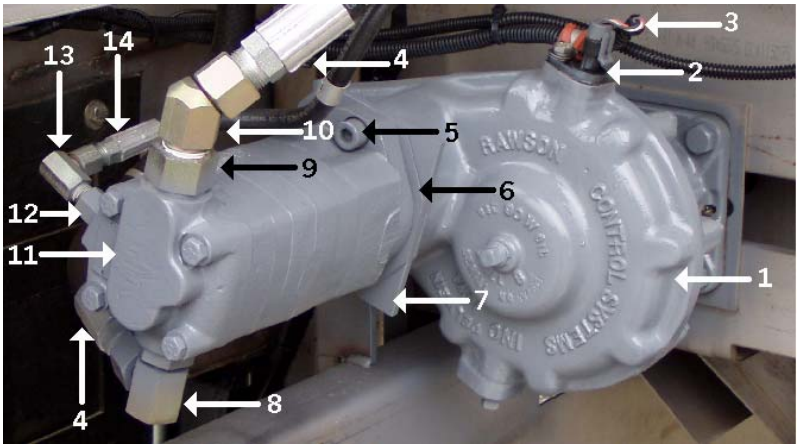


Ref. #	Part #	Description	Qty.
1	S-6-168	2 x 1¼ suction strainer	1
2	GI-781	1¼ x 3 nipple	1
3	S-6-33	1¼ gate valve	1
4	GI-613	1¼ x close nipple	1
5	GI-701	1¼ elbow	1
6	F-100	1¼ hose barb	1
7	F-118	1¼ hose clamp	1
8	S-6-63	1½ suction hose	per ft.

Drivers Side Rear Hydraulics

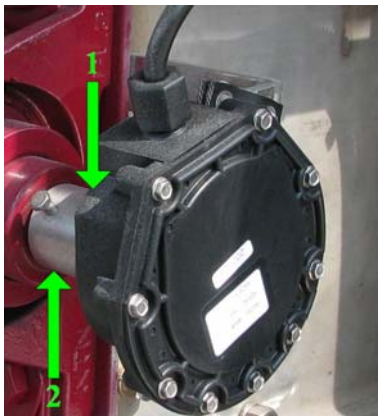


Ref. #	Part #	Description	Qty.
1	S-6-49	¾ female adapter	1
2	S-6-53	¾ x 90 female adapter	1
3	S-6-121	¾ x 18” hyd. hose	1
4	S-6-210	¼ x 17” hyd. hose	1
5	S-6-35	¾ tee	1
6	S-6-118	¾ x ¼ bushing	1
7	S-6-47	¾ male adapter	1
8	S-6-92	¾ x 30” hyd. hose	1



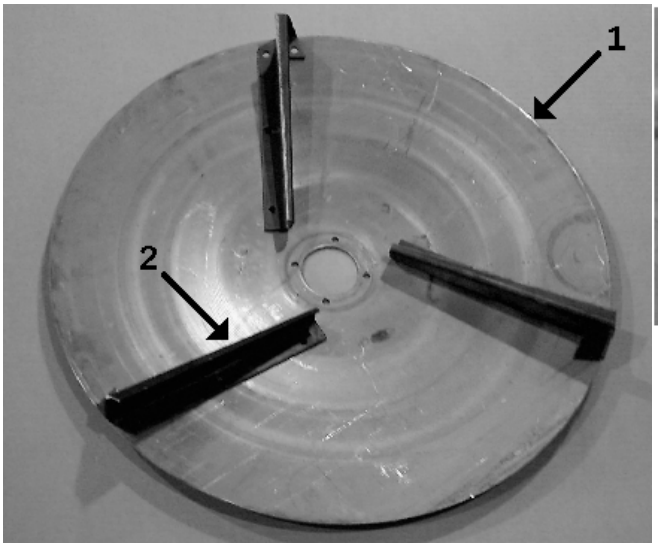
Ref. #	Part #	Description	Qty.
1	S-7-20	rawson gearbox	1
2	S-22-20	gearbox sensor	1
3	S-22-19	sensor ext. cable	1
4	S-6-121	¾ x 18 hyd. hose	2
5	S-7-17I	allen head socket cap screw	2
6	S-7-15A	gasket	3
7	S-7-15	spacer	1
8	S-6-183	¾ str. x ¾ x 90 male adapter	1
9	S-6-181	¾ str. x ¾ bushing	1
10	S-6-54	¾ x 45 male adapter	1
11	S-7-16	char-lynn motor	1
12	S-6-182	7/16 str. x ¼ bushing	1
13	S-6-128	¼ x 90 male adapter	1
14	S-6-210	¼ x 17” hyd. hose	1
ns	S-7-17C	repair kit for S-7-16	1
ns	S-7-20F	repair kit for S-7-20	1
ns	S-7-20K	sensor plug kit	1

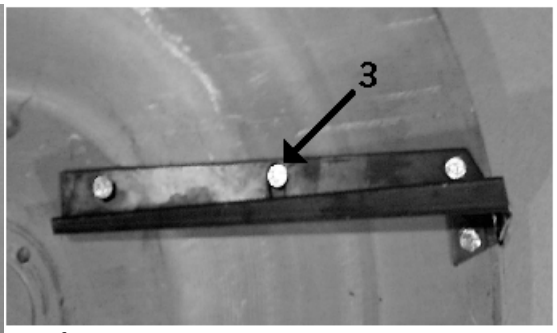
Shaft Rate Sensor
(Mid-Tech)



Ref. #	Part #	Description	Qty.
1	S-22-3	360 slot sensor	1
2	S-8-2D	shaft adapter	1
ns	S-8-2B	bushing for shaft adapter	1

Spinner Plate Assembly





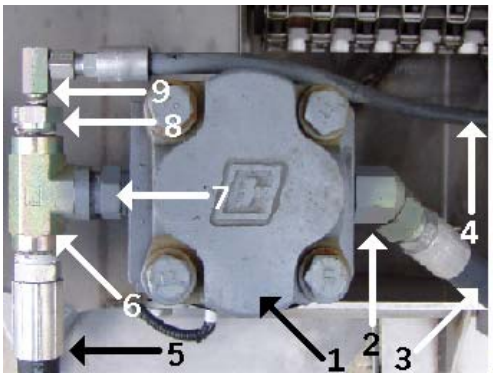
Ref. #	Part #	Description	Qty.
1	S-4-29S	right plate ss	1
	S-4-29	right plate steel	
1	S-4-30S	left plate ss	1
	S-4-30	left plate steel	
2	S-4-26	right blade	3
2	S-4-27	left blade	3
2	S-4-80	right hard blade	3
2	S-4-81	left hard blade	3
3	S-4-68	blade bolt kit	1
ns	S-4-83	plate bolt kit	1

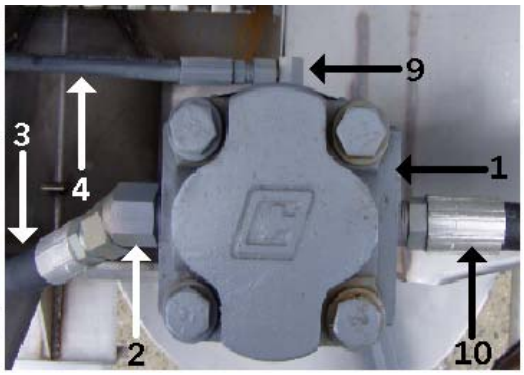
Spinner Housing Assembly

Ref. #	Part #	Description	Qty.
1	SG-5-10	spinner housing	2
1	SG-5-11	rpm spinner housing	option
2	S-5-3	spinner shaft (6 tooth)	2
3	S-5-4	thrust bearing	2
4	S-5-7	lock ring	2
5	S-5-15	ss roll pin	2
6	S-5-11	spinner hub	2
7	S-5-6	key	2
8	S-5-5	seal	2

*Note: Please specify if your spinner housing has a **Fan RPM Sensor** mount.

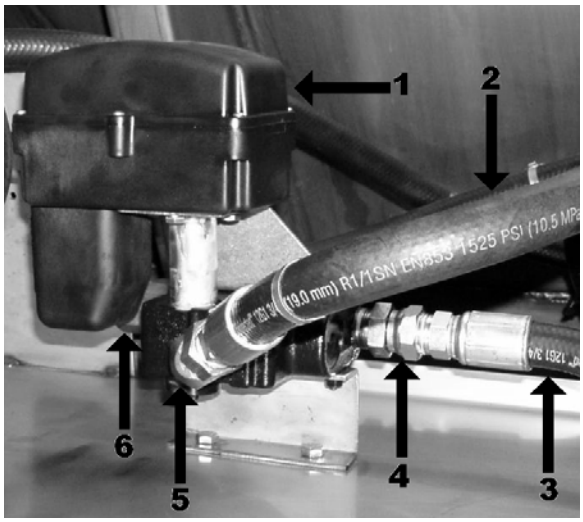
Spinner Motor Assembly



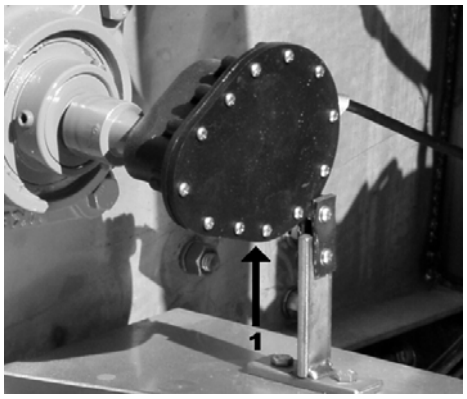


Ref. #	Part #	Description	Qty.
1	S-6-212	spinner motor	2
2	S-6-54	¾ x 45 male adapter	2
3	S-6-39P	¾ x 15” high pressure hyd. hose	1
4	S-6-129	¼ x 31 hyd. hose	1
5	S-6-92	¾ x 30 hyd. hose	1
6	S-6-35	¾ tee	1
7	S-6-97	¾ nipple	1
8	S-6-118	¾ x ¼ busing	1
9	S-6-128	¼ x 90 male adapter	2
10	S-6-27	¾ x 26 hyd. hose	1

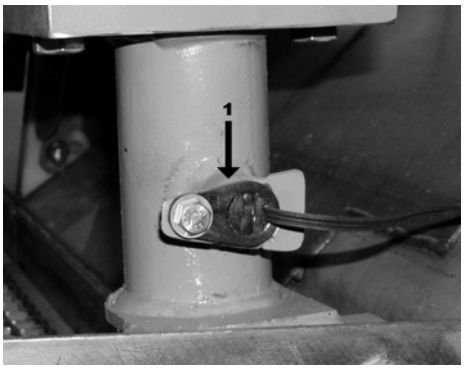
Raven Components



Ref. #	Part #	Description	Qty.
1	063-0172-150	fast valve (motor only)	1
1a	S-29-8	fast valve (complete)	1
2	S-6-39	18 x ¾ hyd. hose	1
3	S-6-18	21 x ¾ hyd. hose	2
4	S-6-47	¾ male adapter	1
5	S-6-54	¾ x 45 male adapter	1
6	S-6-50	¾ x 90 male adapter	1

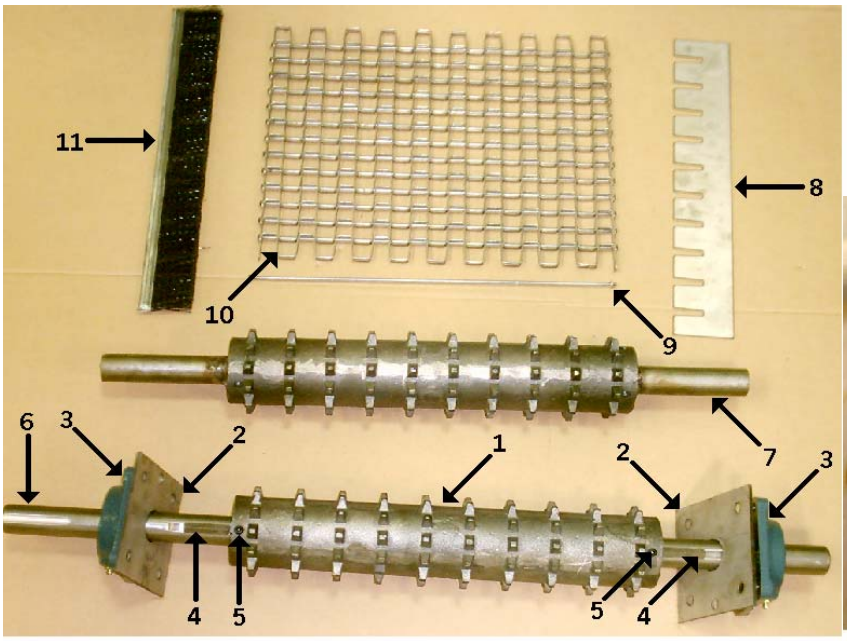


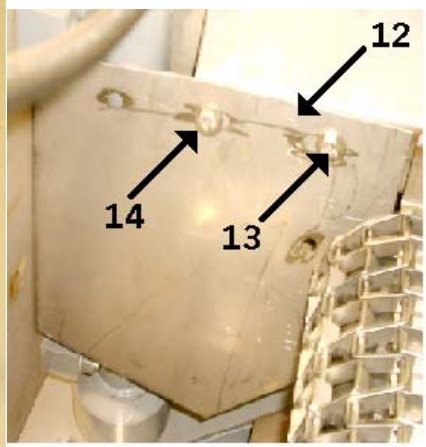
Ref. #	Part #	Description	Qty.
1	063-0171-071	rate sensor	1



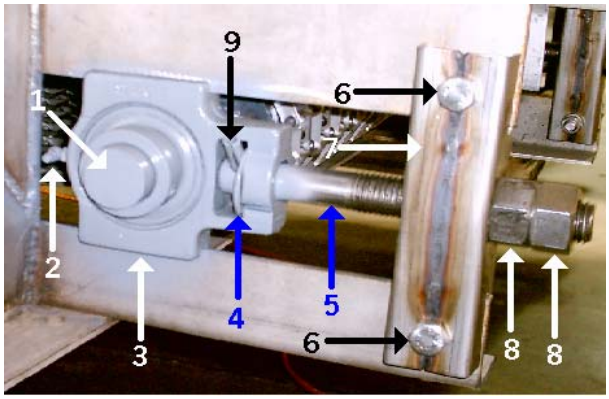
Ref. #	Part #	Description	Qty.
1	117-0159-575	fan RPM sensor	1

Conveyor Chain Assembly



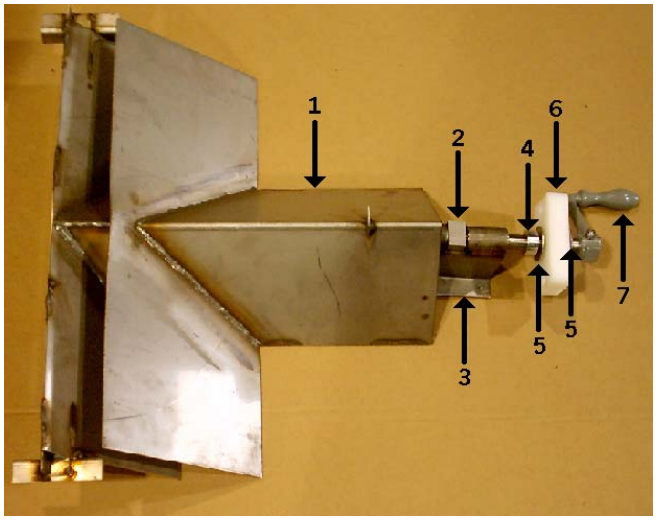


Ref. #	Part #	Description	Qty.
1	S-2-6	rear roller sprocket	1
2	S-2-5	ss bearing Backplate	2
3	S-2-4	4 bolt flange bearing	2
4	S-2-12	key	2
5	S-4-7	3/8 set screw	4
6	S-7-21	rear conveyor shaft	1
7	S-2-21	front idler sprocket w/ shaft	1
8	S-1-101	pan splice	1
9	S-2-15	connecting pin	1
10	S-2-14	conveyor chain	per foot
10a	S-2-1	conveyor chain 11’ body	1
10b	S-2-27	conveyor chain 13’ body	1
11	S-1-143	wipe out brush	1
12	S-4-33	side shield	2
13	N-26-0075	3/8 x ¾ ss bolt	4
14	N-26-0003	3/8 ss flat washer	4
ns	N-26-0002	3/8 ss lock washer	4
ns	N-26-0001	3/8 ss nut	4

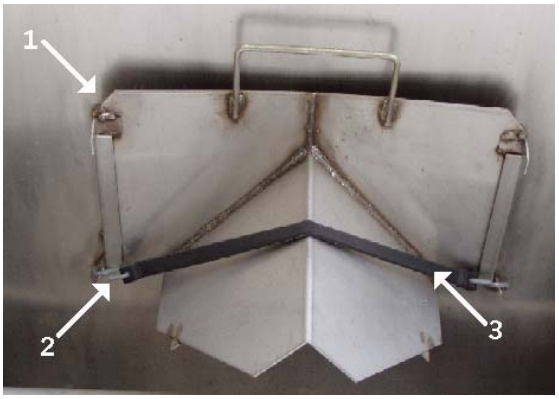


Ref. #	Part #	Description	Qty.
1	S-2-21	idler sprocket w/ shaft	1
2	S-6-140	90 x zerk fitting	2
3	S-2-10	1¼ take up bearing	2
4	S-2-19	1” ss flat washer	2
5	S-2-17	take up rod	2
6	N-28-0250	½ x 2½ ss bolt	4
7	S-2-8	take up member	2
8	S-2-18	1” ss nut	4
9	S-2-22	ss roll pin	2
ns	N-28-0002	½ ss lock washer	4
ns	N-28-0001	½ ss nut	4

Slide Assembly And Fertilizer Insert

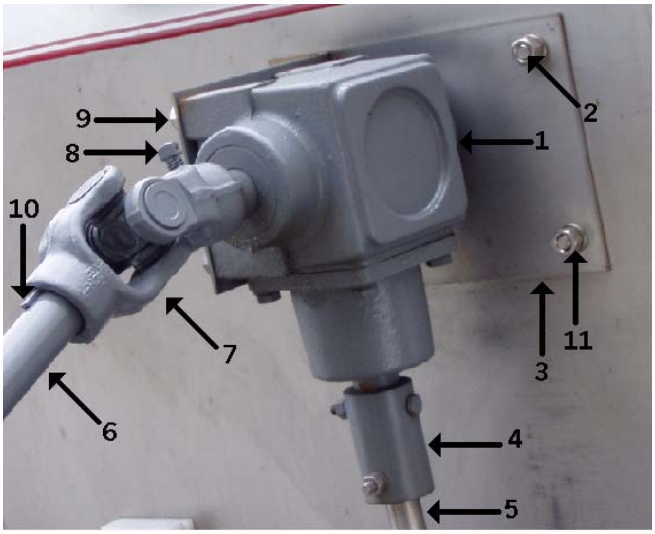


Ref. #	Part #	Description	Qty.
1	S-4-41	slide	1
2	S-1-34	gate rod nut	1
3	S-4-56	slide nut holder	1
4	S-4-54	¾ set collar	1
5	S-4-32	¾ ss flat washer	2
6	S-4-53	bearing	1
7	S-4-55	handle w/hardware	1
ns	S-4-66	pointer	1
ns	N-26-0125	3/8 x 1¼ ss bolt	2
ns	N-26-0001	3/8 ss nut	2
ns	N-26-0002	3/8 ss lock washer	2
ns	N-26-0003	3/8 ss flat washer	2
ns	N-24-0075	¼ x ¾ ss bolt	4
ns	N-24-0002	¼ ss lock washer	4



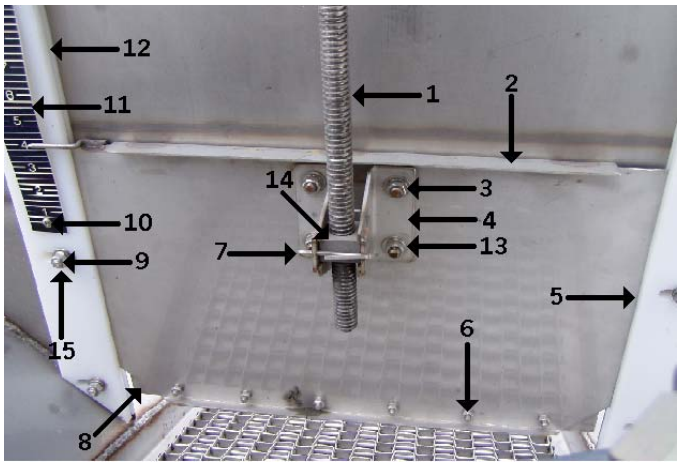
Ref. #	Part #	Description	Qty.
1	S-4-42	insert	1
2	S-12-4	s-hook	2
3	S-12-7	rubber strap	1

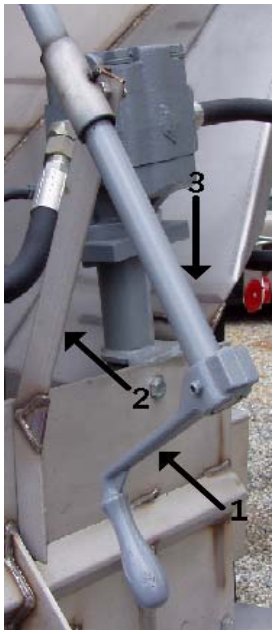
Adjustable Gate



Ref. #	Part #	Description	Qty.
1	R-4-12	gearbox	1
2	N-26-0100	3/8 x 1” ss bolt	4
3	S-1-130	gearbox bracket	1
4	S-1-36	gate rod coupling	1
5	S-1-33	gate rod	1
6	R-3-45	ext. shaft	1
7	R-3-4	1” u-joint	1
8	R-3-4A	square head set screw	2
9	N-26-0075	3/8 x ¾ ss bolt	4
10	R-3-5	¼ woodruff key	2
11	N-26-0001	3/8 ss nut	4
ns	N-26-0002	3/8 ss lock washer	8
ns	S-1-19	gearbox backplate	1

Ref. #	Part #	Description	Qty.
1	S-1-33	gate rod	1
2	S-1-38	gate	1
3	N-26-0001	3/8 ss nut	10
4	S-1-35	gate nut holder	1
5	S-1-98R	right gate track	1
6	N-24-0075	¼ x ¾ ss bolt	6
7	S-1-35A	ss cotter pin	1
8	S-1-23	gate shear strip	1
9	N-26-0150	3/8 x 1 ½ ss bolt	6
10	S-1-5A	ss screw	2
11	S-1-5	gate scale	1
12	S-1-99L	left gate track	1
13	N-26-0002	3/8 ss lock washer	10
14	S-1-34	gate rod nut	1
15	N-26-0003	3/8 flat washer	6

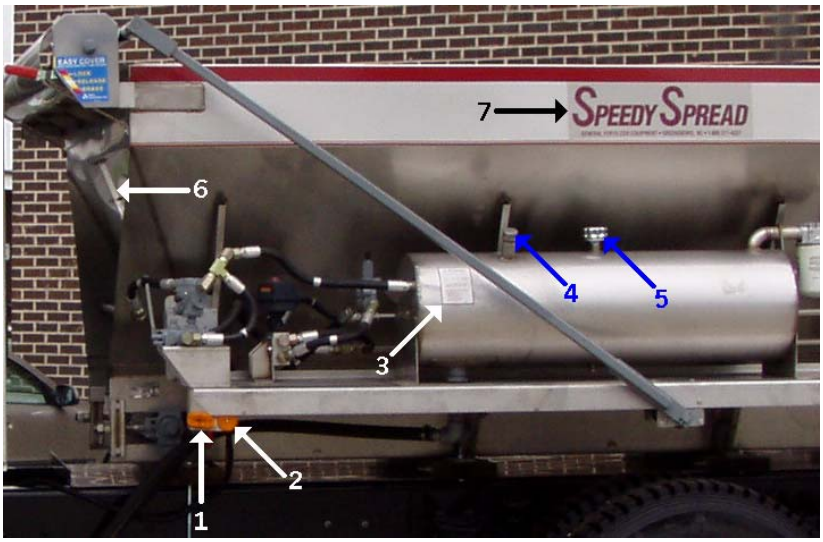




Ref. #	Part #	Description	Qty.
1	S-1-10	handle	1
2	S-1-4N	gate ext. bracket	1
3	S-1-4M	ss ext. shaft	1
ns	N-26-0100	3/8 x 1” ss bolt	2
ns	N-26-0001	3/8 ss nut	2
ns	N-26-0002	3/8 ss lock washer	2

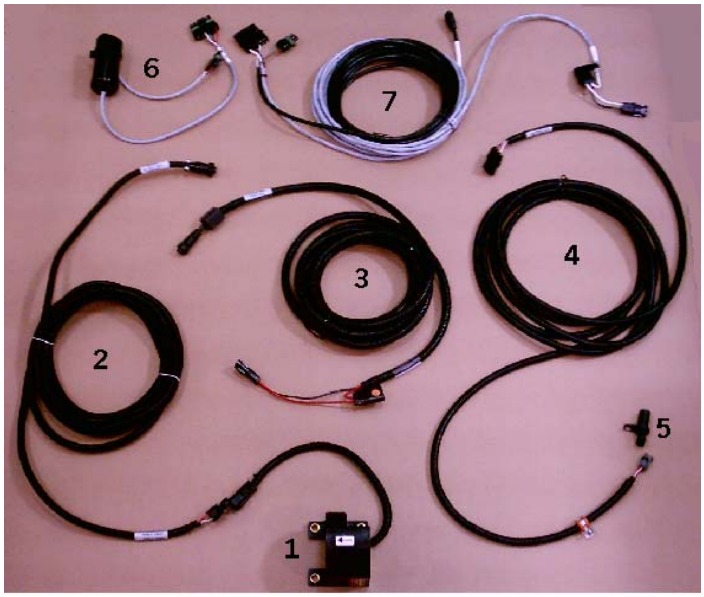
Rear View Parts

Ref. #	Part #	Description	Qty.
1	S-4-64S	ss spatterboard	1
2	S-9	mud flaps	2
3	S-14-4	round red reflectors	4
4	S-14-1	red corner lights	2
5	S-14-9	combo. tail lights	2
6	SY-1-87	narrow pin stripe	per foot
7	S-1-16	GFE decal	2
8	S-1-48	danger decal	1
9	SY-1-84	wide pin stripe	per foot
10	S-14-3	3 light bar	1

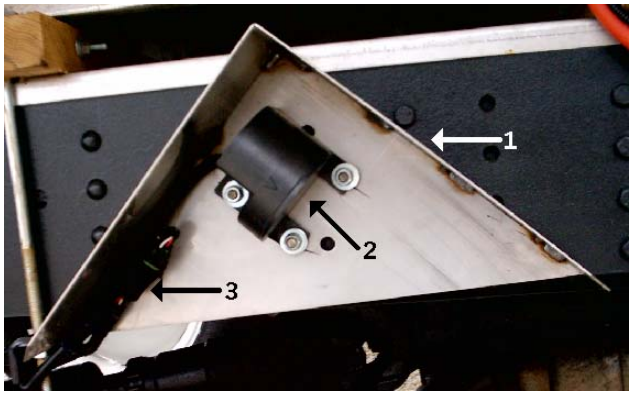


Ref. #	Part #	Description	Qty.
1	S-14-1	amber corner light	2
2	S-14-5	amber round reflector	2
3	S-1-48	oil tank decal	1
4	GP-731	oil tank cap	1
5	S-6-98	oil tank breather cap	1
6	S-1-22	plexiglas window	1
7	S-1-20	speedy spread decal	1

Mid-Tech Cables



Ref. #	Part #	Description	Qty.
1	S-22-4	Radar	1
2	S-22-17	Radar Cable	1
3	S-22-6	Power Cable	1
4	S-22-20	rate sensor	1
5	S-22-19	sensor cable	1
6	S-22-7	valve driver	1
7	S-22-11	flow control cable	1
ns	S-22-18	battery cable	1

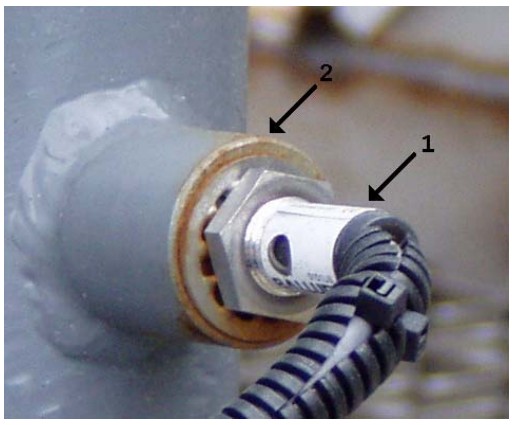


Radar

Ref. #	Part #	Description	Qty.
1	S-22-15	radar shield	1
2	S-22-4	radar	1
3	S-22-17	radar cable	1

Mid-Tech Console

Ref. #	Part #	Description	Qty
1	S-25-1	6100 console	1
2	S-22-1A	console bracket	1
3	S-22-12	status switch box	1
4	S-17-16	console stand	1

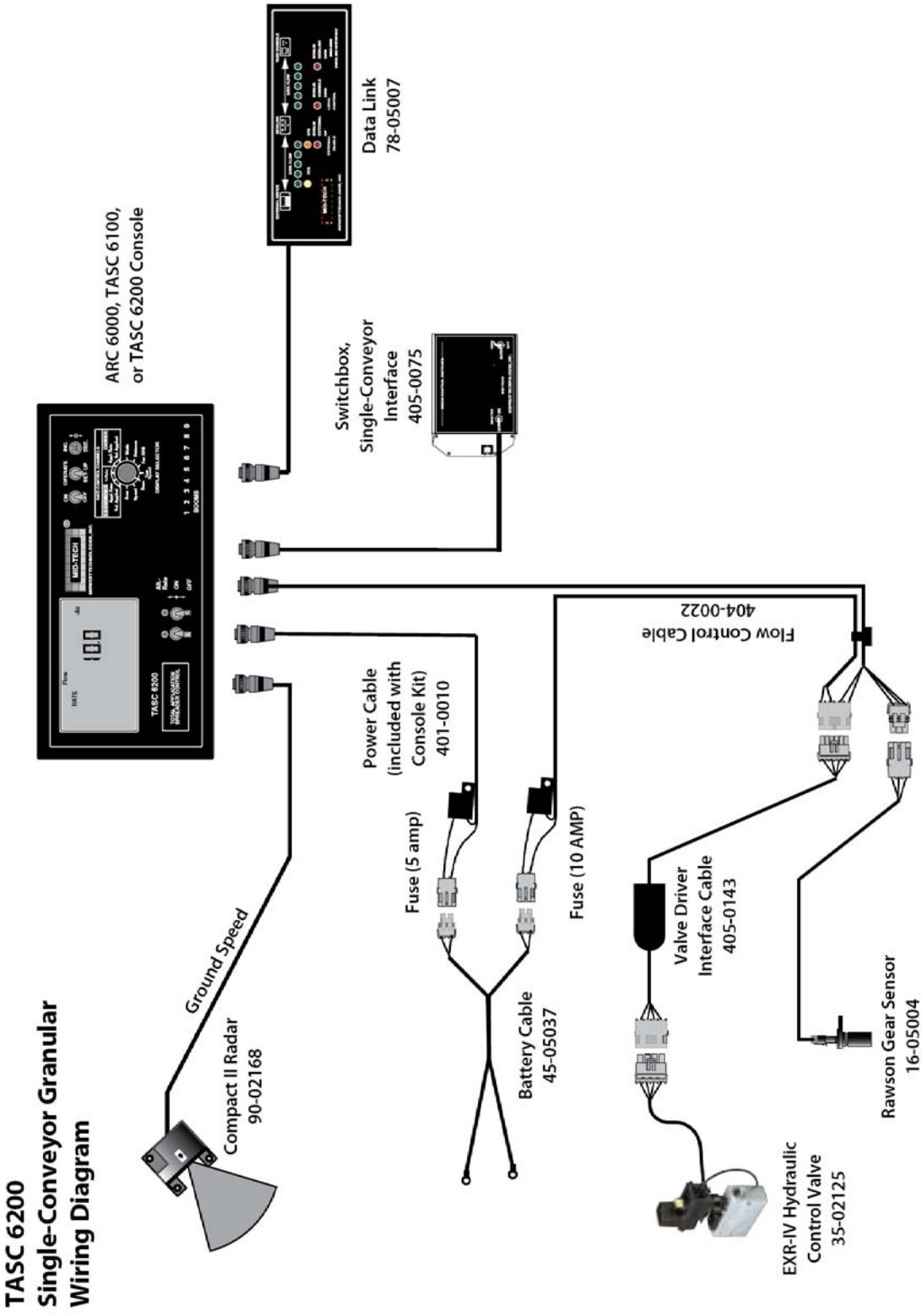


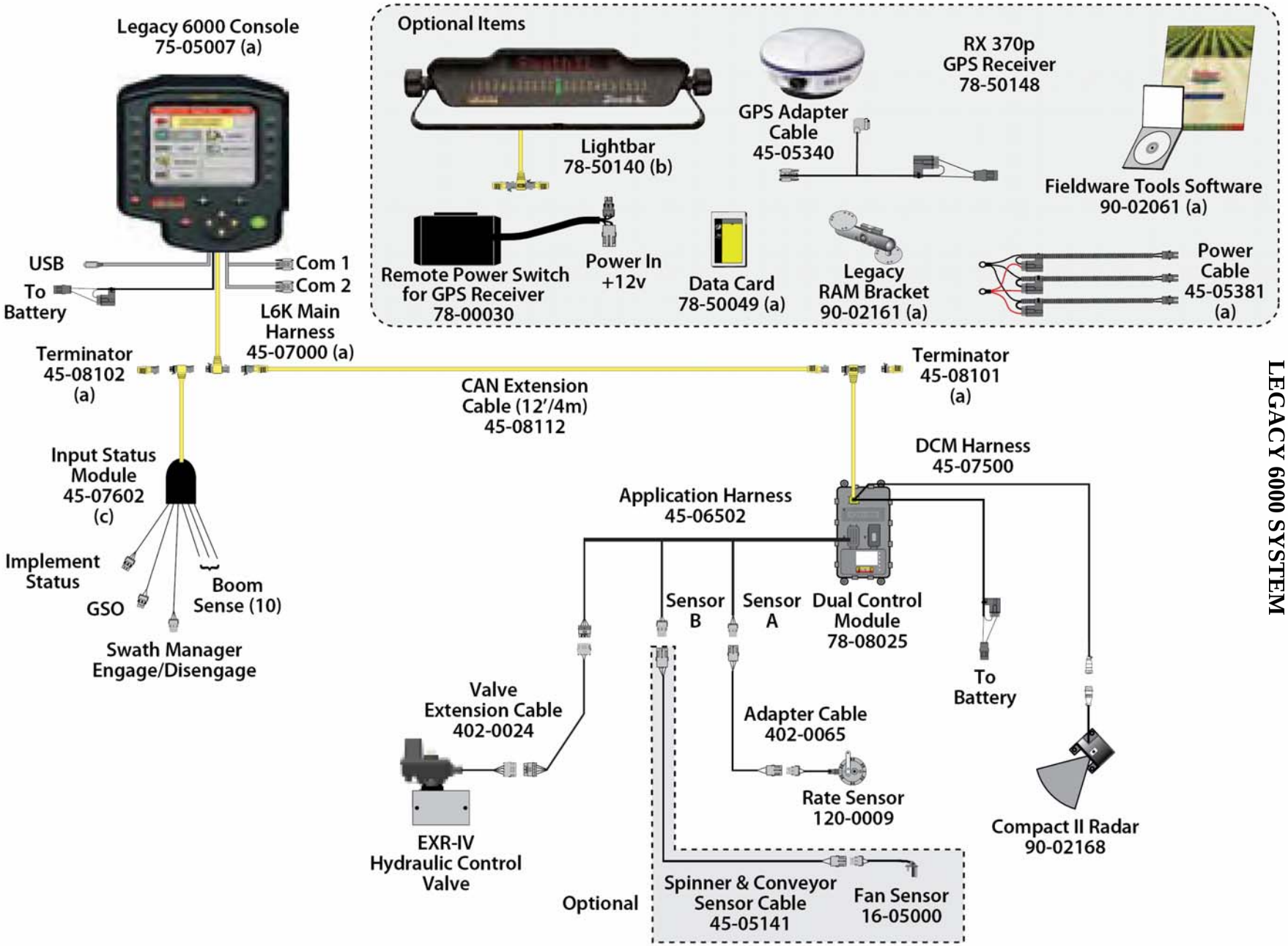
Spinner RPM Sensor

Ref. #	Part #	Description	Qty.
1	S-23-3	spinner RPM sensor	1
2	S-23-6	RPM sensor mount	1
3	S-23-2	RPM sensor cable	1

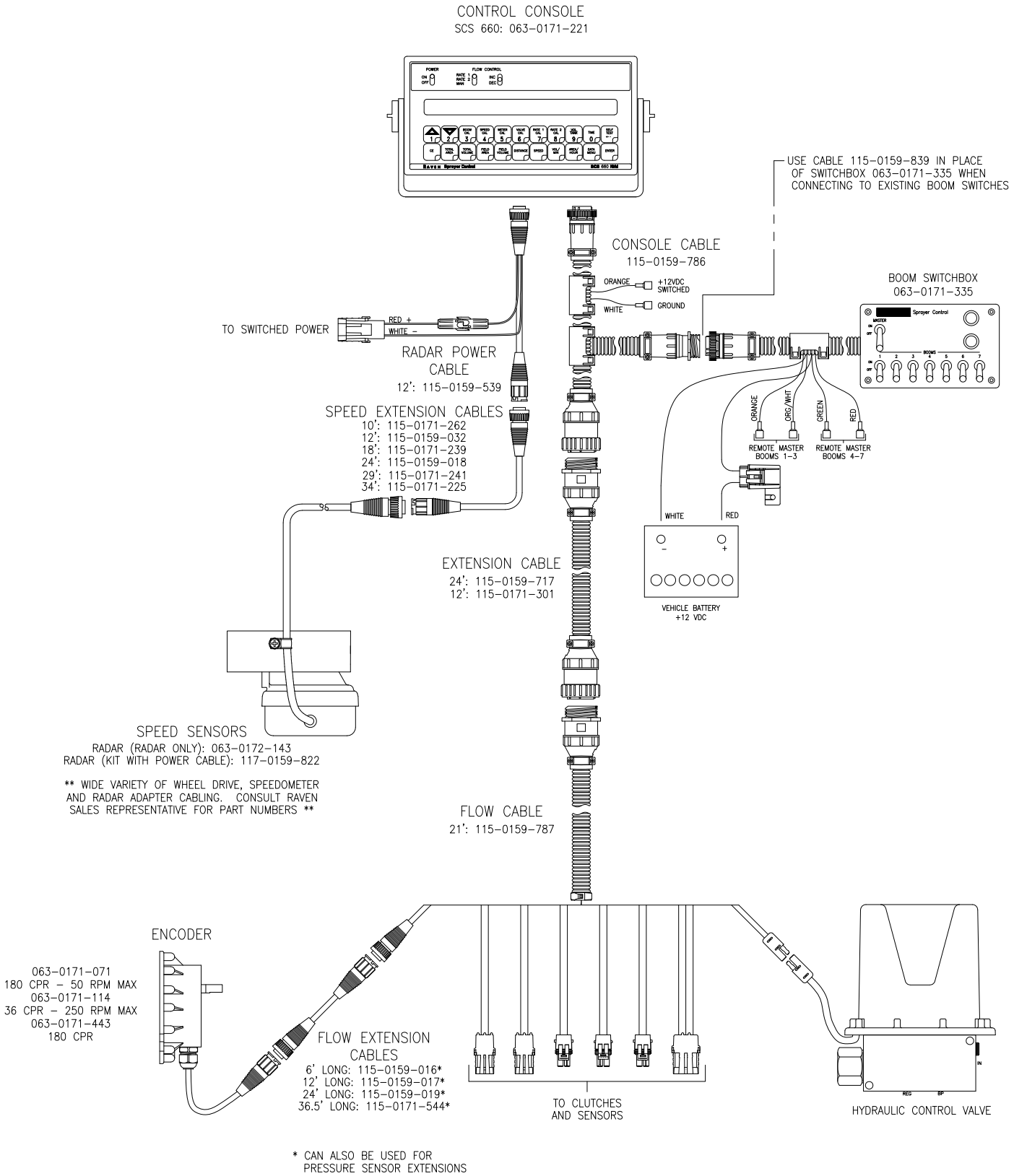
SYSTEM DRAWINGS

MID-TECH 6000,
6100 OR 6200
CONTROL SYSTEM



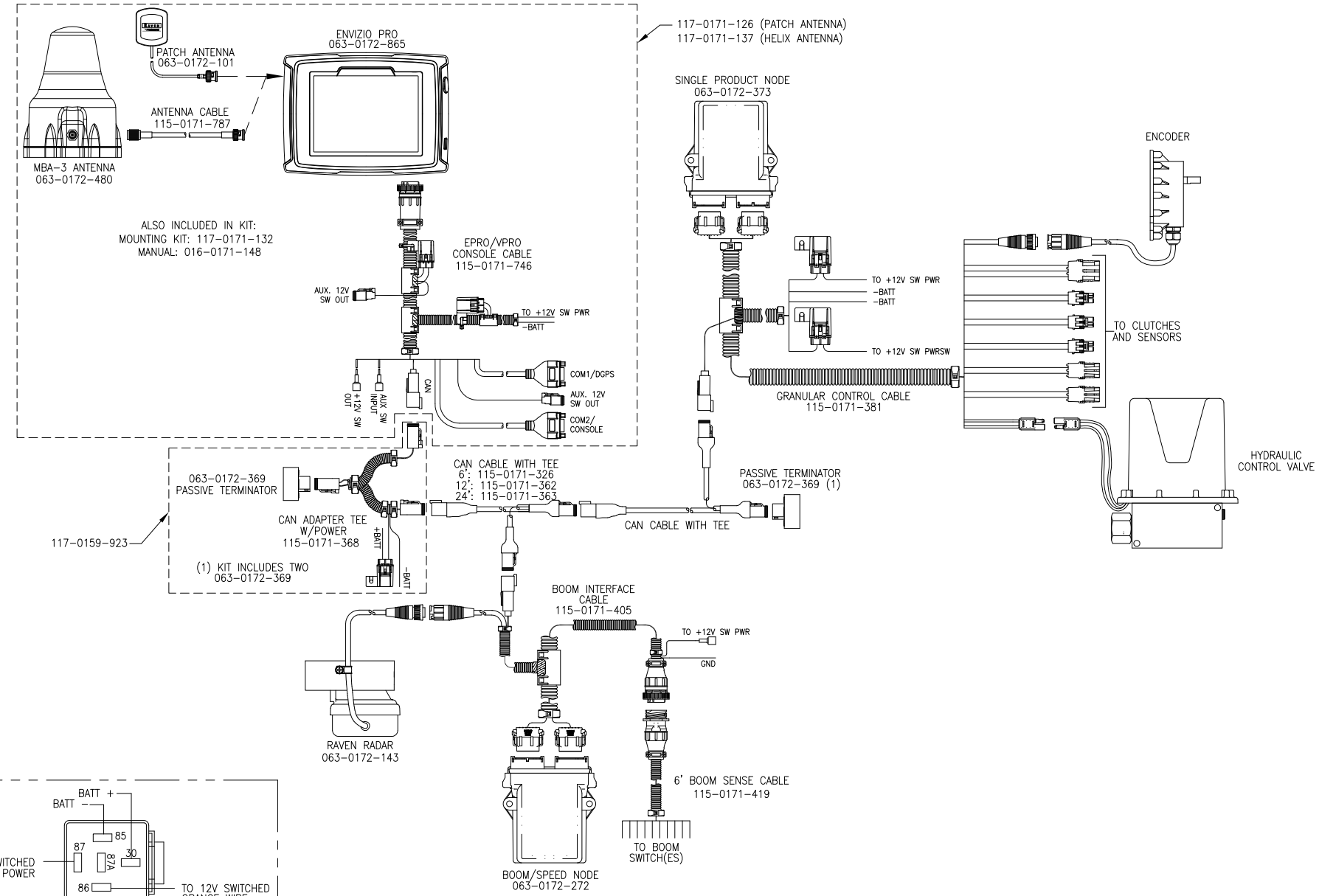

Legacy 6000 Console
75-05007 (a)
Optional Items
Lightbar
78-50140 (b)
GPS Adapter
Cable
45-05340
RX 370p
GPS Receiver
78-50148
Fieldware Tools Software
90-02061 (a)
Remote Power Switch
for GPS Receiver
78-00030
Power In
+12v
Data Card
78-50049 (a)
Legacy
RAM Bracket
90-02161 (a)
Power
Cable
45-05381
(a)
USB
To
Battery
Com 1
Com 2
L6K Main
Harness
45-07000 (a)
Terminator
45-08102
(a)
CAN Extension
Cable (12'/4m)
45-08112
Terminator
45-08101
(a)
DCM Harness
45-07500
Input Status
Module
45-07602
(c)
Application Harness
45-06502
Implement
Status
GSO
Boom
Sense (10)
Swath Manager
Engage/Disengage
Sensor
B
Sensor
A
Dual Control
Module
78-08025
To
Battery
Valve
Extension Cable
402-0024
Adapter Cable
402-0065
Rate Sensor
120-0009
Compact II Radar
90-02168
EXR-IV
Hydraulic Control
Valve
Optional
Spinner & Conveyor
Sensor Cable
45-05141
Fan Sensor
16-05000

SCS 660 GRANULAR CONTROL SYSTEM WITH SWITCHBOX



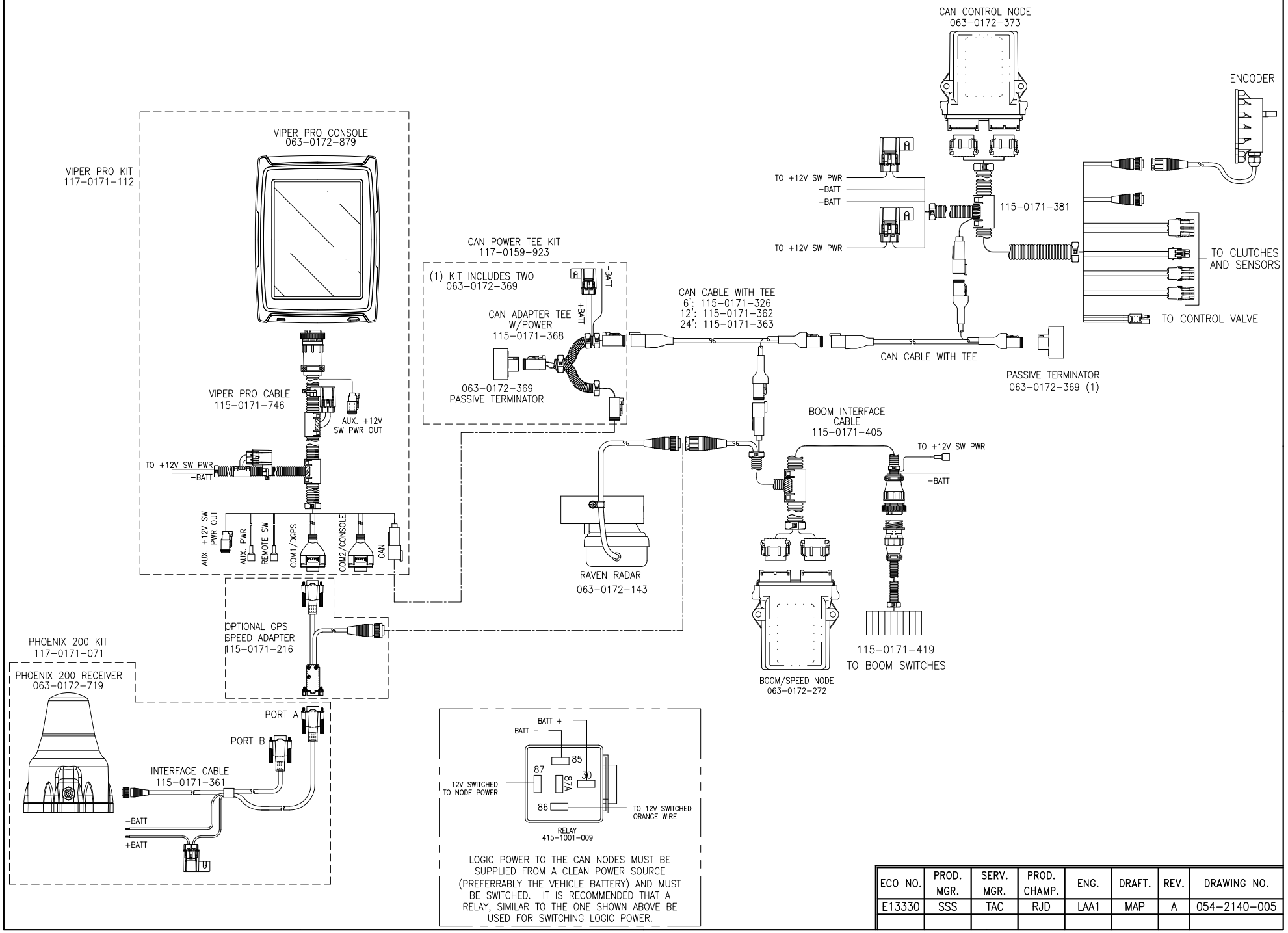
ECO NO.	PROD. MGR.	SERV. MGR.	PROD. CHAMP.	ENG.	DRAFT.	REV.	DRAWING NO.
E13339	JB	TAC	DNR	LAA1	MAP	A	054-2810-003

ENVIZIO PRO WITH GPS AND GRANULAR PRODUCT CONTROL



ECO NO.	PROD. MGR.	SERV. MGR.	PROD. CHAMP.	ENG.	DRAFT.	REV.	DRAWING NO.
E13313	SSS	TAC	EM	LAA1	LAA1	A	054-2000-004

VIPER PRO WITH PHOENIX 200 AND SINGLE PRODUCT GRANULAR CONTROL



ECO NO.	PROD. MGR.	SERV. MGR.	PROD. CHAMP.	ENG.	DRAFT.	REV.	DRAWING NO.
E13330	SSS	TAC	RJD	LAA1	MAP	A	054-2140-005

Component and Cable Layout

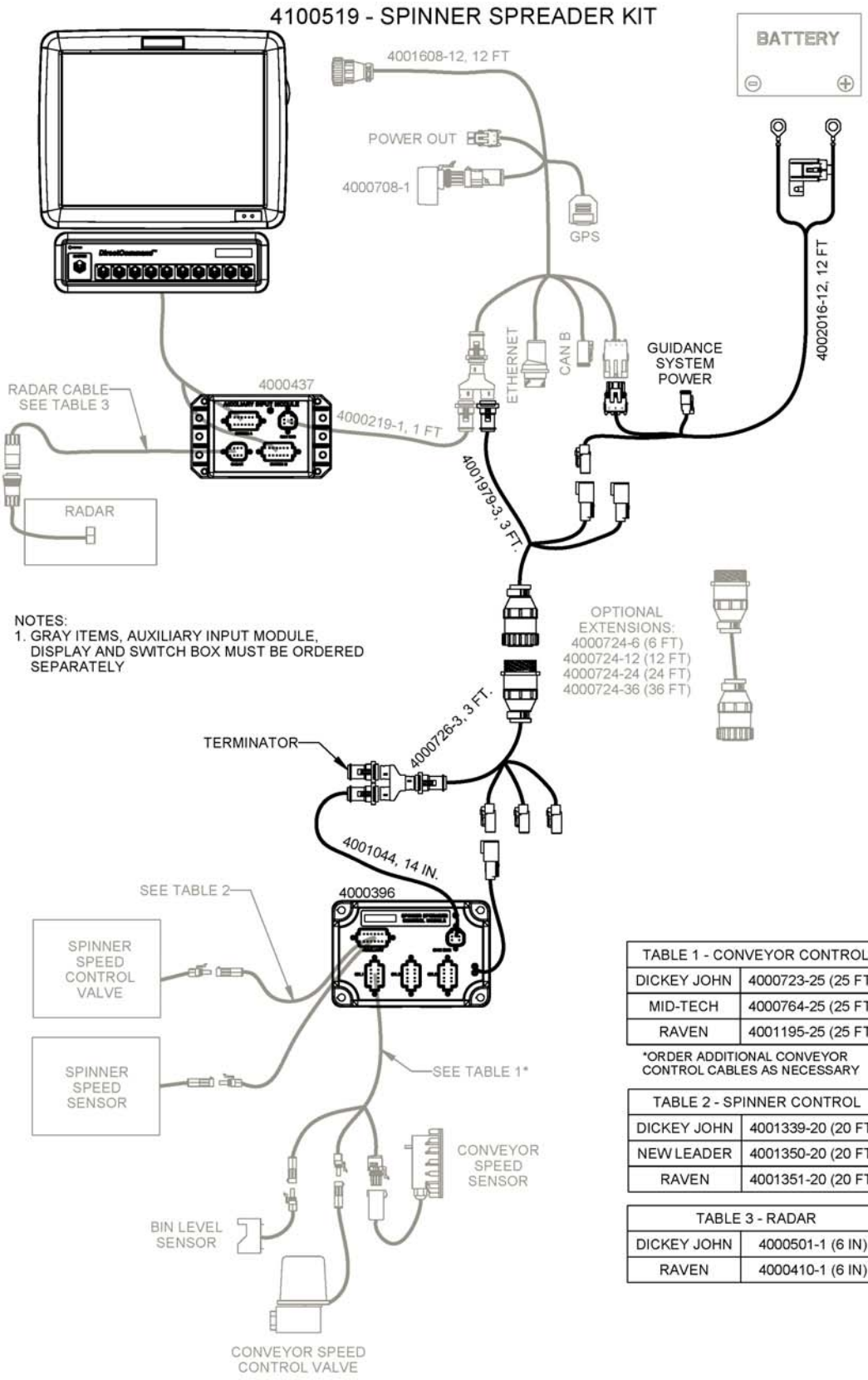


TABLE 1 - CONVEYOR CONTROL	
DICKEY JOHN	4000723-25 (25 FT)
MID-TECH	4000764-25 (25 FT)
RAVEN	4001195-25 (25 FT)

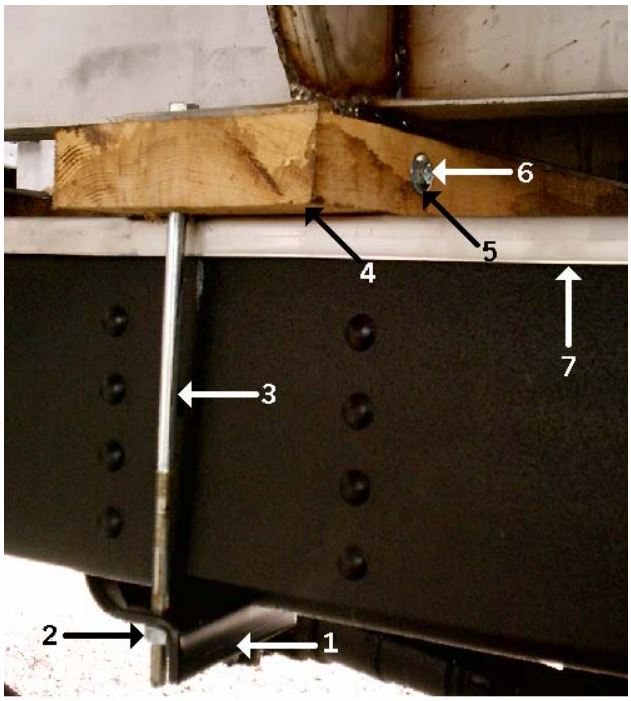
*ORDER ADDITIONAL CONVEYOR CONTROL CABLES AS NECESSARY

TABLE 2 - SPINNER CONTROL	
DICKEY JOHN	4001339-20 (20 FT)
NEW LEADER	4001350-20 (20 FT)
RAVEN	4001351-20 (20 FT)

TABLE 3 - RADAR	
DICKEY JOHN	4000501-1 (6 IN)
RAVEN	4000410-1 (6 IN)

Optional Equipment

Body Tie Downs and Boards



Ref. #	Part #	Description	Qty.
*1	S-1-24	tie down angle	16 or 20
*2	N-18-0001	½ nut	various
*3	N-18-_ _ _	½ x _ _ bolt	various
*4	S-1-6A	2 x 8 x 40 oak board	4 or 5
*5	N-18-0003	½ flat washer	various
6	N-16-0900	3/8 x 9 bolt	8 or 10
*7	S-1- _ _ _	full SS cover sheet	1

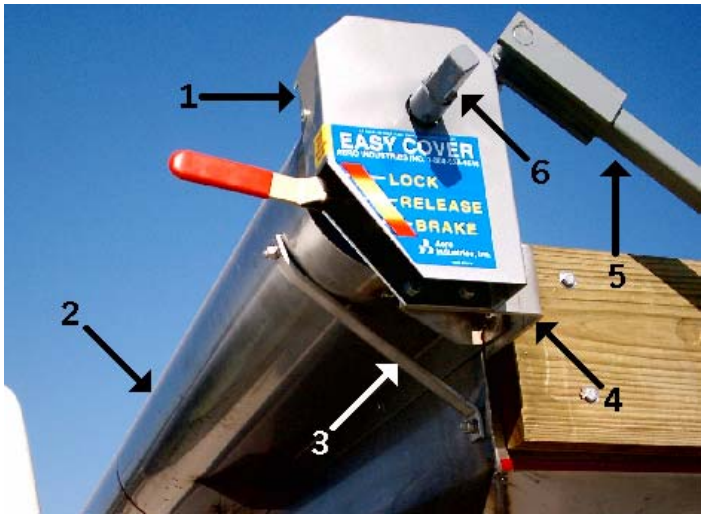
* Note: these items may be different for each body, please specify when ordering.

Body Extension Brackets

Ref. #	Part #	Description	Qty.
*1	S-1-45A	corner ext. bracket	4
*ns	S-1-45B	side ext. bracket	2

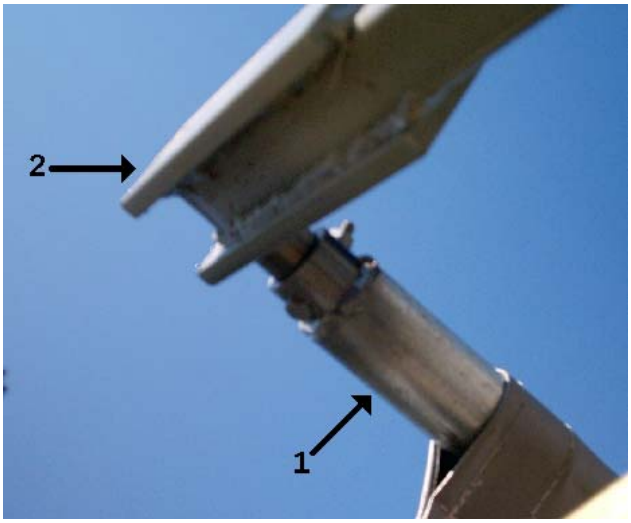
*Note: please specify what size extension boards you are using when ordering these parts.

Tarp Assembly



Ref. #	Part #	Description	Qty.
1	S-12-27	gearbox	1
*2	S-12-26	windshield	1
3	S-12-31	windshield brace	2
4	S-12-28	mounting bracket	2
*5	S-12-32	drivers side tarp arm	1
6	SY-12-23B	crank coupler	1
ns	D-1-114	set screw	2
ns	R-3-28	key	1

*note-parts are specific to size of body

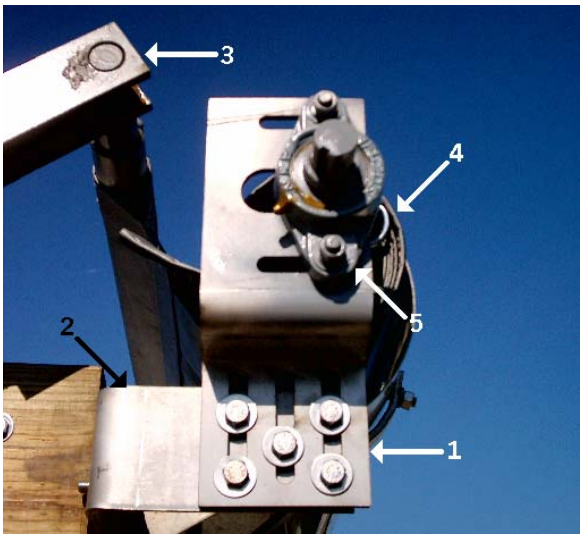


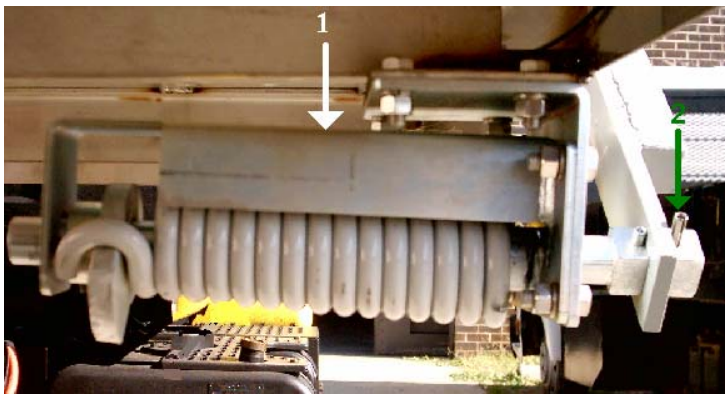
Ref. #	Part #	Description	Qty.
*1	S-12-34	rear tarp pipe	1
*2	S-12-32	drivers side tarp arm	1

*note-parts are specific to size of body

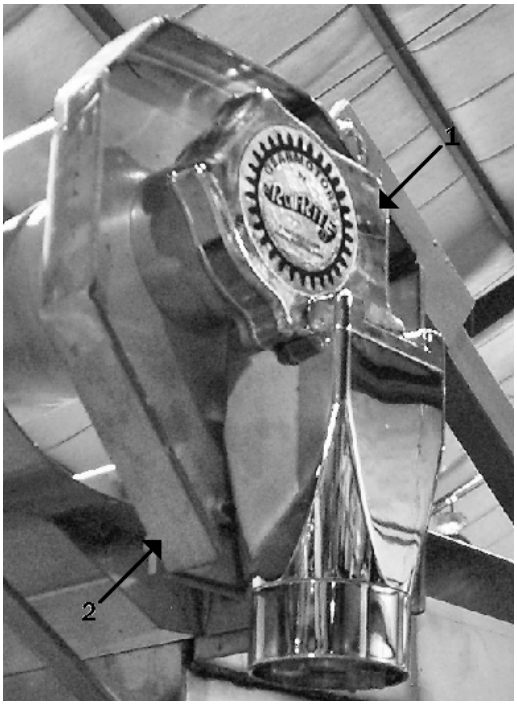
Ref. #	Part #	Description	Qty.
1	S-12-29	bearing mount	1
2	S-12-28	Z mounting bracket	2
*3	S-12-33	pass. Side tarp arm	1
*4	S-12-22	tarp 11’ body	1
*4	S-12-20A	tarp 13’ body	1
5	R-2-6	bearing	1
*ns	S-12-35	front tarp pipe	1

*note-parts are specific to size of body



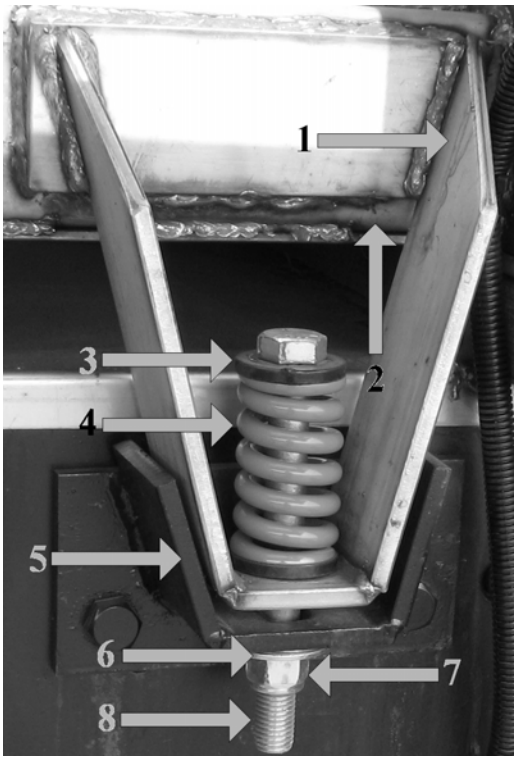


Ref. #	Part #	Description	Qty.
1	S-12-25R	pass. side spring	1
1	S-12-25L	drivers side spring	1
2	R-2-14	roll pin	2



Electric Tarp Motor Assembly

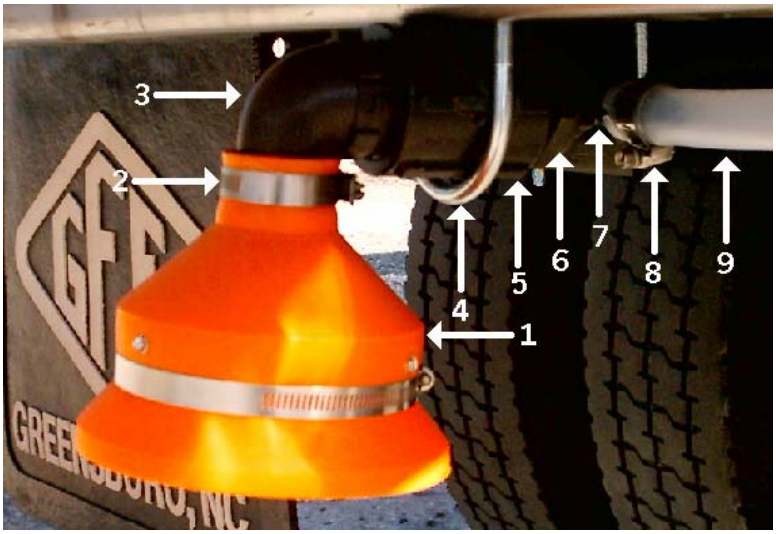
Ref. #	Part #	Description	Qty.
1	S-12-22E	elec. tarp motor	1
2	S-12-23M	motor mount	1



Body Tie Down Assembly (NEW)

Ref. #	Part #	Description	Qty.
1	S-1-1	Upper Bracket	4
2	SY-1-1	Spacer	4
3	T-1-16A	Spring Guide	2
4	T-1-16	Spring	2
5	S-1-2	Lower Bracket	4
6	N-112-0002	Washer	4
7	N-112-0001A	Lock Nut	4
8	N-112-0250	Bolt	4
NS	N-110-0004	Lock Nut	8
NS	N-110-0200	bolt	8

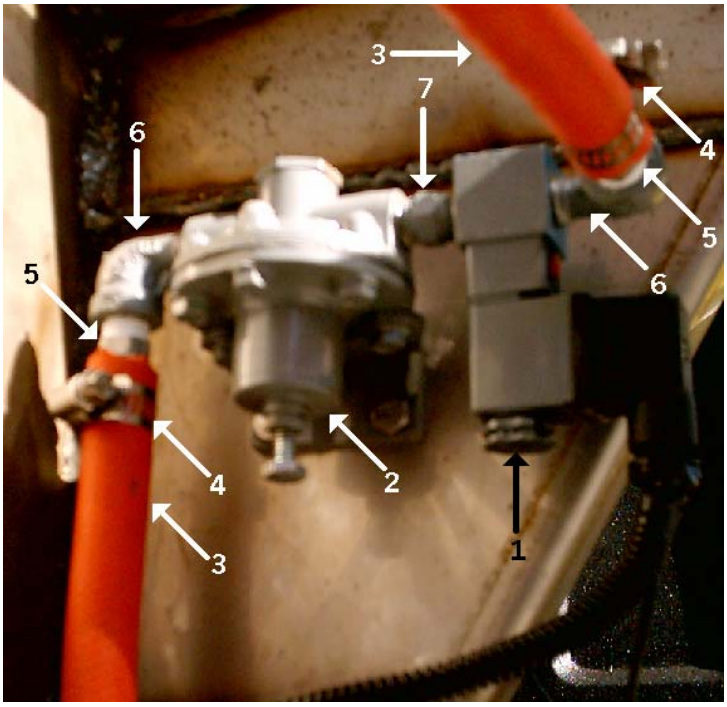
Foam Drop Assembly



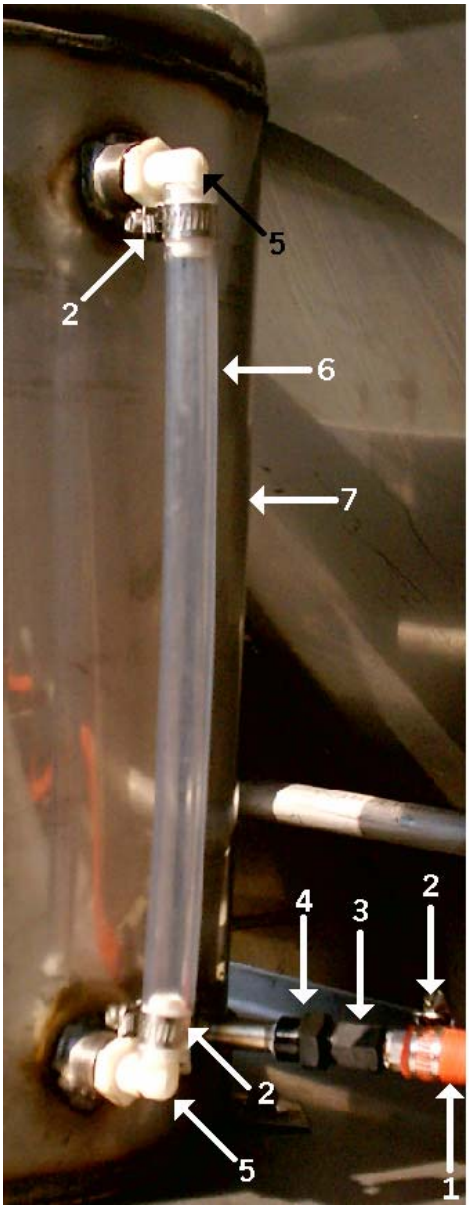
Ref. #	Part #	Description	Qty.
1	L-220-1	foam drop	1
2	F-98	hose clamp	1
3	F-75	2 x 90 hose barb	1
4	T-4-10	2 ½ u-bolt	1
5	GP-192	2 coupling	1
6	GP-82-6	2 x ¾ bushing	1
7	F-93	¾ x 90 hose barb	1
8	F-18	¾ hose clamp	1
9	F-80	¾ hose	per foot
ns	GP-180-5	1 x ¾ bushing	1

Foam Valve Assembly

Ref. #	Part #	Description	Qty.
1	S-11-5	solenoid valve	1
2	S-11-13	regulating valve	1
3	F-2	½ rubber hose	per foot
4	F-17	½ hose clamp	2
5	F-42	½ x ¼ hose barb	2
6	GI-485	¼ st. elbow	2
7	S-6-151	¼ hex nipple	1

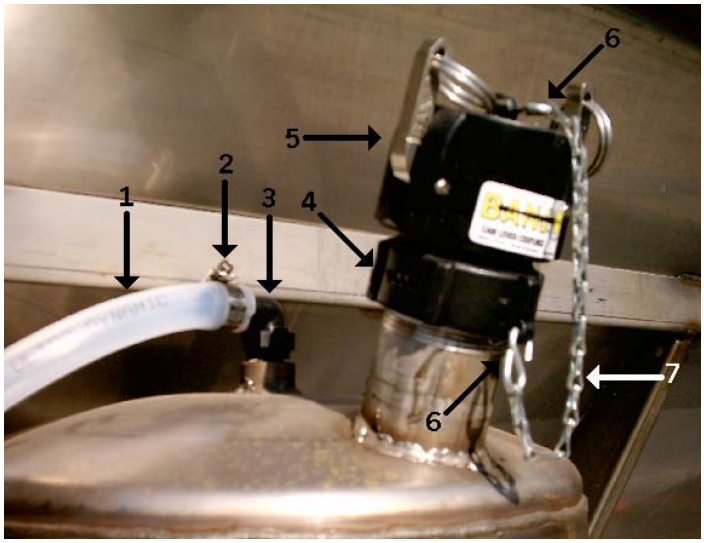


Foam Marker Side View



Ref. #	Part #	Description	Qty.
1	F-2	½ rubber hose	per foot
2	F-17	½ hose clamp	3
3	H-161	¼ cap adapter	1
4	H-129	¼ female body	1
5	F-94	½ x 90 hose barb	2
6	F-96	½ sight tube	per foot
7	B-212	foam tank	1
ns	GS-144	¼ plug	1
ns	F-42	½ x ¼ hose barb	1
ns	H-181	ss check valve	1

Foam Marker Top View



Ref. #	Part #	Description	Qty.
1	F-80	¾ hose	per foot
2	F-18	¾ hose clamp	1
3	F-93	¾ x 90 hose barb	1
4	E-108	2” part A	1
5	E-122	2” cap	1
6	L-48	s hook	2
7	L-49	sash chain	per foot

Notes

TROUBLE SHOOTING

1. Problem: Material heavy behind truck
   Cause: Spinners too slow-not throwing material far enough
   Correction: Check spinner speed with tach. and set to 750 RPM

2. Problem: Material heavy behind truck
   Cause: Delivery chute in the wrong location
   Correction: Move the delivery chute forward (check measurements for adjusting the chute)

3. Problem: Material falling directly under the truck
   Cause: Pan splice may be worn
   Correction: Replace the pan spice

4. Problem: Material too light behind truck
   Cause: Spinners may be too fast
   Correction: Check spinner speed with tach. and set to 750 RPM

5. Problem: Material too light behind truck
   Cause: Delivery chute in the wrong location
   Correction: Move the delivery chute toward the rear (check measurements for adjusting the chute)

NOTE: Make sure that the fertilizer insert is installed when spreading fertilizer.

FOR MID-TECH ERROR MESSAGES PLEASE REFER TO SECTION 5-5 OF YOUR MID-TECH OWNERS MANUAL.

LIMITED WARRANTY AND REMIDIES

General Fertilizer Equipment INC., warrants each of its products for a period of 90 day from the date of purchase by the original customer (end-user) under normal use and service.

This warranty provides that all products are free of defective materials and workmanship, however, it is limited to the replacement of any parts or the allowance of credit thereof, which within 90 day s from the date of purchase by the original customer, have been returned to GFE, transportation charges prepaid, and found to our satisfaction to be defective.

This warranty is void when repairs or alterations have been made to GFE products outside our factory.

Normal use and service does not include misuse, accident, vandalism, civil disturbance, war, flood, fire, earthquake, or other acts of God.

This warranty does not extend to the contents of any GFE machines, tanks or containers, or damages for injury to person or property caused by leakage or misapplication of such contents.

This warranty is the sole warranty of GFE, INC. The remedies are exclusive and in lieu of all other buyer remedies, either expressed or implied.

GFE