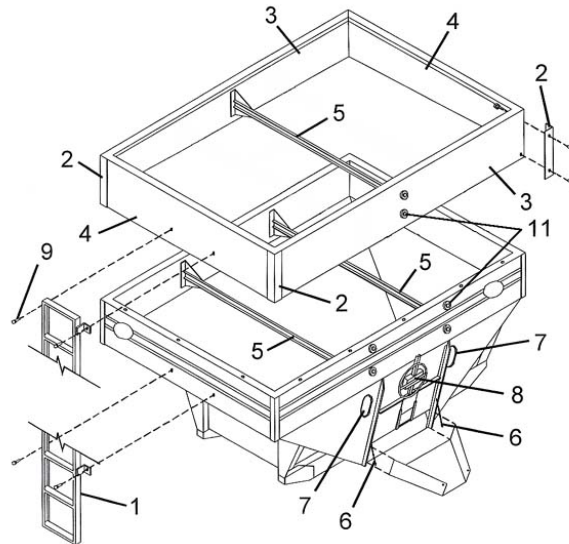


# OPERATOR'S MANUAL

Set-Up Instructions and Parts Catalog for

## Model 440SD or 540SD Gravity Box



### 440 or 540 Bushel Capacity

Short Turn Design  
For 16 Ton Running Gears



J. & M. Manufacturing Co., Inc.  
P.O. Box 547  
Fort Recovery, OH 45846

Phone: (419) 375 2376 Fax: (419) 375-2708  
E-mail: [sales@jm-inc.com](mailto:sales@jm-inc.com) Website: [www.jm-inc.com](http://www.jm-inc.com)

REV-10-04-08

**TO THE DEALER:**

Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Operator's Manual are completed before releasing equipment to the owner.

The dealer must complete the Warranty Registration Card attached to the front inside cover of this manual and return to J. & M. Mfg. Co., Inc. at the address indicated on the card. **Warranty claims will be denied if the Warranty Registration Card has not been completed and returned.**

**EXPRESS WARRANTY:**

J. & M. Mfg. Co. Inc. warrants against defects in construction or materials for a period of ONE year. We reserve the right to inspect and decide whether material or construction was faulty or whether abuse or accident voids our guarantee.

Warranty service must be performed by a dealer or service center authorized by J. & M. Mfg. Co. Inc. to sell and/or service the type of product involved, which will use only new or remanufactured parts or components furnished by J. & M. Mfg. Co. Inc. Warranty service will be performed without charge to the purchaser for parts or labor based on the Warranty Labor Times schedule. Under no circumstance will allowable labor times extend beyond the maximum hours indicated in the Warranty Labor Times schedule for each warranty procedure. The purchaser will be responsible, however, for any service call and/or transportation of the product to and from the dealer or service center's place of business, for any premium charged for overtime labor requested by the purchaser, and for any service and/or maintenance not directly related to any defect covered under the warranty. Costs associated with equipment rental, product down time, or product disposal are not warrantable and will not be accepted under any circumstance.

Each warranty term begins on the date of product delivery to the purchaser. Under no circumstance will warranty be approved unless (i) the product warranty registration card (attached to the inside of the Operator's Manual) has been properly completed and submitted to the equipment manufacturer. This Warranty is effective only if the warranty registration card is returned within 30 days of purchase.

This warranty does not cover a component which fails, malfunctions or is damaged as a result of (i) improper modification or repair, (ii) accident, abuse or improper use, (iii) improper or insufficient maintenance, or (iv) normal wear or tear. This warranty does not cover products that are previously owned and extends 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. J. & M. Mfg. Co. Inc. makes no warranty, express or implied, with respect to tires or other parts or accessories not manufactured by J. & M. Mfg. Co. Inc. Warranties for these items, if any, are provided separately by their respective manufacturers.

**THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE.**

In no event shall J. & M. Mfg. Co. Inc. be liable for special, direct, incidental or consequential damages of any kind. The exclusive remedy under this Warranty shall be repair or replacement of the defective component at J. & M. Mfg. Co. Inc.'s option. This is the entire agreement between J. & M. Mfg. Co. Inc. and the Owner about warranty and no J. & M. Mfg. Co. Inc. employee or dealer is authorized to make any additional warranty on behalf of J. & M. Mfg. Co. Inc.

The manufacturer reserves the right to make product design and material changes at any time without notice. They shall not incur any obligation or liability to incorporate such changes and improvements in products previously sold to any customer, nor shall they be obligated or liable for the replacement of previously sold products with products or parts incorporating such changes.

**SERVICE:**

The equipment you have purchased has been carefully manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the unit as specified. Observe all safety information in this manual and safety signs on the equipment.

For service, your authorized J. & M. dealer has trained mechanics, genuine J. & M. service parts, and the necessary tools and equipment to handle all your needs.

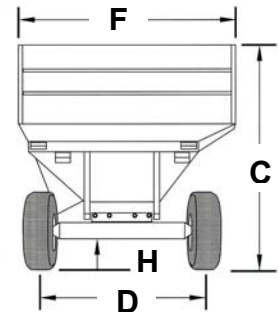
Use only genuine J. & M. service parts. Substitute parts may void the warranty and may not meet standards required for safe and satisfactory operation. Record the model number and serial number of your equipment in the spaces provided:

Serial # \_\_\_\_\_ Purchase Date: \_\_\_\_\_ Purchased From: \_\_\_\_\_

Please provide this information to your dealer to obtain the correct parts:

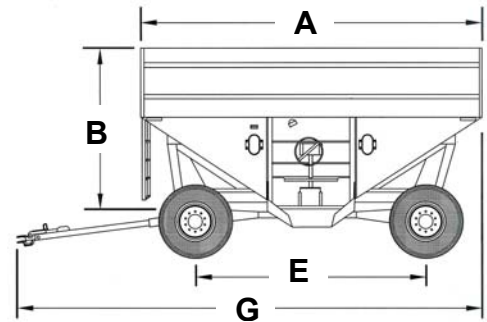
## MODEL 540SD and 440SD GRAVITY BOX

Dimensions	540SD	440SD
A	180"	180"
B	94"	81"
C	120"	107"
D	87"	87"
E	124"	124"
F	100"	100"
G	248"	248"
H	15"	15"



### Specifications

Capacity	540 or 440 bushels
Door Width	48"
Chute Height	Adjustable (14" to 19")
Understructure	9 GA 3" x 6" Tubing
Taillights	Standard
Front Ladder	Standard
Center Diverter Chute	Optional
Hydraulic Drum Brakes	Optional
Hopper Construction	12 GA
Weight (with running gear)	5,250 lbs (540SD) or 4,950 lbs (440SD)



### GENERAL INFORMATION

#### TO THE OWNER:

The purpose of this manual is to assist you in operating and maintaining your running gear in a safe manner. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance and help maintain safe operating conditions. If this machine is used by an employee or is loaned or rented, make certain that the operator(s), prior to operating:

1. Is instructed in safe and proper use.
2. Reviews and understands the manual(s) pertaining to this machine.

Throughout this manual, the term **IMPORTANT** is used to indicate that failure to observe can cause damage to equipment. The terms **CAUTION**, **WARNING** and **DANGER** are used in conjunction with the Safety-Alert Symbol, (a triangle with an exclamation mark), to indicate the degree of hazard for items of personal safety. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury or death.

	<b>DANGER</b>
	<b>WARNING</b>
	<b>CAUTION</b>
<b>IMPORTANT</b>	
<b>NOTE</b>	

This Safety-Alert symbol indicates a hazard and means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed.

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.

Indicates that failure to observe can cause damage to equipment.

Indicates helpful information.

## GENERAL INFORMATION (continued)

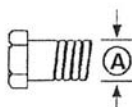
### BOLT TORQUE CHART

Always tighten hardware to these values unless a different torque or tightening procedure is listed for a specific application.


Fasteners must always be replaced with the same grade as specified in the manual parts list.

Always use the proper tool for tightening hardware. SAE for SAE hardware and Metric for metric hardware.

Make sure fastener threads are clean and you start the thread engagement properly. All torque values are given to specification used on hardware defined by SAE J1701 & J1701M (Jul 96).




**SAE SERIES TORQUE CHART**




SAE Bolt Head Identification

**SAE Grade 2 (No Dashes)**

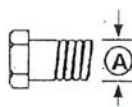


**SAE Grade 5 (3 Radial Dashes)**




**SAE Grade 8 (6 Radial Dashes)**

Diameter (Inches) <sup>(A)</sup>	Wrench Size	MARKING ON HEAD					
		SAE 2		SAE 5		SAE 8	
		Lbs.-Ft.	N-m	Lbs.-Ft.	N-m	Lbs.-Ft.	N-m
1/4	7/16"	6	8	10	13	14	18
5/16	1/2"	12	17	19	26	27	37
3/8	9/16"	23	31	35	47	49	67
7/16	5/8"	36	48	55	75	78	106
1/2	3/4"	55	75	85	115	120	163
9/16	13/16"	78	106	121	164	171	232
5/8	15/16"	110	149	170	230	240	325
3/4	1-1/8"	192	261	297	403	420	569
7/8	1-5/16"	306	416	474	642	669	907
1	1-1/2"	467	634	722	979	1020	1383




**METRIC SERIES TORQUE CHART**



Metric Bolt Head Identification

**Metric Grade 8.8**



**Metric Grade 10.9**

Diameter & Thread Pitch (Millimeters) <sup>(A)</sup>	Wrench Size	COARSE THREAD				FINE THREAD				Diameter & Thread Pitch (Millimeters) <sup>(A)</sup>
		MARKING ON HEAD								
		Metric 8.8		Metric 10.9		Metric 8.8		Metric 10.9		
		N-m	Lbs.-Ft.	N-m	Lbs.-Ft.	N-m	Lbs.-Ft.	N-m	Lbs.-Ft.	
6 x 1.0	10 mm	8	6	11	8	8	6	11	8	6 x 1.0
8 x 1.25	13 mm	20	15	27	20	21	16	29	22	8 x 1.0
10 x 1.5	16 mm	39	29	54	40	41	30	57	42	10 x 1.25
12 x 1.75	18 mm	68	50	94	70	75	55	103	76	12 x 1.25
14 x 2.0	21 mm	109	80	151	111	118	87	163	120	14 x 1.5
16 x 2.0	24 mm	169	125	234	173	181	133	250	184	16 x 1.5
18 x 2.5	27 mm	234	172	323	239	263	194	363	268	18 x 1.5
20 x 2.5	30 mm	330	244	457	337	367	270	507	374	20 x 1.5
22 x 2.5	34 mm	451	332	623	460	495	365	684	505	22 x 1.5
24 x 3.0	36 mm	571	421	790	583	623	459	861	635	24 x 2.0
30 x 3.0	46 mm	1175	867	1626	1199	1258	928	1740	1283	30 x 2.0

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## SAFETY SIGNS

**IMPORTANT:** Install new safety signs if the old signs are destroyed, lost, painted over or cannot be read. When parts are replaced that have safety signs, make sure you install a new sign with each new part. New signs are available from the manufacturer or your authorized dealer.

Item #	Part #	Description
1	DD-101	Danger: Flowing Grain
2	DC-109	Caution: Fasten Box / Highway Travel
3	DI-114	J&M Oval - Large

## **SAFETY RULES**

### **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be erased by an operator's single careless act. In addition, hazard control and accident prevention are dependent upon the awareness, concern, judgment, and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

Make certain that the operator(s), prior to operating is instructed in safe and proper use and reviews and understands the manual(s) pertaining to this machine.

Read this manual before you operate this machine. If you do not understand any part of this manual, or need more information, contact the manufacturer or your authorized dealer.

## **SAFETY**

Understand that your safety and the safety of other persons are measured by how you service, and operate this machine. Know the positions and functions of all controls before you try to operate them. Make sure to check all controls in a safe area before starting your work.

The safety information given in this manual does not replace safety codes, federal, state or local laws. Make certain your machine has the proper equipment as designated by local laws and regulations.

A frequent cause of personal injury or death is from persons falling off equipment and being run over. Do not permit persons to ride on this machine.

Travel speeds should be such that complete control and machine stability is maintained at all times. Where possible, avoid operating near ditches, embankments and holes. Reduce speed when turning, crossing slopes and rough, slick or muddy surfaces.

Collision of high speed road traffic and slow moving machines can cause personal injury or death. On roads, use flasher lights according to local laws. Keep slow-moving-vehicle emblem visible. Pull over to let faster traffic pass.

Never adjust, service, clean, or lubricate gravity box until all power is shut off.

Keep all safety shields in place. Keep hands, feet, hair and clothing away from moving parts while unit is in operation.

The service ladder is for service work only. If you must climb into the grain tank, be certain that all power is shut off and then use extreme caution when climbing into the grain tank. Never allow anyone in, near or on the gravity box during transporting or unloading grain. Moving grain is dangerous and can cause entrapment, resulting in severe injury or death by suffocation.

Make sure that everyone is clear of equipment before applying power or moving the machine.

Make sure that the implement is fastened securely to the tractor by using the proper hitch pin, clip and safety chains. Make sure the gravity wagon is properly fastened to the running gear.

Never overload the wagon. Overloading the wagon is dangerous and can cause extensive damage. Never add more sideboards to the gravity box than what is recommended, as the box is not designed to carry the additional weight. Do NOT exceed speeds in excess of 20 MPH. Rim, hubs and bearings are designed for heavy loads at slow speeds. Also be sure slow moving vehicle emblem is attached to rear of wagon.

Before unhooking the implement from the towing unit, be sure to properly block the wheels to prevent the implement from moving.

## OPERATION INSTRUCTIONS / /MAINTENANCE

### **WARNING - BE CERTAIN THAT ALL POWER IS SHUT OFF BEFORE SERVICING EQUIPMENT.**

Before equipment is put into service:

Has the track assembly (door opener) been lubricated for less wear on the sprocket and track and for easier door operation?

Has the SMV (Slow Moving Vehicle) Emblem been positioned with a point of the triangle upward and as near to the rear and centered or as near to the left of center of the unit as practicable? Is it located two to ten feet above the ground measured from the lower edge of the emblem?

Has the gravity box been properly attached to the running gear? If no rocking bolster is used, bolt all four corners (use the 1/2" bolts provided) of the gravity box runners to the running gear. If the box is used in rough terrain, bolt a minimum of two corners and chain (or cable) the remaining corners to allow more box flexibility.

Have all braces, bolts, nuts, lug bolts and lug nuts been checked to ensure they are properly fastened?

Have all safety instructions been read and clearly understood by the operator(s) of this machine?

Do the lights work properly? Are all reflective decals clean and visible? Are they positioned correctly?

### **BRAKING SYSTEM REQUIREMENTS:**

#### **WARNING - Tow Loads Safely**

Stopping distance increases with speed and weight of towed loads, and on slopes. Towed loads with or without brakes that are too heavy for the tractor or are too fast can cause loss of control. Consider the total weight of the equipment and its load.

#### **For towed equipment WITHOUT brakes, the following is recommended:**

Do NOT tow equipment that does not have brakes at speeds over 32 km/h (20 mph); or that, when fully loaded, has a mass (weight) over 1.5t (3300 lb) and more than 1.5 times the mass (weight) of the towing unit.

#### **For towed equipment WITH brakes, the following is recommended:**

Do NOT tow equipment that has brakes at speeds over 40 km/h (25 mph); or that, when fully loaded, has a mass (weight) more than 4.5 times the mass (weight) of the towing unit.

Ensure the load does not exceed the recommended weight ratio. Use additional caution when towing loads under adverse conditions, when turning and on inclines.

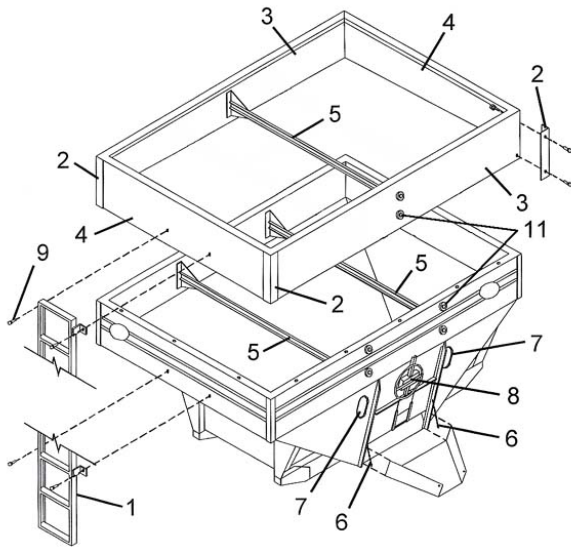
#### **WARNING**

Before filling the gravity box, make certain that no one is inside the grain tank. Never allow children or anyone in, near or on the gravity box during transport or during loading or unloading of grain. Be aware that moving grain is dangerous and can cause entrapment, resulting in severe injury or death by suffocation.

After hauling corrosive material such as fertilizers, be sure to wash out the grain tank to prevent premature rusting. Bare spots on metal should be primer coated before applying the outer surface paint.

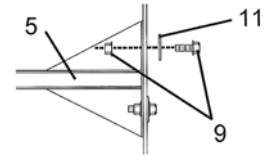
Check the box periodically for cracks in welds and for other structural damage. Have cracked welds fixed immediately. Failure to do so could result in extensive damage and greatly reduce the life of the gravity box.

## MODEL 540SD and 440SD REPAIR PARTS LIST



### Sideboard Installation

Note: Sideboards, Endboards, Corners and Sideboard Braces are used only on 540SD Gravity Box.

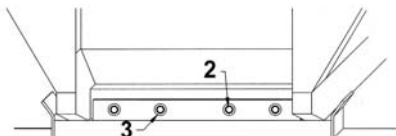
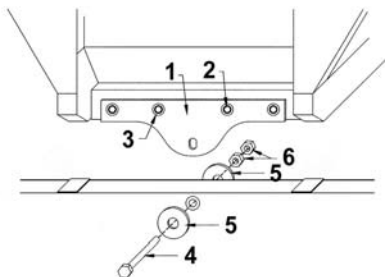
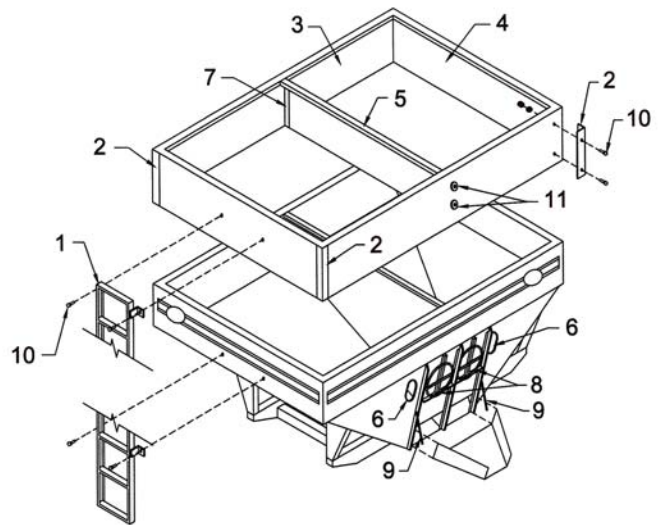


### Gravity Box Parts List

#	Part #	Description
1	LL-7	Ladder
2	C-13	Corner for 13" Sideboard
3	S-1315	Sideboard, 13" x 15'
4	E-1384	Endboard, 13" x 8' 4"
5	CB-540	Center Brace
6	31617-CS	3/16" x 17" Chain with S-Hook
7	IWK-1	Inspection Window Kit
8	CWA-540	Complete Wheel Assembly
9	381-HBN-F	3/8" x 1" Flange Bolt with Nut
10	381-HBN	3/8" x 1" Bolt with Nut
11	12FLW	Large Flat Washer

### Divider Gravity Box Parts List

#	Part #	Description
1	LL-7	Ladder
2	C-13	Corner for 13" Sideboard
3	S-1315	Sideboard, 13" x 15'
4	E-1384	Endboard, 13" x 8' 4"
5	DB-540	Divider Board
6	IWK-1	Inspection Window Kit
7	DBB-13	Divider Board Bracket
8	CWA-540	Complete Wheel Assembly
9	31617-CS	3/16" x 17" Chain with S-Hook
10	381-HBN-F	3/8" x 1" Flange Bolt with Nut
11	12LFW	Large Flat Washer
12	381-HBN	3/8" x 1" Bolt with Nut



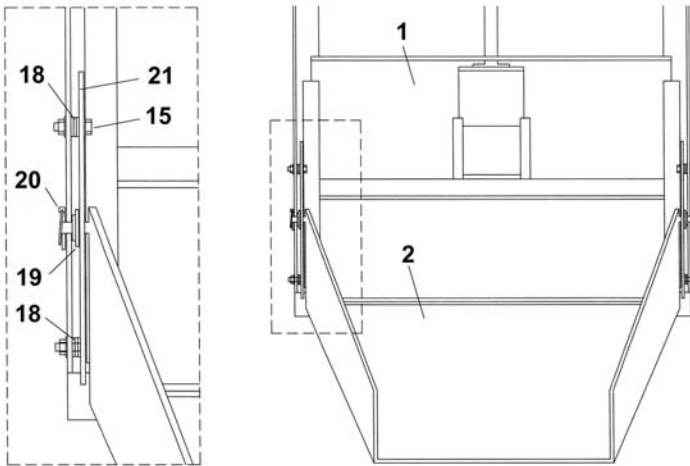
### Rocking Bolster Assembly

#	Part #	Description
1	URB-540	Upper Rocking Bolster
2	346G5BLN	3/4" x 6" Grade 5 Bolt with Lock Nut
3	34-LW	3/4" Large Washer
4	78812-BNW	7/8" x 8 1/2" Bolt with Nut
5	78-LW	7/8" Large Washer



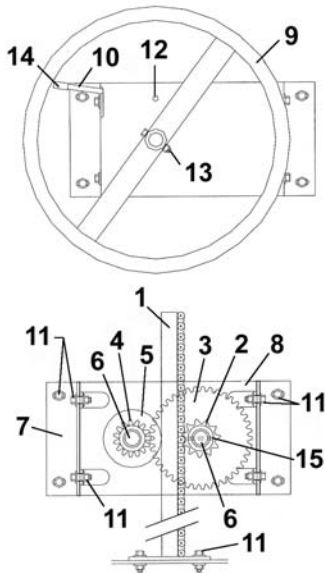
## MODEL 540SD and 440SD REPAIR PARTS LIST

### Door, Chute and Inspection Window



#	Part #	Description
1	D-540M	Metering Door
2	GC-680	Grain Chute
15	381-HBN-F	3/8" x 1" Flange Bolt with Nut
18	38-FW	3/8" Flat Washer
19	38-LW	3/8" Large Washer
20	CTE-LP	Lynch Pin
21	ACB-1	Adjustable Chute Bracket

### Gear Reduction Wheel Assembly

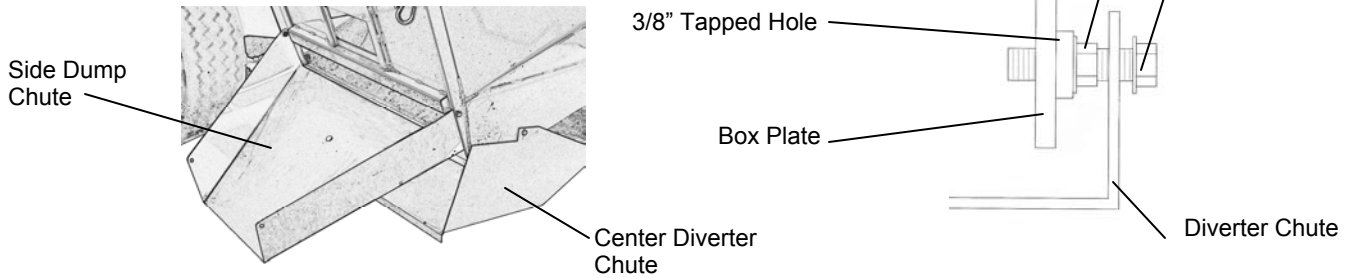


#	Part #	Description
1	TCA-28	Track and Chain Assembly
2	10T50B	10 Tooth Sprocket
3	38TSS	38 Tooth Sprocket and Shaft
4	15TSS	15 Tooth Sprocket and Shaft
5	TS-1	Roller with Bronze Bushing
6	BB-34	3/4" Bronze Bushing
7	RMP-1	Rear Mounting Plate
8	FCP-1	Front Cover Plate
9	WPS-1	Wheel, Pin and Strap Assy
10	DLR-1	Door Locking Rod
11	381-HBN-F	3/8" x 1" Flange Bolt with Nut
12	141HBLN	1/4" x 1" Hex Bolt w/ Lock Nut
13	38134-HBN	3/8" x 1 3/4" Hex Bolt with Nut
14	REC-1	Rubber End Cap
15	14112RP	1/4" x 1 1/2" Roll Pin

## MODEL 540SD and 440SD REPAIR PARTS LIST

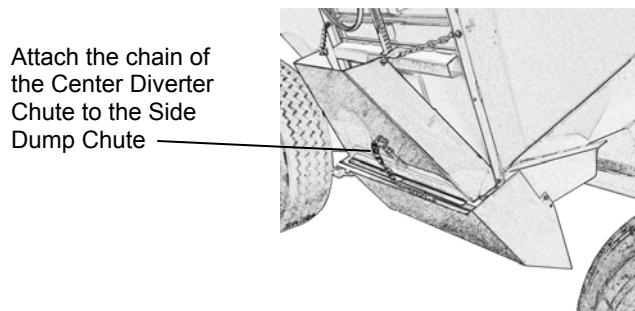
### Center Diverter Chute Assembly Instructions

1. Locate the plates on both underneath sides of the door. There is a 3/8" tapped hole located on each plate. Attach the Center Diverter Chute using one 3/8" hex bolt, washer and lock nut as shown.

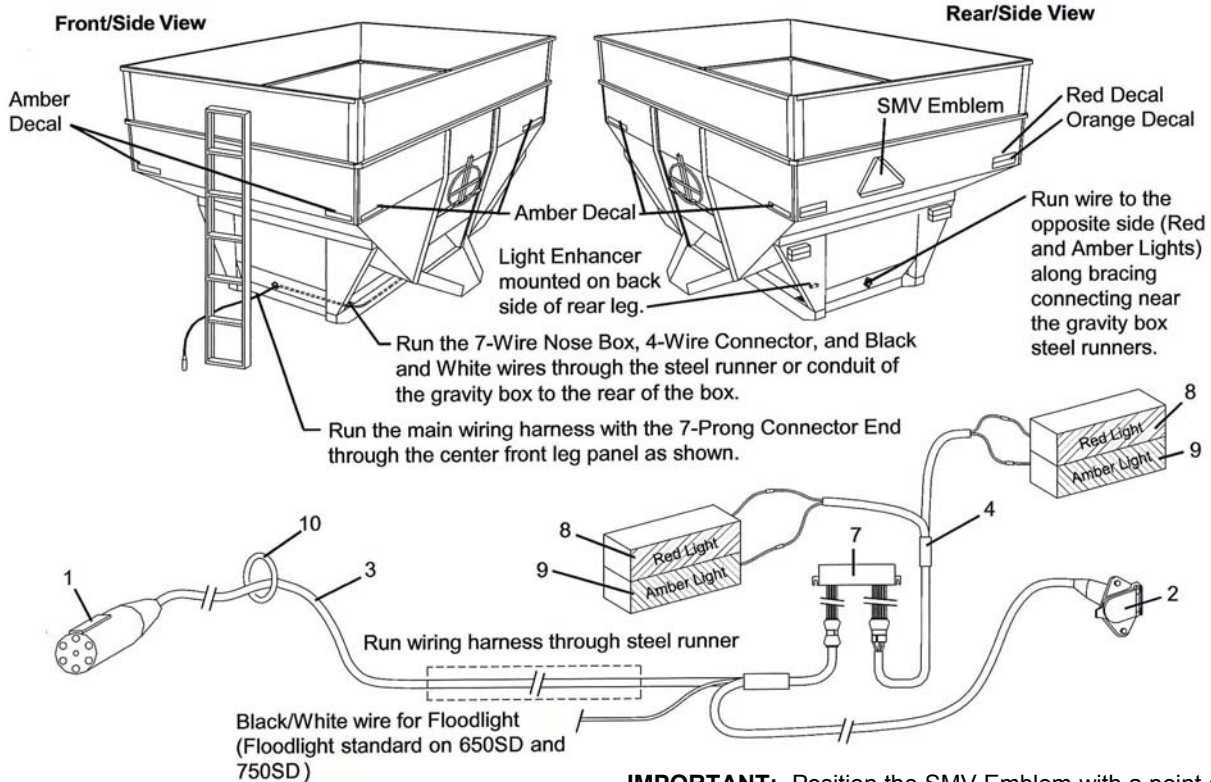


Insert the 3/8" bolt through the pre-punched hole in the chute. Thread the nut onto the bolt until approximately half of the threads are exposed. Screw the bolt through the pre-tapped hole in the plate under the gravity box until the nut is against the plate. This allows the bolt to be used as a pivot so the center diverter chute can swing freely.

2. Lift the Side Dump Chute up into storage position. Rotate the Center Diverter Chute up against the Side Dump Chute. Extend the chain on the Center Diverter Chute up to the center of the Side Dump Chute so the chain is tight. Mark and drill one 3/8" hole in the Side Dump Chute and attach the chain a couple of links from the end using one 3/8" stove bolt and nut. Be sure to position the head of the stove bolt on the inside of the Side Dump Chute.



## GRAVITY BOX LIGHT KIT REPAIR PARTS LIST

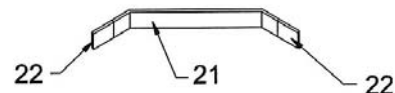


### PARTS LIST

#	Part #	Description
1	7-WCE	7-Wire Connector End
2	7-WNB	7-Wire Nose Box
3	WH-1	Main Wiring Harness
4	LH-1	Light Harness
7	LE-1B	Light Enhancer
8	LT-R1	Red Light
9	LT-A1	Amber Light
10	PG-1L	Plastic Grommet
11	RD-A1	Amber Reflective Decal
12	RD-R1	Red Reflective Decal
13	RD-O1	Orange Reflective Decal
14	141-CB	1/4" x 1" Carriage Bolt
15	14-FN	1/4" Flange Nut
16	181-HB	1/8" x 1" Hex Bolt
17	18-HB	1/8" Hex Nut
18	1434-SDST	1/4" x 3/4" Self-Tapping Screw
19	WLC-1	Wire Loom Clamp
20	SMV-2	Slow Moving Vehicle Emblem
21	WHB-1	Wire Harness Storage Bracket
22	RCW-1	Rubber Cap for Bracket
23	OFL-1	Flood Light

**IMPORTANT:** Position the SMV Emblem with a point of the triangle upward and as near to the rear and centered or as near to the left of center of the unit as practicable. The SMV Emblem should be located two to ten feet above the ground measured from the lower edge of the emblem.

### SECURING THE WIRE HARNESS STORAGE BRACKET



Place the wire harness storage bracket against the front face of the gravity box. Secure the bracket using two 1/4" x 3/4" Self-Tapping Screws. Slide the Rubber End Caps over each end of the Wire Harness Storage Bracket. Securely wrap the Main Wiring Harness around the bracket for storage. To prevent injury, do NOT secure the storage bracket along the side of the ladder.

#	Part #	Description
24	OMSC-1	Owners Manual Storage Container
25	141CB	1/4" x 1" Carriage Bolt
26	14WN	1/4" Whiz Nut
27	WG-2	Wire Guard for Rear Lights
28	RL-1AB	Replacement Lens (amber)
29	RL-1RB	Replacement Lens (red)

## GRAVITY BOX LIGHT KIT SET-UP INSTRUCTIONS:

Slide the Main Wiring Harness 7-Prong Connector End through the lower front end of the gravity wagon toward the hitch. The black and white wire and 7-Wire Nose Box should run to the back end of the gravity box through the steel runner or conduit.

Place the black Plastic Grommet around the circular cut-out of the Front Angle Bracket.

Secure the black and white wire along the steel runner to the door opening of the gravity box for the door light.

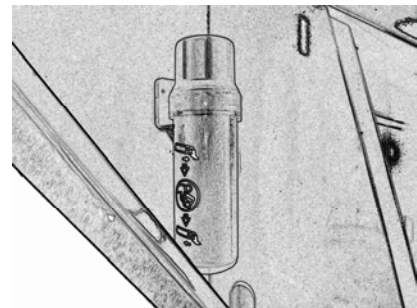
Drill two holes in the rear leg of the gravity box and secure the Light Enhancer on the inside face of the leg using two 1/8" x 1" Hex Bolts and Nuts. (Note: The Light Enhancer should be mounted so the wire connectors hang from the enhancer box.)

Slide the bolt head of one 1/4" x 1" Carriage Bolt through each of the two slots located on the rear side of each light. The bolt pattern should correspond to the hole pattern on the rear leg of the gravity box. Place the light wire through the hole provided on the rear leg, then slide the bolts through the two holes on the rear leg. Set the Wire Guard on the inside face of the rear leg and secure to the 1/4" x 1" Carriage Bolt using the 1/4" Flange Nut. Repeat for each light. (Note: When mounting the red and amber lights to the gravity box, the Red Light should be mounted above the Amber Light on each side.)

Connect the Light Wiring Harness to the Light Enhancer and the red and amber lights on the adjacent rear leg. To connect the opposite side red and amber lights, run the Light Wiring Harness along the gravity box bracing connecting the steel runners. Secure the Light Wiring Harness using the three Wire Loom Clamps and Self Tapping Screws.

Place one amber reflective decal at each extreme end of both sides and front of the gravity box as shown. Place one red and one orange reflective decal at each extreme end of the rear of the gravity box as shown. The red decal should be placed above the orange decal.

Mount the Operator's Manual Storage Container using two 1/4" x 1" Carriage Bolts and 1/4" Flange Nuts to the inside face of the front leg of the gravity wagon as shown.



Read and understand all the information in the Operator's Manual BEFORE you operate this machine. Keep the Operator's Manual in the Storage Container and reference the manual as required.

## SERVICE / MAINTENANCE RECORD

Date	Description	Notes