



## INSTALL & OWNER'S MANUAL 2015

- \*5 Yard to 18 yard capacities
- \*9' to 18' hopper lengths



| Materials Recommended |                    |
|-----------------------|--------------------|
| Materials             | (# per cubic yard) |
| Sand - Dry            | 2,750              |
| Sand - Wet            | 3,300              |
| Salt - Bulk           | 2,160              |
| Sand/Salt mix         | 2,320              |
| 50 / 50               |                    |

**CAUTION**

Do not overload vehicle beyond the vehicle's Gross Vehicle Weight Rating (GVWR) or Gross Axle Weight Ratings (GAWR). Check the vehicle's load rating certification sticker for maximum vehicle capacity.

**Owner's Information:**

Owner's Name : \_\_\_\_\_ Dealer : \_\_\_\_\_

Purchase Date : \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Phone : ( \_\_\_\_ ) \_\_\_\_ - \_\_\_\_\_

Spreader Part # : \_\_\_\_\_ Serial # \_\_\_\_\_ Weight # empty: \_\_\_\_\_

Other \_\_\_\_\_ Weight # loaded: \_\_\_\_\_

## 24" CONVEYOR SPREADER SERIES

Contact your local dealer or distributor for replacement parts and technical support or visit

[www.downeastermfg.com](http://www.downeastermfg.com)

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## Introduction

Thank you for purchasing a DownEaster Salt and Sand Spreader. This Owners Manual provides easy to follow instructions, for installing, operating and servicing the spreader. Read the entire manual, carefully, to learn the proper procedures for each operation. Follow all of the instructions, described, to keep the sander in top condition and it will provide years of, trouble-free, performance. In the event that a problem should arise or if you have any questions about the spreader, please contact your, DownEaster dealer.

All information, illustrations and specifications in this manual are based on the latest, DownEaster salt- and sand spreader, information available, at the time of publication. The manufacturer reserves the right to make changes and improvements without notice.

**\*\*\* NOTE: Read this manual and fully understand the information, presented, before starting or operating the equipment.**

## WARNING! SHIPPING BLOCKS & MOUNTING

### **ATTENTION**

The 4 x 4 wood blocks that are attached to the bottom of the gussets, on any spreader unit, are for **SHIPPING PURPOSES ONLY!**

**DO NOT** install spreader, onto any vehicle or implement, using these wood blocks as base supports.

The spreaders are designed to have equal weight distribution on **ALL** gussets, at the same time, on an even and flat surface.

If off the floor mounting is required or desired, please use the diagram below, for wood installation.

**USE ONLY**, presue treated 2x6, cut to length of dimensions shown for your application. Fasten using 3/8" lag bolts 1 1/2" long. Pre drill a 1/4" pilot hole to avoid cracking of wood.

Longitudinal runners **MUST SPAN** from ***FRONT TO BACK***

### **DownEaster**

120 Old Lisbon RD. PH (207) 729-5101  
Topsham, ME 04086 Fax (207) 729-8782

# SPECIFICATIONS & MATERIAL CHART

## SPECIFICATIONS

All units 83.5" wide,  
12GA SS / 10GA HR hopper  
construction & 45 deg.  
sloped sides

| Height                    | Hopper length |     |      |      |      |      |      |      |
|---------------------------|---------------|-----|------|------|------|------|------|------|
|                           | 9'            | 10' | 11'  | 12'  | 13'  | 14'  | 15'  | 16'  |
| 48"                       | 5.1           | 5.6 | 6.2  | 6.8  | 7.3  | 7.9  | 8.4  | 9.2  |
| 54"                       | 6.2           | 7.0 | 7.6  | 8.4  | 9.0  | 9.7  | 10.3 | 11.2 |
| 60"                       | 7.4           | 8.3 | 9.0  | 9.9  | 10.7 | 11.6 | 12.2 | 13.2 |
| 66"                       | 8.6           | 9.5 | 10.3 | 11.5 | 12.3 | 13.5 | 14.2 | 15.2 |
| <b>Capacity ( yards )</b> |               |     |      |      |      |      |      |      |

|  |       |       |       |       |       |       |       |       |
|--|-------|-------|-------|-------|-------|-------|-------|-------|
| Ship weight: ( lbs ) ( median )  | 2250  | 2410  | 2560  | 2710  | 2870  | 3020  | 3170  | 3350  |
| Loaded weight: (2900# per yard)<br>90/10% sand/salt mix lbs<br>(lowest to highest yardage) | 17040 | 18650 | 20540 | 22430 | 24040 | 25930 | 27530 | 30030 |
| Loaded weight: (1460# per yard)<br>100% coarse salt lbs.<br>(lowest to highest yardage)    | 27190 | 29960 | 32430 | 36060 | 38540 | 42170 | 44350 | 47430 |
|  | 9696  | 10586 | 11612 | 12638 | 13528 | 14554 | 15434 | 16782 |
|  | 14806 | 16280 | 17598 | 19500 | 20828 | 22730 | 23902 | 25542 |

### CAUTION

Do not overload vehicle beyond the vehicle's Gross Vehicle Weight Rating (GVWR) or Gross Axle Weight Ratings (GAWR). Check the vehicle's load rating certification sticker for maximum vehicle capacity.

## Determining Vehicle Payload Worksheet

Example:

|  |                            |  |  |  |  |
|--|----------------------------|--|--|--|--|
| <b>Material Type</b>   | <b>Sand Salt mix 90/10</b> |  |  |  |  |
| Equipment installed when vehicle was weighed                         | 10' Stainless 7.0 yard     |  |  |  |  |
| Weight of Spreader (empty) lb.                                       | 2410                       |  |  |  |  |
| Vehicle Make / Model   | Ford F750 Diesel dump      |  |  |  |  |
| Front Gross Axle Weight Rating (FGAWR) lbs.                          | 14,000                     |  |  |  |  |
| Rear Gross Axle Weight Rating (RGAWR) lbs.                           | 26,000                     |  |  |  |  |
| Gross Vehicle Weight Rating (GVWR) lbs.                              | 37,000                     |  |  |  |  |
| Curb Weight w/ driver & accessories & dump body (empty) lb.          | 12850                      |  |  |  |  |
| Payload Available lbs. w/spreader installed (GVWR minus Curb Weight) | <u>21740</u>               |  |  |  |  |
| Material Density lb/cu yd  | 2900                       |  |  |  |  |
| Maximum Volume cu yd (Payload divided by Material density above)     | <u>7.50</u>                |  |  |  |  |

# SAFETY



THIS SIGN SHOULD ALERT YOU:

The Society of Automotive Engineers has adopted this SAFETY ALERT SYMBOL to pinpoint characteristics that, if NOT carefully followed, can create a safety hazard. When you see this symbol in this manual or on the machine itself, BE ALERT! Your personal safety and the safety of others is involved.



**DANGER**

Identifies the most serious hazards



**WARNING**

Failure to obey a safety warning can result in injury to yourself and others



**CAUTION**

Indicate[s] a hazardous situation which, if not avoided, could result in minor or moderate injury.

**\* NOTE - Advises of general information or instructions important to the operation or maintenance**

Carefully read this manual. Learn how to safely operate the DownEaster Spreader and how to use the controls properly. Do not allow anyone to operate the DownEaster spreader without proper training and instruction. Unauthorized modification to the DownEaster Spreader may impair the function and/or safety of the machine.

**Follow safety instructions**

Read all safety messages in the manual and on the DownEaster spreader safety labels. Follow recommended precautions and safe operating practice. Maintain all safety labels on the DownEaster spreader in good condition. Replace missing or damaged safety labels, with new labels, available through your DownEaster dealer.

**Pre Operation**



















Thoroughly inspect the DownEaster Spreader, for loose or damaged parts, before each use. Do not use until adjustments or repairs are made.

Keep all bystanders, especially children and pets, well away from the area, where the machine will be operated.

**Keep all bystanders, a minimum of 40 feet away when unit is operational.**



# WARNINGS

-  *Before attempting any procedure in this book, these safety instructions must be read and understood by all workers, who have any part in the preparation or use of this equipment.*
-  *For your safety, warning and information decals have been placed on this product to remind the operator of safety precautions. If anything happens to mark or destroy the decals, please request new ones from DownEaster.*
-  *Unit must be pinned, locked or tied down into position before operating.*
-  *Never exceed the Gross Vehicle Weight Rating of your vehicle. Failure to do so may limit handling characteristics.*
-  *Never attempt to lift a spreader with material in it.*
-  *Always inspect spreader, for defects such as broken, worn or bent parts, weakened areas on spreader or mount.*
-  *Always disconnect power source before attempting to attach or detach or service spreader unit. Be sure vehicle/power source is properly braked or chocked.*
-  *Always keep hands, feet and clothing away from power-driven parts. Remember, it is the owner's responsibility to communicate information on safe usage and proper maintenance, of all equipment.*
-  *Always make sure personnel are clear of areas of danger, when using equipment. Maintain 50' distance from all bystanders, when operating the spreader.*
-  *Inspect the unit periodically for defects. Parts that are broken, missing, or worn out must be replaced immediately. The unit, or any part of it can not be altered without prior written permission from the manufacturer.*
-  *Never use with foreign debris in the spreader. These units are designed to handle clean, flowing material.*
-  *Always inspect straps, chains, pins and/or latches, whenever attaching or detaching spreader and before traveling.*
-  *Never leave material in hopper for long periods of time. Be aware that all ice melters are hygroscopic and will attract atmospheric moisture and harden up.*
-  *Remember, most accidents are preventable and caused by human error. Exercising of care and precautions must be observed, to prevent the possibility of injury to operator or others!*
-  *Never operate equipment when under the influence of alcohol, drugs or medication that might alter your judgment and /or reaction time.*
-  *Before working with the spreader, secure all loose clothing and unrestrained hair.*
-  *Always wear safety glasses with side shields when servicing spreader. Failure to do so could result in serious injury, to the eyes.*
-  *Never climb into the hopper, while the engine is operating or capable of being operated. **SERIOUS INJURY or DEATH MIGHT OCCUR.***



# INSTALLATION

## Hopper

**\*\*\*NOTE:** The DownEaster Sand and Salt Spreader may be installed into the dump bed, platform body or direct chassis mount of a truck. It is the responsibility of the owner to determine the suitability, of any installation configuration, relative, to the load carrying capacity of a particular vehicle. The weight allowance of the empty DownEaster spreader can be found in the chart of specifications on page 3.



### WARNING

Do not drill holes into fuel tanks, fuel lines, through electrical wiring, etc that may be damaged by drilling.



### WARNING

Do not install control box in the vehicle's airbag deployment area. Refer to the vehicle's manual for airbag deployment area.



### WARNING

The lifting device must be adequately rated to lift a payload equal to or greater than the spreader weight. See page 3 for spreader weights. Empty spreader before lifting.

### Recommended Fastener Torque Chart ft-lb (N·m)

| Size    | Torque      |             |             |
|---------|-------------|-------------|-------------|
|         | SAE Grade 2 | SAE Grade 5 | SAE Grade 8 |
| 1/4-20  | 6 (8)       | 9 (12)      | 13 (18)     |
| 5/16-18 | 11 (15)     | 18 (24)     | 28 (38)     |
| 3/8-16  | 19 (26)     | 31 (42)     | 46 (62)     |
| 3/8-24  | 24 (33)     | 46 (62)     | 68 (92)     |
| 7/16-14 | 30 (41)     | 50 (68)     | 75 (102)    |
| 1/2-13  | 45 (61)     | 75 (102)    | 115 (156)   |
| 9/16-12 | 66 (89)     | 110 (149)   | 165 (224)   |
| 5/8-11  | 93 (126)    | 150 (203)   | 225 (305)   |
| 3/4-10  | 150 (203)   | 250 (339)   | 370 (502)   |
| 7/8-9   | 150 (203)   | 378 (512)   | 591 (801)   |
| 1-8     | 220 (298)   | 583 (790)   | 893 (1211)  |

| Metric Grade 8.8 ft-lb (N·m) |         |      |           |
|------------------------------|---------|------|-----------|
| Size                         | Torque  | Size | Torque    |
| M 6                          | 7 (9)   | M 12 | 60 (81)   |
| M 8                          | 17 (23) | M 14 | 95 (129)  |
| M 10                         | 35 (47) | M 16 | 155 (210) |

These torque values apply to fasteners except those noted in the instruction.

## Dump body mounting

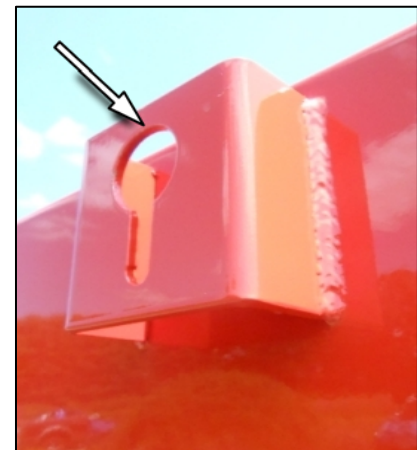
- 1 Remove the tailgate and/or any other obstructions, from the bed of the truck.
- 2 Remove or open the hopper screen and/or any loose parts, which may have been shipped with or stored in the hopper, during storage or shipping.
- 3 Remove any wood skids or shipping pallet attached to bottom of spreader.  
**SEE SHIPPING WARNING PAGE.**

- 4 Lift the hopper assembly by attaching your lifting device to the factory installed lifting eyes, located at each corner of the hopper. This may be a welded rod or key slot pocket.



**!WARNING:** Empty the hopper before lifting. Do not attempt to lift the spreader with the hopper containing any leftover sand or salt.

- 5 Place the spreader onto the bed, on the frame, of the truck, sliding it forward to the point that the rear of the conveyor rails extends approximately 2 feet, beyond the rear bumper of the truck. This temporary location will allow for installation, of the chute and spinner assembly.

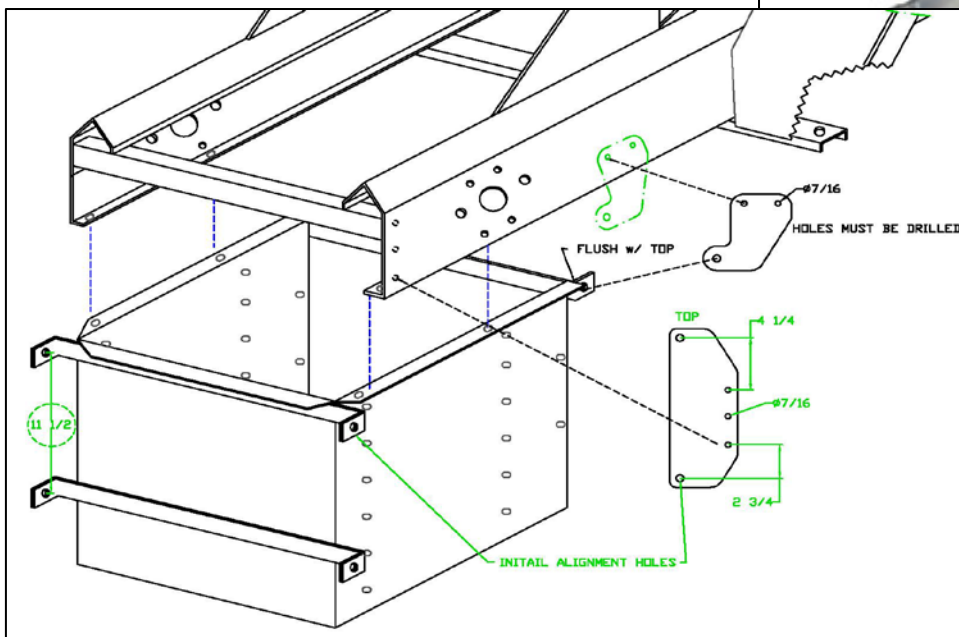
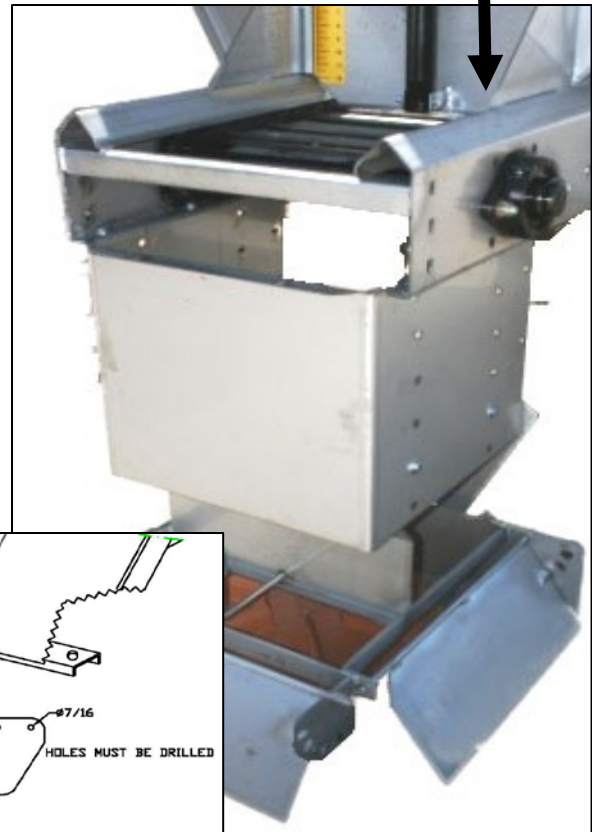
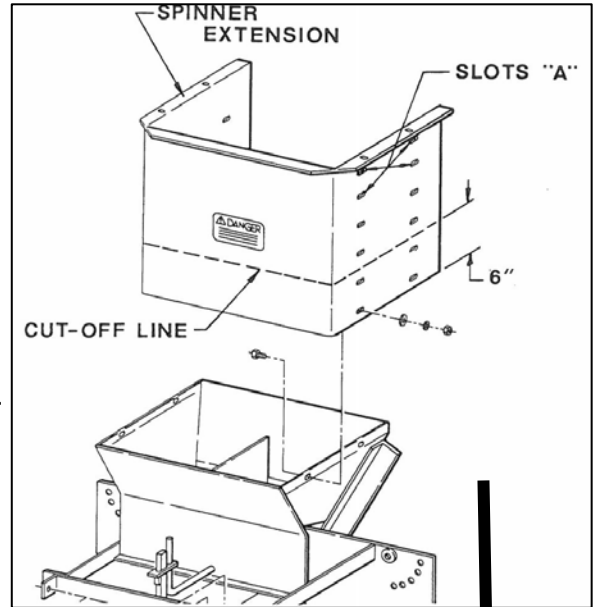


**Note:** Keeping the spreader elevated off the vehicle, with lumber, helps with removal of material, that accumulates, under the spreader, during operation. Place lumber under the side gussets and central rails of the spreader as seen on page 9.

# INSTALLATION - CHUTE

## Chute Assembly

- 5 Install the chute assembly onto the spreader using (8) 3/8" x 1" bolts, with lock washers under the heads, followed by flat washers and lock nuts
- 6 To achieve desired spinner height, assemble by using any of the slots available .
- 7 TO USE SLOTS "A" ONLY:  
The bottom of the Spinner Extension must be cut off as shown above, if the top slots (labeled "A") are to be used. The use of slots "A" will give the shortest spinner profile available. No modifications are necessary if the other slots are used.
- 8 The top flange of the chute extension, **MUST** sit on top of the conveyor rail 90 deg. bend flanges on a standard chute only. For flip chute mounting, see diagram below.(9)
- 9 Typical flip chute mounting, dependent on model, you may not have to drill holes for mounting.

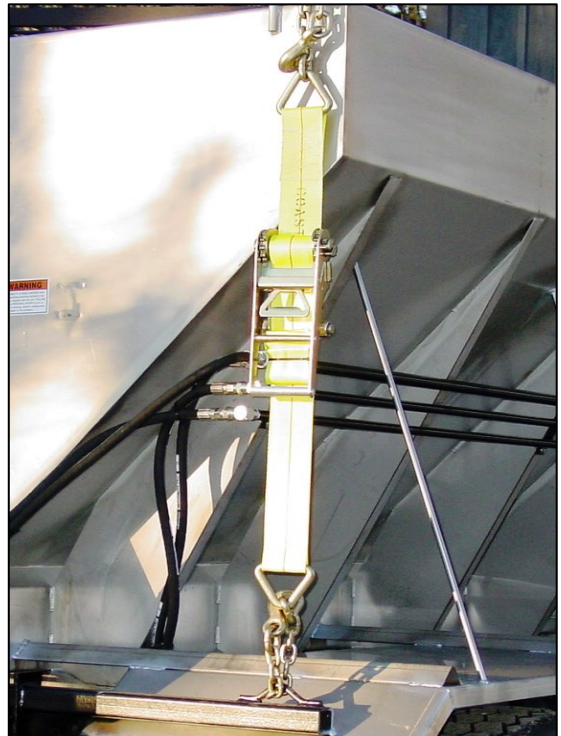


# INSTALLATION - TRUCK BED / PLATFORM

## Tie Down Ratchet strap installation

- 12 After completing installation and adjustment of spinner and chute, reposition spreader forward on truck bed, so that chute clears the rear bumper or dump bed edge by 1". Rear end of hopper must not exceed past the rear edge of vehicle bed or platform by more than 6", or adverse affects on handling and/or steering may occur, due to improper weight distribution over rear axle(s)
- 13 Attach the hook end from each ratchet through the welded eye at each of the top outside corners of the hopper. Attach the opposite end of each strap to an appropriate anchor point on the truck. A tie down or anchor point that is closet to the truck bed floor is preferred. Tighten ratchets accordingly. Unit may also be bolted to vehicle chassis or an adequately supported floor or platform body, using supplied holes in side gusset bottoms.

If body requires tie down points to be added, by means of bolting or welding, position tie down points so ratchet strap is far outwards away from the hopper as possible. Verify with the vehicle's manufacturer that the factory installed anchor points are designed for tie-down of such load. Custom chassis mounting may be available through your distributor/installer. Periodically check that the spreader mounting hardware is securely tightened (*See pic to the right*)



## **WARNING**

Damaged, frayed, malfunctioning or twisted straps should ***NEVER*** be used. Replace broken straps or binders. Failure to do so may result in load shifting, property damage or injury.

## Permanent Chassis Mount

- 1 Hardwood or PT wear strips usually 1 x 3 (not furnished) must be fitted to the truck chassis.



- 2 The V-Box should be positioned on the wooden wear strips so that a distance of approximately 6" be left between the truck cab and the front of the V-Box. This will help facilitate any future servicing of the conveyor chain.
- 3 5. ***DO NOT*** weld mounting angles to the truck frame . Doing so can cause fatigue cracking of the truck frame .



# INSTALL - HYDRAULIC DRIVE MODELS

DownEaster uses two hydraulic motors on each spreader, one for the gearbox driving the conveyor and one for the spinner. The spreaders are furnished with the motors, but otherwise are unplumbed, i.e. the customer must supply the hoses and fittings. All the motors have two W' NPT female ports. To drive the spreader, the user should have a clutch-pump hydraulic system on the vehicle. A power take-off (PTO) system may not deliver acceptable results, because the engine RPM at low idle may not drive the motors enough to get adequate material flow.

The system should deliver **16 gallons per minute** at an engine speed of 1000 rpm. The hydraulic reservoir tank should be **25-30 gallons**, and the operating pressure will be about **1500-1800 psi**.

## HYDRAULIC MOTORS MLHP

These units provide high output torque from relatively small packages. The MLHP motors are fixed displacement, gerotor type units that are known for compactness and economy. All MLHP motors have built-in check valves assuring pressure on the shaft seal never exceeds pressure levels seen in the return line.

## HYDRAULIC MOTORS **MLHM**

The MLHM type is equipped with plain teeth for use over long periods at moderate pressure or over short periods at high pressure.

- 1 During assembly take precautions to keep all hydraulic components as clean as possible. Galvanized pipe and pipe fittings **must not be used** because flaking of galvanizing material can cause damage
- 2 Allow enough hose length to prevent kinking and stretching of the hoses and to permit raising the dump body. Support long hoses with wire ties or clamps. Protect hoses from wear caused by sliding and/or vibration.
- 3 For proper rotation of conveyor chain and spinner motors, hoses may be reversed. The spinner rotates clockwise when looking down from the top.  
**Note: Use of a pipe joint sealant compatible with hydraulic oil is recommended for all screw fittings.**
- 4 Use swivel type hose ends to connect hoses to flow valve. Damage to valve body may occur if the fittings in flow valve are over tightened.
- 5 A 10 micron return line filter is recommended to protect the pump, valve, and motors from wear causing contamination.

***Taking time to plan location of major hydraulic components will save time in further plumbing operations***

***Hose should be protected where severe wear may be caused by vibration or sliding movement.***

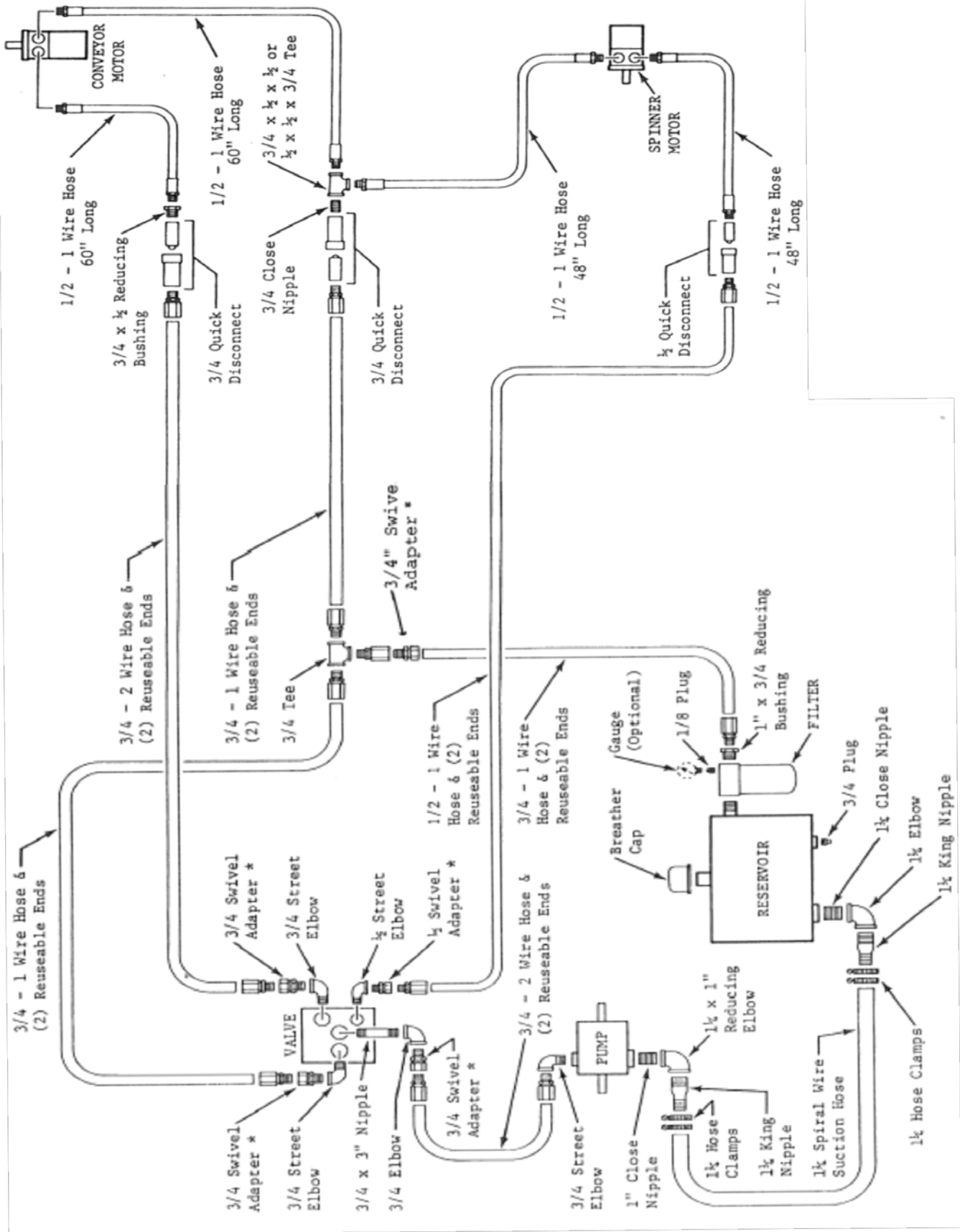


***If dump body is raised for easier pump installation, it must be blocked securely before disconnecting hoist pump.***

# INSTALL - HYDRAULIC DRIVE MODELS

## Typical Hydraulic installation

Alternate proven methods and components are acceptable to suit various truck model requirements

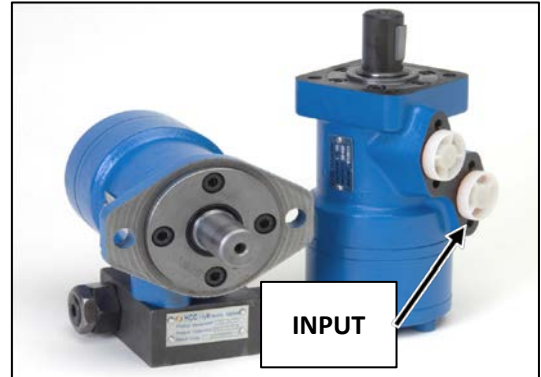


# HYDRAULIC MOTOR FEED RATES

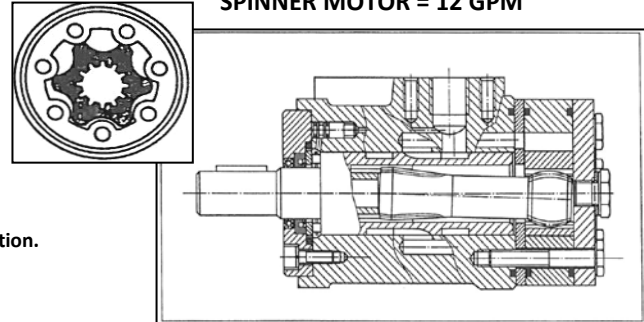
**DO NOT replace or exchange hydraulic motor with any other motor designed to have a different PSI rating or GPM flow than the one supplied by the manufacturer.**

**Failure to do so may result in equipment damage, and/or improper operation speeds of the unit.**

|  |              | Conveyor<br>MLHP400 | Spinner<br>MLHPQ50 |
|--|--------------|---------------------|--------------------|
| <b>Displacement (ml/r)</b>   |              | 91                  | 11                 |
| <b>(in<sup>3</sup>/r)</b>  |              | 24.16               | 3.02               |
| <b>Flow<br/>(gal./min.)</b>  | <b>Rated</b> |                     |                    |
|  | <b>Cont,</b> | 16.0                | 16.0               |
|  | <b>Int.</b>  | 20.0                | 20.0               |
| <b>Speed<br/>(RPM)</b>   | <b>Rated</b> |                     |                    |
|  | <b>Cont,</b> | 153                 | 1210               |
|  | <b>Int.</b>  | 191                 | 1550               |
| <b>Pressure</b>  | <b>Rated</b> | 2540                | 2540               |
|  | <b>Cont,</b> | 2900                | 2900               |
|  | <b>Int.</b>  | 3260                | 3260               |
| Convert: 1 cubic inch = 16.39 ml; 1 PSI= 145.07 MPa, 1 N.M= 8.851 in-lb, 1 gallon= 3.785 liter |              |                     |                    |



CONVEYOR DRIVE MOTOR = 16 GPM MAX  
SPINNER MOTOR = 12 GPM



**Note:**

1. Continuous: The max. value of operating motor continuously.
2. Intermittent: The max value of operating in 6 seconds per minute.
3. A simultaneous max speed and max. pressure is not recommended.
4. The optimum operation should be at the 1/3 – 2/3 of the continuous operation.
5. The motor should be filled oil and run at free loading at start, then loading

**Hoses**

Use only approved hoses, manufactured for the proper PSI rating.

Hose size: 1/2 (.5)      Rated @: 4300 PSI      Fittings: JIC, 37-degree flare seating surface

| DATE | MATERIAL | LEVER SETTING # | SPEED (MPH) | CAB CONTROL SETTING # | NOTES |
|------|----------|-----------------|-------------|-----------------------|-------|
| / /  |          |                 |             |                       |       |
| / /  |          |                 |             |                       |       |
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| / /  |          |                 |             |                       |       |

# PRE CHECKS & OPERATIONS


## Lubrication

1. Use Cold Weather Multipurpose Grease to lubricate grease fittings at the idler bearings (2), the the rear drive shaft bearings (2) and gearbox shaft bearing(x1). Lubricate grease fittings after each increment of 10 hours of use or weekly. Consult the maintenance guide for other fluid checks, dependent on your model.

## Pre Starting Checks

1. Lubricate bearings according to the maintenance schedule.
2. Check tension adjustments on drive chains, adjust accordingly.
3. Visually inspect the complete spreader for damage or loose fastenings.
4. Set hopper feed gate flap to desired tension & feed rate.
5. Make sure screen is in place, and no foreign objects are in hopper that will damage components. Screen must be in closed position.
6. Set internal and external chute adjustments to desired pattern.

 **WARNING** Never adjust external spinner deflectors while spinner is in

 **WARNING** NEVER PLACE ARMS, HANDS, OR OTHER BODY PARTS INSIDE THE HOPPER WHILE RUNNING, OR WITH HYDRAULIC LINES CONNECTED TO VEHICLE OR TRACTOR. DISCONNECT LINES WHEN ATTEMPTING TO DISLodge ANY FOREIGN OBJECTS FROM HOPPER.

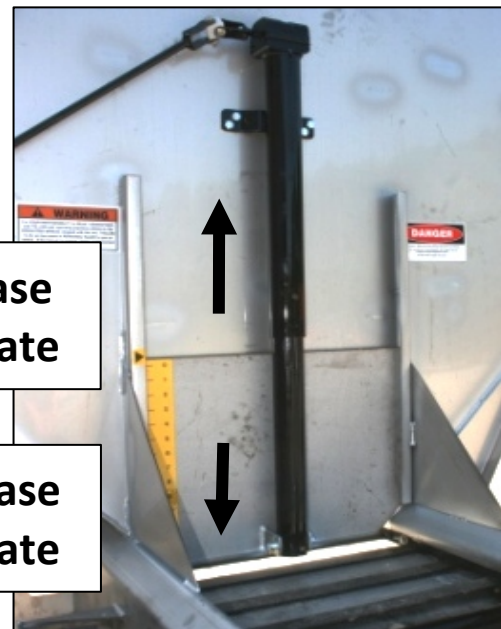
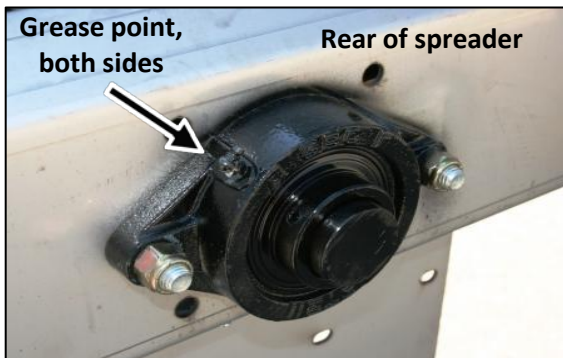


## Adjusting Feed

**NEVER adjust feed while machine is running!**

By turning crank handle, mounted on the driver side of hopper, **clockwise**, feed rate will increase.

By turning crank handle, mounted on the driver side of hopper, **counter clockwise**, feed rate will decrease.



# ADJUSTMENTS AND LUBRICATION

## Adjusting Chain



### WARNING

*Never make chain adjustments while unit is running or in operation.*

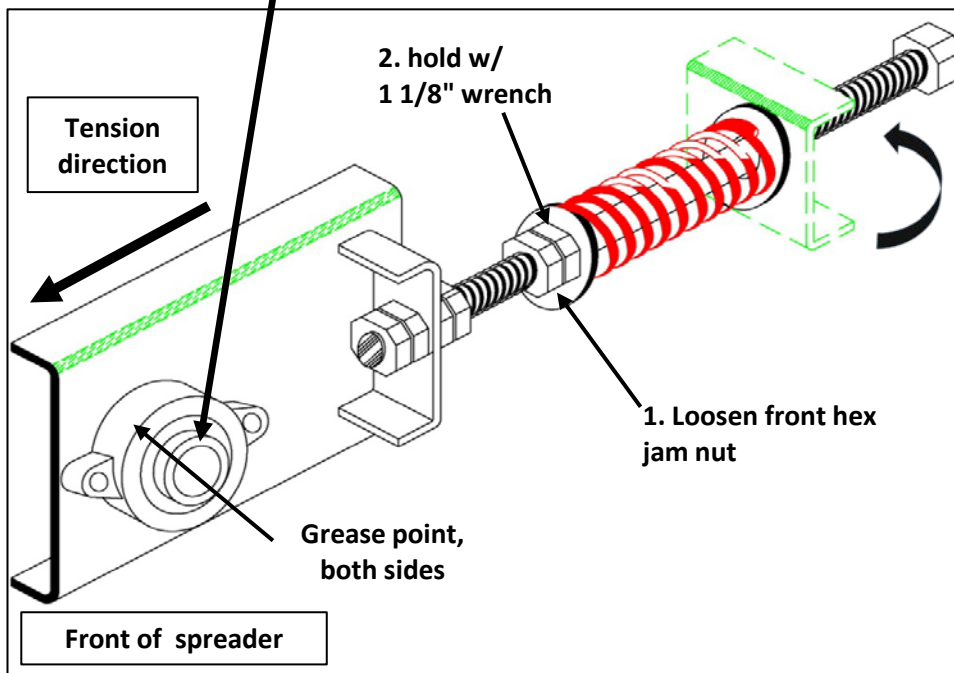
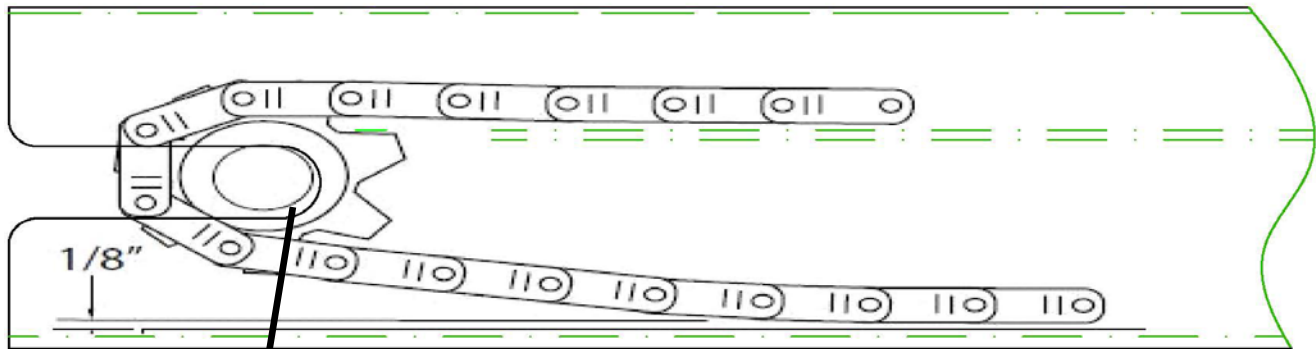
Pintle drive chain clearance above sills or crossmembers should be as follows. (see diagram below)

**DRIVE AND CONVEYOR CHAINS MUST HAVE PROPER SLACK:** Chains that are too tight will cause loss of power, excessive amperage draw and premature motor failure or seizure.



### WARNING

***BOTH SIDES OF CHAIN TAKEUP MUST BE ADJUSTED EVENLY.***



3. Turn clockwise to tighten, no more than 2 complete turns per side, one at a time. Binding and bearing damage may occur if sides are unevenly tensioned

Check gearbox oil level periodically and maintain the oil level by adding appropriate lubricant.

The gearbox is designed to only accept torque from the input shaft. Therefore, **DO NOT ATTEMPT TO FREE THE FEED CHAIN BY USING A PIPE OR SIMILAR TOOL TO MOVE OR DISLodge THE CHAIN**. If the feed chain is moved, the gears within the gearbox will strip. This action will void all warranties.



# OPERATION - HYDRAULIC DRIVE MODELS



## WARNING

It is YOUR RESPONSIBILITY to READ, UNDERSTAND, and FOLLOW safe operating practices defined in the OPERATORS MANUAL shipped with the unit. FAILURE to do so may result in PERSONAL INJURY to you or others. If the manual is missing, obtain a replacement from your dealer or the company.

*Wear safety glasses or goggles at all times, when operating the spreader. Keep hands, face and feet away from all moving parts. Do not attempt to stop the machinery, when it is moving or rotating. Do not wear loose fitting articles of clothing, such as scarves, strings, chains, ties, etc.; because they could get drawn into moving machinery, associated with this equipment. Long hair should be tied back or protected from entanglement.*

### Spreader Start-up

- 1 Use high grade non-foaming hydraulic oil to fill reservoir about 3/4 full.
- 2 Position valve on/off lever to off.
- 3 Move auger (conveyor chain) and spinner knobs on the valve to the open position.
- 4 Engage PTO and circulate hydraulic oil for several minutes to warm up.
- 5 Move valve on/off lever to on and check for leaks
- 6 Check conveyor chain and spinner to see if they are working properly and rotating the correct direction. To reverse rotation, switch the hydraulic lines at the motor.
- 7 Refill reservoir to 3/4 full.
- 8 Check feed gate opening and baffle positions for desired material flow and spread pattern. See chute section.
- 9 Shut off spinner and auger (conveyor chain) knobs and position the on/off lever to on. Engage the PTO and allow the hydraulic system to warm up.
- 10 After the system is warm turn the spinner and conveyor chain knobs to the desired settings.
- 11 Changing the conveyor chain and spinner speeds as well as adjusting the baffle positions will produce various spread patterns
- 12 Valve setting changes may be made with truck in motion. By moving on/off lever to the off position, spinner and conveyor chain may be stopped at the same time without changing their valve settings.

### CAUTION

- Be sure everyone is standing clear of spreader.
- Be alert for anything that may require shutting down the system.
- Before working in or around spreader equipment, be sure all hydraulic controls are moved to off position.

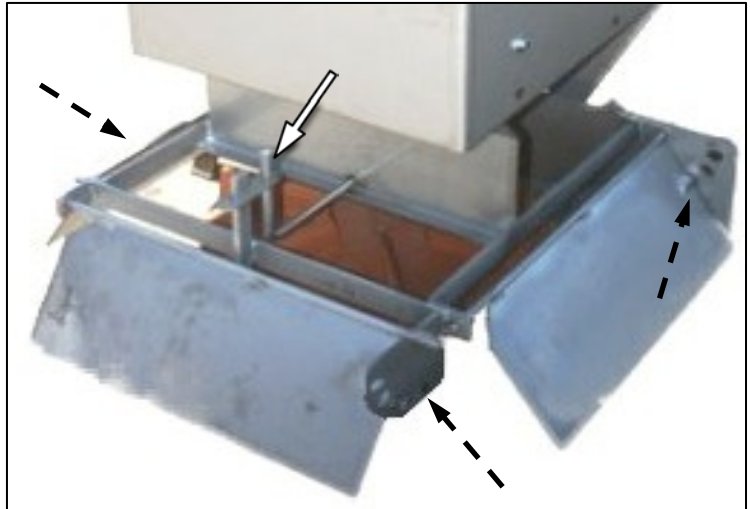
### CAUTION

Position the valve on/off control lever in the off position when the spreader is not in use or is removed. In the event the valve on/off control lever is left in the on position, a heat problem may occur as the pump continues to pump oil to the hydraulic valve. This could cause a hose to burst spraying hot oil.

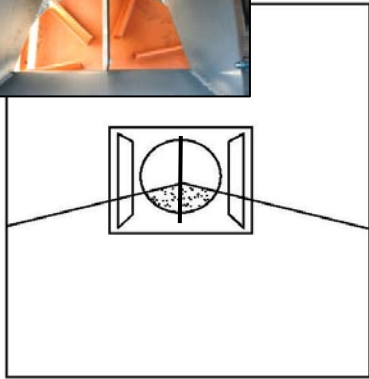
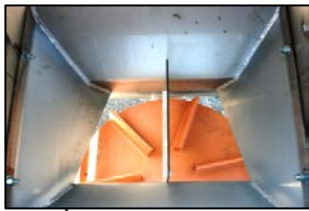
# CHUTE ADJUSTMENTS

The internal baffle can be adjusted by the looped rod handle, in either the center, left or right positions (solid arrow)

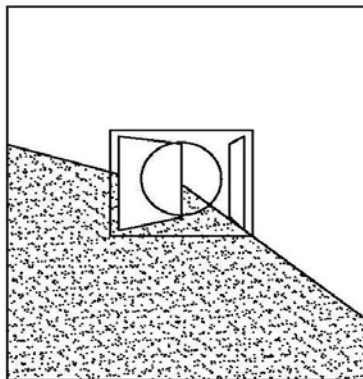
The external deflectors can be adjusted by the (3) pins, indexed into the holes on the 3 sides of the chute. (dashed arrows)



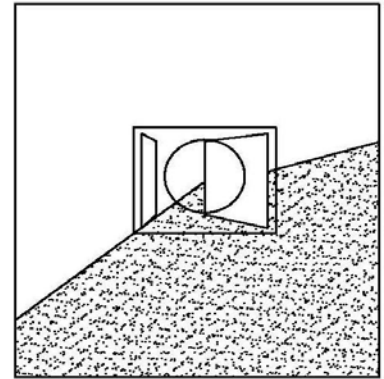
## INTERNAL CENTER BAFFLE (looking down)



INTERNAL BAFFLE



BAFFLE LEFT

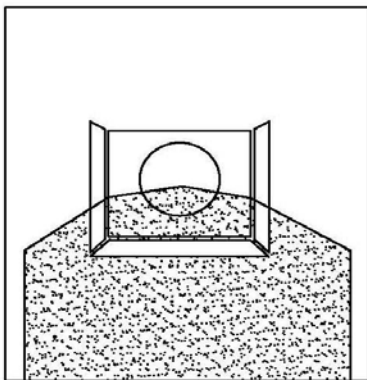


BAFFLE RIGHT

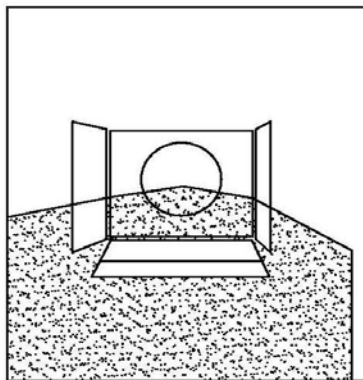


Path Direction

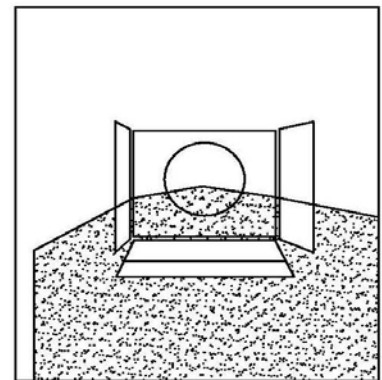
## EXTERNAL DEFLECTORS



ALL DEFLECTORS DOWN, FOR A CONFINED SPREAD PATTERN



RIGHT BAFFLE DEFLECTS MATERIAL DOWN, HEAVY ON LEFT SIDE.



LEFT BAFFLE DEFLECTS MATERIAL DOWN, HEAVY ON RIGHT SIDE.

## MAINTAINENCE SCHEDULE, DOWNEASTER SPREADERS

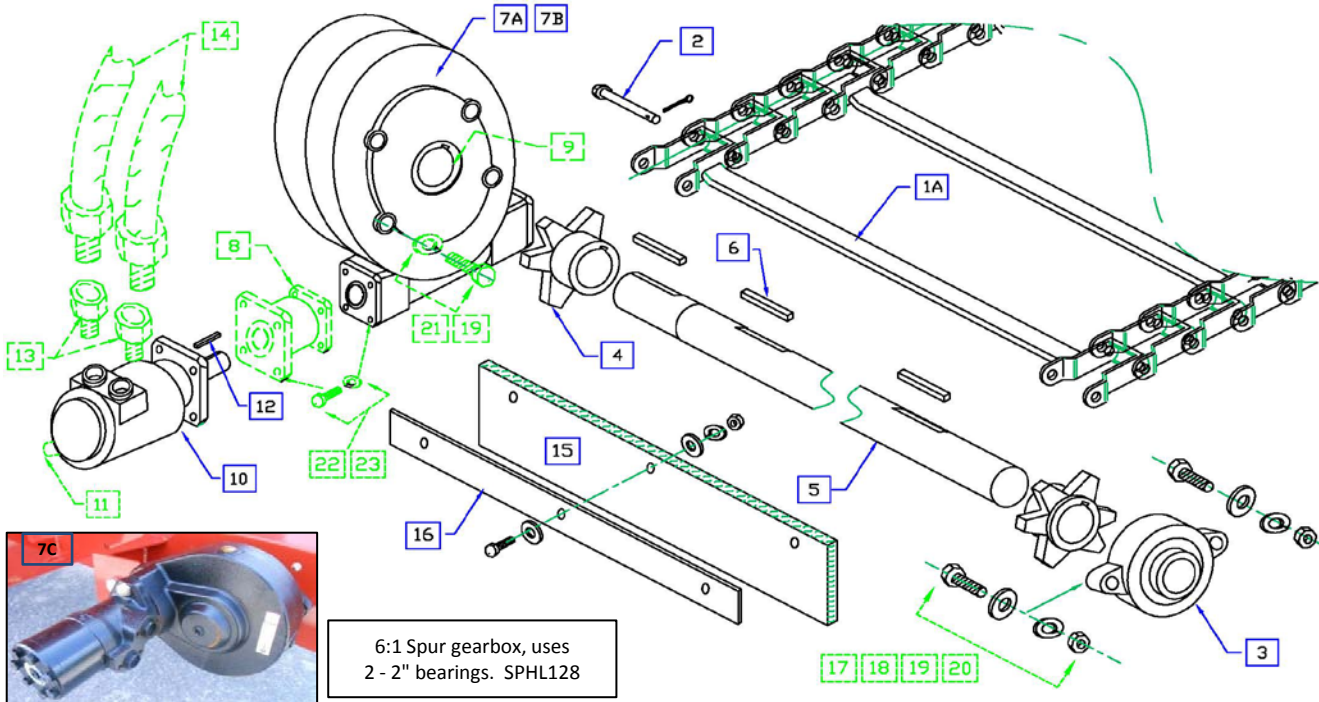
| <u>MAINTAINENCE TASK TO BE COMPLETED</u>  | <i>Pre-Season</i> | <i>Daily</i> | <i>10 Hours or Weekly</i> | <i>40 Hours or Monthly</i> | <i>Post-Season</i> |
|---|-------------------|--------------|---------------------------|----------------------------|--------------------|
| Inspect spreader for loose, missing, or damaged parts or hardware                         | X                 | X            |                           |                            | X                  |
| Verify spreader is securely attached to vehicle   | X                 | X            |                           |                            |                    |
| Adjust drag chain tension & chain wiper position  | X                 |              |                           | X                          |                    |
| Check gearbox oil level   | X                 |              | X                         |                            |                    |
| Inspect & clean gearbox breather  | X                 |              | X                         |                            |                    |
| Grease gearbox input shaft bearing  | X                 |              |                           | X                          | X                  |
| Flush and refill gearbox oil  | X                 |              |                           |                            |                    |
| Lubricate drag chain  | X                 |              | X                         |                            | X                  |
| Adjust roller chain tension   | X                 |              |                           | X                          |                    |
| Grease idler, drive shaft, and spinner shaft bearings                                     | X                 |              | X                         |                            | X                  |
| Oil or paint rusty surfaces, such as screens, and shafts.                                 | X                 |              |                           |                            | X                  |
| Check Hydraulic Fluid Level   | X                 | X            |                           |                            |                    |
| Replace hydraulic filter  | X                 |              |                           | X                          |                    |
| Flush and refill hydraulic reservoir  | X                 |              |                           |                            |                    |
| Pressure wash hopper, conveyor and shafts,  |                   |              | X                         |                            | X                  |
| Spray painted, cast, or bare surfaces and chains with rust inhibitor such as "Fluid Film" |                   |              |                           | X                          | X                  |
| Apply antisieze to all removable hardware such as chute bolts, spinner bearing bolts.     |                   |              |                           |                            | X                  |

### ***End of Season Maintenance & Summer Storage***

1. Wash spreader. Make sure no material or residue is left in and outside the hopper.
2. Lubricate bearings using marine grease.
3. Lubricate pintle chain, roller chains and drive gears, entirely, with rust inhibitor or other type of moisture prevention oil.
4. Clean and repaint any rusty surfaces, such as screens, shafts, gearbox case and bearing housings.
5. Store hopper in a dry, cool place out of the elements of the sun and rain off the ground. Cover with a weatherproof tarp if stored outdoors.

***DownEaster Orange paint code: DuPont Burnt Orange, 7624-23EX8***

# 24" CONVEYOR REAR DRIVE PARTS



6:1 Spur gearbox, uses 2 - 2" bearings. SPHL128

| KEY | PART #  | DESCRIPTION                             |
|-----|---|---|
| 1A  | Conveyor chain, 667, 20.25" center, 1/4" X 1-1/2" crossbars |   |
| 1   | SPHL111   | Conveyor chain 9' 109 links,            |
|     | SPHL112   | Conveyor chain 10' 119 links,           |
|     | SPHL113   | Conveyor chain 11' 129 links,           |
|     | SPHL114   | Conveyor chain 12' 139 links,           |
|     | SPHL115   | Conveyor chain 13' 149 links,           |
|     | SPHL116   | Conveyor chain 14' 159 links,           |
|     | SPHL117   | Conveyor chain 15' 169 links,           |
|     | SPHL118   | Conveyor chain 16' 179 links,           |
| 2   | HWF418  | Pin, 7/16" for 667 Chain Link           |
| -   | SPHL108   | Single conveyor chain Bar weldment,     |
| -   | HWF364  | Conveyor chain single master link, 667, |

| KEY | PART #   | DESCRIPTION  |
|-----|----------|--|
| 3   | SPHL128  | Bearing drive Shaft, 2" bore 2 bolt flange                   |
|     | SPHL119  | Bearing drive Shaft, 1.5" bore 2 bolt, optional 50:1 gearbox |
| 4   | SPHL103  | Sprocket, D667 B 6T, 2.00" bore w/keyway,                    |
|     | SPHL141  | Sprocket, D667 B 6T, 1 1/2" bore, w/ 3/8"keyway              |
| 5   | SPHL140  | Drive shaft, 2" for 6:1 gearbox, 1/2" keyways                |
| 6   | HWF637   | Key 1/2"x1/2"x 2 1/2" for 2" shaft only (2 per unit )        |
|     | HWF358   | Key 3/8"x3/8"x2" for 1 1/2" shaft only (2 per unit )         |
| 7B  | SPHL107  | Gearbox, worm gear, 50:1 reducer,                            |
| 7C  | SPHL105  | Gear box, (spur gear)w/sensor shaft 6:1 speed reducer        |
| 10  | SPHL104A | Hydraulic motor, for 6:1 gearbox , 2 bolt                    |
|     | SPLS102  | Hydraulic motor, for 50:1 gearbox, 4 bolt                    |
| 12  | HWF350   | Key, square 1/4 x 1"   |
| 15  | SPHL121  | Chain wiper 3/8" Neoprene rubber 4" x 18"                    |
| 16  | SCAL320  | Chain wiper back up bar, Stainless only                      |

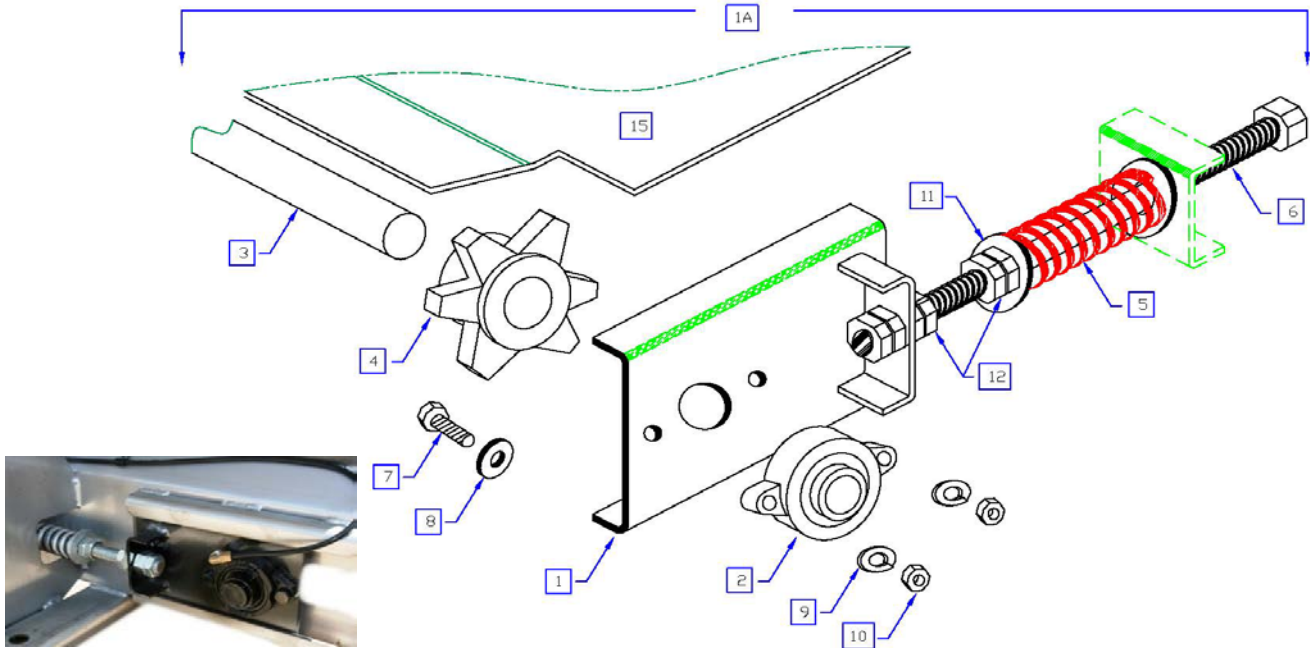
- \* For items 17, thru 23, or any other fastening hardware, call for part numbers and prices
- \* Items in dashed hidden lines are special custom order parts

**Motors are rated @ 15-20 gallons per min, @ 150 rpm, 1500-1800 PSI.**

NOTE: The driveshaft is turning 24 RPM, with no load, MAX. With a load, 18-20 rpm x 5" diameter sprockets and the chain is theoretically moving no more than 300 in. per min. The gate opening is 12" x 17" (204 sq. inches) x 300 = 61200 cu. inches per min. or 1.3 yards per min.

To order: Call 207-729-5101 Fax 207-729-8782 email: parts@downeastermfg.com

# 24" CONVEYOR IDLER & ADJUSTER PARTS

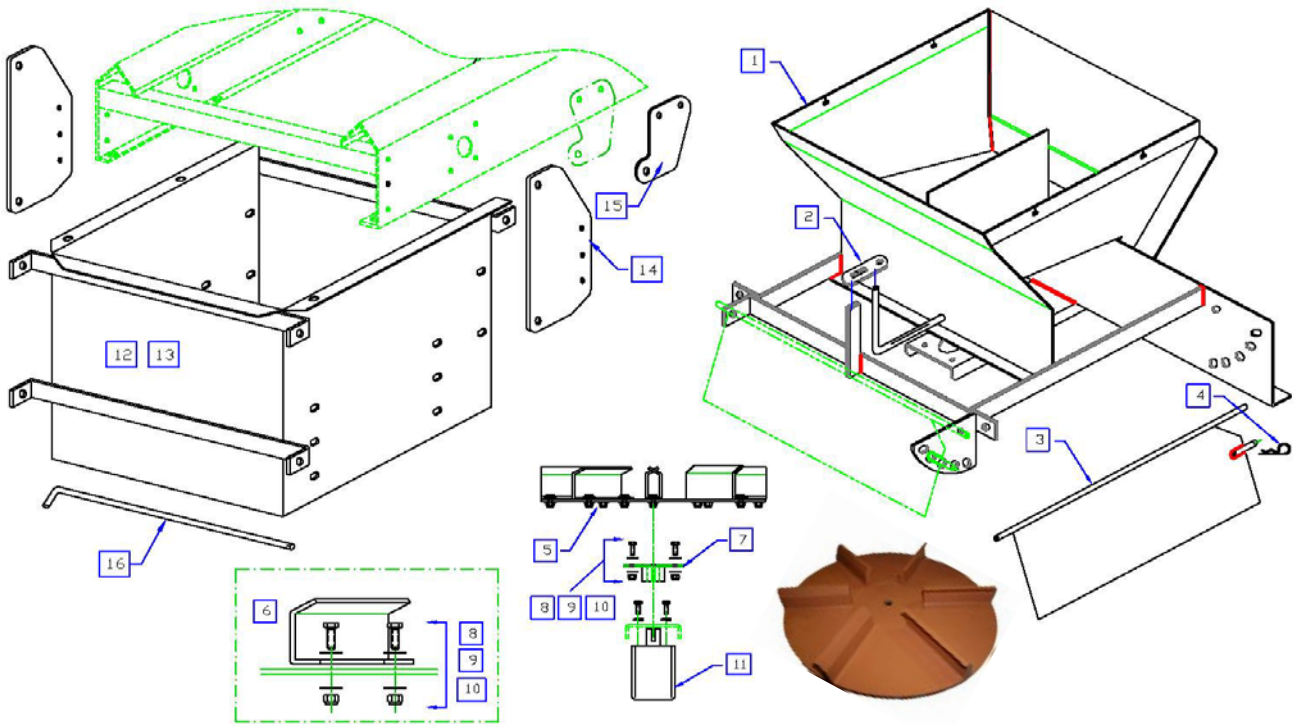


| KEY | PART #   | DESCRIPTION   |
|-----|----------|---|
| 1A  | SCAL102  | Complete Idler adjustment shaft assembly              |
| 1   | SCAL100S | Bearing slide brackets, stainless steel.              |
| 2   | SPHL102  | Bearing, 1-1/4" bore, 2 bolt flange                   |
| 3   | SMHL101  | Idler shaft, 1.25" diameter                           |
| 4   | SPHL101  | D667 B 6T 1.25" bore w/o keyway                       |
| 5   | SPHL130  | Spring, Tension                                       |
| 6   | SCAL110  | Idler adjusting rods, 3/4-10 x 15", jam nuts included |
| 7   | HWF180A  | Bolt  |
| 8   | HWF495   | Washer  |
| 9   | HWF497   | Washer, lock  |
| 10  | HWF391   | Nut, hex head   |
| 11  | HWF520   | Washer, 3/4" Zinc Plated                              |
| 12  | HWF410   | Jam nut, 3/4-10                                       |

| KEY | PART #   | DESCRIPTION   |
|-----|----------|---|
|     |          | Conveyor wear plate, abrasion resistant, 3/16" thick, 23 3/8"x ____ |
| 15  | SARPO09  | Conveyor plate, 9', 3/16" abrasion resistant, x 117"                |
|     | SARPO10  | Conveyor plate, 10', 3/16" abrasion resistant, x 129"               |
|     | SARPO11  | Conveyor plate, 11', 3/16" abrasion resistant, x 141"               |
|     | SARPO12  | Conveyor plate, 12', 3/16" abrasion resistant, x 153"               |
|     | SARPO13  | Conveyor plate, 13', 3/16" abrasion resistant, x 165"               |
|     | SARPO14  | Conveyor plate, 14', 3/16" abrasion resistant, x 177"               |
|     | SARPO15  | Conveyor plate, 15', 3/16" abrasion resistant, x 189"               |
|     |          | Conveyor plate, 16', 3/16" abrasion resistant, x 201"               |
|     |          | Conveyor wear plate, Stainless steel, 3/16" thick, 23 3/8"x ____    |
| 15  | SARPO09S | Conveyor plate, 9', 3/16" 304 Stainless steel, x 117"               |
|     | SARPO10S | Conveyor plate, 10', 3/16" 304 Stainless steel, x 129"              |
|     | SARPO11S | Conveyor plate, 11', 3/16" 304 Stainless steel, x 141"              |
|     | SARPO12S | Conveyor plate, 12', 3/16" 304 Stainless steel, x 153"              |
|     | SARPO13S | Conveyor plate, 13', 3/16" 304 Stainless steel, x 165"              |
|     | SARPO14S | Conveyor plate, 14', 3/16" 304 Stainless steel, x 177"              |
|     | SARPO15S | Conveyor plate, 15', 3/16" 304 Stainless steel, x 189"              |
|     |          | Conveyor plate, 16', 3/16" 304 Stainless steel, x 201"              |



# 24" SERIES SPINNER & DISTRIBUTOR PARTS

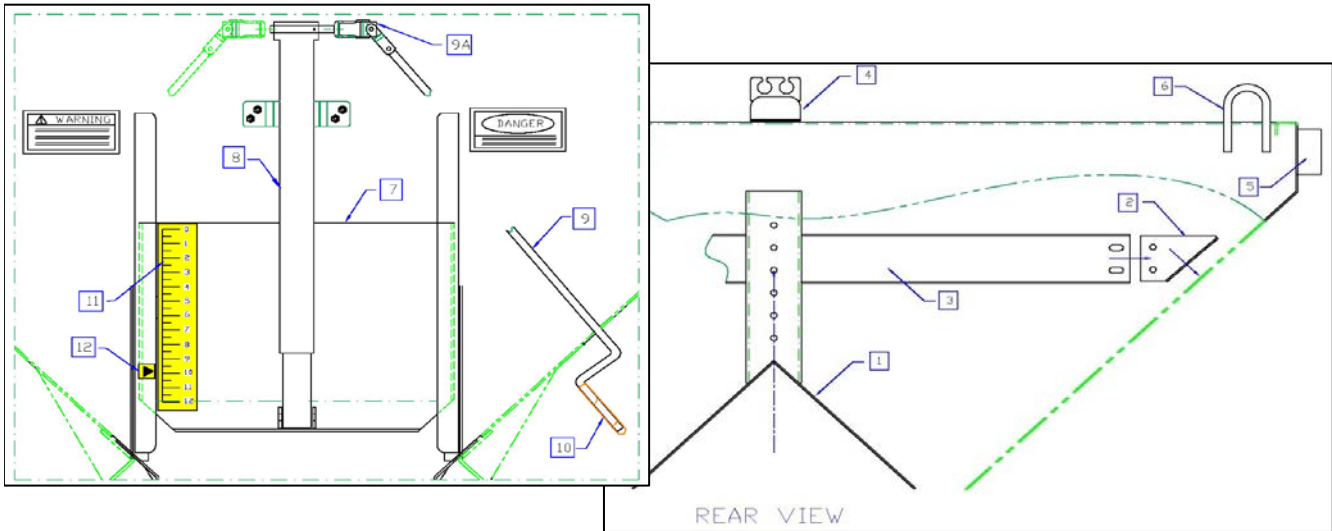


| KEY | PART #<br>SS / painted |         | DESCRIPTION                                     |
|-----|------------------------|---------|---|
| 1A  | SKC200S                | SKC200P | Complete chute assembly w/ spinner & motor      |
| 1B  | SKC190S                | SKC190P | Complete chute assembly W/O spinner & motor     |
| 1   | SKC180S                | SKC180P | Chute ONLY, welded, NO DEFLECTORS or PARTS      |
| 2   | SKC212S                |         | Metering lock                                   |
| 3   | SKC210S                | SKC210P | Deflector w/ welded rod, includes hairpin.      |
| 4   | HWF423B                |         | Pin, Hitch, Size 3, Zinc Plated                 |
| 5   | SKC300S                |         | 18" Spinner disc assembly, w/ bolt on vanes,    |
|     | SMSL104                |         | Spinner disc, 18" Molded poly w/ 6 vanes        |
|     | SMSL105                |         | Spinner disc, 20" Molded poly w/ 6 vanes        |
| 6   | SKC302S                |         | Bolt on replaceable vanes, (hardware included)  |
| 7   | SKC310                 |         | Spinner hub assembly, 4 bolt, with keyed collar |
| 8   | HWF605                 |         | Bolt 5/16-18x1" SS                              |

| KEY | PART #<br>SS / painted |         | DESCRIPTION                                  |
|-----|------------------------|---------|--|
| 9   | HWF385                 |         | Nut 5/16"-18 nyloc SS                        |
| 10  | HWF488A                |         | Washer, 5/16" flat                           |
| 11  | SPSL102                |         | Hydraulic motor, for spinner                 |
| 11  | SPSL102A               |         | Hydraulic motor, for spinner (more RPM, GPM) |
| 12  | SKC218S                | SKC218P | Chute extension (standard 16" drop)          |
|     | SKC219S                | SKC219P | Chute extension, long (extended 27" drop)    |
| 13  | SKC220S                | SKC220P | Flip chute extension assembly (optional)     |
| 14  | SKC224S                |         | Flip chute pivot bracket, stainless          |
| 15  | SKC226S                |         | Flip chute lock bracket, stainless           |
| 16  | SKC228S                |         | Flip chute pivot pins, stainless             |
| -   | HWF583                 |         | Hardware / bolt kit for 24" sanders, SS      |
| 0   | HWF582                 |         | Hardware / bolt kit for 24" sanders          |

To order: Call 207-729-5101 Fax 207-729-8782 email: parts@downeastermfg.com

# 24" SERIES HOPPER & FEED GATE PARTS



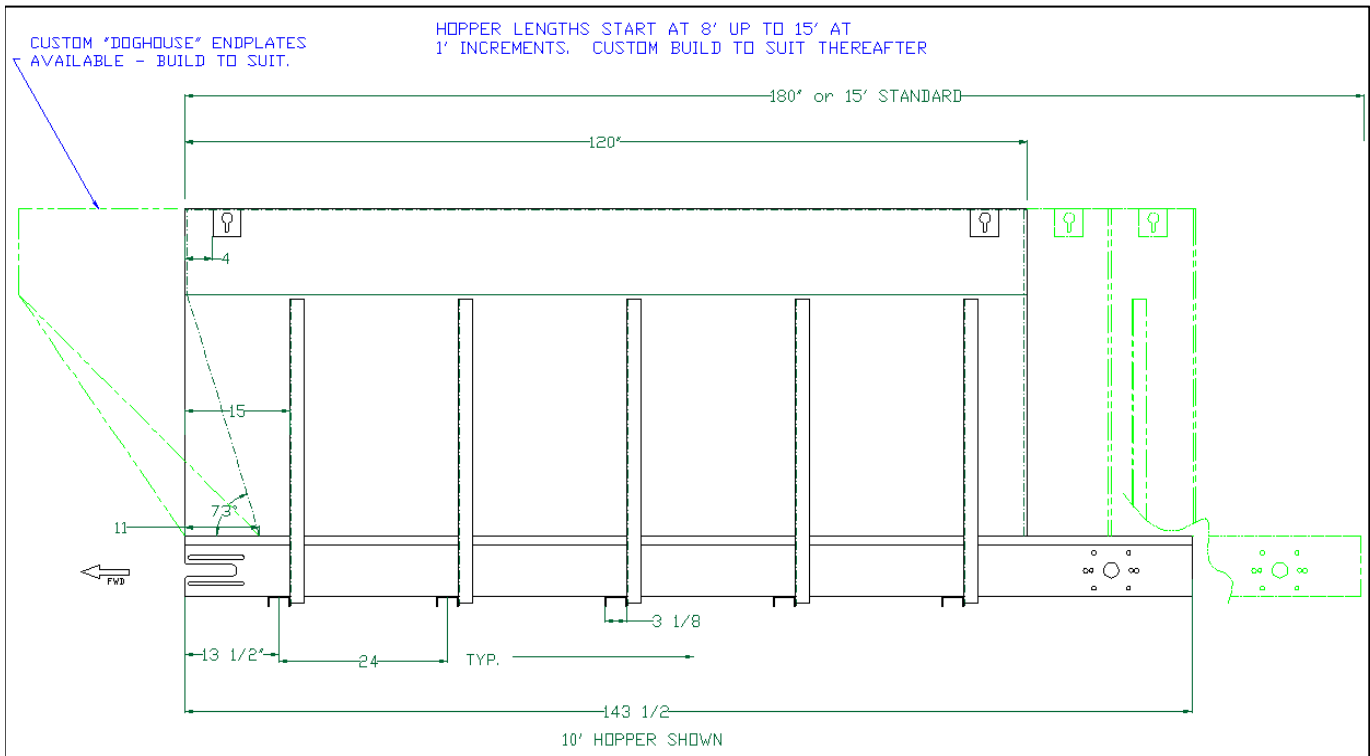
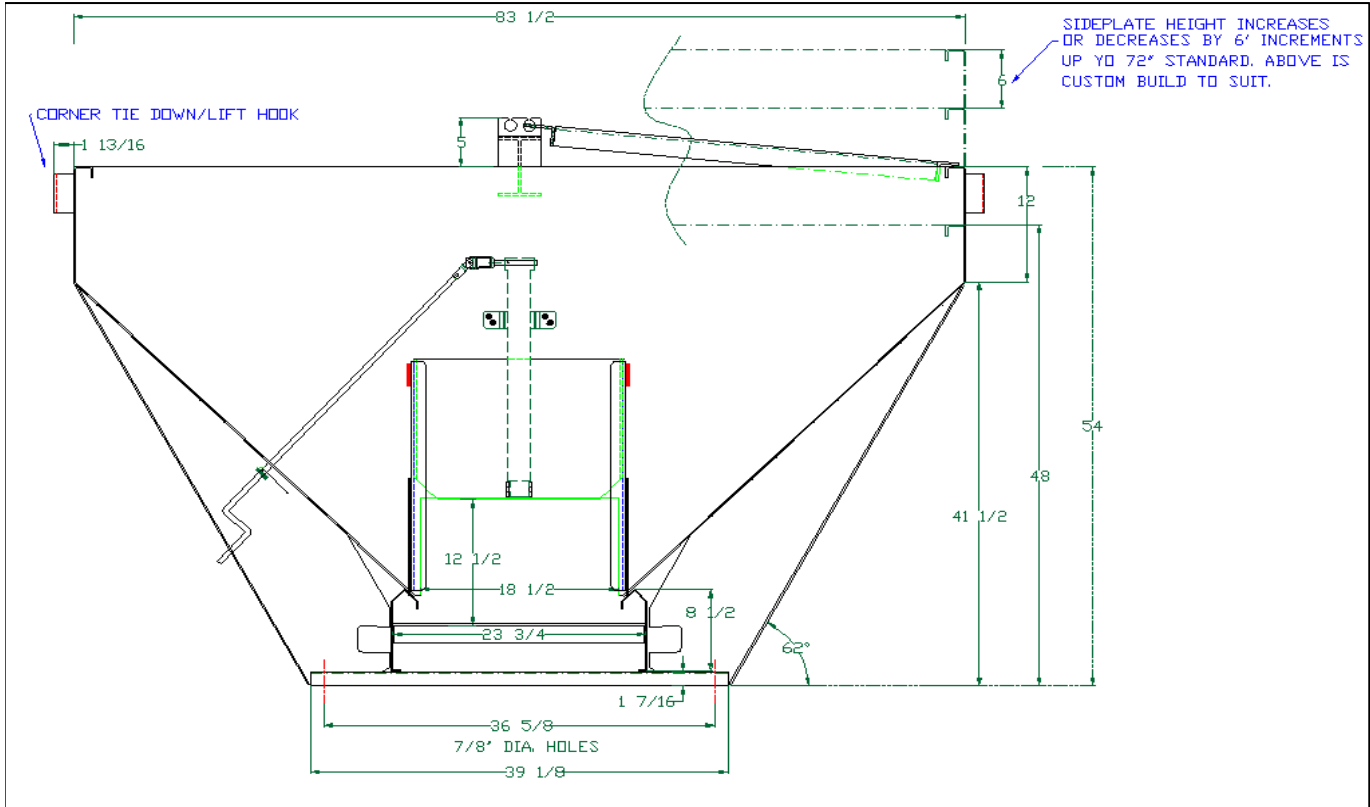
| KEY | PART #<br>SS / painted | DESCRIPTION                                  |   |
|-----|------------------------|--|---|
|     |                        | Inverted deflector assembly, all parts       |   |
| 1   | SVA1608S               | SVA1608P                                     | Inverted-V assembly, 8', for 9' & 10'   |
|     | SVA1610S               | SVA1610P                                     | Inverted-V assembly, 10', for 11' & 12' |
|     | SVA1612S               | SVA1612P                                     | Inverted-V assembly, 12', for 13' & 14' |
|     | SVA1614S               | SVA1614P                                     | Inverted-V assembly, 14', for 15' & 16' |
|     | 2                      | call   | Side plate bracket                      |
| 3   | call                   | Cross channel                                |   |
| 4   | call                   | H beam assembly, 6" H-beam w/ hinges         |   |
| 5   | call                   | Side stake / tie down chain pocket           |   |
| 6   | call                   | Lifting eyelet, stainless (option @ factory) |   |

| KEY | PART #  | DESCRIPTION                                   |
|-----|---------|---|
| 7   | SGA301  | Feed gate, stainless only                     |
| 8   | SGA302  | Screw jack assembly, w/ bolt on bracket       |
| 9   | SGA303  | Handle assembly, for screw jack.              |
| 9A  | SPHL148 | Knuckle joint, plastic (old# SPHL125)         |
| 10  | DEDP204 | Handle, round yellow                          |
| 11  | LBL126  | Label yellow/blk ruler                        |
| 12  | N/A     | Arrow decal                                   |
|     | LBL113  | Label, Danger stay away from this area.....   |
|     | LBL127  | Label, Warning it is your responsibility..... |

## Screens

|  |         |  |
|--|---------|--|
|  | SKLS03L | Screen assembly, 3' (qty varies) (O.A. size 33 1/4 x 39 1/2) |
|  | SKLS04L | Screen assembly, 4' (qty varies) (O.A. size 46 5/8 x 39 1/2) |

# APPENDIX, 24" CONVEYOR SERIES TYPICAL DIMENSIONS





# TROUBLE SHOOTING GUIDE

## DOWNEASTER24 HYDRAULIC TROUBLESHOOTING TABLE

|  |   |
|--|---|
| <p><b>PROBLEM: PUMP CAVITATION (CAN BE RECOGNIZED BY EXCESSIVE NOISE)</b></p> <p><b><u>POSSIBLE CAUSES:</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Air entering the system through the suction lines.</li> <li><input type="checkbox"/> The suction line is kinked, twisted or too long.</li> <li><input type="checkbox"/> The size of the suction line is inadequate</li> <li><input type="checkbox"/> The oil being used is too heavy a grade.</li> <li><input type="checkbox"/> Excessive pump speed (normal speed: 1200-1500 RPM's)</li> </ul> <p><b><u>POSSIBLE SOLUTIONS:</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Check the line from the reservoir for possible leaks.</li> <li><input type="checkbox"/> Install a suction line which is as short and straight as is possible.</li> <li><input type="checkbox"/> Increase the size of the suction line.</li> <li><input type="checkbox"/> Drain the oil and replace it with a low-viscosity, non-detergent type.</li> <li><input type="checkbox"/> Pump capacity is incorrect. Adjust RPM if necessary.</li> </ul> | <p><b>PROBLEM: ERRATIC OPERATION OF CONVEYOR AND/OR SPINNER</b></p> <p><b><u>POSSIBLE CAUSES:</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Low oil level</li> <li><input type="checkbox"/> Worn or defective motor</li> <li><input type="checkbox"/> Dirty, worn or defective flow control valve</li> <li><input type="checkbox"/> Plugged filter</li> <li><input type="checkbox"/> Relief valve setting is too low</li> <li><input type="checkbox"/> Pump cavitation</li> <li><input type="checkbox"/> Air vent on the reservoir tank is blocked</li> </ul> <p><b><u>POSSIBLE SOLUTIONS:</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Fill reservoir to a level of ¾ full.</li> <li><input type="checkbox"/> Repair or replace the motor.</li> <li><input type="checkbox"/> Clean, replace or repair the flow control.</li> <li><input type="checkbox"/> Replace the filter element and clean the filter</li> <li><input type="checkbox"/> Adjust the relief valve to 1500 PSI.</li> <li><input type="checkbox"/> Refer to pump cavitation section on this page.</li> <li><input type="checkbox"/> Clean or replace the vent cap to admit air pressure to the inside of the tank.</li> </ul> |
| <p><b>PROBLEM: SLOW OPERATION OF CONVEYOR AND/OR SPINNER</b></p> <p><b><u>POSSIBLE CAUSES:</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Worn or defective pump</li> <li><input type="checkbox"/> Worn or defective motor</li> <li><input type="checkbox"/> Pump cavitation</li> <li><input type="checkbox"/> Insufficient pump speed</li> </ul> <p><b><u>POSSIBLE SOLUTIONS:</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Repair or replace pump.</li> <li><input type="checkbox"/> Repair or replace motor.**</li> <li><input type="checkbox"/> Refer to pump cavitation section on this page.</li> <li><input type="checkbox"/> Pump capacity is incorrect. Adjust RPM if necessary.</li> </ul>  | <p><b>PROBLEM: CONVEYOR AND/OR SPINNER WILL NOT OPERATE</b></p> <p><b><u>POSSIBLE CAUSES:</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The quick disconnects are either dirty, damaged or improperly connected.</li> <li><input type="checkbox"/> The hose connections are incorrect.</li> <li><input type="checkbox"/> Foreign material or contaminants are in the valve compensator.</li> </ul> <p><b><u>POSSIBLE SOLUTIONS:</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Clean, replace or properly connect the quick disconnects.</li> <li><input type="checkbox"/> Refer to the manual illustration and check hose connections.</li> <li><input type="checkbox"/> Remove the valve compensator and clean.</li> </ul>   |

\*\* The Downeaster spreader warranty does not cover unauthorized disassembly of hydraulic or



## Coastal Metal Fab, Inc. Warranty

2016

**General Provisions:** Coastal Metal Fab, Inc. warrants its products to be free from manufacturing defects under normal use and service conditions and will repair or replace, at its option, any products or components thereof that are proven to be defective during the warranty period as specified below. This warranty extends to the original retail purchaser only and commences on the date of original purchase. Coastal Metal Fab's maximum liability under this warranty is limited to the cost of the repair or replacement of any defective products or components, and excludes any incidental or consequential damages. The warranty period is as follows:

**DownEaster** brand Dump Trailers and Dump Inserts -- 2 years from date of purchase

**DownEaster** brand Salt and Sand spreaders -- 1 year from date of purchase

**DownEaster** brand Dump Bodies -- 2 year from date of purchase or 24,000 miles

**Items Warranted Separately:** This warranty does not apply to certain components that are warranted separately by the original equipment manufacturers including, but not limited to, electric or gasoline motors, hydraulic pumps, hydraulic cylinders, tires, wheels, and axles.

**Items not Covered:** Coastal Metal Fab, Inc. is not responsible for the following:

- Premiums charged for overtime labor requested by the purchaser.
- Transportation to and from the dealership or service calls made by the dealer.
- Products purchased used.
- Products that have been altered or modified in ways not approved by Coastal Metal Fab.
- Depreciation or damage caused by normal wear and tear, lack of reasonable and proper maintenance, failure to follow operating or installation instructions, misuse, lack of proper protection during storage or accidents.
- Normal maintenance costs.

**Parts Replaced under Warranty:** If Coastal Metal Fab, Inc. elects to repair a defective product or component thereof, Coastal metal Fab will, at its discretion, utilize either new or remanufactured parts or components. If any such part or component proves to be defective within 12 months of installation or before expiration of this warranty, whichever is later, Coastal Metal Fab, Inc. will repair or replace, as it elects, such defective part or component.

**Securing Warranty Services:** To obtain service under this warranty, the original retail purchaser must request warranty service during the applicable period of warranty from a dealer authorized to sell the product being serviced. When making such a request, the purchaser must present evidence of the product's original purchase date, and make the product available for service at the dealer's place of business.

**Limitations:** The selling dealer has no authority to make any representation or promise on behalf of Coastal Metal Fab or to modify the terms or limitations of this warranty in any way. Coastal Metal Fab shall have sole discretion to determine whether a product or component is defective. Coastal Metal Fab reserves the right to discontinue or modify any of its products and, if Coastal Metal Fab elects to replace a defective product under this warranty which has been discontinued or modified, it may do so with a product deemed by Coastal Metal Fab to be of comparable quality and function.

**THIS WARRANTY IS GRANTED IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. UNDER NO CIRCUMSTANCE SHALL COASTAL METAL FAB BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY NATURE RESULTING FROM ANY DEFECT IN THE PRODUCT OR ITS COMPONENT PARTS. SOME STATES DO NOT ALLOW LIMITATIONS ON OR EXCLUSION OF IMPLIED WARRANTIES OR INCIDENTAL AND CONSEQUENTIAL DAMAGES SO THE ABOVE EXCLUSIONS MAY NOT APPLY TO YOU.**

*Contact your local dealer or distributor for replacement parts and technical support or visit*

[www.downeastermfg.com](http://www.downeastermfg.com)