ROTARYSET® DISTRIBUTOR

Installation and Operation Manual

Manual and EDI Electric Distributor

SCHLAGEL

Manufacturers of Innovative Materials Handling Equipment since 1957.

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INTRODUCTION

This distributor has been designed to give you many years of faithful service. To obtain all of the benefits built in to it, the following instructions should be read and adhered to as closely as possible during installation. These instructions are suggestions to help the installer determine the best way to mount the unit.

USE OF MANUAL

This manual provides installation, operation, service recommendations and replacement parts identification for Schlagel RotarySet® Distributors.

Each section of the manual is fully illustrated for fast, accurate reference. It is highly recommended that this manual be read thoroughly by those who are responsible for the installation, operation and maintenance of this distributor. Refer to the Table of Contents, on this page for the location of specific information.

As new information and equipment become available, service and parts bulletins will be issued by Schlagel, Inc. So that they will be readily available for reference, all bulletins should be inserted with this manual. This manual covers standard distributor equipment only. For any items or special equipment not covered in this manual, please consult our service department for recommendations or instructions regarding this equipment.

INFORMATION SERVICE

Enclosed with your distributor shipment is our packing list that details all items on your order. This packing list should be saved for future reference. The invoice number shown on this document is the same as the serial number shown on your distributors I.D. tag. If you ever need to call the factory for parts or service it is very helpful to have this serial number available. Please record the information below now and save this booklet for future reference.

Date of Purchase:_____

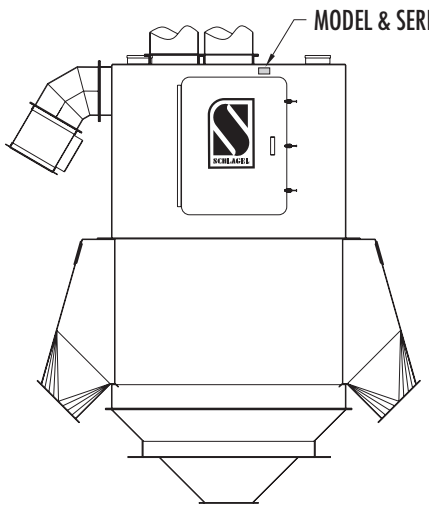
Purchased from:_____

Installed by:_____ Date:_____

Serial Number:_____

Model:_____

Email or Call: Schlagel, Inc.
491 North Emerson Street
Cambridge, MN 55008
(763) 689-5991 or 1-800-328-8002
sales@schlagel.com



UNCRATING AND INSPECTION

Your distributor has been carefully checked and operated before shipment from our factory. In the event that any parts are missing or damaged, please notify us immediately and also have the delivering carrier note this is on the Bill of Lading.

IMPORTANT

All claims for shipping damages must be noted by the consignee at the time of delivery and filed with the transportation company.

MANUAL DISTRIBUTOR HARDWARE PACKING LIST

DESCRIPTION	QTY.
HAND CONTROL ASSEMBLY	1
LIFT PEDAL	1
HOT HOUSE PULLEYS	3
SIDE PULLEYS	3
WHEEL BRACKET MOUNTING CLIPS	2
3/16" AC CONTROL CABLE	1
CABLE CLAMPS	6
NUMBER CARD	1

NOTE - THE ABOVE QUANTITIES ARE FOR EACH SPOUT IN THE DISTRIBUTOR.

SAFETY CODE

⚠ WARNING ⚠

The icon shown below was proposed as a safety alert symbol by the Farm and Industrial Equipment Institute (FIEI) and approved by the American Society of Automotive Engineers (ASAE) and others for the purpose of calling attention to safety precautions which if not heeded might lead to bodily injury.

Please read instructions carefully and follow the instructions exactly wherever this symbol appears in the manual. ⚠

SAFETY FIRST

LOOK FOR THIS SAFETY LABEL

INSTALLATION

NOTE - It should be understood by the installer that many of the following steps need to be duplicated for each spout in the distributor

1. The distributor may be shipped fully assembled or in sections, depending on the size and shipping method. Any support stands bolted or welded to the distributor must be removed prior to setting the distributor in place. Any shipping brackets attached to the housing are not meant to be used to support the distributor.
2. Locate and level the distributor using field fabricated supports. It is suggested that the distributor be supported by means of the angle iron ring located on the overflow cone. Some distributors such as those not supplied with an overflow have the large angle ring located around the circumference of the upper housing just above the ducts. Any structural steel angles, beams, channels or support rods that are field attached to this support angle should continue back to your supporting structure. If you have a small distributor and are using spouting off the distributor that is reasonably short in length and is rigidly fastened, then these additional supports may not be necessary.
3. Spout the outlet ducts, preferably using reversible elbows to obtain the desired angle on the spout. Connect the opposite side of the distributor, from the one previously spouted, to equal out the stresses to the bottom of the unit

⚠ CAUTION ⚠

The distributor is not designed to support spouting.

4. Connect the inlet from the conveyor or leg, but do not apply extreme pressure to the inlet collar.

⚠ CAUTION ⚠

The inlet should be connected only after the spouting has been run to prevent tilting the inlet collar.

5. If this is an electrically operated distributor then refer to the EDI Condensed Wiring Instructions and the EDI Operation Manual and ignore the following cable connection steps.

⚠ DANGER ⚠

Be sure to use appropriate safety device to protect from falling into distributor outlets. Falling into outlets may cause injury or death.

6. After the spouts have been connected and before the control cable has been run, operate the distributor by hand to see if it works satisfactorily. If difficulties are encountered, remedy them at this time so that if it works hard from the remote operator, after it has been connected, the trouble will be found in the run of cable.
7. Position the hand control assembly at a level comfortable for the operator and on a surface that will allow routing of the cable between the hand control and the cable wheel of the lower spout or the outer barrel of any upper spouts in the distributor. The pointer opening in the front of the housing is the UP side of the control. (See page 8).
8. Adjust the side angle mounting brackets of the hand control assembly so that the bolts for the main housing are at the top of the slotted holes in the side angle mounting brackets. This will allow the main housing to be pulled downward when tensioning the cables. (See page 8).
9. Determine how many actual turns are needed on the cable wheel in the hand control assembly of your distributor by measuring the diameters inside the distributor of the lower spout's cable wheel and any upper spout's barrel in addition to the cable wheel inside the control cable assembly. Divide the diameter of the large interior wheel or barrel by the diameter of the small wheel in the hand control assembly. This gives you the number of cable wraps needed around the small wheel in the hand control assembly.

Example:

Let's say you have 48" dia. and 12" dia. wheels: 48"/12" = 4

You now know you need a minimum of 4 wraps around the cable wheel inside the control wheel housing.

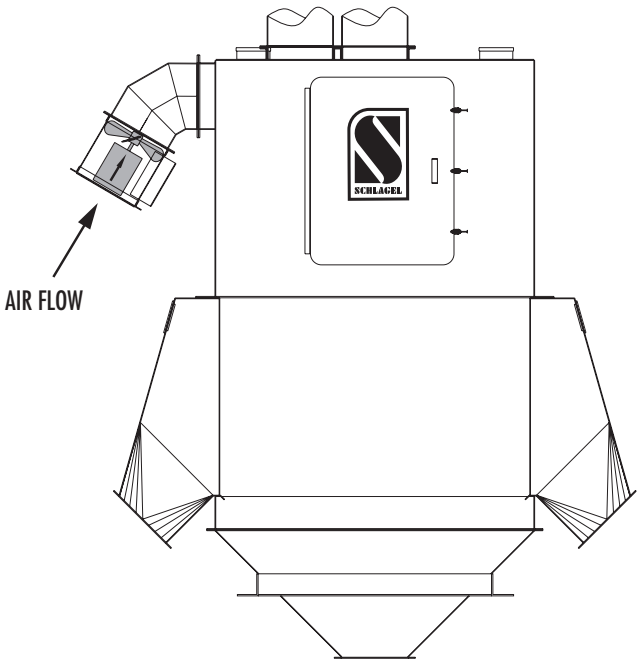
10. Rotate the inner spout one direction until it stops against the inside spout stop. Wrap the cable around the lower spout's cable wheel or any upper spout's barrel and also the cable wheel in the hand control assembly. The cable should be wrapped at least one complete turn around either cable wheel/barrel before putting the cable clamp on the wheel to hold the cable in place. The initial direction of wrap is determined by which way the wheel has to rotate in order to move the spout away from its stopped position and which side of the wheel/barrel you started your initial wrap on. The intent here is to avoid having the cable clamps cause any binding of the cable as it rotates the inner spout from stop to stop.
11. The cables off the cable wheel/spout barrel inside of the distributor will run through the fixed double pulley in the side of the distributor and then over to the pulleys you have selected for directing the cables to the hand control assembly.
12. Attach cable to hand control assembly. Once the cable clamp bolt is tight, continue to wrap around the cable wheel in the hand control assembly with at least one more wrap than the actual number calculated in step 9.
13. Keep in mind that each wrap around the small wheel in the hand control assembly is about 3'-2" of cable. This means that if your distributor took 4.3 actual turns from end to end that you will need about 14' between the cable clamps at the cable splice and any obstructions such as pulleys when the ends of the cable are finally connected together.
14. Make certain that any pulleys used in the cable line are properly positioned to prevent rubbing or binding of the cable. Lubricate the cable where it follows the pulleys. It is important to use as short of a cable run as possible with as few turns around pulleys as possible to provide the best "feel" to the operator when moving the distributor spout.
15. Loosen the bolts mounting the side angle mounting brackets to the main housing. Tighten the cable by pulling down on the main housing of the hand control assembly and then tighten the bolts. (See page 8)

NOTE - See page 8 and 9 for cable run diagram.

⚠ DANGER ⚠

Be sure to use appropriate safety device to protect from falling into distributor outlets. Falling into outlets may cause injury or death.

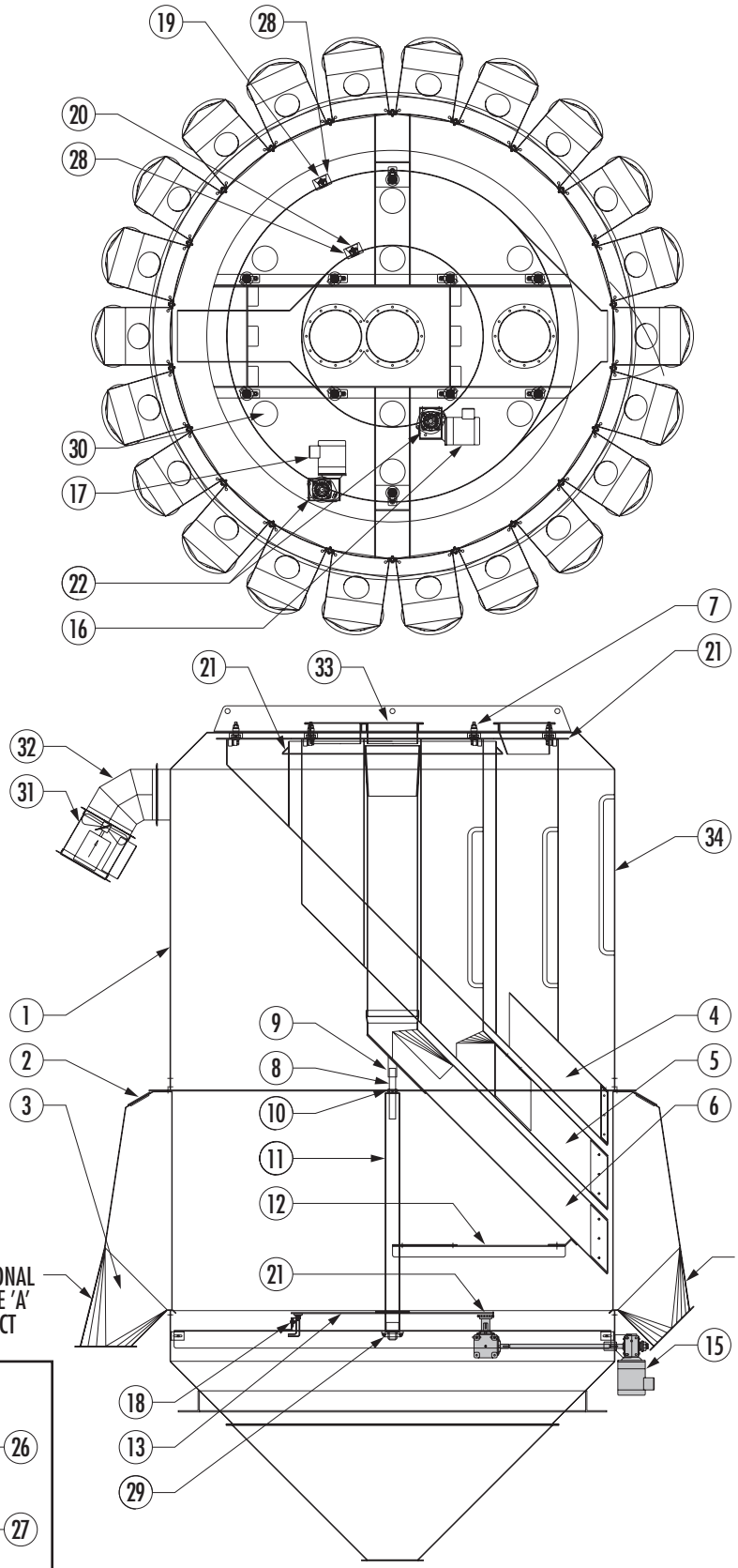
There may have been a positive pressure fan provided with your RotarySet distributor. The purpose of the fan is to help prevent the build up of moisture and dust from the bin. It is very important that this fan is installed so that the air flow is to the inside of the distributor. See detail below.

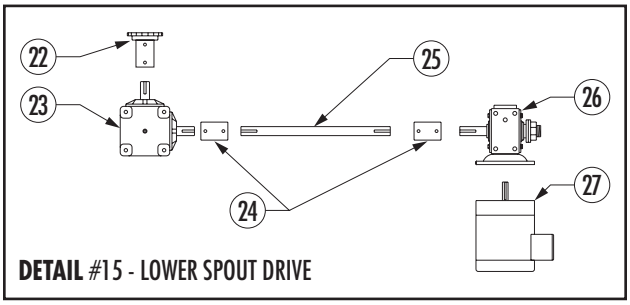


ROTARYSET DISTRIBUTOR SHOWN WITH POSITIVE PRESSURE FAN

EDI ELECTRIC ROTARYSET DISTRIBUTOR PARTS LIST

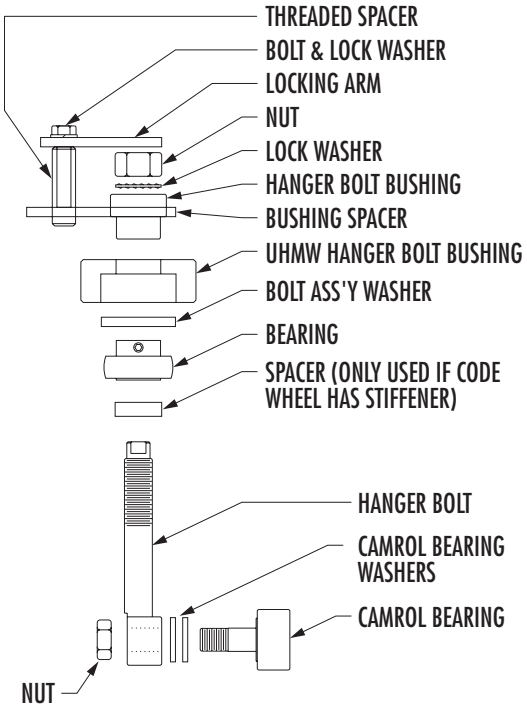
ITEM #	DESCRIPTION
1.	UPPER HOUSING
2.	RUBBER PLUG
3.	DUCTS (STYLE "A" OR "B")
4.	UPPER SPOUT
5.	CENTER SPOUT
6.	LOWER SPOUT
7.	SPOUT HANGER ASSEMBLY (SEE DETAIL, Pg. 6)
8.	SPOUT SHAFT
9.	ROLL PIN
10.	CLAMPING COLLAR
11.	DRIVE PIPE
12.	DRIVE ARM
13.	LOWER CODE WHEEL
14.	RIGHT ANGLE DRIVE
15.	LOWER SPOUT DRIVE
16.	CENTER SPOUT DRIVE
17.	UPPER SPOUT DRIVE
18.	EDI SENSOR ASSEMBLY LOWER (SEE DETAIL, Pg. 6)
19.	EDI SENSOR ASSEMBLY UPPER (SEE DETAIL, Pg. 6)
20.	EDI SENSOR ASSEMBLY CENTER (SEE DETAIL, Pg. 6)
21.	DOUBLE #50 ROLLER CHAIN
22.	#50SH15 SPROCKET ASSEMBLY
23.	CURTIS GEAR REDUCER
24.	SHAFT COUPLER
25.	DRIVE SHAFT
26.	CLEVELAND GEAR REDUCER
27.	ELECTRIC MOTOR
28.	CONDUIT BOX
29.	FLANGE BEARING
30.	RUBBER CAP
31.	POSITIVE PRESSURE FAN
32.	ELBOW FOR FAN
33.	INLET
34.	HINGED DOOR



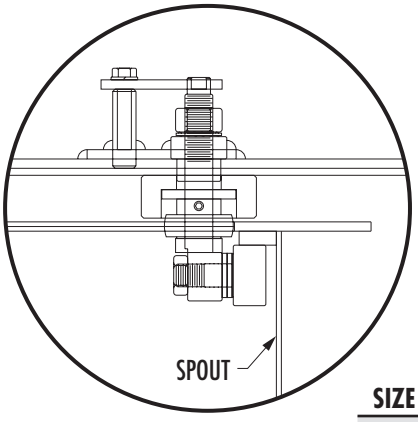


DETAIL #15 - LOWER SPOUT DRIVE

SPOUT HANGER BEARING ASSEMBLY



DETAIL
MOUNTED ON DISTRIBUTOR

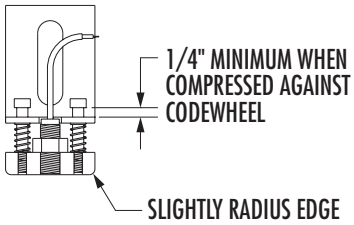


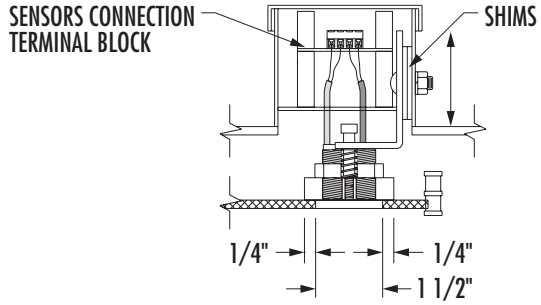
SIZE	DOUBLE INLET OUTER SPOUT	TRIPLE INLET MIDDLE SPOUT	TRIPLE INLET OUTER SPOUT
6"	4	-	-
8"	4	4	6
10"	4	4	6
12"	4	4	6
14"	6	6	6
16"	6	6	8
18"	6	6	8
20"	6	6	8
22"	6	6	8
24"	6	6	8

THE CHART SHOWS THE QUANTITY OF HANGER BEARING ASSEMBLIES REQUIRED FOR A GIVEN SIZE DISTRIBUTOR.

THE NUMBER OF OUTLET DUCTS DOES NOT CHANGE THE QUANTITY OF HANGER BEARING ASSEMBLIES.

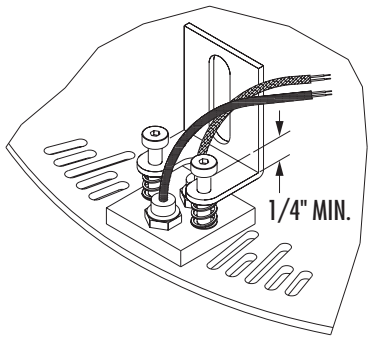
EDI SENSOR DETAIL



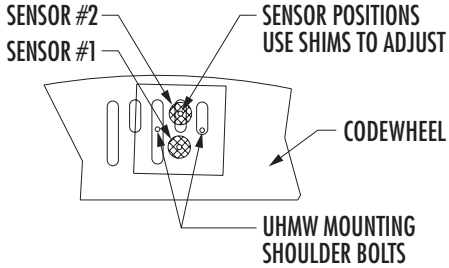


SET SENSORS FLUSH W/ UHMW THEN BACK OFF ONE 1/4 TURN

SENSOR #1 *SHOWN IN BLACK*
SENSOR #2 *SHOWN IN WHITE*

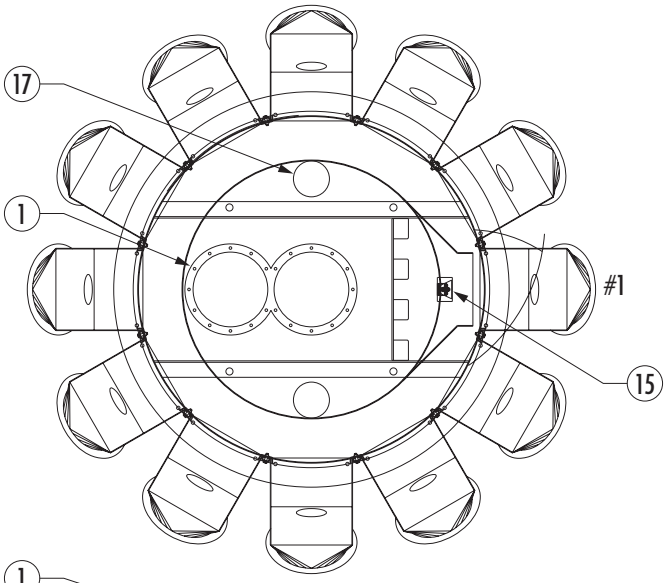


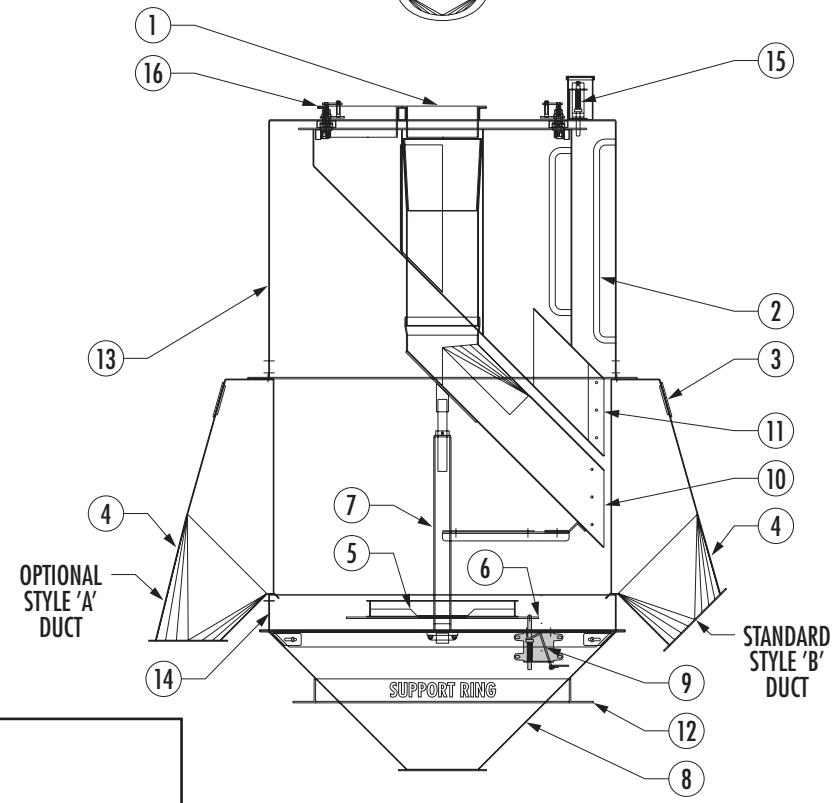
1- TURK SENSOR #F1
1- TURK SENSOR #F2
} REQ'D PER ASSEMBLY

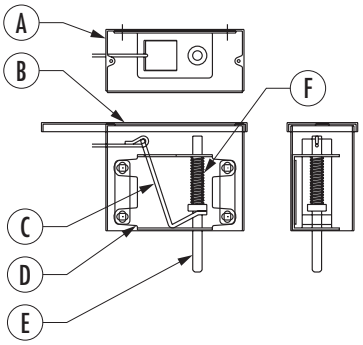


MANUAL ROTARYSET DISTRIBUTOR PARTS LIST

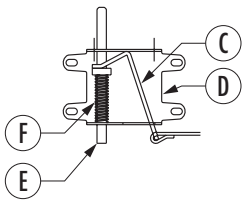
ITEM #	DESCRIPTION
1.	INLET
2.	HINGED DOOR
3.	RUBBER PLUG
4.	DUCTS (STYLE "A" OR "B")
5.	LOWER CABLE WHEEL
6.	INDEXING PLATE
7.	LOWER SPOUT PIPE
8.	OVERFLOW CONE
9.	LOWER SPOUT INDEXER (SEE DETAIL)
	(A). INDEXER HOUSING
	(B). COVER
	(C). LEVER
	(D). INDEXER BRACKET
	(E). PIN
	(F). SPRING
10.	LOWER SPOUT
11.	UPPER SPOUT
12.	SUPPORT FLANGE
13.	UPPER HOUSING
14.	CABLE PULLEYS
15.	UPPER SPOUT INDEXER (SEE DETAIL)
16.	HANGER BEARING ASSEMBLY (SEE DETAIL)
	(C). LEVER
	(D). INDEXER BRACKET
	(E). PIN
	(F). SPRING
17.	RUBBER CAP







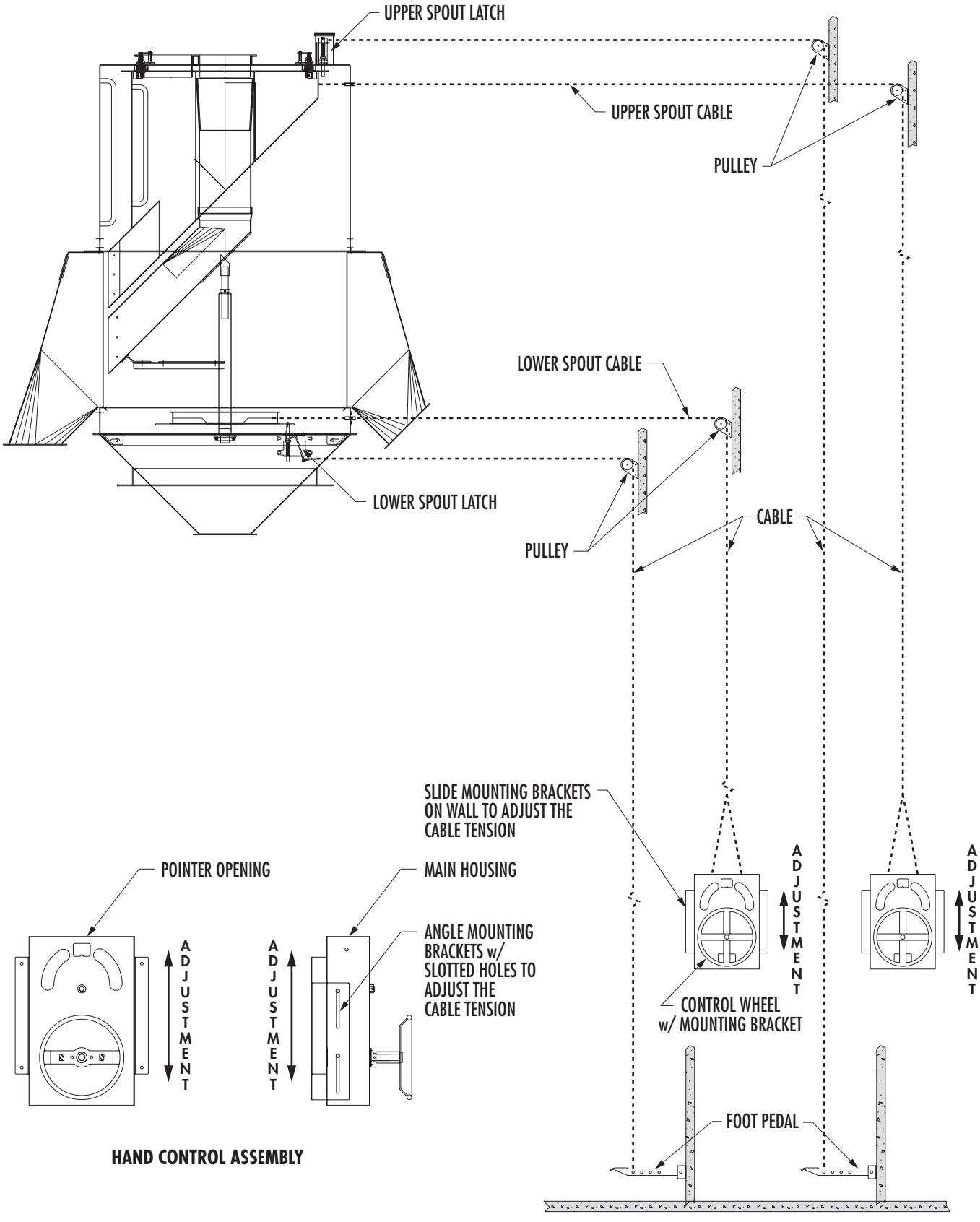
DETAIL #15 - UPPER SPOUT INDEXER



DETAIL #9 - LOWER SPOUT INDEXER

TYPICAL CABLE RUN LAYOUT

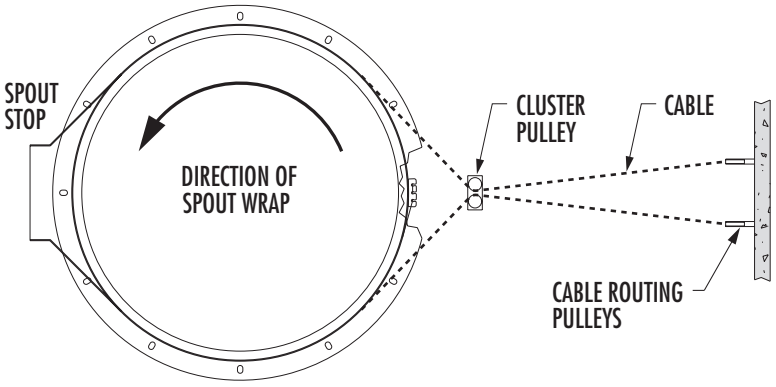
Assembly at distributor

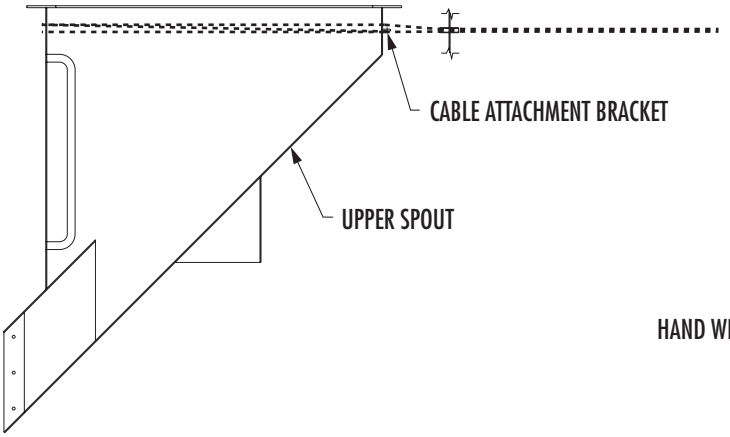


HAND CONTROL ASSEMBLY

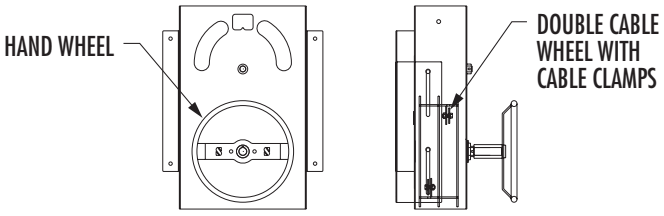
TYPICAL CABLE RUN LAYOUT

Assembly at distributor

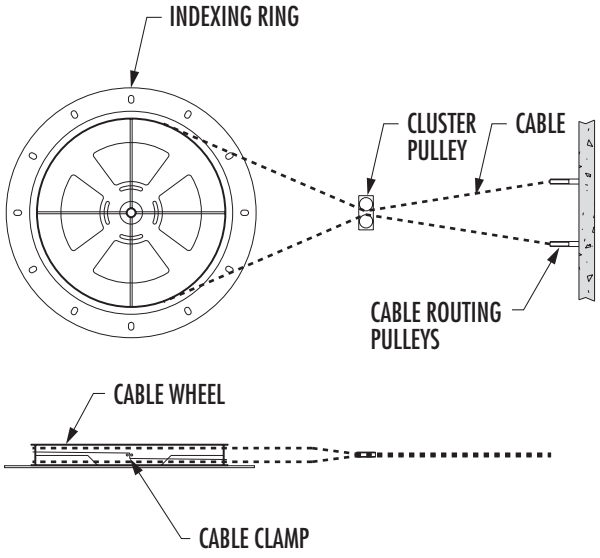




UPPER SPOUT CABLE DIAGRAM



HAND CONTROL ASSEMBLY



LOWER SPOUT CABLE DIAGRAM

OPERATION OF MANUAL DISTRIBUTOR

1. Pull the inner spout indexing pin with the lift pedal and turn the control wheel to move the spout near the desired position. Release the pedal and continue to turn the wheel. This will move the spout to the duct selected and will then allow the indexing pin to drop into the notch in the cable wheel ring.
2. With the RotarySet distributor the operator does not have to be familiar with the "feel" of the distributor as the indexing pin will drop into the notches of the inner spout's cable wheel with very little effort and when the control wheel no longer moves the spout is set.

INNER SPOUT REMOVAL - MANUAL DISTRIBUTOR

⚠ DANGER ⚠

Be sure to use appropriate safety device to protect from falling into distributor outlets. Falling into outlets may cause injury or death.

Lower spout removal:

1. Move the inner spout to a duct that will allow you the best access to the back side of the spout. Cover outlets to prevent small parts or hand tools from falling down the hole.
2. Mark the relationship of the center lower spout shaft/pipe so that you will have the same timing when you reassemble the spout.
3. Unbolt any spout brace where it attaches to the end of the spout.
4. Unbolt the center lower shaft/pipe where it attaches to the underside of the lower spout. Push the shaft/pipe off to one side to allow the lower spout to drop down.

NOTE - To re-install the spout, reverse the above steps then proceed to the Re-installation Follow-up Instructions on this page.

Upper spout removal:

1. Move the inner spout to a duct that will allow you the best access to the back side of the spout. Cover outlets to prevent small parts or hand tools from falling down the hole.
2. Remove the lower spout first per the instructions above.
3. Mark the relationship of the cable going around the barrel so that you will have the same timing when you reassemble the spout. This will eliminate the need to redo the number sequence on the operator's control wheel housing. A piece of electrical taped wrapped around the cable and marking it's position on the barrel might suffice.
4. Loosen the control cable by sliding the operator's control housing upward. This is done by loosening the side bolts on the housing.
5. Remove the cable from around the barrel of the upper spout.
6. Remove the bolts holding the upper spout indexer latch and pull the latch pin away from the notched indexing ring. This could also be done by setting a weight on the foot pedal down at the operator's station.
7. Block the upper spout up by some type of bracing. Use the lower spout's support channel that goes across the lower housing as a brace support.
8. Mark the position of each of the top mounted bearing bolts. These bolts are not adjustable other than you should note which end of the slotted bolt top points towards the center of the distributor.
9. Loosen the nuts of the bearing bolts and turn them 90° so they clear the indexing ring there are removable top access doors that allow you to feel inside to insure they are clearing.
10. Very carefully ease the bracing away to lower the spout.

NOTE - To re-install the spout, reverse the above steps then proceed to the Re-installation Follow-up Instructions on this page.

RE-INSTALLATION FOLLOW-UP INSTRUCTIONS

1. Remove any temporary bracing, ladders, etc. that you may have used inside the distributor during the removal of an inner spout. Also remove any item that may be blocking the overflow cone outlet.
2. Check the centering of the inner spout in front of a duct and readjust if necessary.
3. Verify that the operation of the control wheel is correct and that the relationship of wheel markings to the inner spout's position in front of the ducts is still correct.

OPERATION OF EDI ELECTRIC DISTRIBUTOR

This distributor manual is intended to deal only with the mechanical portions of your distributor. Included inside the control box of every distributor is the following:

1 - EDI Condensed wiring instructions
1 - EDI Operation Manual

These learning and instructional materials should provide all the information necessary to complete set up of the electrical control system. If you have any questions regarding setup, programming or trouble shooting make sure you have reviewed all this information. If your problem is not addressed in any of these, or you can not find a solution to your problem, contact the factory for assistance.

INNER SPOUT REMOVAL - EDI ELECTRIC DISTRIBUTOR

⚠ DANGER ⚠

Be sure to use appropriate safety device to protect from falling into distributor outlets. Falling into outlets may cause injury or death.

Lower spout removal:

1. Move the inner spout to a duct that will allow you the best access to the back side of the spout. Cover outlets to prevent small parts or hand tools from falling down the hole.

⚠ WARNING ⚠

Turn off and lock out power to the distributor motor to prevent anyone from operating the unit while you are servicing it.

   Make sure all power to this unit is disconnected and locked out. This means both the 115 volt and motor voltage lines to the control panel.

2. Mark the relationship of the center lower spout shaft / pipe so that you will have the same timing when you reassemble the spout. There is no need to remove any of the electric drive components.
3. Unbolt any spout brace where it attaches to the end of the spout.
4. Unbolt the center lower shaft/pipe where it attaches to the underside of the lower spout.

   Push the shaft/pipe off to one side to allow the lower spout to drop down.

NOTE - To re-install the spout, reverse the above steps then proceed to the Reinstallation Follow-up Instructions on page 12.

Upper spout removal:

1. Move the inner spout to a duct that will allow you the best access to the back side of the spout. Cover outlets to prevent small parts or hand tools from falling down the hole.

⚠ WARNING ⚠

Turn off and lock out power to the distributor motor to prevent anyone from operating the unit while you are servicing it.

   Make sure all power to this unit is disconnected and locked out. This means both the 115 volt and motor voltage lines to the control panel.

2. Remove the lower spout first per the instructions.
3. Unbolt the top sensor mount plate and set to the side. There is no need to disconnect any wires.
4. Unbolt the top drive mount plate and set to the side. There is no need to disconnect any wires nor is there any need to mark the relationship of the drive sprocket to the large sprocket on the top of the spout.
5. Block the upper spout up by some type of bracing. Use the lower spout's support channel that goes across the lower housing as a brace support.
6. Mark the position of each of the top mounted bearing bolts. These bolts are not adjustable other than you should note which end of the slotted bolt top points towards the center of the distributor.
7. Loosen the nuts of the bearing bolts and turn them 90° so they clear the indexing ring. There are removable top access doors that allow you to feel inside to insure they are clearing.
8. Very carefully ease the bracing away to lower the spout.

NOTE - To re-install the spout, reverse the above steps then proceed to the Reinstallation Follow-up Instructions on page 12.

RE-INSTALLATION FOLLOW-UP INSTRUCTIONS

1. Remove any temporary bracing, ladders, etc. That you may have used inside the distributor during the removal of an inner spout. Also remove any item that may be blocking the overflow cone outlet.
2. Refer to the EDI Operation Manual.
3. Restore 110 power to the control panel.
4. Turn on the power and tryout the distributor. Adjust the spout's positioning in front of the outlet ducts per the EDI manual's instructions so that the spout stops in the center of the duct openings.

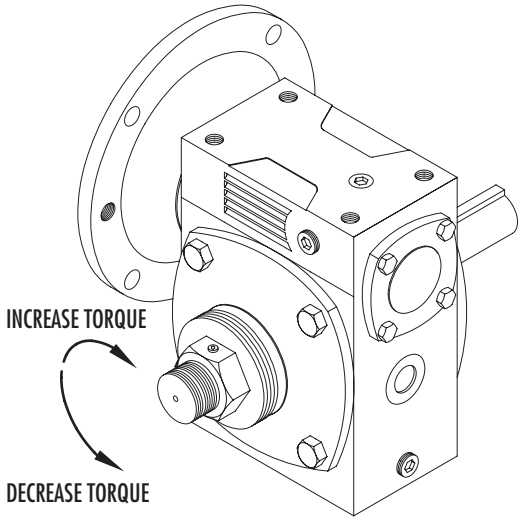
HAMPTON GEAR REDUCER

Hampton Worm Gear Reducer 100:1 Ratio, 56C Frame

This reducer is equipped with a built-in slip clutch. In the event of a mechanical blockage of the inner spout, the motor will keep running without damaging the drive train. The slip clutch is factory set at 45 ft/lbs. In the event the slip clutch needs to be field adjusted, loosen the set screw (using a 3 mm allen wrench) and turn the nut as shown using a torque wrench to the desired setting.

In an emergency situation where the electric control is not working, the distributor spout can be moved manually by releasing all tension on the clutch.

The reducer is filled with Mobil Delvac synthetic lubricant 75W-90 98HL97. This provides good service in most normal temperature ranges. As with any gear reducer, the oil should be changed in your normal routine maintenance schedule.



⚠ DANGER ⚠

Be sure to use appropriate safety device to protect from falling into distributor outlets. Falling into outlets may cause injury or death.

⚠ WARNING ⚠

Turn off and lock out power to the distributor motor to prevent anyone from operating the unit while you are servicing it.

MAINTENANCE

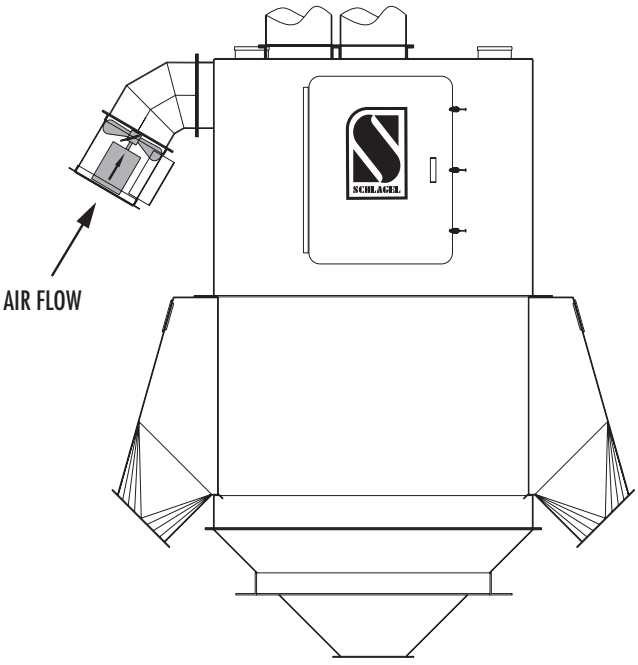
Under normal operating conditions the RotarySet distributor will need very little attention. The list below is to help insure the distributor will continue to operate as it did when it was first installed. Although this distributor is a most important component in your material handling system, its superior operation will soon be taken for granted.

1. For the manual RotarySet distributor, it is recommended that the remote operating cables are kept in good condition and that proper tension is maintained.
2. For the EDI electric RotarySet distributor, it is recommended that the oil in the gear reducer be changed regularly. See the Hampton Gear Reducer information located on this page.
3. Occasionally check the rotating spout and associated wear points as you check other components in a scheduled maintenance program.

POSITIVE PRESSURE FAN

The Schlagel RotarySet distributor has been designed to give you many years of trouble free service with regular maintenance. Listed below are a couple of situations that may arise and the remedy.

Sensor block freeze down may rarely occur due to a combination of environmental factors, dust, moisture, and extreme cold temperature. Excessive dust may accumulate on the upper spout code ring if venting and /or dust control is inadequate. In addition high levels of moisture may be present due to the environment or material processing. To help prevent freeze down a positive pressure fan can be installed. We offer a fan with transition and elbow for mounting to the exterior of the RotarySet distributor. This fan will create a positive pressure that will eliminate most of the dust and moisture rising through the spouts. This in turn will prevent most opportunities for sensor block freeze down. The fan is available with either a single phase or three phase explosion proof motor.



ROTARYSET DISTRIBUTOR SHOWN WITH POSITIVE PRESSURE FAN

If there is a positive pressure fan installed on your RotarySet distributor and you are experiencing sensor block freeze down; make sure the fan is operating trouble free and that it is blowing air into the distributor. See detail above.

The EDI Control systems should be virtually problem free. However, situations may arise due to power shortage or a power spike. After such an event takes place, the EDI control box may need to be reconfigured. This can be easily done using the EDI Operation manual. That was provided when the unit was purchased. If you cannot set up the control panel using the manual call the factory for assistance.

See page 14 of this manual for other trouble shooting ideas.

PROBLEM	CAUSE	REMEDY
Spout moves hard.	Control cable too tight.	Loosen cable until control wheel moves 1" in either direction with moderate pressure.
	Cable not lined up with pulleys.	See above installation steps #
	Inlet plate tilted causing the spout to bind against the housing guides.	Rework inlet transition to the distributor so as to eliminate any twisting force on the distributor. If the inlet plate has been permanently distorted then try clamping a heavy angle to the flange and prying back into correct position.
	Upper spout does not rotate smoothly.	Adjust the (4) top alignment / leveling bearings.
	Lower spout does not rotate smoothly.	Check for binding at the inlet collar.
Latch pin does not drop into notch of indexing wheel.	Control cable rubbing against an obstruction.	Check routing of lift pedal cable to make certain that the cable is not rubbing against a pulley's enclosure housing or against some other equipment.
	Too much weight from lift pedal cable.	Put a spring assist up by the distributor on either the operating latch lever or the cable to reduce the downward cable pull.
End of spout not centered on outlet duct.	MANUAL Distributors - Notched indexing wheel / ring is out or alignment.	LOWER SPOUT - Loosen the bolts on the small center flange with the radial slots to reset alignment. UPPER SPOUT - Loose the bolts holding the top mounted latch plate to reset alignment.
	ELECTRIC Distributors - Incorrect value for "CENTERING ADJUSTMENT" was entered into the EDI control panel.	See the EDI operation manual instruction manual to re-enter a new value.
Constant small stream of material down overflow spout. *Keep in mind that it is almost impossible to prevent a small amount of light product from getting in the overflow cone.*	End of spout not centered over duct causing material to hit against the vertical channel between ducts and bounce back into the overflow cone.	See above corrections.
	Air flow coming back up from bin spout is blowing product out of the duct back into the overflow cone.	Make certain bins are vented. Check to see that any atmosphere vents are not being blocked. If the bin is vented to a dust collection system then check that it is working properly and that no blast gate is the duct work is set too restrictive.

Please contact our service department for help with any concerns or questions about your RotarySet® Distributor.

SCHLAGEL

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