OPW Installation and Maintenance Instructions

OPW 1-3100 Series Primary and Secondary Bucket Replacement Instructions

IMPORTANT: Please read these warnings and follow the assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

IMPORTANT: The OPW 1-3100 Spill Container is pre-assembled for your convenience and ease of installation. Check to make sure the unit is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage or death. Be sure that the working area is free from such hazards, and always use proper precautions. NOTE: At all times when product is in the storage tank keep the riser pipe capped, so the vapors cannot escape into the environment.

Notice: OPW products must be used in compliance with applicable federal, state, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and material to be handled. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

Standard Product Warranty

OPW warrants that products sold by it are free from defects in materials and workmanship for a period of one year from the date of manufacture by OPW (ECO products two years from date of manufacture.) Proof of purchase may be required. As the exclusive remedy under this limited warranty, OPW, will at its sole discretion, repair, replace, or issue credit for future orders for any product that may prove defective within the one year date of manufacture period (repairs, replacements, or credits may be subject to prorated warranty for remainder of the original warranty period, complete proper warranty claim documentation required.) This warranty shall not apply to any product that has been altered in any way, which has been repaired by any party other than a service representative authorized by OPW, or when failure is due to misuse, or improper installation or maintenance. OPW shall have no liability whatsoever for special, incidental or consequential damages to any party, and shall have no liability for the cost of labor, freight, excavation, clean up, downtime, removal, reinstallation, loss of profit, or any other cost or charges.

For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND SPECIFICALLY THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

In some states it is prohibited to use spill container drain valves on spill containers that are exclusively used for vapor return risers. Install only 1-3100 Series Thread-On spill container models equipped with a drain plug.

WARNING: If the snowplow ring is removed, for any reason, follow the Operation and Maintenance instruction as noted. Replace o-rings and seals and install new ones. Never reuse damaged o-rings or seals as it may result in an improper seal. Only qualified, competent, well-trained technicians should perform maintenance. Common sense and good judgment should always be exercised. The contractor's understanding of all related site conditions prior to starting the project is essential. If the contractor does not have a clear understanding of the required work and site conditions, the contractor is advised to seek clarification prior to starting any portion of the project.

NOTICE TO DELIVERY DRIVER: All delivery drivers MUST inspect the inside of the container for water or contaminants other than fuel prior to delivery. If water or contaminates are present, then they MUST be removed before proceeding. Dispose of towels and debris safely and per all applicable local, state, and federal codes. After delivery is complete, the driver MUST drain any excess fuel that may have spilled into the container from their delivery hose.

Replacement Kit (p/n 203172) Contents:

Seal	201689	Qty. 2
Set Screws	203171	Qty. 8
Base O-Ring	201692	Qty. 1
Adaptor O-Ring	201972	Qty. 1
Gage O-Ring	202013	Qty. 1

Torque Specifications:

Ring Bolts: 3/8-16 UN, 20 ft-lbs minimum to 25 ft-lbs maximum.

Primary Bucket to Secondary Bucket: 40 ft-lbs minimum to 100 ft-lbs maximum.

Secondary Bucket to Riser Pipe: 125 ft-lbs min to 250 ft-lbs max. **Note:** All 4" NPT threads are to be torqued progressively lower from the tank up.

Tools Recommended:

1-3100-TOOL – Torque Installation Tool
9/16" hex socket
Torque wrench
DW-VAC-TEST – Vacuum Test Equipment
(or 202310 Test Adaptor)

1-3100 SERIES PRIMARY AND SECONDARY BUCKET REPLACEMENT INSTRUCTIONS

NOTE: These instructions only apply when a primary or secondary bucket requires removal. Standard installation does not require disassembly of buckets.

Step 1:
Remove nipple adaptor, jack screw kit, and drop tube or overfill prevention valve from spill container.

Step 2: (See Figure 1)
Remove white plastic adaptor from the primary bucket. On models (1-3112 series) with a mechanical float gage removing the adaptor will also remove the float gage. On models with a sensor (1-3122 & 1-3132 series) push the sensor and wiring down into the interstitial space.

Step 3:
Disconnect drain valve split ring from tab on snowplow ring. Remove eight bolts (9/16 hex) from snowplow ring. Remove snowplow ring and discard seal. Set ring, lock washers, and bolts aside. Note: Seal must be replaced before installing new bucket.

Step 4: (See Figure 2)
Remove primary bucket using 1-3100-TOOL as shown in tool instruction sheet 202395 (ensure large slot on tool is aligned with drain valve). When removing primary bucket ensure that only the primary bucket is rotating. A visual check by viewing into the hole in the primary base or into the middle of the base can confirm that only the primary bucket is rotating.

If initial installation was installed to the proper torques the secondary bucket will not rotate.

If secondary bucket is rotating on a sensor style (1-3122 & 1-3132 series) spill container the sensor wiring will be damaged if disassembled. Do not continue disassembling unless prepared to replace all sensor components including sensor, wiring, and seal off.

If secondary bucket is rotating on a float gage style (1-3112 series) disassembly can continue as long as the proper tools are available to disassemble the buckets after removal from the riser pipe. To disassemble this model after removing from the riser pipe secure boss on the secondary base with a vise or pipe wrench and remove primary bucket with 1-3100-TOOL.

Note: If replacing only the primary bucket, skip to step 9.

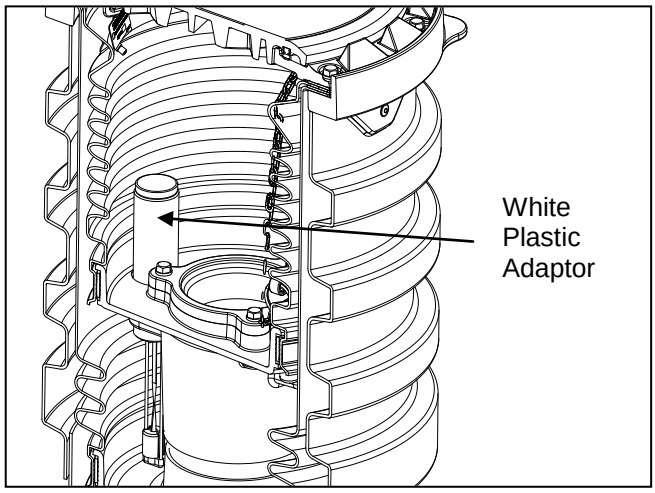

Figure 1

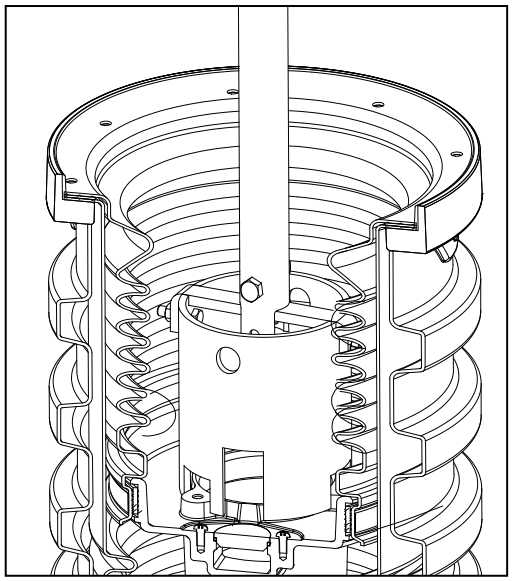

Figure 2

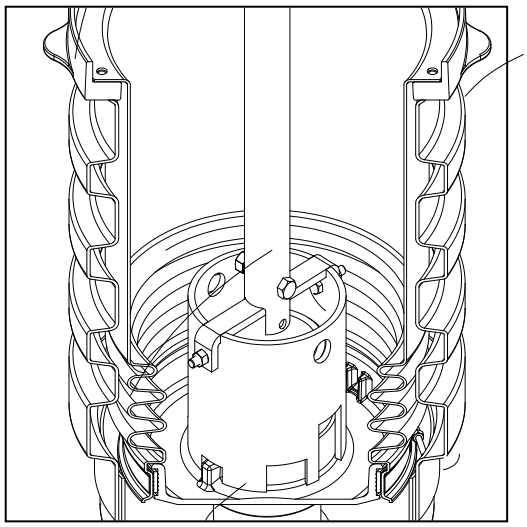

Figure 3

1-3112 Series Secondary Bucket Only
(Float Gauge Models)

Step 6: (See Figure 3)
Remove secondary bucket using 1-3100-TOOL as shown in instruction sheet 202395. Note: Seal must be replaced before installing new bucket.

Step 7: (See Figure 3)
Install new secondary bucket using 1-3100-TOOL to torque the secondary bucket to 125 ft-lbs min to 250 ft-lbs max. Align bolt holes in secondary bucket to holes in the ring. Proceed to step 9.

1-3122 Series Secondary Bucket Only
Replacement Kit (p/n 202943) Required
(Customer Supplied Sensor Model)

Tools Recommended:
¾" & 7/8" hex sockets (for OPW 30-3221-1A sensor)
Magnetic Pickup Tool
Magnetic Object (must fit thru 9/16" diameter hole)

Step 1-3122 #1: (See Figure 1-3122 #1)
If sensor style (1-3122 series) a 202943 Wire Splice Kit will need be needed to replace the secondary bucket. Ensure that the sensor is functional if not it will need to be replaced. Test the sensor by flipping it over and checking for an alarm. Alternate test method: Dip the sensor in a cup of water and check for an alarm.

Step 1-3122 #2: (See Figure 4)
Cut the sensor wire approximately 2 feet away from the plug in the secondary base. Loosen the dome nut on the top of the grommet in the 1-1/2" plug (recommended tool is ¾" crowfoot wrench for OPW 30-3221-1A sensor). Remove the grommet (7/8" hex on OPW 30-3221-1A sensor) from the 1-1/2" plug and slide the grommet off of the wire. Attach a magnetic object capable of fitting thru a 9/16" diameter hole to the end of the wire that runs thru the secondary base. Pass the object and wire thru the 1-1/2" Plug in the secondary base.

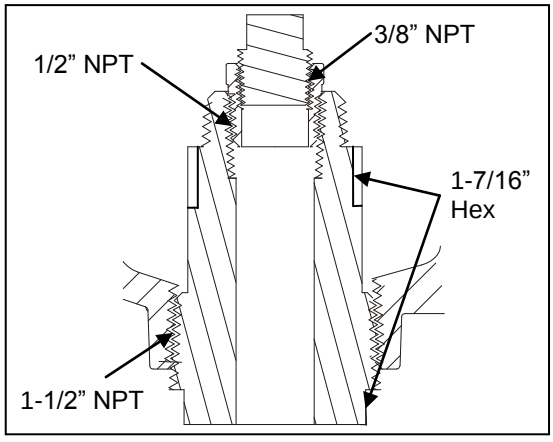

Figure 1-3122 #1

Step 1-3122 #3: (See Figure 3)
Remove secondary bucket using 1-3100-TOOL as shown in instruction sheet 202395. Note: Seal must be replaced before installing new bucket. A new seal is included with the bucket replacement kit.

Step 1-3122 #4: (See Figure 3 & 1-3122 #2)
Note the location of the wire and magnetic object in the gravel guard then install new secondary bucket using 1-3100-TOOL to torque the secondary bucket to 125 ft-lbs min to 250 ft-lbs max. Using a magnetic pickup tool pull the magnetic object and wire back thru the plug and secondary base into the interstitial space. Align bolt holes in secondary bucket to holes in the ring. Install new seal.

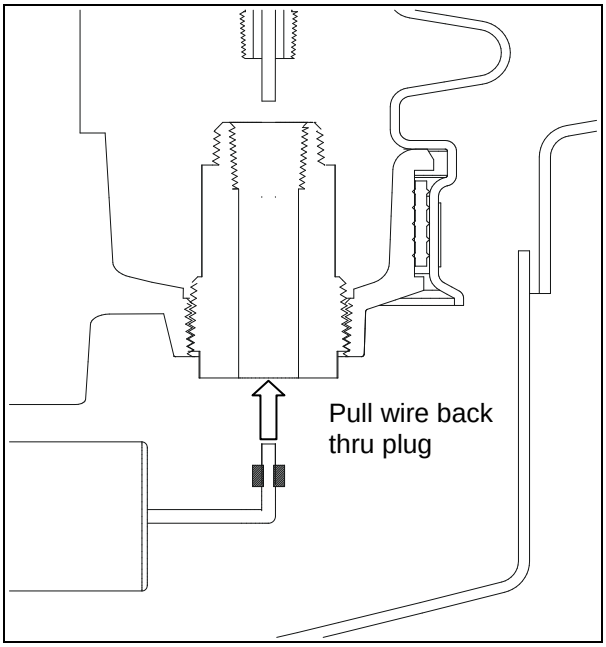

Figure 1-3122 #2

Step 1-3122 #5:
Apply pipe dope to threads of grommet, pass wire thru grommet, and reinstall the grommet in the 1-1/2" plug, tighten per manufacturer's instructions. Tighten dome nut on grommet per manufacturer's instructions (Note: All joints must be vacuum tight).

Step 1-3122 #6:
Before reconnecting sensor wire, verify that the factory installed loop in the sensor wire is 10-1/2" tall from the bottom of the sensor to the top of the loop. The 202943 Wire Splice Kit is required in order to reconnect the wires.
Note: Splice is to be installed no closer than 2 feet from the sensor loop.
Note: At least 4 feet of wire should be between the sensor and the grommet.

Step 1-3122 #7: (See Figure 1-3122 #3)
Remove the end caps from the splice kit barrel. Cut the tip off of one of the cones on each of the end caps so that the end cap will fit snugly around the sensor wiring.

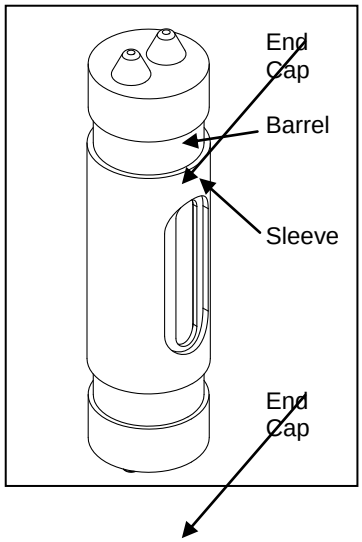

Figure 1-3122 #2

Step 1-3122 #8: (See Figure 1-3122 #4)
Insert the sensor wire from the secondary base through the hole in one of the end caps and the wire attached to the sensor through the hole in the other end cap and slide the end caps out of the way. Slide barrel and sleeve onto the sensor wire and slide out of the way as shown in Figure 1-3122 #4.

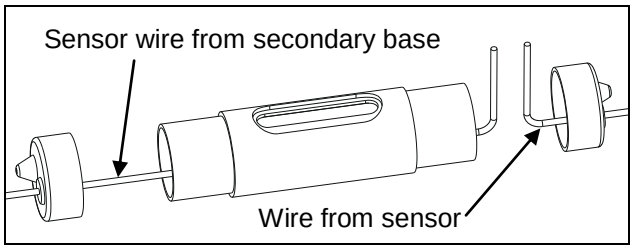

Figure 1-3122 #4

Step 1-3122 #9:
Using the included wire nuts, join the wires per the sensor manufacturer's instructions. Using the included split bolt, securely fasten the two wire ends together.

Step 1-3122 #10:
Center the barrel and sleeve over the splice and slide end caps onto the barrel.

Step 1-3122 #11:
Warm the included compound to at least 60° F (15° C). As shown in the compound mixing instructions, break the center barrier in compound bag by grasping the sides of the bag and rolling thumbs through the barrier. Thoroughly mix the compound, being sure to strip the compound from the corners while mixing.

Step 1-3122 #12:
Cut one corner off of bag and pour the compound through the opening in the barrel until completely full.

Step 1-3122 #13:
Close the barrel by centering the sleeve over the hole in the barrel and rotating the sleeve around the barrel until the hole is completely covered

Step 1-3122 #14:
Test the sensor by flipping it over and checking for an alarm. Alternate test method: Dip the sensor in a cup of water and check for an alarm. If sensor functions properly proceed to step 9.

1-3132 Series Secondary Bucket Only

Replacement Kit (p/n 202943) Required
(Customer Supplied Sensor Model)

Tools Recommended:
1-1/4" Crowfoot Flare Nut 12 Point Wrench
Magnetic Pickup Tool
Magnetic Object (must fit thru 1-3/4" diameter hole)

Step 1-3132 #1:
If sensor style (1-3132 series) a 202943 Wire Splice Kit will need be needed to replace the secondary bucket. Ensure that the sensor is functional if not it will need to be replaced. Test the sensor by flipping it over and checking for an alarm. Alternate test method: Dip the sensor in a cup of water and check for an alarm.

Step 1-3132 #2:
Remove the 1-1/2" plug from the secondary bucket using a 1-1/4" crowfoot flare nut 12 point wrench on the hex of the plug. Pull plug into secondary bucket and cut sensor wire at least six inches below plug.

Step 1-3132 #3:
Remove secondary bucket using 1-3100-TOOL as shown in instruction sheet 202395. Note: Seal must be replaced before installing new bucket. A new seal is included with the bucket replacement kit.

Step 1-3132 #4:
Inspect sensor wiring and ensure wire was not damaged when plug was removed (damaged wiring must be replaced). Attach a magnetic object capable of fitting thru a 1-3/4" diameter hole to the end of the sensor wire that is in the gravel guard.

Step 1-3132 #5:
Check the number of turns required by hand to install the sensor plug back into the secondary base as this information will be needed in step 1-3132 #17 (should be about 5 to 7 turns). Remove the sensor plug from the secondary base.

Step 1-3132 #6:
Ensure grommet is tight. Check both dome nut on wire and thread into plug.

Step 1-3132 #7: (See Figure 3 & 1-3132 #1)
Note the location of the wire and magnetic object in the gravel guard then install new secondary bucket using 1-3100-TOOL to torque the secondary bucket to 125 ft-lbs min to 250 ft-lbs max. Using a magnetic pickup tool pull the magnetic object and wire back thru the secondary base into the interstitial space. Align bolt holes in secondary bucket to holes in the ring. Install new seal.

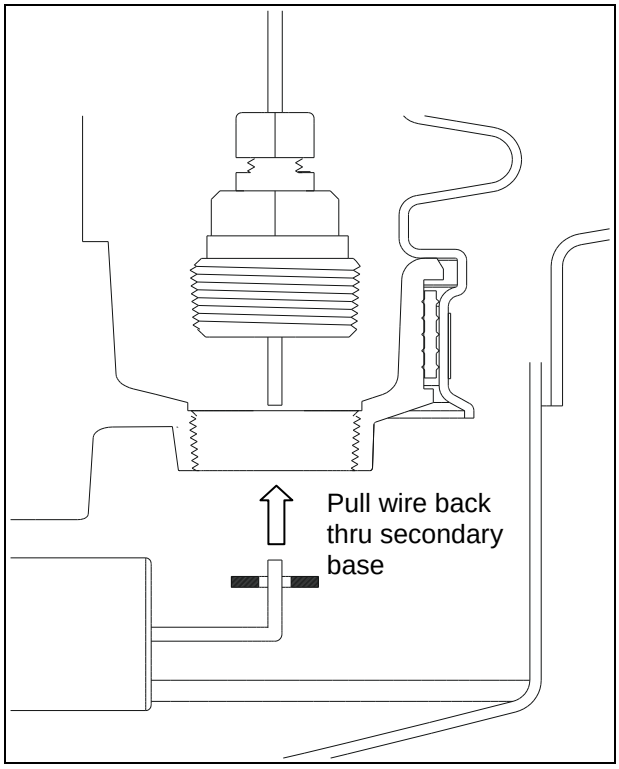

Figure 1-3132 #1

Step 1-3132 #8: (See Figure 1-3132 #2)
Reconnect wires with the 202943 Wire Splice Kit. Remove the end caps from the splice kit barrel. Cut the tip off of one of the cones on each of the end caps so that the end cap will fit snugly around the sensor wiring.

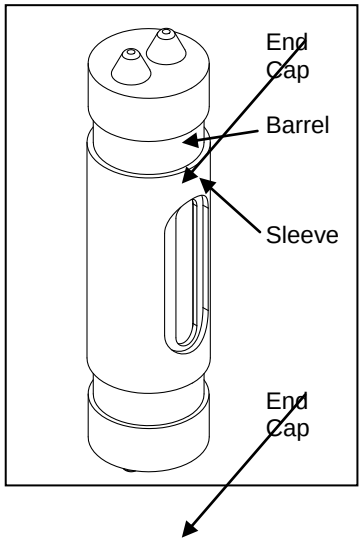

Figure 1-3132 #2

Step 1-3132 #9: (See Figure 1-3132 #2)
Insert the sensor wire coming through the secondary base in one of the end caps and the wire attached to the plug through the hole in the other end cap and slide the end caps out of the way. Slide barrel and sleeve onto the sensor wire and slide out of the way as shown in Figure 1-3132 #3.

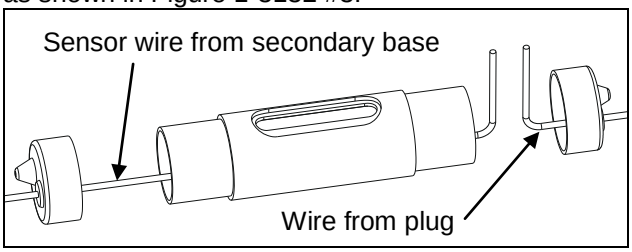

Figure 1-3132 #3

Step 1-3132 #10:
Using the included wire nuts, join the wires per the sensor manufacturer's instructions. Using the included split bolt, securely fasten the two wire ends together.

Step 1-3132 #11:
Center the barrel and sleeve over the splice and slide end caps onto the barrel.

Step 1-3132 #12:
Warm the included compound to at least 60° F (15° C). As shown in the compound mixing instructions, break the center barrier in compound bag by grasping the sides of the bag and rolling thumbs through the barrier. Thoroughly mix the compound, being sure to strip the compound from the corners while mixing.

Step 1-3132 #13:
Cut one corner off of bag and pour the compound through the opening in the barrel until completely full.

Step 1-3132 #14:
Close the barrel by centering the sleeve over the hole in the barrel and rotating the sleeve around the barrel until the hole is completely covered

Step 1-3132 #15:
Test the sensor by flipping it over and checking for an alarm. Alternate test method: Dip the sensor in a cup of water and check for an alarm.

Step 1-3132 #16:
Wait at least 5 minutes then feed the splice kit and excess wire into the gravel guard.

Step 1-3132 #17: (See Figure 1-3132 #4)
Apply pipe dope to threads of plug then wrap the sensor wire below the plug in a counterclockwise direction the number of turns determined in step 1-3132 #5.

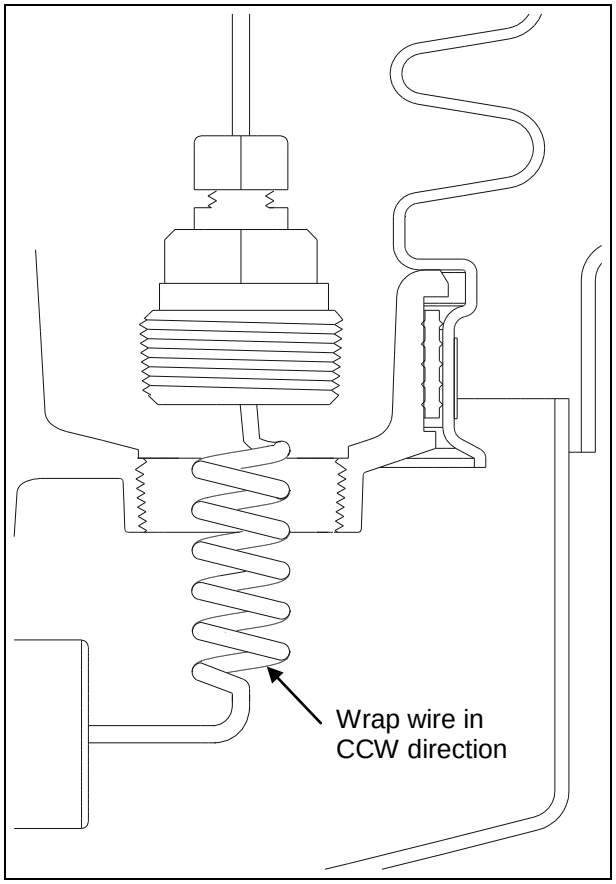

Figure #1-3132 #4

Step 1-3132 #18:
Install 1-1/2" plug back into base and torque to 100 to 130 ft-lbs with 1-1/4" crowfoot flare nut 12 point wrench.

Step 1-3132 #19:
Test the sensor by flipping it over and checking for an alarm. Alternate test method: Dip the sensor in a cup of water and check for an alarm. If sensor functions properly proceed to step 9.

Step 9:
(Beginning of Primary Bucket Installation)
If secondary bucket was not replaced a new o-ring must be installed on the secondary base and the secondary bucket torque should be verified (torque should be 125-250 ft lbs). Lubricate o-ring with black moly grease or equivalent.

Step 10: (See Figure 4)
Place new seal (included in kit 203172) on top of secondary bellows.

Note: New seal must be used. No sealant required.

To prevent rotation of the seal, install eight 3/8-16 UNC set screws (supplied with replacement kit) into the mounting ring. Thread the set screws in to just below the top of the seal.

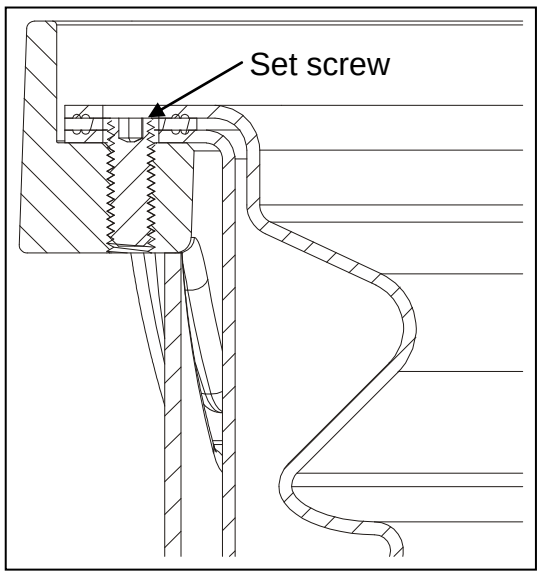

Figure 4

Step 11: (See Figure 2)
Install primary bucket using 1-3100-TOOL into secondary bucket until tight (at least 6 turns). Recommended torque on bucket is 40 to 100 ft-lbs. Align bolt holes in primary bucket with holes in secondary bucket.

For sensor models, lay sensor wire flat half way around secondary bucket and note location before installing primary bucket. Fish wire thru access hole in primary base and stand sensor upright. Make sure that the hole in the primary base does not align with the plug in the secondary base.

Step 12:
Raise the set screws so that they are above the top of the primary bellows.

Step 13:
Place new seal and snowplow ring back into place. Remove one set screw at a time and replace with bolt and lock washer. Torque bolts in crossing pattern to 20 to 25 ft-lbs.

Step 14:
Attach drain valve split ring to tab on snowplow ring.

Step 15:
Replace o-ring(s) on adaptor and lubricate with black moly grease or equivalent (o-rings included in replacement kit).

Install white plastic adaptor back into the primary bucket. On models (1-3112 series) with a mechanical float gage thread in the adaptor until the float gage just touches the bottom of the secondary bucket then back off ¼ turn.

On models with a sensor (1-3122 & 1-3132 series) ensure sensor is as flat as possible on bottom of secondary base. Inspect o-ring on sensor adaptor replace if it is not in good condition. Thread sensor adaptor back into primary bucket until o-ring is no longer visible (approximately 6 turns), do not overtighten.

Step 16:
Test bucket as indicated in 202383 DW-VAC-TEST instructions or Step 9 of 202181 installation instructions. An initial vacuum of 15” of water should be attained and the spill container must retain a vacuum of at least 12” of water after 5 minutes.

Step 17:
Install nipple adaptor, jack screw kit, and drop tube or overfill prevention valve into spill container per applicable instructions.

OPW
A DOVER COMPANY

9393 Princeton-Glendale Rd * Hamilton, Ohio 45011
1-800-422-2525 Domestically
513-870-3315 Internationally
www.opw-fc.com

Printed in U.S.A., p/n 203050 – 02/09