



PCI
SPILL STOP VALVE
SERVICE
MANUAL



P.O. BOX 57
ZACHARY, LA 70791
OFFICE 225-654-6879

WWW.PCIMACHINE.COM

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3"-4" 150# FLANGE SPILL STOP VALVE INSTALLATION SHEET

Items needed:

- Quantity 1 Gasket
- Quantity 8 5/8"-11 (M16) Hex Head Bolt (For 3" Quantity 4)
- Quantity 8 5/8" (16mm) Flat Washer for aluminum side (For 3" Quantity 4)
- Quantity 1 Torque Wrench

Instructions:

1. Tank flange needs to be 1° or less vertically level
2. Flange needs to be 2 holed 1° or less horizontally level
3. Install valve on flange with bolts hand tighten and level on top 1° or less 2 ways at 90° apart
4. Torque flange 8-bolts in "CRISS-CROSS" pattern at 69 ft-lbf (93 N-m) **SEE NOTE IN RED BOX**



Lid



Flange

Torque bolts and nuts in a "CRISS-CROSS" sequence using a minimum of 3 torquing passes.

PASS 1: Torque to a maximum of 30% of the final torque value
PASS 2: Torque to a maximum of 60% of the final torque value
PASS 3: Torque to the final torque value of 100%

After the 3 basic torque passes are completed, repeat torquing the nuts at least once using the final torque in a "CRISS-CROSS" manner until no further rotation of the nut is observed.

5. Recheck level if not good go back to Step 3, if good proceed to next step
6. Remove lid and set aside the lid gasket, pull out debris shield and stopper hanger assembly then remove shipping support located in the bottom, while inside check element
7. Reinstall stopper hanger assembly (make sure the gutter on stopper hanger is in align with the valve inlet), debris shield (make sure to align the tab with the valve inlet), lid gasket and lid
8. Torque lid 4-bolts in a "CRISS-CROSS" pattern at 65 ft-lbf (87 N-m) **SEE NOTE IN RED BOX**
9. Remove cotter pin on indicator plunger



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6" 150# FLANGE SPILL STOP VALVE INSTALLATION SHEET

Items needed:

- Quantity 1 Gasket
- Quantity 8 3/4"-10 (M20x2.5) Hex Head Bolt
- Quantity 8 3/4" (20mm) Flat Washer for aluminum side
- Quantity 1 Torque Wrench

Instructions:

1. Tank flange needs to be 1° or less vertically level
2. Flange needs to be 2 holed 1° or less horizontally level
3. Install valve on flange with bolts hand tighten and level on top 1° or less 2 ways at 90° apart
4. Torque flange 8-bolts in "CRISS-CROSS" pattern at 105 ft-lbf (142 N-m) **SEE NOTE IN RED BOX**



Lid



Flange

Torque bolts and nuts in a "CRISS-CROSS" sequence using a minimum of 3 torqueing passes.

PASS 1: Torque to a maximum of 30% of the final torque value
PASS 2: Torque to a maximum of 60% of the final torque value
PASS 3: Torque to the final torque value of 100%

After the 3 basic torque passes are completed, repeat torqueing the nuts at least once using the final torque in a "CRISS-CROSS" manner until no further rotation of the nut is

5. Recheck level if not good go back to Step 3, if good proceed to next step
6. Remove lid and set aside the lid gasket, pull out debris shield and stopper hanger assembly then remove shipping support located in the bottom, while inside check element
7. Reinstall stopper hanger assembly (make sure the gutter on stopper hanger is in align with the valve inlet), debris shield (make sure to align the tab with the valve inlet), lid gasket and lid
8. Torque lid 4-bolts in a "CRISS-CROSS" pattern at 65 ft-lbf (87 N-m) **SEE NOTE IN RED BOX**
9. Remove cotter pin on indicator plunger



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SERVICING PCI SPILL STOP VALVES

Tools Required: 3/4" End Wrench
7/16" End Wrench
Pick
Dead Blow Hammer
Plastic Driver

1. Arming the Spill Stop Valve

Before putting a new **Spill Stop Valve** into service it will be necessary to arm the valve by removing the devices that are used for protection during shipment.

Disassembly Instructions

1. Remove Item (1) indicator cap.
2. Remove Item (2) four nuts and washers that retain the lid assembly.
3. Remove Item (3) lid assembly.
4. Remove Item (4) lid gasket.
5. Remove Item (5) debris shield.
6. Remove Item (6) stopper assembly.
7. Remove and discard the stopper support with the yellow "REMOVE" tag.

Reassembly Instructions

1. Reinstall Item (6) stopper assembly, the gutter must align with the valve inlet, if not the valve will not function properly.
2. Reinstall Item (5) debris shield, the tab must align with the valve inlet.
3. Reinstall Item (4) lid gasket in the gasket recess.
4. Reinstall Item (3) lid assembly, the indicator flag can be positioned in any of the 3 possible locations to suit the installation.
5. Reinstall Item (2) four nuts and washers that retain Item (3) lid assembly.
IMPORTANT to tighten evenly in a cross pattern.
6. Remove and discard the cotter pin from Item (7) indicator plunger.
7. Reinstall Item (1) indicator cap.

2. Replacing the Sensing Element

Disassembly Instructions

1. Remove Item (1) indicator cap.
2. Remove Item (2) four nuts and washers that retain the lid assembly.
3. Remove Item (3) lid assembly.
4. Remove Item (4) lid gasket.
5. Remove Item (5) debris shield.
6. Remove Item (6) stopper assembly.
7. Remove Item (8) upper pin.
8. Remove Item (9) stopper hanger.
9. Remove Item (10) lower pin.
10. Remove and discard the old Item (11) sensing element.

Reassembly Instructions

1. The pinholes in Item (12) stopper guide must remain lined up with the pinholes in Item (13) stopper.
2. Install the new Item (11) sensing element, make sure to align all the pinholes.
3. Reinstall Item (10) lower pin.
4. Reinstall Item (9) stopper hanger.
5. Reinstall Item (10) upper pin.
6. Reinstall Item (6) stopper assembly, the gutter must align with the valve inlet, if not the valve will not function properly.
7. Reinstall Item (5) debris shield, the tab must align with the valve inlet.
8. Reinstall Item (4) lid gasket in the gasket recess.
9. To install Item (3) lid assembly, the flag must be rotated a 1/2 turn down. Prior to lid installation the slot on Item (7) indicator plunger must be aligned with the flat on the flag shaft.
10. Reinstall Item (2) four nuts and washers that retain Item (3) lid assembly.
IMPORTANT to tighten evenly in a cross pattern.
11. Reinstall Item (1) indicator cap.

3. Installing a Full Service Kit

A. Disassembly Instructions to get to the Stopper Assembly

1. Remove Item (1) indicator cap.
2. Remove Item (2) four nuts and washers that retain the lid assembly.
3. Remove Item (3) lid assembly.
4. Remove and discard Item (4) lid gasket.
5. Remove Item (5) debris shield.
6. Remove Item (6) stopper assembly.

B. Service on the Stopper Assembly

Disassembly Instructions

1. Remove Item (8) upper pin.
2. Remove Item (9) stopper hanger.
3. Remove Item (10) lower pin.
4. Remove Item (12) stopper guide.
5. Remove and discard the old Item (11) sensing element.
6. Remove and discard the old Item (14) o-ring 5.725" ID and Item (15) o-ring 5.475" ID, you can use a pick to aid in removal of the o-rings.
7. Replace with new Item (14) o-ring 5.725" ID (larger) in the top groove and Item (15) o-ring 5.475" ID (smaller) in the bottom groove.
8. Remove and discard the old Item (16) o-ring 9.737" ID from Item (9) stopper hanger.
9. Replace with new Item (16) o-ring 9.737" ID, apply some Dow Molykote 111 Compound to stopper o-ring, this will later aid in the installation.

Reassembly Instructions

1. The pinholes in Item (12) stopper guide must remain lined up with the pinholes in Item (13) stopper.
2. Install the new Item (11) sensing element, make sure to align all the pinholes.
3. Reinstall Item (10) lower pin.
4. Reinstall Item (9) stopper hanger.
5. Reinstall Item (10) upper pin.
6. Reinstall Item (6) stopper assembly, the gutter must align with the valve inlet, if not the valve will not function properly.
7. Reinstall Item (5) debris shield, the tab must align with the valve inlet.

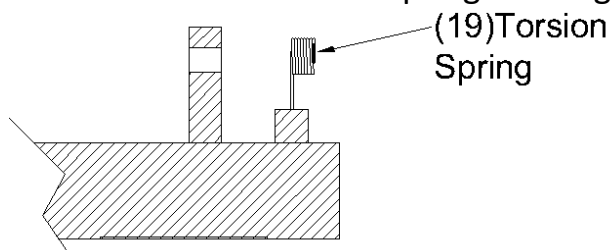
C. Service on the Lid Assembly

Disassembly Instructions

1. Remove and discard the 2 Items (17) cotter pins from the Item (18) indicator flag/shaft.
2. Slide the indicator flag/shaft out slightly, so that Item (19) torsion spring can be unwound and removed from the hole on the indicator flag/shaft, then remove the indicator flag/shaft.
3. Discard the old Item (19) torsion spring.
4. Remove and discard the 2 old Items (20) teflon bushings.
5. With a 7/16" wrench remove Item (21) four bolts that retain Item (22) indicator plunger cover.
6. Remove Item (22) indicator plunger cover.
7. Remove and discard Item (23) compression spring.
8. Remove Item (7) indicator plunger.
9. Use a pick to remove and discard Item (24) o-ring 1.614" ID.
10. Use a pick to remove and discard Item (25) lip seal and Item (26) o-ring 3.109" ID from Item (22) indicator plunger cover.

Reassembly Instructions

1. Install new Item (26) o-ring 3.109" ID onto Item (22) indicator plunger cover.
2. Apply Dow Molykote 111 Compound to the inside of Item (25) lip seal.
3. Use a plastic driver and a dead blow hammer to reinstall Item (25) lip seal.
4. Apply Dow Molykote 111 Compound generously to all the surfaces of Item (7) indicator plunger and reinstall into Item (3) lid assembly.
5. Slide the new Item (23) compression spring over Item (7) indicator plunger.
6. Install new Item (24) o-ring 1.614" ID into the recess on Item (3) lid assembly.
7. Reinstall Item (22) indicator plunger cover over Item (7) indicator plunger compressing Item (23) compression spring on Item (3) lid assembly.
8. Reinstall Item (24) four bolts that retain Item (22) indicator plunger cover.
9. Install 2 new Item (20) teflon bushing by inserting them with the lip on the outside of the blocks.
11. Install the new Item (19) torsion spring by inserting the long leg into the small block on Item (3) lid assembly, make sure the coils of the spring is facing in an outward direction (See Figure 1).



12. Reinstall Item (18) indicator flag/shaft, go through Item (19) torsion spring and the 2 Item (20) teflon bushings.
13. Insert the short leg of Item (19) torsion spring into the hole on the tab of Item (18) indicator flag/shaft, by turning the flag wind the spring just enough for the tab to engage the block on the lid, approximately a 1/4 turn.
14. Install the 2 new Item (17) cotter pin by inserting them through the holes in Item (18) Indicator flag/shaft.

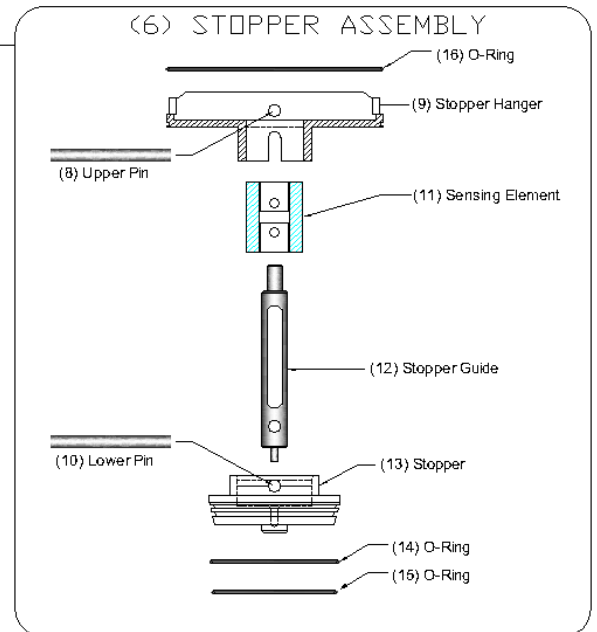
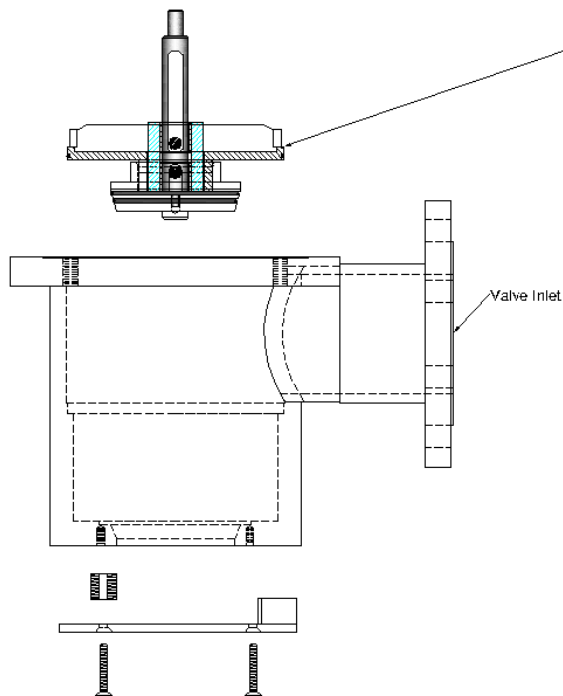
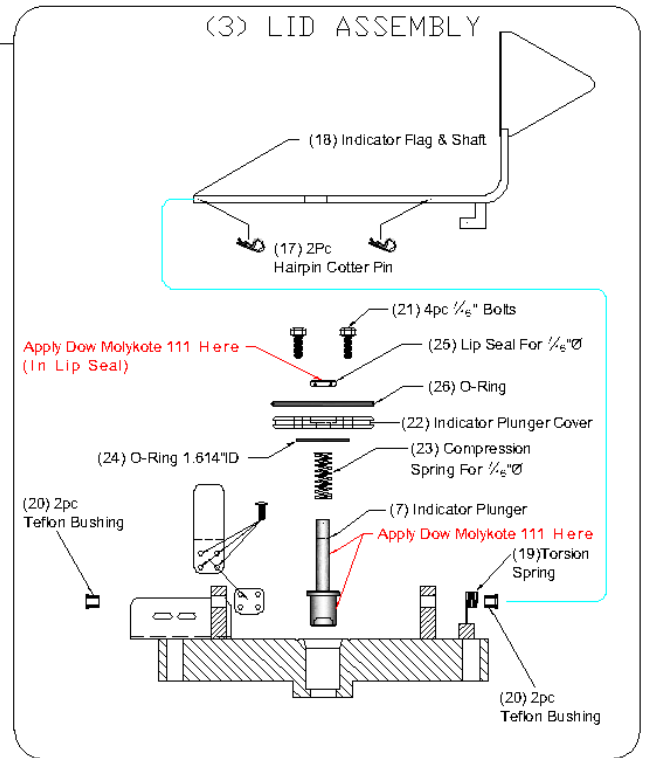
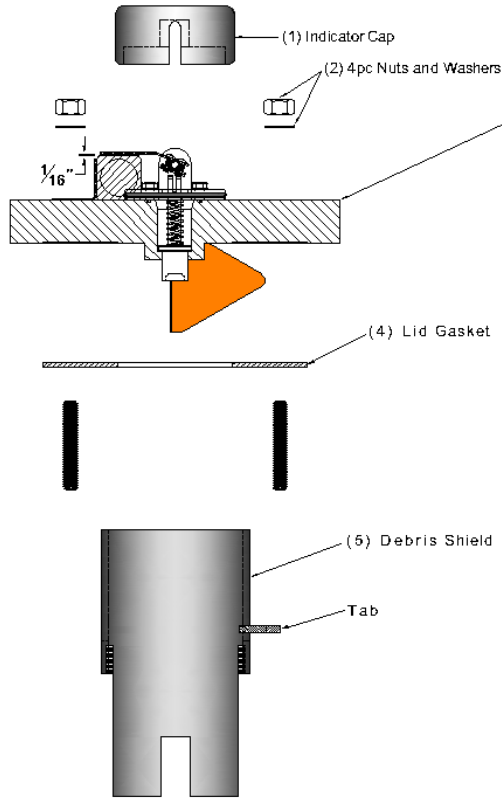
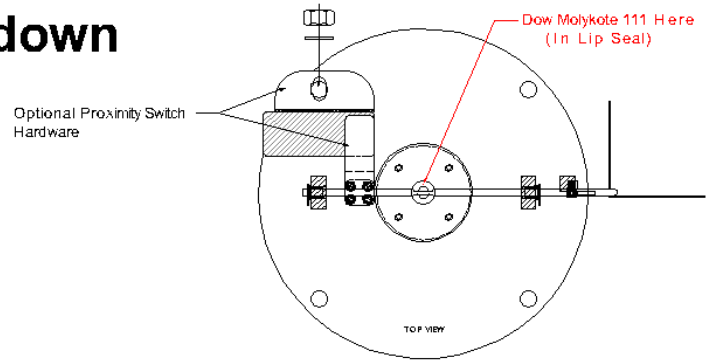
D. Testing the operation of Item (18) Indicator Flag/Shaft

Wind the flag down a 1/2 turn and place Item (3) lid assembly on a flat surface, Item (7) indicator plunger should rise up and engage Item (18) indicator flag/shaft, by lifting the lid Item (7) indicator plunger should fall allowing the flag to rotate up. If it functions properly you can start installing Item (3) lid assembly.

E. Installing the Lid Assembly

1. Reinstall Item (4) lid gasket in the gasket recess.
2. To install Item (3) lid assembly, the flag must be rotated a 1/2 turn down. Prior to lid installation the slot on Item (7) indicator plunger must be aligned with the flat on the flag shaft.
3. Reinstall Item (2) four nuts and washers that retain Item (3) lid assembly.
IMPORTANT to tighten evenly in a cross pattern.
4. Reinstall Item (1) indicator cap.

Spill Stop Valve Breakdown



Spill Stop Valve Standard Parts List

<u>Item</u>	<u>Qty</u>	<u>Description</u>	<u>Material</u>
1	1	Indicator Cap	Plastic
2	4	Nut & Washer	Stainless Steel
3	1	Lid Assembly	
4	1	Lid Gasket	Buna or Viton
5	1	Debris Shield	Aluminum
6	1	Stopper Assembly	
7	1	Indicator Plunger	Stainless Steel
8	1	Upper Pin	Stainless Steel
9	1	Stopper Hanger	Aluminum
10	1	Lower Pin	Stainless Steel
11	1	Sensing Element	Polystyrene
12	1	Stopper Guide	Stainless Steel
13	1	Stopper	Stainless Steel
14	1	O-Ring 3.984" ID	Viton
15	1	O-Ring 3.869" ID	Viton
16	1	O-Ring 6.987" ID	Viton
17	2	Hairpin Cotter Pin	Stainless Steel
18	1	Indicator Flag & Shaft	Stainless Steel
19	1	Torsion Spring	Stainless Steel
20	2	Teflon Bushing	Teflon
21	4	Bolt	Stainless Steel
22	1	Indicator Plunger Cover	Stainless Steel
23	1	Compression Spring	Stainless Steel
24	1	O-Ring 1.614" ID	Viton
25	1	Lip Seal	Viton
26	1	O-Ring 3.109" ID	Viton

