

RESPA[®]-CF Installation Kit for Komatsu WA380-7 Waste Handler



Sy-Klone part number: REV3K2
Installation Time: 3 to 4 hours

Purpose: RESPA-CF provides precleaned and filtered air through integrated Gideon power precleaning technology. Filtration is provided by a MERV 16/EU P2* filter. The RESPA-CF powered precleaner system provides a positive airflow without adding resistance to the air conditioning system.

The Sy-Klone Cab Pressure Monitor System has been included to alert the operator when it is time for the RESPA filter to be changed. **RESPA IS NOT CERTIFIED FOR USE IN EXPLOSION RISK ENVIRONMENTS.**



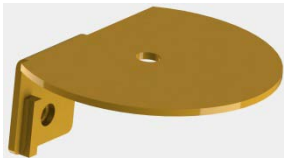
AD0070 – 1-INCH TUBE BRACKET - HORIZONTAL



AD0069 – 1-INCH TUBE BRACKET - VERTICAL



AD0027B – 3 INCH TUBE CLAMP BRACKET



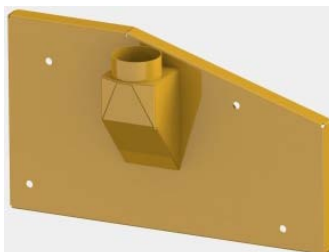
AD0089 – ANTENNA BRACKET



AD0065 – INLET ADAPTER CLAMP



AD0064 – INLET HOUSING ADAPTER PLATE



AD0087 – INLET HOUSING ADAPTER COVER

KIT CONTENTS:

Replaceable Parts:

Stock code	Description	Quantity
REV0003	RESPA-CF 24 VOLT	1
KT-CABPRES-EL1-ENG	CAB PRESSURE MONITOR	1
AD0027B	3 INCH TUBE CLAMP BRACKET	3
AD0064	INLET HOUSING ADAPTER PLATE	1
AD0065	INLET ADAPTER CLAMP	1
AD0068	RESPA-CF ROOF BRACKET	1
AD0069	1 INCH TUBE BRACKET-VERTICAL	1
AD0070	1 INCH TUBE BRACKET-HORIZONTAL	2
AD0087	INLET HOUSING ADAPTER COVER	1
AD0089	ANTENNA BRACKET	1
90L30	3 INCH 90° ELBOW	3
45L30	3 INCH 45° RUBBER ELBOW	2

Also included in kit:

Description	Quantity
3 INCH X 48 INCH TUBE	1
3 INCH X 10 INCH TUBE	1
3 INCH X 3 INCH TUBE	3
CONNECTOR MOUNTING CLIP	1
RTV SILICONE TUBE	1
3 TO 4 INCH 90° RUBBER ELBOW	1
3.25 INCH T-BOLT CLAMP	3
3.25 INCH WORM GEAR CLAMP	11
4.75 INCH WORM GEAR CLAMP	1
ELECTRICAL WIRING KIT	1
M10 X 1.5 NUT	5
M10 WASHER	8
M10 X 1.5 X 25 BOLT	3
M10 LOCK WASHER	5
M12 LOCK WASHER	1
M12 WASHER	1
M12 X 1.75 X 35 BOLT	1
FOAM STRIP	3
3/8-16 X 1 BOLT	4
3/8 WASHER	22
3/8 LOCK WASHER	4
3/8-16 LOCK NUT	6
5/16-18 X 1 BOLT	6
5/16 WASHER	12
5/16-18 LOCK NUT	6
3/8-16 U-BOLT	3

Technical Support

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(904) 448-6563 ext. 1310



AD0068 – RESPA-CF ROOF BRACKET

CAB PRESSURE MONITOR SYSTEM:

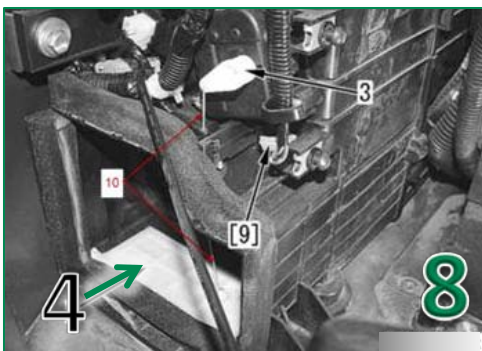
Use the Sy-Klone Cab Pressure Monitor to verify cab pressure.

1. Install the Sy-Klone Cab Pressure Monitor per the installation instructions.
2. Start the machine.
3. Set the HVAC system to its lowest fan setting.
4. Set the HVAC system to fresh air by turning off the recirculation feature.
5. Increase HVAC system fan speed. Cabin pressure should increase as fan speed increases.
6. If cabin pressure never increases there may be leaks in cab that need to be sealed.

MODIFY RECIRCULATION DOOR:

The recirculation door must be modified to prevent cab pressure loss when the HVAC is set to recirculation.

1. Prior to installation of the RESPA-CF system, the cabin should be cleaned. Follow the manufacturer's suggested practices for cleaning.
2. Turn the machine on.
3. Set the HVAC system fan speed to its minimum operating setting, setting 1.
4. Turn the machine off.
5. Remove the in cab recirculation filter by removing the two thumb screws from the recirculation air duct. **Note:** The recirculation filter, if clean, can be reinstalled later in the RESPA-CF installation. If the filter shows signs of debris, it should be discarded appropriately and replaced with a new filter.
6. Remove the 6 bolts that retain the recirculation air duct. **Note:** Two bolts are located in the face of the duct under the dash panel. Four bolts are located inside the duct behind the filter opening.
7. Remove the air duct panel and place to the side.
8. The recirculation door will now be visible, [labeled 4](#).



9. Drill eight to ten 1/2 inch holes in the recirculation door. Avoiding areas near the pivot and connecting rod mount. Remove any loose material. **Note:** The recirculation door can be placed in the recirculate position as shown or vertically in the fresh air position, see step 11.
10. Remove any loose debris using a suitable vacuum unit and clean rags.

11. Set the HVAC system to fresh air. If already in this vertical position, move on to the next step.
 - a. Turn the machine on.
 - b. Set the HVAC system to recirculation. **Note:** Fan speed should still be set to setting 1.
 - c. Turn the machine off.
12. Open the fresh air door outside of the cab.



13. Remove the fresh air filter and discard appropriately.



14. Use compressed air to blow any remaining debris from the fresh air duct from the recirculation door port out the fresh air inlet.
15. Reinstall the recirculation air duct and recirculation filter.

INSTALL THE FRESH AIR INLET:

1. Remove the two 8mm bolts that secure fresh air filter door to the cab. **Retain the two bolts** and discard the fresh air door.



2. Clean the cab sheet metal around the fresh air inlet.
3. Apply approximately a ¼ inch bead of RTV silicone (supplied) around the fresh air opening.



4. Install the inlet housing adapter plate over the fresh air opening. **Note:** The four stand-offs face the outside of the machine. The 2 mounting holes align with the fresh air door mounting holes.
 - a. The upper edge of the adapter plate must be placed under the two upper fresh air filter tabs first.



- b. The inlet adapter plate will rest flat against the cab sheet metal.
- c. Secure the left side of the inlet adapter plate with the two bolts removed in **Step 1** of this segment.

- d. Position the inlet adapter clamp to the backside of the inlet adapter plate on the two studs as shown below. **Note:** The inlet clamp holes are offset. The clamp bracket should not extend into the inlet opening of adapter plate. One edge will rest against the backside of the inlet adapter plate and the other edge will rest on the backside of the cab sheet metal.



- e. Secure inlet adapter clamp with two 10mm washers, lock washers, and nuts.
5. Apply approximately a ¼ inch bead of RTV silicone (supplied) around the mating face of the inlet housing adapter cover as shown below.

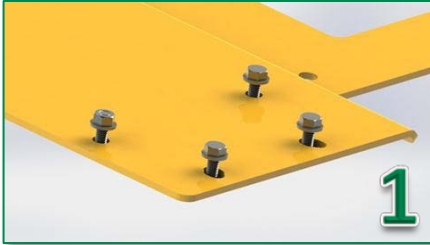


6. Attach the inlet housing adapter cover to the inlet adapter plate with four 3/8 inch washers, lock washers, and bolts.



INSTALL RESPA-CF:

1. Assemble four 5/16 inch bolts, lock nuts, and eight 5/16 washers in the RESPA-CF roof bracket as shown below. Leave loose do not tighten. **Note:** Orient direction of bolts as pictured. The bolt near the leading edge must be inserted from below.



2. Lay the RESPA-CF on a secure surface with the mounting feet up.



3. Align the roof bracket with hardware as shown below.
4. Insert 5/16 inch hardware into the four corresponding mounting feet. **Note:** Ensure that the washers are above the mounting feet.
5. Secure the remain two RESPA-CF mounting feet to the roof bracket with two 5/16 inch bolts, lock nuts, and four 5/16 washers. **Note:** The bolts must be oriented as shown. The bolts near the leading edge must be inserted from the bottom as shown.



6. Tighten mounting hardware to 20-25 ft. lbs. or 27.2-33.9 N-m. **Note:** Do not use power tools – tighten bolts by hand ONLY!

7. Remove the four bolts securing the beacon light bracket to the roof and retain.



Retain 4 bolts

8. Lift the beacon light bracket enough to slide the RESPA-CF roof bracket assembly between the beacon light bracket and the roof as shown.
9. Align the four mounting holes in the RESPA-CF roof bracket with the beacon light bracket bolt pattern.
10. Secure the RESPA-CF roof bracket and beacon light bracket to the roof with the hardware removed in step 7 (see photo above). **Note:** A connector clip is included and should be placed on either beacon light bracket bolt nearest the RESPA-CF as shown to secure the harness connector.

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11. Verify that the RESPA-CF ejection ports are pointed down. **Note:** The ejection ports can be rotated by releasing the 4 filter latches that retain the filter element.



INSTALL INLET PLUMBING:

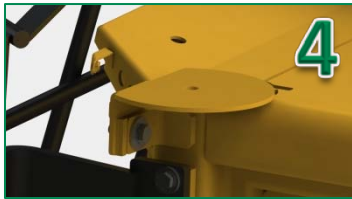
1. Remove the antenna from the antenna bracket.
2. Remove the corner cover plate.



3. Cut and remove or bend mounting tabs flat to clear inlet down-tube.



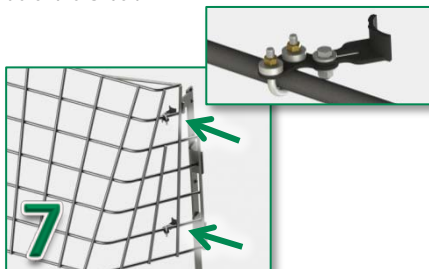
4. Install antenna bracket on cab lift tab and secure with , one M12 bolt, one M12 washer, and one M12 lock washer.



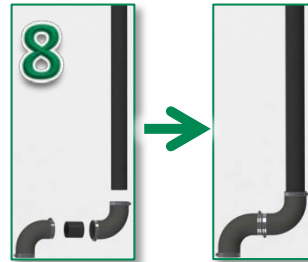
5. Reinstall antenna.
6. Assemble two tube clamp brackets as shown. Leave loose enough to adjust bracket positioning. One tube clamp bracket consists of AD0027B clamp bracket (1), AD0070 tube bracket (1), M10 bolt (1), M10 nut (1), and M10 washers (2).



7. Attach a tube clamp bracket to the second and sixth horizontal window guard bars between the window guard and glass as shown with U-bolt (1), 3/8 washers (6), and 3/8 nuts (2). Leave loose enough to move along bar. **Note:** Place three washers on each side of the U-bolt.



8. Assemble the 3-inch by 48-inch inlet tube, rubber elbows (2), 3.25-inch worm gear clamps (4), and 3-inch by 3-inch union as shown. Leave clamps loose.



9. Insert the down-tube assembly behind the window guard and attach the open end of rubber elbow to inlet housing adapter cover . Leave loose. **Note:** It may be necessary to trim elbows for proper alignment.



10. Align the tube clamp brackets with the inlet tube and mark locations on inlet tube with chalk, marking crayon, etc.
11. Remove the inlet down-tube assembly.
12. Wrap foam strips around air inlet tube at locations marked in step 10.
13. Remove and save nuts from two 3.25" T-bolt clamps.
14. Reinstall the down-tube assembly.
15. Align lower tube clamp bracket with the corresponding foam strip on tube.
16. Wrap 3.25 inch T-bolt clamp around tube and tube clamp bracket.
17. Assemble clamp and tighten.
18. Repeat steps 15 through 17 for the upper tube clamp bracket.
19. Align the air inlet tube vertically as desired and tighten the upper and lower tube clamp bracket u-bolts.
20. Position worm gear clamps on rubber elbows and tighten.



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INSTALL INLET PLUMBING, continued:

21. Attach the 3 to 4-inch 90° elbow to the RESPA-CF outlet and orient as shown. Place a 3.25-inch and 4.75-inch worm gear clamps on elbow. Leave loose.



22. Insert 3 x 10-inch long tube into 90° elbow.



23. Attach the 3-inch 45° elbow to the 3-inch tube and orient as shown. Place two 3.25-inch worm gear clamps on elbow. Leave loose.



24. Insert 3 x 3-inch long tube into 45° elbow.



25. Attach the 3-inch 45° elbow to the 3-inch tube and orient as shown. Place two 3.25-inch worm gear clamps on elbow. Leave loose.



26. Insert 3 x 3-inch long tube into 45° elbow.
27. Place two 3.25-inch worm gear clamps on 3-inch 90° elbow. Connect the 3 x 3-inch tube to the 3-inch down tube with elbow. **Note:** It may be necessary to trim elbows for proper alignment.



28. Tighten all worm gear clamps.
29. Assemble a tube clamp bracket as shown. Leave loose enough to adjust bracket positioning. One tube clamp bracket consists of AD0027B clamp bracket (1), AD0069 tube bracket (1), M10 bolt (1), M10 nut (1), and M10 washers (2).



30. Attach tube bracket to top window guard bar, near the center of 3 x 10-inch tube, with U-bolt (1), 3/8 washers (6), and 3/8 nuts (2). Leave loose enough to move along bar.



31. Wrap foam strip around 10-inch tube in line with clamp bracket.
32. Refer to steps 13-17 from previous page for clamp to tube assembly.
33. Tighten the tube clamp bracket U-bolt.

WIRING:

1. The machine should be off.
2. Finding proper power is critical for system performance.
 - a. The unit must always receive power when the ignition key is in the ON position.
 - b. The power must terminate when the ignition key is in the OFF position.
 - c. Do not wire the unit to a variable voltage source.
 - d. A master system relay or main fuse box can be a good source of constant power when the ignition key is in the ON position.
 - e. The current requirement for the 24 volt system is 12 amps maximum initial draw with 6 amps constant.
 - f. An appropriate relay can be used to provide suitable power from a non-terminating constant source.
3. Ensure the input voltage is 24 volts.
4. The RESPA-CF system must be fused inline to at least twice the constant current requirements.

Note: A fuse holder and 15 amp fuse is included.
5. 16 GA or larger wire should be used for the system **Note:** A wiring harness is included.
 - a. System black wire = negative (ground)
 - b. System red or orange wire = positive
 - c. Incorrect electrical connection will reverse the fan direction causing the RESPA to function improperly.
6. Finding a good ground is also critical to system performance. Use an existing grounding point if possible. If not, grind a small area to bare metal and use a self-tapping screw to ground the system.
7. The master power switch should be set to the OFF position after appropriate power is located and ignition key removed.
8. Make connections and route the wiring:
 - a. Avoid high heat areas, routing across walkways, and reducing operator visibility.
9. Use wire loom and grommets as necessary to protect wiring.

Note: Seal any holes for wiring with RTV silicon.

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WIRING, continued:

10. Possible routing:



Wiring can be routed underneath beacon light bracket.



Beacon light bracing can be used to route wiring towards rear of cab.



An existing grommet for the antennae can be used to enter the cab.

COMPLETE THE INSTALLATION:

INSPECTING RESPA-CF UNIT:

1. Turn the master power switch ON to inspect the RESPA system. **Note:** If the system powers on while the ignition key is off, an alternate power source must be located.
2. Turn the ignition key to the ON position and inspect the following:
 - a. System is running. If not, an alternate power source must be located.
 - b. Airflow out of RESPA-CF ejection slots is strong. If not, check proper wiring polarity or that the power source is not variable voltage.

VERIFY CAB PRESSURE:

1. With HVAC system to OFF and RESPA-CF operating, cabin pressure should be greater than 0.00 inches of water column (0 pascal).
2. Increase HVAC system fan speed. Cabin pressure should increase as fan speed increases.
3. If cabin pressure never reaches 0.20 inches of water column (49 pascal), check for leaks, improve sealing of cabin, and test again. **Note:** Ideal pressure, with new filters and a sealed cab, is 0.50 inches of water column (125 pascal).

WHEN TO REPLACE FILTER:

Replace the filter when the cab pressure drops below the minimum pressure threshold when cab is sealed. (Refer to Pressure Monitor Installation Manual)

Change the RESPA filter after every 1000 hours of operation time, even if the pressure is within tolerance and there are no noticeable performance changes.