

RESPA[®]-CF/CFX Installation Kit

for Komatsu D475A-5E0

Sy-Klone part number: REV3K13

Installation Time: 7 to 8 hours



Purpose: RESPA systems preclean and filter air through integrated Gideon power precleaning technology. Filtration is provided by a MERV 16 / F9 filter. The RESPA-CF powered precleaner system provides a positive airflow without adding resistance to the air conditioning system.

The Sy-Klone 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.**



AD0154 – RESPA-CF MOUNTING PLATE



AD0143 – RECIRCULATION BULKHEAD



AD0142 – RESPA-CFX MOUNTING PLATE

Replaceable Parts:

Stock Code	Description	Qty
40R30	4-INCH TO 3-INCH RUBBER REDUCER	1
90L30	3-INCH 90° ELBOW	2
KT-CABPRES-EL1-ENG	CAB PRESSURE MONITOR	1
R502151010008	RESPA CF - 24V	1
R602171100011	RESPA CFX - 24V	1
90L40	4-INCH 90° ELBOW	1
90L40R30	4-INCH TO 3-INCH 90° REDUCING ELBOW	1
AD0142	RESPA-CFX MOUNTING BRACKET	1
AD0143	RECIRCULATION BULKHEAD	1
AD0154	RESPA MOUNTING PLATE	1
GA002	4-INCH FLANGE ADAPTER	1
S400X350	4-INCH I.D. STRAIGHT SLEEVE	1

Also included in kit:

Description	Qty
RTV SEALANT	1
4.75-INCH WORM GEAR CLAMP	7
3-INCH O.D. BY 3-INCH UNION	4
3.25-INCH WORM GEAR CLAMP	11
3-INCH HOSE WRAP	1
#12 X 1 SELF-DRILLING SCREW	8
#10 X 3/4 SELF-DRILLING SCREW	4
1/4-20 X 7/8 BOLT	8
3/8-16 x 1 1/4 BOLT	16
M12 X 1.75 X 25 BOLT	2
M6 FLAT WASHER	16
3/8 WASHER	32
M12 WASHER	2
M12 LOCK WASHER	2
1/4-20 LOCKNUT	8
3/8-16 LOCKNUT	16
3-INCH FLEX HOSE	10 FT
4-INCH FLEX HOSE	4 FT
WIRING KIT	2
3-INCH PORT SCREEN	2
4-INCH I.D. X 2-INCH STRAIGHT SLEEVE	1

Technical Support

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CAB PRESSURE MONITOR SYSTEM:

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

1. Install the Sy-Klone Cab Pressure Monitor per the installation instructions. See **Placement and Mounting**.
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.

PLACEMENT AND MOUNTING:

1. The monitor needs to be installed in a location easily visible to the operator. The pressure monitor can be mounted with double sided tape to glass or self-tapping screwed to the panel as shown.



RESPA-CF PREPARATION:

1. Place the RESPA-CF on the AD0154 mounting plate and secure the unit with 3/8 bolts (6), 3/8 washers (12), and 3/8 lock nuts (6).



RESPA-CFX PREPARATION:

1. Place the RESPA-CFX on the AD0142 mounting plate and secure the unit with 3/8 bolts (6), 3/8 washers (12), and 3/8 lock nuts (6).



2. Install the 4-inch x 3.5-inch rubber sleeve on the RESPA-CFX inlet and secure with a 4.75-inch worm gear clamp.



3. Insert a 3-inch union into the 4-inch to 3-inch rubber reducer approximately 1.5-inches.



4. Install the 3-inch union and rubber reducer assembly into the 4-inch sleeve and secure with a 4.75-inch worm gear clamp.



5. Insert a 3-inch union into the 4-inch to 3-inch rubber elbow reducer, approximately 1.5-inches, and secure with a 3.25-inch worm gear clamp. Loosely place a 4.75-inch worm gear clamp on 4-inch opening.



6. Install the reducing elbow assembly on the RESPA-CFX outlet, orient at a slight angle as shown, and secure with a 4.75-inch worm gear clamp.



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DISASSEMBLY:

1. Turn the master power switch off.
2. Remove the side panel indicated below.



3. Remove and retain the mounting clamp securing the fresh air filter hose and retain. **Note:** The clamp will be reused.



4. Disconnect the 4-inch hose from the fresh air housing, the fresh air housing outlet, and discard appropriately.



5. Remove the two bolts securing the fresh air housing and discard the housing appropriately.



RECIRCULATION BULKHEAD INSTALLATION:

1. Drill out and remove the rivets securing the VIN plate on the left side interior sheet metal of the cab. **Note:** This area will be used to install the recirculation bulkhead. Use double sided tape, rivets, or the included self-tapping screws to mount the VIN plate in a new location.



2. Use the recirculation bulkhead (AD0143) to mark the outlet/inlet ports and mounting holes for drilling. Align the bulkhead so the rear port is in the lower position. **Note:** The lower port will act as the inlet for the recirculation system. The upper port will be the recirculation system outlet (return air). It may be necessary to remove the driver's seat to gain access to the drill area.



3. Apply RTV sealant to the mating surface of the bulkhead.

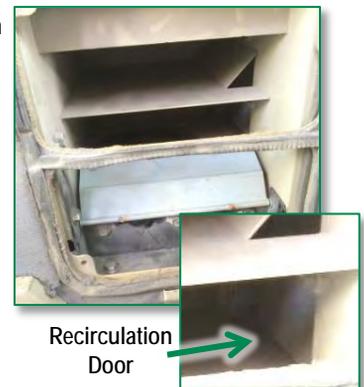


4. Install the bulkhead and secure with ¼-inch bolts (4), washers (8), and ¼-inch lock nuts (4).



RECIRCULATION PLENUM:

1. Clean the cab using the manufacturer's suggested practices.
2. Remove the recirculation filter to gain access to the plenum recirculation door.
3. Bend the corner of the recirculation door to allow fresh air to pass when in the closed position.
4. Reinstall recirculation filter. **Note:** Install a new filter recirculation at this time.



Note: The seat can be reinstalled at this point if removed.

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INTERNAL PLUMBING:

1. Assemble two internal 90° vents by assembling a 90° rubber elbow, 3-inch x 3-inch union, and 3-inch screen. Secure with 91325W clamps.



2. Install a vent assembly on the inlet port (rear/lower), pointing down. Secure with a 91325W clamp.



3. Install a vent assembly on the outlet port (front/upper), pointing up. Secure with a 91325W clamp.



FRESH-AIR HOSE INSTALLATION:

1. Install the supplied 4-inch hose on the fresh air inlet. Secure the hose with a 4.75-inch worm gear clamp.



2. Secure the 4-inch hose with the mounting clamp retained on page 3, Disassembly, step 3.
3. Allow open end to rest on machine. **Note:** Do not allow debris to enter the hose. A rag can be temporarily placed in open end.



RECIRCULATION HOSE INSTALLATION:

1. Install the 3-inch hose on the lower recirculation inlet port. Secure the hose with a 3.25-inch worm gear clamp.



2. Route the supplied 3-inch hose to the rear of the ROPS.



3. Wrap the 3-inch hose wrap around the 3-inch hose where it contacts the ROPS. Secure the wrap with two cable ties.



4. Route the open end of the 3-inch hose around the front of the ROPS as shown.



5. Install the 3-inch hose on the upper recirculation outlet port. Secure the hose with a 3.25-inch worm gear clamp.



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RESPA-CFX INSTALLATION:

1. Install the RESPA-CFX assembly on the ROPS using M12 bolts (2), M12 washers (2), and M12 lock washers (2).



2. Cut the 3-inch recirculation hose to length and install on the RESPA-CFX inlet port. Secure the hose with a 3.25-inch worm gear clamp.



3. Cut the 3-inch recirculation hose to length and install on the RESPA-CFX outlet port. Secure the hose with a 3.25-inch worm gear clamp. **Note:** Adjust the outlet elbow as necessary.



RESPA-CF INSTALLATION:

1. Place the RESPA-CF on top of the removed side panel as shown.
2. Use the assembly to mark the location of the four mounting holes and the 4-inch outlet port.
3. Drill the four mounting holes to accommodate the supplied 3/8-inch hardware.
4. Use a 4-1/8 to 4-1/4-inch hole saw to cut the port hole.



1. Install the 4-inch flange adapter with the long end down. Secure the 4-inch flange adapter to the side panel using either the supplied self-tapping screws or 1/4-inch hardware.



2. Install the 4-inch x 2-inch straight union on the flange adapter. Secure with a 4.75-inch worm gear clamp. Place a second 4.75-inch worm gear clamp on the straight union and leave loose.



3. Install the RESPA-CF on the side panel. Secure with 3/8 bolts (4), 3/8 washers (8), and 3/8 lock nuts (4).



4. Tighten the outlet port clamp on the 4-inch union.

5. Lift the side panel into position.



6. Place a 4.75-inch worm gear clamp on the open end of the fresh-air hose.

7. Install the fresh-air hose on the open end of the 4-inch flange adapter installed in the side panel. Secure the hose with a supplied 4.75-inch worm gear clamp.



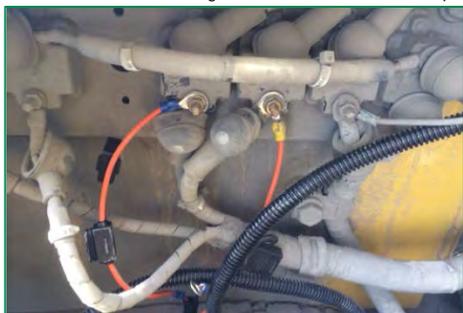
8. Reinstall the side panel on the machine.



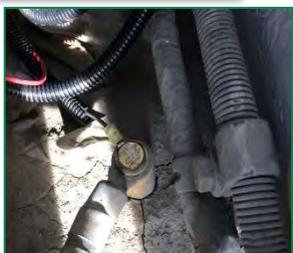
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WIRING:

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 each 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 systems 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.

INSPECTING RESPA UNITS:

1. Turn the master power switch ON to inspect the RESPA systems.
Note: If the systems power 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. Systems are running. If not, an alternate power source must be located.
 - b. Airflow out of RESPA-CF ejection slots is strong. If not:
 - a. Check proper wiring polarity.
 - b. Check that the power source is not variable voltage.
 - c. Filtered air is being returned through the recirculation return port. If not:
 - a. Check proper wiring polarity.
 - b. Check 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.