

RESPA[®]-CF Installation Kit for Komatsu 10-Series Cab

Sy-Klone part number: REV3K3

Fits: PC490LC-10, PC360LC-10, PC290LC-10, PC240LC-10, and PC210LC-10



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.



Replaceable Parts:

Stock code	Description	Quantity
90L30	3-INCH ELBOW	1
90L40R30	4-INCH TO 3-INCH REDUCING ELBOW	1
KT-CABPRES-EL1-ENG	CAB PRESSURE MONITOR	1
REV0003	RESPA CF - 24 VOLT	1
REC0138	RESPA-CF MOUNTING PLATE	1
40003	4 INCH PIPE, 3 INCHES LONG	1
S300X300	3 INCH I.D. STRAIGHT SLEEVE	1
S400X350	4 INCH I.D. STRAIGHT SLEEVE	1
AD0027	RESPA 3 INCH TUBE CLAMP	2
AD0028	KOMATSU 8-SERIES ROOF ADAPTER	1
AD0030	INLET HOOD	1
AD0031	BUMP-STOP SPACER	1
AD0033	EXTENDED STRIKER	1
AD0052	PC-10 DOOR FR. MNT BRKT	1
AD0053	PC-10 DOOR RR. MNT BRKT	1
AD0054	PC-10 LATCH ADAPTER PLATE	1
AD0055	PC-10 INNER DOOR WASHER	1
AD0056	PC-10 INNER DOOR	1
AD0057	PC-10 FRESH AIR BOX ADAPTER	1
AD0058	3.25 INCH DOOR STOP SPACER	1
AD0059	10-SERIES UPPER DOOR STOP	1

Also included in kit:

Description	Quantity
MOUNTING CLIP	1
ELECTRICAL KIT	1
BLADE FUSE TAP	1
RTV SILICONE	1
3.25-INCH T-BOLT CLAMP	2
3.25-INCH WORM GEAR CLAMP	5
4.75-INCH WORM GEAR CLAMP	3
3-INCH PIPE, 12-INCHES LONG	1
3-INCH PIPE, 51-INCHES LONG	1
3/8-16 x 1 1/4 BOLT	6
3/8 WASHER	12
3/8-16 LOCK NUT	6
M4 X 0.7 X 16 SOCKET CAP SCREW	3
M4 WASHER	3
M4 LOCK WASHER	3
M6X16 SOCKET CAP SCREW	10
M6 LOCK WASHER	10
M10 X 1.5 X 25 BOLT	9
M10 X 1.5 NUT	1
M10 WASHER	12
M10 SERRATED LOCK WASHER	1
M10 LOCK WASHER	10
M12 X 1.75 X 25 BOLT	4
M12 LOCK WASHER	4
M12 WASHER	4

Installation Time: 3 to 4 hours

Technical Support

Contact your local dealer or see
www.sy-klone.com
support@sy-klone.com
 (904) 448-6563 ext. 1310

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, and set the system to fresh air.
4. Turn the machine off.
5. Remove the in-cab recirculation filter by removing the thumb screw. **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. The recirculation door will now be visible through the recirculation filter opening. **Note:** If it's not visible, the HVAC system is set to recirculate and steps 2 thru 4 must be repeated.
7. Drill a 2-inch hole in the recirculation door as shown. Remove any loose material.
8. Remove any loose debris using a suitable vacuum unit and clean rags.
9. Reinstall or replace the recirculation filter.



INSTALL THE FRESH AIR INLET:

1. Open the fresh air filter door.
2. Remove the fresh air filter and dispose of appropriately.
3. Remove the edge molding from the cab sheet metal surrounding the fresh air opening.
4. Remove the four bolts that secure fresh air filter door to the cab. **Retain the four bolts** and discard the fresh air door.



5. Install the front mounting bracket using the four bolts retained from the filter door.
6. Insert filter adapter box into fresh air filter opening. **Note:** The notch in the box goes towards the rear of the cab. If the foam seal in the opening is damaged, remove foam and RTV box in place.
7. Place the rear mounting bracket behind the filter door latch. Secure the bracket with the latch adapter plate, M4 washers (3), M4 lock washers (3), and M4 bolts (3).



AD0052 AD0053 AD0054

INSTALL THE FRESH AIR INLET (CONT.):

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| <p>1. Test fit fresh air door adapter. Note: The latch may need to be bent for proper latch bracket alignment.</p> <p style="text-align: right;"><i>AD0056</i> →</p> |  | <p>7. Position the fresh air inlet hood on the door adapter and secure with M6 washers (5), M6 lock washers (5), and M6 bolts (5)</p> |  |
| <p>2. Apply a ¼-inch wide bead of silicone (RTV) to the mating surface of the door adapter.</p> |  | <p>8. Install clamp bracket on post bracket with M10 washers (2), M10 lock washer (1), and M10 bolt (1). Leave loose. Note: Place a washer above and underneath bracket.</p> <p style="text-align: right;"><i>AD0027</i> →</p> |  |
| <p>1. Position the fresh air door adapter in place and install M6 washers (3), M6 lock washers (3), and M6 bolts (3). Leave loose.</p> |  | <p>9. Slide rubber sleeve over inlet tube until it clears clamp bracket. Secure bottom with worm gear clamp. Note: Due to the door clearance, the worm gear should be placed front, back, or to the side of the sleeve.</p> <p style="text-align: right;"><i>S300x300</i></p> |  |
| <p>2. Apply a thin bead of silicone to the inner door washer.</p> <p style="text-align: right;"><i>AD0055</i> →</p> |  | <p>10. Slide second worm gear clamp over sleeve. Leave loose.</p> |  |
| <p>4. Secure the right side of the fresh air door adapter with the inner door washer, M6 washers (2), M6 lock washers (2), and M6 bolts (2). Tighten all five M6 bolts.</p> |  | <p>11. Remove the lower exterior door bump stop from the cab.</p> |  |
| <p>5. Apply a ¼-inch wide bead of silicone to the mating surface of the fresh air inlet hood.</p> <p style="text-align: right;"><i>AD0030</i> →</p> |  | <p>12. Install the supplied M10 3.25 inch spacer.</p> <p style="text-align: right;"><i>AD0058</i> →</p> |  |
| | | <p>13. Reinstall bump stop. Leave jam nut loose.</p> |  |

MOUNT THE RESPA-CF:

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|---|---|--|---|
| <p>1. Secure RESPA-CF to mounting plate with 3/8 washers (12), 3/8-16 bolts (6), and 3/8-16 nuts (6).</p> |  | <p>4. Remove the four plugs from the cab roof that correspond with the mounting locations of the roof bracket.</p> |  |
| <p>2. Secure RESPA-CF assembly to roof bracket with M10 washers (4), M10 lock washers (4), and M10 bolts (4).</p> |  | <p>5. Place roof bracket on cab roof and attach using M12 washers (4), M12 lock washers (4), and M12 bolts (4). Note: The antennae may need to be adjusted.</p> |  |
| <p>3. Install electrical connector clip to roof bracket with M10 washer (1), M10 lock washer (1), and M10 bolt (1).</p> |  | <p>6. Install 2 inch spacer on bottom of roof bracket extension with M10 washer (1), M10 lock washer (1), and M10 nut (1).</p> <p style="text-align: right;"><i>AD0031</i> →</p> |  |

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MOUNT THE RESPA-CF (CONT.):

7. Install clamp bracket on spacer with M10 washers (2), M10 lock washer (1), and M10 bolt (1). Leave loose. **Note:** Place a washer above and underneath bracket.

AD0027



8. Remove the upper exterior door bump stop from the cab.



9. Position the upper bump stop toward front of cab by installing the supplied upper bump stop bracket. Place the M10 serrated washer between the bump stop bracket and the cab mount. Secure the bracket with a M10 washer (1), M10 lock washer (1), and M10 bolt (1).



AD0059

10. Reinstall bump stop. Leave jam nut loose.

INSTALL PLUMBING:

1. Install the long inlet tube into previously installed rubber sleeve. **Note:** Leave a ¼ to ½ inch gap between the inlet tubes.



2. Attach foam rubber strip around air inlet tube, in line with clamp bracket, two places.



3. Secure inlet tube to rubber sleeve with second worm gear clamp.



4. Place T-bolt clamps around air inlet tube and clamp brackets. Leave loose. **Note:** The clamp nuts can be removed to wrap clamp around tube.



90L40R30

40003

5. Insert 4-inch tube, approximately halfway, into 3-inch to 4-inch elbow. Secure with worm gear clamp.



6. Install 4-inch rubber sleeve over exposed end of 4 inch tube. Secure with worm gear clamp. Place a second worm gear clamp on rubber sleeve. Leave loose.

S400X225



7. Position elbow sleeve assembly on RESPA-CF outlet. Place a second worm gear clamp on 3-inch to 4-inch elbow. Leave loose.



8. Insert short inlet tube into 90° elbow and secure with a worm gear clamp. Place a second worm gear clamp on 90° elbow. Leave loose.

90L30



9. Insert open end of short inlet tube into 3 to 4-inch elbow and connect 90° elbow to long inlet tube.



10. Align plumbing and tighten all loose clamps.

11. Tighten upper and lower tube brackets.

RESTRICT CAB DOOR MOVEMENT:

1. Remove the door striker access cover.



2. Remove the two M10 nuts securing the striker and retain.



3. Remove the striker, cover plate, and adjustment nuts. Retain all hardware.



AD0033

4. Install adjustment nuts and cover plate on extended striker.

5. Install striker and secure with M10 nuts retained earlier.

6. Adjust door stops and striker to prevent contact with the fresh air inlet hood and plumbing.



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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 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 silicone.
10. Mounting points are located along the rear of the roof bracket for wire clamps.
11. Grommets in the rear of the cab can be used to route the wiring to the fuse panel.
12. A blade fuse tap is included in the kit and can be used with the blade fuses in the fuse box.



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.