



SOLUTION AIR HANDLING UNITS

FIELD DISASSEMBLY AND REASSEMBLY

Replaces 102.20-FA1 (303)

Form 102.20-FA1 (1104)

SOLUTION INDOOR AND OUTDOOR MODELS 27X27 THROUGH 132X138



LDO9624

INDOOR UNIT



LDO9688

OUTDOOR UNIT

IMPORTANT!

READ BEFORE PROCEEDING!

GENERAL SAFETY GUIDELINES

This equipment is a relatively complicated apparatus. During installation, operation, maintenance or service, individuals may be exposed to certain components or conditions including, but not limited to: refrigerants, oils, materials under pressure, rotating components, and both high and low voltage. Each of these items has the potential, if misused or handled improperly, to cause bodily injury or death. It is the obligation and responsibility of operating/service personnel to identify and recognize these inherent hazards, protect themselves, and proceed safely in completing their tasks. Failure to comply with any of these requirements could result in serious damage to the equipment and the property in which it is situated, as well as severe personal injury or death to themselves and people at the site.

This document is intended for use by owner-authorized operating/service personnel. It is expected that this individual possesses independent training that will enable them to perform their assigned tasks properly and safely. It is essential that, prior to performing any task on this equipment, this individual shall have read and understood this document and any referenced materials. This individual shall also be familiar with and comply with all applicable governmental standards and regulations pertaining to the task in question.

SAFETY SYMBOLS

The following symbols are used in this document to alert the reader to areas of potential hazard:



DANGER indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.



CAUTION identifies a hazard which could lead to damage to the machine, damage to other equipment and/or environmental pollution. Usually an instruction will be given, together with a brief explanation.



WARNING indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.



NOTE is used to highlight additional information, which may be helpful to you.



Consider for IAQ compliance per ASHRAE STANDARD 62-2001



External wiring, unless specified as an optional connection in the manufacturer's product line, is not to be connected inside the control panel cabinet. Devices such as relays, switches, transducers and controls may not be installed inside the control panel. No external wiring is allowed to be run through the control panel. All wiring must be in accordance with YORK's published specifications and must be performed only by qualified YORK personnel. YORK will not be responsible for damages/problems resulting from improper connections to the controls or application of improper control signals. Failure to follow this will void the manufacturer's warranty and cause serious damage to property or injury to persons.

Table 1 - Fasteners for Solution Units

PART NUMBER	DESCRIPTION	WHERE USED
021-01168-000	WASH LK TH INT 5/8 STL ZINC PLTD., STD. C-76	Blower Mounting
021-01248-000	WASHER PLAIN 5/16 ID X 3/4 OD X 0.065 NOM THK : STEEL	Blower Mounting
021-01288-000	WASH FLT 11/16 ID X 1-3/4 OD 0.134 THK STL ZINC PLTD., STD. C-48	Blower Mounting
021-01499-000	SCREW, CAP HEX 3/8 - 16 UNC - 2A X 1.5, ZINC PLATED	Blower Mounting
021- 02782-000	Scr Hex Cap 5/16-18 X 1-1/4, 1-1/4 Lg Stl Zinc Pltd	Blower Mounting
021-02794-000	SCR HEX 5/8-11UNC-2A X 2.00" SAE J429	Blower Mounting
021-02862-000	NUT HEX 5/8-11 HVY STL ZINC PLTD., STD. C-85	Blower Mounting
021-03749-000	SCR MACH RD PH 1/4-20UNC-2A X 1-1/4 LG STL ZINC PLTD.	Blower Mounting
021-10186-000	LOCK WASHER SPG HELICAL 1/4, STEEL	Blower Mounting
021-12656-000	NUT HEX 3/4-11 HVY STL ZINC CTD ASA B18	Blower Mounting
021-13830-000	SCR HEX CAP 3/4-10 X 2-1/2, STL ZINC PLTD	Blower Mounting
021-15802-000	WASH FLT 13/16 ID X 1-3/4 OD X 0.134 THK STL ZINC	Blower Mounting
021-16151-000	LOCK WASHER SPG HELICAL 1/4, STEEL	Blower Mounting
021-17212-000	Screw,Hex Hd Cap,1/4-20x1-1/2", Full Thread, Zinc Plated	Blower Mounting
021-17718-000	NUT HEX 1/4 - 20 UNC - 2B	Blower Mounting
021-17728-000	SCR HEX 1/2-13UNC-2A X 1.75", STL ZINC PLTD, SAE J429	Blower Mounting
021-19571-000	WASH LK TH INT 3/4 STL ZINC PLTD., STD. C-76	Blower Mounting
021-13863-000	SCR, TAP SELF DRILL 10-24 X 1/2 HD #10-24 X 1/2 LG STYLE 3 SHAKEPROOF # 621-100880-00-0251T,STL,ZINC PLTD	Control Brackets
021-19568-000	PLUG, STEEL FINISHING TO FIT 1-1/2" HOLE	Corner Connector lifting hole plug
021-13291-000	NUT RET 1/4-20 0125-0.156 PANEL RANGE, STD. C-77	Economizer hatch
021-19515-000	SCREW, SELF-DRILLING: 1/4 - 14 UN X 3/4 LG, STL ZINC PLATED	Fan Discharge Flex Connection
021-01481-000	SCR, CAP HEX 3/8 - 16 UNC - 2A X 1.0, ZINC PLATED	Fan Skid
021-02860-000	NUT, HEX 1/2-13 HVY 7/8 STL ZINC PLTD., STD. C-85	Fan Skid
021-05146-000	WASH, FLT 9/16 ID X 1-3/8 OD .109 THK STL ZINC PLATED	Fan Skid
021-08388-000	SCR, HEX 1/2-13UNC-2A X 1" STL ZINC PLTD, SAE J429	Fan Skid
021-11645-000	NUT, RET 3/8-16.162/.210 .162 - .210 PANEL RANGE, STD. C-77	Fan Skid
021-17717-000	NUT, HEX LK 3/8-16, ZINC PLATED	Fan Skid
021-13911-000	SCR, TAP TYPE B HEX 3/8 X 3/4 STL ZINC PLTD.	Fan Skid, Coil stacking splice
021-12917-000	SCR, TAP TY B HEX 5/16 X 3/4 5/16 DIA X 3/4 LG STL CD PL	Fan Skid, Coil supports, Coil blockoff to coil casing
021-01163-000	WASH, LK TH INT 1/2 HVY STL ZINC PLTD., STD. C-76	Fan Skid, Lifting Lugs
021-01155-000	WASH, LK TH INT 3/8 STD C-76	Fan Skid, Lifting Lugs
021-13734-000	SCR, TAP TY F PAN 1/4 X 1/2 LG STL ZINC PLTD	Hood & Hood Gutter
021-19307-010	NUT, HEX 3/8-16, ZINC PLATED	Lifting Lugs
021-19586-000	NUT, HEX 3/8-16, ZINC PLATED	Lifting Lugs
021-19570-000	SCREW, HEX SOCKET BUTTON HEAD, 3/8 -16 X 3/4, STL ZINC PLATED	Lifting Lugs, Corners, Top split, stacking plate
021-19556-000	SCR, HEX 1/2-13UNC-2A X 9" STL ZINC PLTD, SAE J429, ALL THREAD, OR EQUAL	Motor Base
021-19558-000	BLOCK, MOTOR BASE, 1/2-13 & 3/8-16 THRU HOLES	Motor Base
021-19581-000	SCR, CAP HEX 3/8 - 16 UNC - 2A X 2.5, STL ZINC PLTD	Mounting Kit, 2KVA Transformer

Continued on next page

Table 1 - Fasteners for Solution Units (Continued)

PART NUMBER	DESCRIPTION	WHERE USED
021-19582-000	SCR, PAN HD PHLPS, MACH, #10-32 X 1/2 LG, STL ZINC PLTD, WITH CAPTIVE INTERNAL TOOTH WASHER	Mounting Kit, 500VA / 150VA Control Transformer & Mounting Kit, Small MCC Panel
021-19580-000	NUT, RIVET KNURLED, 3/8-16, STL ZINC PLTD	Mounting Kit, Large MCC Panel
021-19579-000	NUT, RIVET KNURLED, #10-31, STL ZINC PLTD	Mounting Kit, Small MCC Panel
021-19585-000	SCREW, 1/4"-14 X 1", PHILLIPS PAN HD., SELF DRILLER W/WASHER, ZINC W/EPDM .25	Outdoor Unit Roof
021-17711-000	RIVET, POP, 1/8"x1/4" GRIP	Panel outer to liner
021-17722-000	SCR, TAP TY A PH 14-10 1/4 X3/4 PAN HEAD, PHILLIPS (#1), TYPE A, ZINC PLATED	Primary screw for inside sheet metal, panels outside unit , damper mounting, Shipping tie down to raceway
021-01154-000	WASH, LK TH INT 5/16 HVY,ZINC PLTD., STD. C-76	RF Filter Tracks
021-02523-000	NUT, HEX 5/16 - 18 UNC - 2B STL ZINC PLTD	RF Filter Tracks
021-08394-000	SCR, HEX CAP 5/16-18 X 3/4 LG STL ZINC PLTD	RF Filter Tracks
021-09983-000	WASH, FLT 3/8 ID X 7/8 OD 0.083 THK STL ZINC PLATED,ANSI B27.2, STD C-48	RF Filter Tracks
021-19587-000	RIVET, POP, 3/16"x3/8" GRIP, STL ZINC PLTD	RF Front or Rear Load Filter Tracks
021-08395-000	SCR, CAP HEX 3/8 - 16 UNC - 2A X 0.75, STL ZINC PLTD	SECURES BLOCK TO MOTOR BASE
021-19560-000	SCR,1/4-14x1,PHIL PAN SELF DRILL	Self drill Screw for various locations when required
021-01267-000	WASH FLT 7/16 ID X 1 OD X 0.083 THK STL ZINC PLTD.	Snubber
021-19559-000	SCR, CAP HEX 3/8 - 16 UNC - 2A X 5.0, STL ZINC PLATED	Snubber
021-00331-000	BOLT, LAG HEX 3/8 X2-1/2 ZINC PLATED	Tie down plate to shipping skid/wood
021-19567-000	PLUG, STEEL FINISHING TO FIT 3/4" ID HOLE	Top Corner Connector foam hole plug

Table 2 - Gasket/Caulk/Adhesive/Grommet for Solution Units		
PART NUMBER	DESCRIPTION	WHERE USED
026-30458-000	Connector, Flex Fabric 8"	Between fan opening and opening in panel
010-01017-010	Caulk, Sikaflex, 221 SF, Sika Corp or Equal	Corner connectors & raceway; inside corners where corner connector, raceway and panels meet; wireway and bulkhead seal
010-02917-000	Ins Therm 1/8 x 1-1/2 x 50 Lg, Ind. Rolls C3-241-DC 221 White Ethafoam, W/psa, Std R749 DTD 10/8/90 Marriage Tape	Coil seal, bulk head seal
013-02966-011	Caulk, Manus-bond, 75-am, Manus Products, or Equal	Corner connectors & raceway; inside corners where corner connector, raceway and panels meet; wireway and bulkhead seal
013-02976-010	Tape, Butyl, 0.75W x .19THK, TC-49 XI 121, Manus Products, or Equal	Outdoor units, between raceway 0.688 Flanges and panels/ roof/drain pan/pipe chase/control enclosure, panel to panel (vertical)
013-02977-010	Tape, Butyl, 1.5W x .13THK, TC-49 XI 121, Manus Products, or Equal	Outdoor units, between top raceways & along roof sides & between bottom raceways & curb rest
013-02978-010	Tape, Butyl, 0.5W x .13THK, TC-49 XI 121, Manus Products, or Equal	Outdoor unit doors along sides when door is between two panels
013-02979-010	Tape, Butyl, 0.5W x .25THK, TC-49 XI 121, Manus Products, or Equal	Outdoor units, between raceway 0.688 Flanges and roof
013-03317-010	Caulk, Solvent Free, Pace Gray or Equal, Sikaflex 221 SF or Manus-bond 75-AM	Corner connectors & raceway; inside corners where corner connector, raceway and panels meet; wireway and bulkhead seal
013-22013-010	Adhesive, Super Fast, #74, 3M or Equal	Fan flex connection
028-11778-010	Gasket, Neoprene, Closed Cell, B/G, 1.25W x 0.25THK, Scott Mfg or Equal	Split, bottom, sides, top panel to panel ends butt to butt
028-11791-010	Gasket, Polyurethane, Open Cell, B/G, 1.0W x 1.0THK, Scott Mfg or Equal	Filters
028-11861-000	GROMMET, SUPPLY/RETURN COIL HEADER, 1/8" PVC, For 3.00" CONNECTIONS	Coil Header Panel, For 3.00" Connections
028-11861-000	GROMMET, SUPPLY/RETURN COIL HEADER, 1/8" PVC	Coil Header Panel
01620	Gasket, Door, _____" High x _____" Wide	Door (see example below)
028-11864-010	Gasket, Neoprene, Closed Cell, B/G, 0.75W x 0.5THK, Scott Mfg or Equal	Between vertical bulkheads and panel
028-11865-010	Foam, #2 Polyester, Open Cell, 2W x 2THK, 4LG, Scott Mfg or Equal	Wireway at pressure transitions.
028-11865-010	Gasket, Neoprene, Closed Cell, B/G, 1.0W x 2.0THK, Scott Mfg or Equal	Wireway at pressure transitions.
028-11866-001	Tape, Polyethylene, Double, 0.375W x 0.032THK, 5,184 In / Roll, or Equal	Between raceway double flange, between the liner flanges and out flanges of panels
028-11866-002	Tape, Polyethylene, Double, 0.375W x 0.032THK, Spool, 60,000 In / Spool, or Equal	Between raceway double flange, between the liner flanges and out flanges of panels
028-11866-010	Tape, Polyethylene, Double Sided, .38W x 0.13THK, Acrylic, Adhesive	Between raceway double flange, between the liner flanges and out flanges of panels
028-11867-010	Gasket, Neoprene, Closed Cell, B/G, 1.25W x .50THK, Scott Mfg or Equal	Between roof panels, type 8 filter tracks under the bulkhead

Example For Ordering Door Gasket:

Door is 35-1/2" High by 21-1/2" Wide

Order P/N 1620 35-1/2' High x 21-1/2" Wide.

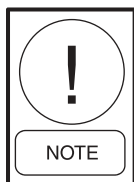
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Table 2 - Gasket/Caulk/Adhesive/Grommet for Solution Units (cont.)

PART NUMBER	DESCRIPTION	WHERE USED
028-11871-000	Grommet, Supply/Return Coil Header, 1/8" PVC, for 2.50" And 2.00" Connections	Coil header panel, for 2.50" And 2.00" Connections
028-11872-000	Grommet, Supply/return Coil HEADER, 1/8" PVC, for 1.50", 1.25" And 1.00" Connections	Coil header panel, for 1.50", 1.25" And 1.00" Connections
028-11873-010	Gasket, Neoprene, Closed Cell, Grey, .75W X .25THK, Scott Mfg or Equal	Panel to panel (vertical)
028-11875-010	Gasket, Ethafoam 221,Closed Cell, White, 1.5W X .13THK, Scott Mfg or Equal	Coil seal, bulk head seal
044-02912-000	Ultra Flex Elastomeric, #2260-0100(White) Coating: *an Expiration Date Required on This Product (Drain Pan)	Mastic coating for drain pan
044-02912-010	Coating, Ultra Flex Elastomeric, Mastic Coating for Drain Pan	Mastic coating for drain pan
TAC01494	Standard Touchup Spray Paint, Dessert Sand	Outdoor unit exterior

INTRODUCTION

These general breakdown instructions are for a tiered unit. Each unit may vary in configuration and components, therefore some portions or statements may not pertain to the unit you are working with. *Refer to your YORK International Sales Office if additional information is required.*



Outdoor Units - Use compound sealing (perma gum/butyl tape) TC-49 XL -121, .188" Thk. x 0.50", between raceway 0.688 flanges and panels/ roof/drain pan/pipe chase/control enclosure.

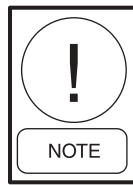


*It is recommended to cover coil fin area with hard board panels mounted to coil frame to protect coil fins from damage. **DO NOT** touch tubing or headers with screwdriver tips or drills.*

Indoor Units - Use gasket, neoprene 0.125" Thk. x 0.50", gray color, at door to panel, panel to panel (vertical).



Rotating parts and electrical shock hazards exist. Lock out and tag out the fan motor(s) and heat power disconnects before servicing. YORK service personnel should refer to the "YORK Field Service Employee Safety Manual", 50.05-SM1. Independent contractors refer to OSHA Lockout/Tag out Standard, 29 CFR 1910.147. Failure to follow proper safety precautions may result in serious injury or death.



- *Factory Mounted End Devices (FMED) are optional at time of order.*
- *Wireways are only present on units where FMED are purchased.*
- *Unit base rails are optional at time of order.*
- *When removing panels, leave damper assemblies, air stations, etc. attached to panels whenever possible. Close dampers and cover air stations to protect from damage.*

1.0 PREPARATION

ORDER PARTS THAT MAY BE NEEDED FOR REASSEMBLY

Replacement gaskets, screws, cable ties, etc. (*refer to Tables 1 & 2*).

TOOLS NEEDED:

- Drill with No. 3 phillips bit for removing all panel screws.
- Three Sixteenth” Hex Allen head screwdriver
- Nut setters or socket set, (1/4”, 5/16” 3/8” and 9/16”) for removal of all bulkhead, raceway and wireway screws.
- Wire cutters
- Four” x four” wood blocks
- Common hand tools



Protect all parts and porous materials from rain and other sources of moisture. Decontaminate or replace as needed to ensure microbial growth is not introduced to the air handler.

TOOL LIST:

[illegible]

LABEL ALL DOORS, PANELS, ETC.

Before disassembly, label all doors, panels, raceways, wireways components and wiring with masking tape and bold marker to ensure proper location when re-assembling unit. Identify orientation with arrows in direction of airflow.



FIG. 1 - LABEL DOOR AND PANELS

RETAIN ALL PARTS REMOVED

NOTES:

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2.0 DISASSEMBLY

1. DISCONNECT POWER AT MAIN POWER SOURCE AND LOCKOUT
2. DISCONNECT ALL MAIN POWER, CONTROL & LIGHTING WIRING HARNESSES

Cut cable ties where necessary.

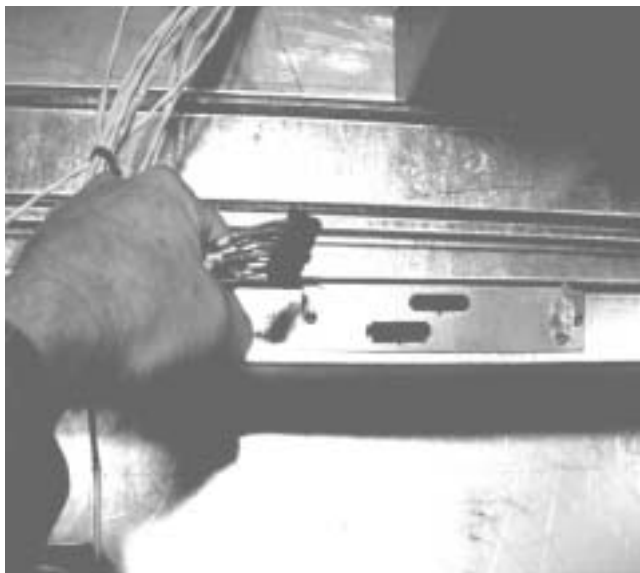


FIG. 2 - DISCONNECT WIRING



To avoid damage, secure all loose wiring before disassembly.

3. DISCONNECT MOTOR WIRES

Disconnect motor wires inside VSD, starter panel or other power source. Pull high voltage wiring back to component and secure.

4. REMOVE DOOR/FRAME ASSEMBLIES

To prevent damage during removal, close and latch doors. Remove as complete Door/Frame Assemblies. On Outdoor Units, allow Perma Gum/Butyl Tape to properly release by removing Door/Frame Assembly slowly. Failure to do so may result in damage to frame.



FIG. 3 - REMOVE DOOR ASSEMBLIES

5. DISCONNECT FAN DISCHARGE FLEX CONNECTOR

Disconnect fan discharge flex connector by first removing self-tapping screws and duct flanges.



FIG. 4 - DISCONNECT FAN DISCHARGE FLEX CONNECTOR

6. REMOVE END PANELS FROM TOP TIER.**FIG. 5 - REMOVE END PANELS****7. REMOVE SIDE PANELS FROM TOP TIER**

- Remove left hand panel(s).
- Remove right hand panel(s).

8. REMOVE TOP PANELS

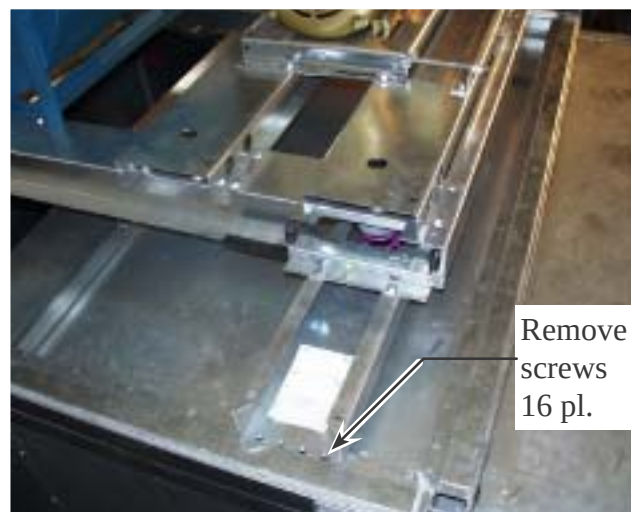
- a) If unit has light assemblies, remove them prior to removal of top panel(s).
- b) Detach wireways at top panel(s).

**FIG. 6 - REMOVE TOP PANELS****9. REMOVE TOP TIER RACEWAY ASSEMBLY**

- a) Remove hex socket button head screws from the bottom of each vertical raceway.
- b) Separate raceway frame at bottom and set aside.
- c) Label all pieces and perform further disassembly if required.

**FIG. 7 - REMOVE TOP RACEWAY ASSEMBLY****10. REMOVE FAN ASSEMBLY**

- a) Remove 16 screws from 2 isolator rails.

**FIG. 8 - REMOVE SCREWS FROM ISOLATOR RAILS**

- b) Secure motor wiring to prevent damage.

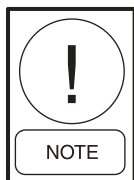


FIG. 9 - SECURE MOTOR WIRING

- c) Remove fan assembly or breakdown into smaller components if necessary.



FIG. 10 - REMOVE FAN ASSEMBLY



When using a forklift, it may be necessary to block fan assembly to provide enough clearance for tines.

- d) Set fan assembly on 4" x 4" blocking to protect fan isolator bolts.



*If breakdown is necessary, after re-assembly, **DO NOT** operate fan for more than 15 minutes before performing verified, dynamic vibration analysis of the fan assembly.*

11. SEPARATE BOTTOM RACEWAYS OF TOP TIER FROM BOTTOM TIER

- a) Remove hardware (bolt, two washers, lock washer and nut) from top section mounting brackets (8 pl.).



FIG. 11 - REMOVE HARDWARE FROM TOP SECTION MOUNTING BRACKETS

- b) Remove bottom raceways.



FIG. 12 - REMOVE BOTTOM RACEWAYS

12. REMOVE END PANEL(S)



FIG. 13 - REMOVE BOTTOM FRONT END PANEL(S)



FIG. 14 - REMOVE LOWER BACK END PANEL(S)

13. REMOVE SIDE PANEL(S)

- a) Remove rubber grommets from around coil connectors prior to removing panels.



FIG. 15 - REMOVE GROMMET(S)

- b) Remove side panel(s) from right side.
- c) Remove side panel(s) from left side.

14. REMOVE SEAM CAPS FROM PANELS AT SHIPPING SPLITS

15. REMOVE LIGHT ASSEMBLY

- a) Disconnect “stake-on” electrical connectors.



FIG. 16 - REMOVE ELECTRICAL CONNECTORS

- b) Remove wireway from where it fastens to top panel(s).



FIG. 17 - REMOVE WIREWAY

- c) Remove light assembly.

16. REMOVE TOP PANEL(S)

- a) Prior to panel removal on tiered or vertical units cut any gasket that crosses a seam. This will prevent tearing gaskets.
- b) Remove top panel(s).

17. REMOVE SIDE LOAD FILTER TRACKS OR FILTER BANK OF INDIVIDUAL FILTER FRAMES

- a) Remove filter access panel(s).
- b) Disconnect left and right vertical filter bulkheads from top and bottom raceways.
- c) Remove screws from bottom bulkhead under filter assembly.
- d) Move filter assembly away from coil.
- e) Tip and remove filter assembly. Remove angle filter assembly in two pieces.

18. REMOVE COIL



Leave control devices attached to the coil if possible.

- a) Remove screws connecting coil to bulkhead on the air entering side.



FIG. 18 - REMOVE SCREWS SECURING COIL

- b) Slide coil onto forklift or cribbing.



FIG. 19 - MOVING COIL

- c) Carefully guide coil away from bulkheads and raceways.
d) Set coil on four" x four" blocking.

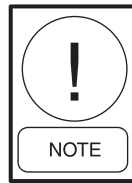


FIG. 20 - BLOCK COIL

19 – REMOVE COIL BULKHEAD



FIG. 21 - REMOVE COIL BULKHEAD



Do not remove drain pan unless necessary to fit through entranceway. A positive water/air seal is extremely difficult in the field.

20. REMOVE BOTTOM TIER RACEWAYS

- a) Remove 3/16" hex allen head screws from bottom of vertical raceways.



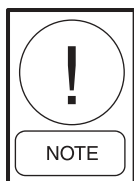
FIG. 22 - REMOVE 3/16" HEX ALLEN SCREWS

- b) Separate raceway assembly from base and set aside.

- c) At this point the unassembled portion of some units can be stood on edge and moved through the entranceway.



FIG. 23 - UNIT BASE ON EDGE



Further breakdown may be necessary on larger units. Perform steps 21 through 23 as necessary.

21. SEPARATE UNIT BASE AT SHIPPING SPLITS

- a) Remove bolts and nuts at lifting lug.



FIG. 24 - REMOVE HARDWARE AT LIFTING LUG

- b) Separate base at shipping splits.

22. REMOVE OPTIONAL BASE RAILS



FIG. 25 - SEPARATE BASE

- c) With unit base turned on edge remove screws from bottom of unit where the base rails attach to the bottom of the base raceways and/or floor panels.
- d) Remove base rails.



FIG. 26 - REMOVE BASE RAILS

23. REMOVE THE BOTTOM FLOOR PANELS AS NECESSARY TO FIT THROUGH ENTRANCE

- a) Remove seam caps from floor where panels are joined together.
- b) Remove screws from the base raceway where it attaches to the top of floor panels. (Unit interior side of unit base.)
- c) Flip unit bottom up.
- d) Remove screws from bottom of floor panel(s) into raceways.
- e) Remove floor panel(s).

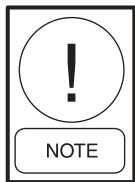


*If coil segment is to be disassembled,
DO NOT remove bottom raceway from
drain pan on drain connection end.*



**FIG. 27 - REMOVE SCREWS FROM BOTTOM OF
FLOOR PANEL(S)**

REASSEMBLY



• Insure that final location is flat and level over the entire area of the unit foot print. If not flat and level the unit base must be leveled by shimming. This will allow all doors and dampers to operate properly after reassembly.

• Sort and inspect all gasketed parts and replace any gaskets that have been damaged.

• It is recommended for units that were shipped in sections having shipping splits, that the entire unit be assembled as one piece not in individual sections.

• If any raceways were separated, use construction grade sealant (caulking) to rejoin the foam insulation inside the raceways as they are reassembled. However, if any volume of foam insulation was destroyed or lost, replace it with canned spray foam after reassembly is complete.

1. LAYOUT THE BASE PARTS

Layout the base rails, bottom raceways or base sections depending upon how far the disassembly was carried out.

2. ASSEMBLE THE BASE PARTS

Assemble the base parts as a first step. Be sure all joints are tight and sealed.

3. INSTALL BOTTOM TIER PARTS

Once the base parts are assembled and level, install internal coil bulk heads, fan walls, filter walls and/or damper walls that belong in the bottom tier.

4. REASSEMBLE FAN AND MOTOR ASSEMBLY

If the fan and motor assembly was disassembled, reassemble it now and install it on the base. Delay this step if the unit is a tiered or stacked unit until the bottom tier is completely assembled and the upper tier base is installed on top of it.

5. INSTALL BOTTOM TIER COMPONENTS

Proceed with the installation of the components to the support bulkheads and support walls that belong in the bottom tier.

6. INSTALL THE VERTICAL AND UPPER RACEWAYS OF THE BOTTOM TIER.

7. INSTALL WIREWAYS / CONNECT WIRING

Install the wireways if originally provided and removed. Connect the wiring within and to the wireways. Observe and match the labels. Do not install the light fixtures at this time, but leave the wire connectors accessible.

8. INSTALL THE TOP PANELS OF THE BOTTOM TIER

9. INSTALL LIGHT FIXTURES

Connect the wiring while installing the light fixtures and attach to the top panel inside liners.

10. INSTALL SIDE PANELS OF BOTTOM TIER

Install the side panels of the bottom tier. Those containing dampers, duct connections, electric boxes, etc. first.

11. INSTALL UPPER TIER BASE

Assemble and install the upper tier base on top of the bottom tier.

12. INSTALL THE FAN WALL.

13. INSTALL THE FAN ASSEMBLY

14. INSTALL UPPER TIER BULKHEADS / SUPPORT WALLS

Install other bulkheads and support walls that belong in the upper tier.

15. INSTALL UPPER TIER COMPONENTS

Proceed with the installation of the components to the support bulkheads and support walls that belong in the upper tier.

16. INSTALL UPPER TIER WIREWAYS

Install the wireways if originally provided and removed. Connect the wiring within and to the wireways. Observe and match the labels. Do not install the light fixtures at this time, but leave the wire connectors accessible.

17. INSTALL THE VERTICAL AND UPPER RACEWAYS OF THE UPPER TIER**18. INSTALL SIDE PANELS / UPPER TIER**

Install the side panels of the upper tier. Those containing dampers, duct connections, electric boxes, etc. first.

19. INSTALL TOP PANELS OF UPPER TIER**20. CONNECT REMAINING WIRING**

Connect any remaining wiring such as motors, lights, controls

21. CONNECT ANY REMAINING FILTER GAUGE OR PNEUMATIC TUBING**22. INSTALL DOOR ASSEMBLIES**

Install all door assemblies. Before installing Door/Frame Assembly, remove old gasket material. Apply new gasket material to back of frame along the outer edge. Use Compound Sealing (Perma Gum/Butyl Tape), P/N 013-02976-000 for Outdoor Unit and Neoprene Gasket, P/N 028-11873-010 for Indoor Unit.

Proper adjustment is achieved by installing the screws in hinge side of frame first. Then insert spacer(s) between the door and frame at the bottom on the latch side. Add or remove spacers as necessary until gap between bottom of door and frame is even. Install screws in top, bottom and latch sides of door frame.

23. INSPECT SEAMS FOR LEAKS

Once the unit is completely assembled, from inside the unit (no lights on) inspect seams for leaks by looking for light penetration. Adjust panels or gaskets where ever possible. Add minimal amount of construction grade sealant if needed.

24. SEAL WIRING PENETRATIONS

To prevent the passage of air, apply permagum or caulk anywhere wiring penetrates the unit side, top or bottom panels.

25. BALANCE FAN

If the fan assembly was disassembled (motor, belts and fan) the reassembled fan assembly **MUST** be trim balanced by a qualified dynamic balance technician prior to operation of the equipment.

26. TESTING OF DRAIN PANS

To minimize conditions of water stagnation that may result in microbial growth, drain pans shall be field tested under normal operating conditions to ensure proper drainage.

Exception: Field testing of drain pans is not required if units with factory-installed drain pans have been certified (attested in writing) by the manufacturer for proper drainage when installed as recommended.

If drain pan has not been removed from unit base during disassembly, field testing is not required.

NOTES



 A JOHNSON CONTROLS COMPANY	Form Number: 102.20-FA1 (LS01)	606
	Supersedes: 102.20-FA1 (LS01) (605)	
LITERATURE SUPPLEMENT	File with: 102.20-FA1 (1104)	
Subject: Fastener List and Gasket/Caulk/Adhesive List for Solution Air Handler, Field Disassembly and Reassembly		

General - Replace the Fasteners List on pages 3 and 4 and the Gasket/Caulk/Adhesive List on Pages 5 and 6 with the following charts.

Table 1 - Fasteners for Solution Units

PART NUMBER	DESCRIPTION	WHERE USED
021-19588-000	SCREW, HEX CAP, 1/2"-13 x 4", ZINC PLTD.	Base Rail Lifting Lug to Lifting Lug at Split
021- 02782-000	SCREW, HEX CAP, 5/16"-18 x 1-1/4", ZINC PLTD.	Blower Mounting
021-01168-000	WASHER, LOCK, INTERNAL TOOTH, 5/8", ZINC PLTD.	Blower Mounting
021-01248-000	WASHER, PLAIN, 5/16" ID x 3/4" OD x 0.065" NOM THK	Blower Mounting
021-01288-000	WASHER, FLAT, 11/16" ID x 1-3/4" OD x 0.134" THK, ZINC PLTD.	Blower Mounting
021-01499-000	SCREW, HEX CAP, 3/8"-16 x 1.5", ZINC PLTD.	Blower Mounting
021-02794-000	SCREW, HEX CAP, 5/8"-11 x 2", ZINC PLTD.	Blower Mounting
021-02862-000	NUT, HEX, 5/8"-11, ZINC PLTD.	Blower Mounting
021-03749-000	SCREW, MACHINE, PHILLIPS ROUND HEAD, 1/4"-20 x 1-1/4", ZINC PLTD.	Blower Mounting
021-10186-000	WASHER, LOCK, SPLIT, 1/4"	Blower Mounting
021-12656-000	NUT, HEX, 3/4"-10, ZINC PLTD.	Blower Mounting
021-13830-000	SCREW, HEX CAP, 3/4"-10 x 2-1/2", ZINC PLTD.	Blower Mounting
021-15802-000	WASHER, FLAT, 13/16" ID x 1-3/4" OD x 0.134" THK, ZINC PLTD.	Blower Mounting
021-16151-000	NUT, HEX, 1/4"-20, ZINC PLTD."	Blower Mounting
021-17728-000	SCREW, HEX CAP, 1/2"-13 x 1-3/4", ZINC PLTD.	Blower Mounting
021-19571-000	WASHER, LOCK, INTERNAL TOOTH, 3/4", ZINC PLTD.	Blower Mounting
021-17718-000	NUT, HEX LOCK, W/INTERNAL TOOTH WASHER, 1/4"-20, ZINC PLTD.	"Blower Mounting, with Lock Washer (Lockwasher - 021-10186-000)"
021-13863-000	SCREW, SELF DRILLING, #10-24 x 1/2", ZINC PLTD.	Control Brackets
021-19568-000	PLUG, 1-41/64" HEAD DIA., STEEL FINISHING TO FIT 1-1/2" HOLE	Corner Connector Lifting Hole Plug
021-13291-000	NUT, RETAINING, 1/4"-20, 0.13"-0.156" PANEL RANGE, ZINC PLTD.	Economizer w/ Angled MA Wall Hatch
021-19515-000	SCREW, HEX, SELF-DRILLING, 1/4"-14 x 3/4", ZINC PLTD.	Fan Discharge Flex Connection
021-19598-000	SCREW, HEX, SELF DRILLING, 1/4"-14 x 3/4", SS	Fan Discharge Flex Connection
021-01163-000	WASHER, LOCK, INTERNAL TOOTH, 1/2", ZINC PLTD.	Fan Skid
021-01481-000	SCREW, HEX CAP, 3/8"-16 x 1.0", ZINC PLTD.	Fan Skid
021-02860-000	NUT, HEX, 1/2"-13, ZINC PLTD.	Fan Skid
021-05146-000	WASHER, FLAT, 9/16" ID x 1-3/8" OD x 7/64" THK, ZINC PLTD.	Fan Skid
021-11645-000	NUT, RETAINING, 3/8"-16, 0.162"-0.210" PANEL RANGE	Fan Skid
021-17717-000	NUT, HEX LOCK, W/ INTERNAL TOOTH WASHER, 3/8"-16, ZINC PLTD.	Fan Skid
021-13911-000	SCREW, HEX, THREAD FORMING, 3/8" x 3/4", ZINC PLTD.	Fan Skid, Coil Stacking Splice
021-12917-000	SCREW, HEX, THREAD FORMING, 5/16" x 3/4"	Fan Skid, Coil Supports, Coil Blockoff to Coil Casing

Continued on next page

Table 1 - Fasteners for Solution Units (cont.)

PART NUMBER	DESCRIPTION	WHERE USED
021-19597-000	SCREW, HEX, THREAD FORMING, 5/16" x 3/4", SS	Fan Skid, Coil Supports, Coil Blockoff to Coil Casing
021-01155-000	WASHER, LOCK, INTERNAL TOOTH, 3/8", ZINC PLTD.	Fan Skid, Lifting Lugs
021-08388-000	SCREW, HEX CAP, 1/2"-13 x 1", ZINC PLTD.	Fan Skid, Safety Grade
021-13734-000	SCREW, PHILLIPS PAN HEAD, THREAD CUTTING, 1/4" x 1/2", ZINC PLTD.	Hood & Hood Gutter
021-19564-000	SCREW, PHILLIPS PAN HEAD, THREAD CUTTING, 1/4" x 1/2", SS	Hood & Hood Gutter
021-19586-000	NUT, HEX, 3/8"-16, ZINC PLTD.	Lifting Lugs
021-19570-000	SCREW, HEX SOCKET, BUTTON HEAD, 3/8"-16 x 3/4", ZINC PLTD.	Lifting Lugs, Corners, Top split, Stacking Plate
021-19556-000	SCREW, HEX CAP, FULL THREAD, 1/2"-13 x 9", ZINC PLTD.	Motor Base
021-19558-000	BLOCK, MOTOR BASE, 1/2"-13 & 3/8"-16 THRU HOLES	Motor Base
021-19581-000	SCREW, HEX CAP, 3/8"-16 x 2-1/2", ZINC PLTD.	Mounting Kit, 2KVA Transformer
021-19582-000	SCREW, MACHINE, PHILLIPS PAN HEAD, #10-32 x 1/2", WITH CAPTIVE INTERNAL TOOTH WASHER, ZINC PLTD.	Mounting Kit, 500VA / 150VA Control Transformer & Mounting Kit, Small MCC Panel
021-19547-000	NUT, RIVET, KNURLED, 1/2"-13, ZINC PLTD.	Mounting Kit, Large MCC Panel
021-19580-000	NUT, RIVET KNURLED, 3/8"-16, ZINC PLTD.	Mounting Kit, Large MCC Panel
021-19579-000	NUT, RIVET KNURLED, #10-32, ZINC PLTD.	Mounting Kit, Small MCC Panel
021-19589-000	RIVET, POP, 0.13" DIA., .19"-.25" GRIP	Panel Outer to Liner
021-13656-000	NUT, WELD, 3/8"-16, ZINC PLTD.	Pipe Chase Base Rail
021-17722-000	"SCREW, PHILLIPS PAN HEAD, THREAD FORMING SHEET METAL, 1/4" x 3/4", ZINC PLTD."	Primary Screw for Inside Sheet Metal, Panels Outside Unit, Damper Mounting, Shipping Tie Down to Raceway
021-19599-000	SCREW, PHILLIPS PAN HEAD, THREAD FORMING, 1/4"-14 x 3/4", SS	Primary Screw for Inside Sheet Metal, Panels Outside Unit, Damper Mounting, Shipping Tie Down to Raceway
021-01154-000	WASHER, LOCK, INTERNAL TOOTH, 5/16", ZINC PLTD.	RF Filter Tracks
021-02523-000	NUT, HEX, 5/16"-18, ZINC PLTD.	RF Filter Tracks
021-08394-000	SCREW, HEX CAP, 5/16"-18 x 3/4", ZINC PLTD.	RF Filter Tracks
021-09983-000	WASHER, FLAT, 3/8" ID x 7/8" OD x 0.083" THK, ZINC PLTD.	RF Filter Tracks
021-19587-000	RIVET, POP, 0.19" DIA., 1/4" x 3/8" GRIP, ZINC PLTD.	"RF Front or Rear Load Filter Frames (Was P/N 033-05003-606)"
021-19565-000	SCREW, HEX, SELF DRILLING, 1/4"-14 x 1", ZINC PLTD. W/ZINC PLTD. EPDM WASHER	Roof
021-08395-000	SCREW, HEX CAP, 3/8"-16 x 3/4", ZINC PLTD.	Secures Block to Motor Base
021-19546-000	SCREW, SELF-DRILLING, 1/4"-14 x 1", SS	Self Drill Screw for Various Locations When Required
021-19560-000	SCREW, PHILLIPS PAN HEAD, SELF-DRILLING, 1/4"-14 x 1", ZINC PLTD.	Self Drill Screw for Various Locations When Required
021-19563-000	SCREW, PHILLIPS PAN HEAD, SELF-DRILLING, 1/4"-14 x 1", SS	Self Drill Screw for Various Locations When Required
021-01267-000	WASHER, FLAT, 7/16" ID x 1" OD x 0.083" THK, ZINC PLTD.	Snubber
021-19559-000	SCREW, HEX CAP, 3/8"-16 x 5", FULL THREAD, ZINC PLTD.	Snubber
021-19567-000	PLUG, 59/64" HEAD DIA., STEEL FINISHING TO FIT 3/4" ID HOLE	Top Corner Connector Foam Hole Plug

FIELD SERVICE PARTS**Table 2 - Gasket/Caulk/Adhesive/Grommet for Solution Units**

PART NUMBER	DESCRIPTION	WHERE USED
GASKETS		
028-11860-010	Gasket, Neoprene, Closed Cell, 1/2" W x 1/4" Thk	Indoor unit raceway channel (sides, ends & vertical)
028-11873-010	Gasket, Neoprene, Closed Cell, Grey, 3/4" W x 1/4" Thk	Panel to panel (vertical) on flange
028-11864-010	Gasket, Neoprene, Closed Cell, 3/4" W x 1/2" Thk	Between vertical bulkheads and wall panels; between horizontal bulkheads and roof/floor panels
028-11778-010	Gasket, Neoprene, Closed Cell, 1-1/4" W x 1/4" Thk	Shipping split, bottom, sides, top panel to panel ends butt to butt
028-11867-010	Gasket, Neoprene, Closed Cell, 1-1/4" W x 1/2" Thk	Type 8 filter tracks under the bulkhead
028-11880-010	Gasket, Neoprene, Closed Cell, 2" W x 3/16" (.188) Thk	Under roof seam cap, under roof overhang at pipechase, on pipe chase (field applied)
28-11883-010	Gasket, Corner, Neoprene, Closed Cell, 3-1/2" W x 1/4" Thk x 3-1/2" Lg.	XTO shipping splits
028-11791-010	Gasket, Polyurethane, Open Cell, 1" W x 1" Thk	Filters, between roof panels
028-11882-010	Gasket, Foam, Closed Cell, Black, 2-1/2" W x 1/8" Thk	All electrical panels, to seal the conduit penetrations between them and the unit wall panels, intermediate drain pan mounting
AJ4144	Gasket, Door, 12' Lg.	Foam gasket - new cake pan doors (beginning Jan 2006)
AJ3122	Gasket, Door, 500' Roll	Foam gasket - old doors (before Jan 2006)
028-11865-010	Foam, #2 Polyester, Open Cell, 2" W x 2" Thk x 4" Lg.	Wireway at pressure transitions
TAPES		
013-02978-010	Tape, Butyl, 1/2" W x 1/8" Thk	Outdoor unit doors along sides when door is between two panels
013-02979-010	Tape, Butyl, 1/2" W x 1/4" Thk	Outdoor units, between raceway 11/16" flanges and roof
013-02976-010	Tape, Butyl, 3/4" W x 3/16" Thk	Outdoor units, between raceway 11/16" flanges and panels/roof/drain pan/pipe chase/control enclosure, panel to panel (vertical)
013-02977-010	Tape, Butyl, 1-1/2" W x 1/8" Thk	Outdoor units, between top raceways & along roof sides & between bottom raceways & curb rest
028-11879-010	Tape, Stainless Steel, 2" W x 0.004" Thk, 50' Roll	Factory floor seam cap (interior of unit)
028-11879-012	Tape, Stainless Steel, 3" W x 0.004" Thk, 50' Roll	Factory roof seam cap (exterior of unit)
010-02917-000	Ins Therm 1/8" x 1-1/2" x 50', White Ethafoam, Marriage Tape	Coil, bulk head seal

Continued on next page

FIELD SERVICE PARTS

Table 2 - Gasket/Caulk/Adhesive/Grommet for Solution Units (cont.)

PART NUMBER	DESCRIPTION	WHERE USED
CAULKS		
013-02966-011	Caulk, Urethane, Gray, Manus-bond, 75-AM 100ZTU (Same as Urethane, Gray, Sikaflex 221)	Corner connectors & raceway; inside corners where corner connector, raceway and panels meet; wireway and bulkhead seal; all shipping splits (interior/exterior)
013-03317-040	Caulk, Urethane, Champagne, Sikaflex 221	Outdoor unit as need to match champagne paint
Field Purchase	Caulk, Urethane, Gray, Loc-tite	Grainger P/N 4KM87
Field Purchase	Caulk, Urethane, Gray	Sikaflex Sealant, P/N 221, Home Depot
FAN FLEX CONNECTION		
013-22013-010	Adhesive, Super Fast	Fan flex connection
026-30458-010	Connector, Duct Fabric, 8", order by the inch	Flex connector for fan transition
026-30548-000	Connector, Duct Fabric, 8", Ventglas, 150' Roll	Flex connector for fan transition
026-30473-010	Connector, Duct Fabric, 10", order by the inch	Flex connector for fan transition
026-30473-000	Connector, Duct Fabric, 10", Ventglas, Plain Fabrics w/o Metal, 150' Roll	Flex connector for fan transition
028-11744-010	Tape, Polyethylene, Double Sided, 1/2" W x 1/32" Thk	Fan flex connection
GROMMETS		
028-11872-000	Grommet, Supply/Return Coil Header, 1/8" PVC, for 1", 1-1/4" and 1-1/2" IPS Connections	Coil header panel, for 1", 1-1/4" and 1-1/2" connections
028-11871-000	Grommet, Supply/Return Coil Header, 1/8" PVC, for 2" and 2-1/2" IPS Connections	Coil header panel, for 2" and 2-1/2" connections
028-11861-000	Grommet, Supply/Return Coil Header, 1/8" PVC, For 3" IPS Connections	Coil header panel, for 3" connections
MISCELLANEOUS		
029-08786-000	Damper Ball Joint	For 5/16" dia. rod x 1/4"-28 TPI mount
044-02912-000	Ultra Flex Elastomeric, #2260-0100 (White) Coating: *an Expiration Date Required for this Product (Drain Pan), 5 Gal.	Mastic coating for drain pan
013-03322-000	Paint, Champagne, 12oz. Spray Can	Production beginning 5/1/05
TAC01494	Standard Touchup Spray Paint, Dessert Sand	Outdoor unit exterior, shipped before 5/1/05



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