



Double Riser Swage INSTALLATION MANUAL



Build Your Reputation on Ours

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It is the responsibility of the end user to properly characterize and dispose of all waste materials according to applicable regulatory and legal entities. Where reasonable, safe, and compliant with local regulatory and legal requirements, IEC encourages recycling materials when disposing of its products.

International Environmental Corporation (IEC) works continually to improve its products. As a result, the design and specifications of each product may be changed without notice and may not be as described herein. Please contact IEC for information regarding current design and product specifications. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties but are merely IEC's opinion or commendation of its products. Manufacturer's standard limited warranty applies.

SECTION ONE – Receipt & Initial Installation

Preface

International Environmental Corporation (IEC) products represent a prudent investment offering trouble free operation and long service with proper installation, operation, and regular maintenance.

Your equipment is initially protected under the manufacturer's standard warranty; however, this warranty is provided under the condition that the steps outlined in this manual for initial inspection, proper installation, regular periodic maintenance, and everyday operation of the equipment be followed in detail. This manual should be fully reviewed in advance before initial installation, start-up, and any maintenance. Should any questions arise, please contact your local sales representative or the factory BEFORE proceeding.

No attempt should be made to handle, install, or service any riser without following safe practices regarding mechanical equipment.

The risers must always be properly supported. Temporary supports used during installation or service must be adequate to hold the risers securely.

Never wear bulky or loose fitting clothing when working on any mechanical equipment. Gloves should only be worn for proper protection against heat and other possible injuries. Safety glasses or goggles should always be worn when drilling, cutting, or working with chemicals such as refrigerants or lubricants.

Always protect adjacent flammable material when welding or soldering. Use a suitable heat-shield material to contain sparks or drops of solder. Have a fire extinguisher readily available.

The manufacturer assumes no responsibility for personal injury or property damage resulting from improper or unsafe practices during the handling, installation, service, or operation of any IEC equipment.

Unpacking and Inspection

All risers are carefully inspected at the factory throughout the manufacturing process under a strict detailed quality assurance program, and, where possible, ALL major components and sub-assemblies are carefully tested for proper operation and verified for full compliance with factory standards.

Each UMOD quick-ship riser set is carefully packaged for shipment with the Universal MUY unit to avoid damage during normal transit and handling. Equipment should always be stored in a dry place, and in the proper orientation as marked on the carton. All shipments are made F.O.B. factory and it is the responsibility of the receiving party to inspect the equipment upon arrival. Any obvious damage to the carton and/or its contents should be recorded on the bill of lading and a claim should be filed with the freight packaging company or carrier.

Units under the UMOD quick-ship program can be ordered with or without risers. For units that are ordered with risers, the risers will be bundled and packaged together. This box is shipped with the unit and is included on the unit pallet. Once the pallet has arrived at the jobsite, the condition of the riser carton's exterior should be noted for any damage. Carefully remove each riser from the carton and inspect for hidden damage. Any hidden damage should be recorded and immediately reported to the carrier and a claim should be filed. In the event a claim for shipping damage is filed, the unit and riser set, shipping carton, and all packing must be retained for physical inspection by the freight carrier. All equipment should be stored in the factory shipping carton with internal packing in place until installation.

At the time of receipt, the equipment type should be verified against the order documents. Should any discrepancy be found, the local sales representative should be notified immediately so that proper action may be taken. Should any questions arise concerning warranty repairs, the factory must be notified **BEFORE** any corrective action is taken. Where local repairs or alterations can be accomplished, the factory must

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be fully informed of the extent and expected cost of those repairs before work is begun. Where factory operations are required, the factory must be contacted for authorization to return equipment and a Return Authorization Number will be issued. Unauthorized return shipments of equipment and shipments not marked with an authorization number will be refused. In addition, any claims for unauthorized expenses will not be accepted by the manufacturer.

Each unit is identified by labels placed on the top of the cabinet and the top of the coil. Job and unit information is displayed on these labels. Risers should not be installed at locations other than that marked on the unit identification tag location in the building. If no specific detail is shown on tag for unit location then determine configuration for the Universal unit based on information within this Riser IOM and Universal Modular Hi-Rise IOM. Should any questions arise regarding unit configuration, contact the sales representative or the factory **BEFORE** proceeding.

While all risers are designed and fabricated with sturdy materials and may present a rugged appearance, great care must be taken to assure that no force or pressure be applied to the riser stub-outs. Make sure lift rigging equipment can safely support the riser's weight. Care must be taken to not use the riser stub-outs to lift the risers. The risers and riser stub-outs should never be bent or pushed together to align with the unit's riser knockouts.

The risers covered in this manual **ARE NOT** suitable for outdoor installations. The risers should never be stored or installed where it may be subjected to a hostile environment such as rain, snow, or extreme temperatures.

During and after installation, special care must be taken to prevent foreign material such as paint, plaster, and drywall dust from being deposited in the riser columns. Failure to do so may have serious adverse effects on the building system's operation. All manufacturers' warranties are void if foreign material(s) is allowed to be deposited in the riser columns. Some job conditions may require some form of temporary covering during construction.

While the manufacturer does not become involved in the design and selection of support methods and

components, it should be noted that unacceptable system operating characteristics and/or performance may result from improper or inadequate structural support. Due to variations in building construction, floor plans, and unit configurations, each installation is different. The actual step-by-step method of installation may vary from unit to unit.

All installations should be made in compliance with all governing codes and ordinances. **Compliance with all codes is the responsibility of the installing contractor.**

Installation

1. Identify, locate, and remove the riser carton from the UMOD quick-ship unit pallet.
2. Inspect and remove the risers per the Unpacking and Inspection Instructions above.
3. The riser carton should contain:
 - a. 2-pipe application:
 - i. 1 supply riser with a threaded ball valve stub-out
 - ii. 1 return riser with a threaded ball valve stub-out
 - iii. 1 drain riser with copper stub-out
 - b. 4-pipe application:
 - i. 2 supply riser with a threaded ball valve stub-outs
 - ii. 2 return riser with a threaded ball valve stub-outs
 - iii. 1 drain riser with copper stub-out.
4. Measure the building's floor-to-floor height and refer to Table 1 for correct field supplied riser extension length required.

Table 1. Recommended Extension Length

Floor-to-Floor Dimension (in)	Extension Length Required (in)
102	26
104	28
106	30

- Before cutting riser extensions, make sure the piece of riser you are going to cut to make the extension matches the riser diameter that was ordered with unit. All transition pieces like riser reducers are field supplied and field installed.
- Cut riser extensions using the recommended length from Table 1.
- Identify and orient each unit riser so the installer knows which end is the top and which end is the bottom. Use Figure 1 and Table 2 for reference.

Figure 1.

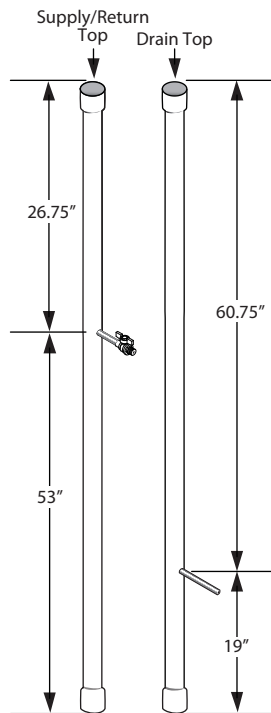
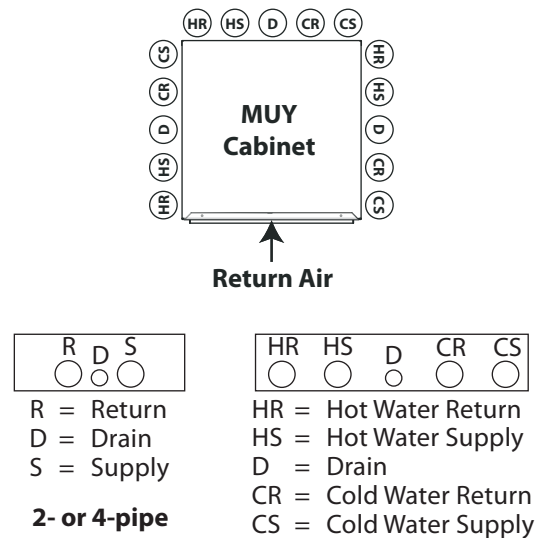


Table 2. Unit Riser Orientation

Riser Type	Top Swage to Riser Stub-out (in)	Bottom Swage to Riser Stub-out (in)	Stubout Height - AFF (Above Finished Floor)
Supply and Return Risers	26.75"	53"	39"
Drain Riser	60.75"	19"	5"

- Insert cut riser extensions into the bottom swages of the risers to a penetration depth of 2".
- Invert the riser w/extension to allow for an easier braze. Make the braze joint according to local building code specifications.
- Identify and orient the brazed risers so that they will match the riser locations for the installed unit. Use Figure 2 for reference.

Figure 2.



- Insert brazed extension/riser into the building's floor block-out hole in the order specified in Figure 1. Insert extension into swage of unit below, approximately 2".
- Verify the floor to riser stub-out and/or ball valve assembly dimension. For a return and supply riser, this dimension should be 39". For a drain riser, this dimension should be 5" (see Table 2).
- Verify riser stub-out is correctly aligned so that stub-out will penetrate through the riser knockout slot of the unit.
- Secure the riser positions for final braze.
- Make the braze joint between riser and cut extension according to local building code specifications.

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16. Repeat steps 4 through 15 for each floor as you move up the riser column.
17. Once all risers have been installed, the installer must perform a leak test for each riser column.
18. Once the riser column has passed its leak test inspection, each riser extension should be properly insulated. No exposed copper should be allowed for the riser columns.
19. Install the unit drain P-trap per the Universal Mod Hi-Rise Series Fan Coils IOM (I100-90003926).
20. Prepare the unit for assembly per the Universal Mod Hi-Rise Series Fan Coils IOM (I100-90003926).
21. Attach and install hose kits and P-trap to the unit per the Universal Mod Hi-Rise Series Fan Coils IOM (I100-90003926).

TERMS AND CONDITIONS

1. Orders shall not be binding upon International Environmental Corporation, an Oklahoma corporation (hereinafter referred to as "IEC") unless accepted by an authorized representative of IEC at its office in Oklahoma City, Oklahoma. No distributor, sales representative or any other person or entity (except authorized employees of IEC at its office in Oklahoma City, Oklahoma) has any authority whatsoever to bind IEC to any representation or agreement of any kind.
2. IEC does not build items to plans and specifications. IEC agrees to furnish only the items as described in IEC's acknowledgment unless IEC's office in Oklahoma City, Oklahoma has previously received and accepted, in writing, approved submittals from Purchaser.
3. Prices acknowledged are firm only if Purchaser releases the goods covered by this order for immediate production by IEC within sixty (60) days from the date of Purchaser's initial offer to purchase and for shipment by IEC within IEC's estimated shipping date, unless otherwise agreed to in writing by IEC at its office in Oklahoma City, Oklahoma. If Purchaser does not meet the terms and conditions of this paragraph, the prices are subject to escalation to those prices in effect at time of shipment without notice to Purchaser.
4. All prices are F.O.B. IEC's factory, unless otherwise agreed by IEC in writing; and, all payments and prices shall be in U.S.A. dollars.
5. If goods are released for production but IEC is prevented by the Purchaser from shipping upon completion or by IEC's estimated shipping date, whichever is later, IEC may at its option, in addition to all other remedies, invoice Purchaser to be payable within thirty (30) days and store the goods at Purchaser's sole expense.
6. Title to and risk of loss to the goods passes to the Purchaser F.O.B. IEC's factory.
7. **Disclaimer**
It is expressly understood that unless a statement is specifically identified as a warranty, statements made by IEC or its representatives relating to IEC's products, whether oral, written or contained in any sales literature, catalog or any other agreement, are not express warranties and do not form a part of the basis of the bargain, but are merely IEC's opinion or commendation of IEC's products. **EXCEPT AS SPECIFICALLY SET FORTH HEREIN, THERE IS NO EXPRESS WARRANTY AS TO ANY OF IEC'S PRODUCTS. IEC MAKES NO WARRANTY AGAINST LATENT DEFECTS. IEC MAKES NO WARRANTY OF MERCHANTABILITY OF THE GOODS OR OF THE FITNESS OF THE GOODS FOR ANY PARTICULAR PURPOSE.**
8. **Grant of Limited Express Warranty**
IEC warrants IEC products purchased and retained in the United States of America and Canada to be free from defects in material and workmanship under normal use and maintenance as follows:
(1) All complete fan coil units built or sold by IEC for twelve (12) months from date of unit start up or eighteen (18) months from date of shipment (from factory), whichever comes first.

All parts must be returned to IEC's factory in Oklahoma City, Oklahoma, freight prepaid, no later than sixty (60) days after the date of the failure of the part; if IEC determines the part to be defective and within IEC's Limited Express Warranty, IEC shall, when such part has been either replaced or repaired, return such to a factory recognized contractor or service organization, F.O.B. IEC's factory, Oklahoma City, Oklahoma, freight prepaid. The warranty on any parts repaired or replaced under warranty expires at the end of the original warranty period. For information and warranty service contact:

International Environmental Corporation
Customer Service
5000 West I-40
Oklahoma City, OK 73128
(405) 605-5000

This warranty does not cover and does not apply to: (1) Air filters, fuses, fluids; (2) Products relocated after initial installation; (3) Any portion or component of any system that is not supplied by IEC, regardless of the cause of the failure of such portion or component; (4) Products on which the unit identification tags or labels have been removed or defaced; (5) Products on which payment to IEC is or has been in default; (6) Products which have defects or damage which result from improper installation, wiring, electrical imbalance characteristics or maintenance; or are caused by accident, misuse or abuse, fire, flood, alteration or misapplication of the product; (7) Products which have defects or damage which result from a contaminated or corrosive air or liquid supply or operation at abnormal temperatures; (8) Mold, fungus or bacteria damages; (9) Products subjected to corrosion or abrasion; (10) Products manufactured or supplied by others; (11) Products which have been subjected to misuse, negligence or accidents; (12) Products which have been operated in a manner contrary to IEC's printed instructions; or (13) Products which have defects, damage or insufficient performance as a result of insufficient or incorrect system design or the improper application of IEC's products.

IEC is not responsible for: (1) The cost of any fluids or other system components, or associated labor to repair or replace the same, which is incurred as a result of a defective part covered by IEC's Limited Express Warranty; (2) The costs of labor, materials or service incurred in removal of the defective part, or in obtaining and replacing the new or repaired part; or, (3) Transportation costs of the defective part from the installation site to IEC or of the return of any part not covered by IEC's Limited Express Warranty.

Limitation: This Limited Express Warranty is given in lieu of all other warranties. If, notwithstanding the disclaimers contained herein, it is determined that other warranties exist, any such warranties, including without limitation any express warranties or any implied warranties of fitness for particular purpose and merchantability, shall be limited to the duration of the Limited Express Warranty.
9. **Limitation of Remedies**
In the event of a breach of the Limited Express Warranty, IEC will only be obligated at IEC's option to repair the failed part or unit or to furnish a new or rebuilt part or unit in exchange for the part or unit which has failed. If after written notice to IEC's factory in Oklahoma City, Oklahoma of each defect, malfunction or other failure and a reasonable number of attempts by IEC to correct the defect, malfunction or other failure and the remedy fails of its essential purpose, IEC shall refund the purchase price paid to IEC in exchange for the return of the sold good(s). Said refund shall be the maximum liability of IEC. THIS REMEDY IS THE SOLE AND EXCLUSIVE REMEDY OF THE BUYER OR THEIR PURCHASER AGAINST IEC FOR BREACH OF CONTRACT, FOR BREACH OF ANY WARRANTY OR FOR IEC'S NEGLIGENCE OR IN STRICT LIABILITY.
10. **Limitation of Liability**
IEC shall have no liability for any damages if IEC's performance is delayed for any reason or is prevented to any extent by any event such as, but not limited to: any war, civil unrest, government restrictions or restraints, strikes, or work stoppages, fire, flood, accident, shortages of transportation, fuel, material or labor, acts of God or any other reason beyond the sole control of IEC. **IEC EXPRESSLY DISCLAIMS AND EXCLUDES ANY LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGE IN CONTRACT, FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, OR IN TORT, WHETHER FOR IEC'S NEGLIGENCE OR AS STRICT LIABILITY.**
11. IEC shall have no system design, application or maintenance responsibility or responsibility for mold, fungus or bacteria to Purchaser or any other third party.
12. All sales, goods and services, use, excise, value added, transportation, privilege, occupational consumption, storage, document, transaction or other taxes which may be levied by any taxing authority as a result of this transaction shall be paid by the Purchaser.
13. Unless otherwise agreed to in writing by IEC any technical data furnished in conjunction with this order and not obtainable from another source shall not be duplicated, used, or disclosed in whole or in part for any purpose other than to evaluate this order.
14. IEC shall have no liability or other obligation hereunder, if IEC's performance is delayed for any reason or is prevented to any extent by any event such as, but not limited to: any act of God, strike or work stoppage, fire, flood, accident, allocation, or other controls of Government authorities, shortages of transportation, fuel, material or labor, or any other cause beyond IEC's sole control. Any shipping date stated by IEC is IEC's best estimate but IEC makes no guarantee of shipment by any such date and shall have no liability or other obligation for failure to ship on such date, regardless of cause.
15. Payment terms are net thirty (30) days from date of shipment on approved credit. One and one half percent (1 1/2%) per month (18% annual rate) may be charged on past due accounts or the highest rate permitted by applicable law, whichever is lesser. In the event the account is placed for collection, Purchaser shall be responsible for all reasonable attorneys fees or costs on a solicitor and client basis, plus all other costs and expenses incurred by IEC in securing payment.
16. Purchaser shall not cancel the contract without prior written consent of an authorized representative of IEC at its offices in Oklahoma City, Oklahoma. In the event Purchaser cancels the contract with the prior written consent of IEC after the Purchaser's offer to purchase is received and acknowledged in writing, IEC shall be entitled to receive from Purchaser IEC's cost incurred to time of cancellation plus a reasonable allowance for overhead and profit.
17. Purchaser shall not assign any of its interest or rights under this agreement without written consent of IEC.
18. IEC will protect all its lien rights. IEC will not furnish lien waivers or releases until IEC receives payment, in full, at its office in Oklahoma City, Oklahoma from Purchaser for the goods covered by this order. There is no authorized retainage for any reason.
19. This Agreement shall be construed, and the rights and liabilities of the parties hereunder shall be determined in accordance with the laws of the State of Oklahoma. If it shall be found that any portion of this agreement violates any particular law of the United States or any state in the United States having jurisdiction or, if applicable, any law of Canada or any province or territory in Canada having jurisdiction, such portion of the agreement shall be of no force and effect in that political unit, division or sub-division in which they are illegal or unenforceable and the agreement shall be treated as if such portion or portions had not been inserted. In the event that any dispute or disagreement in connection with any order should arise or exist between Purchaser and IEC, jurisdiction and venue for any legal action shall be, if IEC so elects, exclusively in the state or federal courts in Oklahoma County, Oklahoma. The statute of limitations on any claim of the Purchaser against the IEC shall be one (1) year from the date the cause of action accrues.
20. Without regard to any other agreement, all obligations of Purchaser to IEC shall become immediately due and payable if Purchaser becomes insolvent or if Purchaser does not make payments when due or breaches any other agreement or fails to perform any obligation.
21. All orders are expressly limited and made conditional upon acceptance by Purchaser of the terms and conditions set forth above without change. There shall be no understandings, agreements, or obligations (outside these terms and conditions) unless specifically set forth in writing and accepted by signature of an authorized representative of IEC in Oklahoma City, Oklahoma.
22. The parties hereto have requested that these presents and all judicial proceedings relating thereto be drafted in English. Les parties aux présentes ont demandé à ce que les présentes et toutes procédures judiciaires y afférentes soient rédigées en anglais

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At International Environmental Corporation, we are the worldwide hydronic fan coil leader and we take significant pride in our reputation of providing integrated engineering solutions to a multitude of building applications. Providing flexible solutions to our customer is what we are all about.

Visit our web page at www.iec-okc.com to view all of our fan coil product families.

Contact your local IEC Sales Representative for further details and pricing applicable to this product. Visit our website (iec-okc.com) to find your local IEC Sales Rep.

IEC Part Number: I100-90009361
IOM-340 Revision 2 (9/2020)
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