



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Solicitation

NUMBER
GSD146426

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
GUY NISBET 304-558-2596

RFQ COPY

TYPE NAME/ADDRESS HERE

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DEPARTMENT OF ADMINISTRATION
GENERAL SERVICES DIVISION
BUILDING 11 CHILLER PLANT
218 CALIFORNIA AVENUE
CHARLESTON, WV
25305 304-558-2317

DATE PRINTED
03/26/2014

BID OPENING DATE: 04/29/2014

BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		936-10		
CLEANING AND MAINTENANCE TO HEAT EXCHANGER PLATES						
REQUEST FOR QUOTATION (RFQ)						
THE WEST VIRGINIA PURCHASING DIVISION FOR THE AGENCY, WEST VIRGINIA DEPARTMENT OF ADMINISTRATION'S GENERAL SERVICES DIVISION, IS SOLICITING BIDS FROM QUALIFIED VENDORS TO ESTABLISH A CONTRACT TO PROVIDE HVAC SERVICES AND REPAIRS TO THE AGENCY'S CHILLER LOCATED ON CALIFORNIA AVENUE, CHARLESTON, WV., THESE SERVICES TO INCLUDE LABOR, MATERIALS AND EQUIPMENT TO PERFORM THE SERVICES WITHIN THE SPECIFICATIONS, AND TERMS AND CONDITIONS AS ATTACHED.						
MANDATORY PRE-BID MEETING ON SITE: APRIL 9TH, 2014 AT 10:00 AM. EST.						
GENERAL SERVICES CHILLER PLANT CAPITOL COMPLEX BUILDING 11 218 CALIFORNIA AVENUE CHARLESTON, WV. 25305						
***** THIS IS THE END OF RFQ GSD146426 ***** TOTAL:						

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

INSTRUCTIONS TO VENDORS SUBMITTING BIDS

1. **REVIEW DOCUMENTS THOROUGHLY:** The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.
2. **MANDATORY TERMS:** The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.
3. **PREBID MEETING:** The item identified below shall apply to this Solicitation.

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A pre-bid meeting will not be held prior to bid opening.

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A **NON-MANDATORY PRE-BID** meeting will be held at the following place and time:

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A **MANDATORY PRE-BID** meeting will be held at the following place and time:

General Services Building # 11
Chiller Plant, Capitol Complex
218 California Avenue
Charleston, WV. 25305

April 9th, 2014 at 10:00AM. EST.

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one person attending the pre-bid meeting may represent more than one Vendor.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. The State will not accept any other form of proof or documentation to verify attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing. Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in, but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

- 4. VENDOR QUESTION DEADLINE:** Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below in order to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are non-binding.

Question Submission Deadline: April 14th, 2014 at 10:00AM. EST.

Submit Questions to: Guy Nisbet, Senior Buyer
2019 Washington Street, East
Charleston, WV 25305
Fax: 304.558.3970
Email: Guy.L.Nisbet@WV.Gov

- 5. VERBAL COMMUNICATION:** Any verbal communication between the Vendor and any State personnel is not binding, including that made at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.
- 6. BID SUBMISSION:** All bids must be signed and delivered by the Vendor to the Purchasing Division at the address listed below on or before the date and time of the bid opening. Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason. The Purchasing Division will not accept bids, modification of bids, or addendum acknowledgment forms via e-mail. Acceptable delivery methods include hand delivery, delivery by courier, or facsimile. The bid delivery address is:

Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

The bid should contain the information listed below on the face of the envelope or the bid may not be considered:

SEALED BID

BUYER: _____
 SOLICITATION NO.: _____
 BID OPENING DATE: _____
 BID OPENING TIME: _____
 FAX NUMBER: _____

In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal plus N/A convenience copies of each to the Purchasing Division at the address shown above. Additionally, the Vendor should identify the bid type as either a technical or cost proposal on the face of each bid envelope submitted in response to a request for proposal as follows:

BID TYPE: ☐ Technical
☐ Cost

7. **BID OPENING:** Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when time stamped by the official Purchasing Division time clock.

Bid Opening Date and Time: April 29th, 2014 at 1:30 PM. EST.

Bid Opening Location: Department of Administration, Purchasing Division
 2019 Washington Street East
 Charleston, WV 25305-0130

8. **ADDENDUM ACKNOWLEDGEMENT:** Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.
9. **BID FORMATTING:** Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

GENERAL TERMS AND CONDITIONS:

1. **CONTRACTUAL AGREEMENT:** Issuance of a Purchase Order signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

2. **DEFINITIONS:** As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.
 - 2.1 **"Agency" or "Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

 - 2.2 **"Contract"** means the binding agreement that is entered into between the State and the Vendor to provide the goods and services requested in the Solicitation.

 - 2.3 **"Director"** means the Director of the West Virginia Department of Administration, Purchasing Division.

 - 2.4 **"Purchasing Division"** means the West Virginia Department of Administration, Purchasing Division.

 - 2.5 **"Purchase Order"** means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the successful bidder and Contract holder.

 - 2.6 **"Solicitation"** means the official solicitation published by the Purchasing Division and identified by number on the first page thereof.

 - 2.7 **"State"** means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

 - 2.8 **"Vendor" or "Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

3. **CONTRACT TERM; RENEWAL; EXTENSION:** The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:



Term Contract

Initial Contract Term: This Contract becomes effective on

and extends for a period of _____ year(s).

Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal must be submitted to the Purchasing Division Director thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Renewal of this Contract is limited to _____ successive one (1) year periods. Automatic renewal of this Contract is prohibited. Notwithstanding the foregoing, Purchasing Division approval is not required on agency delegated or exempt purchases. Attorney General approval may be required for vendor terms and conditions.

Reasonable Time Extension: At the sole discretion of the Purchasing Division Director, and with approval from the Attorney General's office (Attorney General approval is as to form only), this Contract may be extended for a reasonable time after the initial Contract term or after any renewal term as may be necessary to obtain a new contract or renew this Contract. Any reasonable time extension shall not exceed twelve (12) months. Vendor may avoid a reasonable time extension by providing the Purchasing Division Director with written notice of Vendor's desire to terminate this Contract 30 days prior to the expiration of the then current term. During any reasonable time extension period, the Vendor may terminate this Contract for any reason upon giving the Purchasing Division Director 30 days written notice. Automatic extension of this Contract is prohibited. Notwithstanding the foregoing, Purchasing Division approval is not required on agency delegated or exempt purchases, but Attorney General approval may be required.

Release Order Limitations: In the event that this contract permits release orders, a release order may only be issued during the time this Contract is in effect. Any release order issued within one year of the expiration of this Contract shall be effective for one year from the date the release order is issued. No release order may be extended beyond one year after this Contract has expired.



Fixed Period Contract: This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within _____ seventy-five (75) calendar _____ days.

- ☐ **One Time Purchase:** The term of this Contract shall run from the issuance of the Purchase Order until all of the goods contracted for have been delivered, but in no event shall this Contract extend for more than one fiscal year.
- ☐ **Other:** See attached.
4. **NOTICE TO PROCEED:** Vendor shall begin performance of this Contract immediately upon receiving notice to proceed unless otherwise instructed by the Agency. Unless otherwise specified, the fully executed Purchase Order will be considered notice to proceed
5. **QUANTITIES:** The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.
- ☐ **Open End Contract:** Quantities listed in this Solicitation are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.
- ☐ **Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.
- ☒ **Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.
- ☐ **One Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.
6. **PRICING:** The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification.
7. **EMERGENCY PURCHASES:** The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute a breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One Time Purchase contract.
8. **REQUIRED DOCUMENTS:** All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.

- ☒ **BID BOND:** All Vendors shall furnish a bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.
- ☒ **PERFORMANCE BOND:** The apparent successful Vendor shall provide a performance bond in the amount of . The performance bond must be issued and received by the Purchasing Division prior to Contract award. On construction contracts, the performance bond must be 100% of the Contract value.
- ☒ **LABOR/MATERIAL PAYMENT BOND:** The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be issued and delivered to the Purchasing Division prior to Contract award.

In lieu of the Bid Bond, Performance Bond, and Labor/Material Payment Bond, the Vendor may provide certified checks, cashier's checks, or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of a bond must be of the same amount and delivered on the same schedule as the bond it replaces. A letter of credit submitted in lieu of a performance and labor/material payment bond will only be allowed for projects under \$100,000. Personal or business checks are not acceptable.

- ☐ **MAINTENANCE BOND:** The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system. The maintenance bond must be issued and delivered to the Purchasing Division prior to Contract award.
- ☒ **WORKERS' COMPENSATION INSURANCE:** The apparent successful Vendor shall have appropriate workers' compensation insurance and shall provide proof thereof upon request.
- ☒ **INSURANCE:** The apparent successful Vendor shall furnish proof of the following insurance prior to Contract award and shall list the state as a certificate holder:



Commercial General Liability Insurance:

\$1,000,000.00 or more.



Builders Risk Insurance: builders risk – all risk insurance in an amount equal to 100% of the amount of the Contract.



The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether or not that insurance requirement is listed above.

- ☐ **LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section entitled Licensing, of the General Terms and Conditions, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits prior to Contract award, in a form acceptable to the Purchasing Division.

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The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications prior to Contract award regardless of whether or not that requirement is listed above.

- 9. LITIGATION BOND:** The Director reserves the right to require any Vendor that files a protest of an award to submit a litigation bond in the amount equal to one percent of the lowest bid submitted or \$5,000, whichever is greater. The entire amount of the bond shall be forfeited if the hearing officer determines that the protest was filed for frivolous or improper purpose, including but not limited to, the purpose of harassing, causing unnecessary delay, or needless expense for the Agency. All litigation bonds shall be made payable to the Purchasing Division. In lieu of a bond, the protester may submit a cashier's check or certified check payable to the Purchasing Division. Cashier's or certified checks will be deposited with and held by the State Treasurer's office. If it is determined that the protest has not been filed for frivolous or improper purpose, the bond or deposit shall be returned in its entirety.
- 10. ALTERNATES:** Any model, brand, or specification listed herein establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.
- 11. EXCEPTIONS AND CLARIFICATIONS:** The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or

other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.

- 12. LIQUIDATED DAMAGES:** Vendor shall pay liquidated damages in the amount
\$500.00 per day for work is not completed beyond allowed time.

This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy.

- 13. ACCEPTANCE/REJECTION:** The State may accept or reject any bid in whole, or in part. Vendor's signature on its bid signifies acceptance of the terms and conditions contained in the Solicitation and Vendor agrees to be bound by the terms of the Contract, as reflected in the Purchase Order, upon receipt.

- 14. REGISTRATION:** Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the \$125 fee if applicable.

- 15. COMMUNICATION LIMITATIONS:** In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.

- 16. FUNDING:** This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available.

- 17. PAYMENT:** Payment in advance is prohibited under this Contract. Payment may only be made after the delivery and acceptance of goods or services. The Vendor shall submit invoices, in arrears, to the Agency at the address on the face of the purchase order labeled "Invoice To."

- 18. UNIT PRICE:** Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.

- 19. DELIVERY:** All quotations are considered freight on board destination ("F.O.B. destination") unless alternate shipping terms are clearly identified in the bid. Vendor's listing of shipping terms that contradict the shipping terms expressly required by this Solicitation may result in bid disqualification.

- 20. INTEREST:** Interest attributable to late payment will only be permitted if authorized by the West Virginia Code. Presently, there is no provision in the law for interest on late payments.

- 21. PREFERENCE:** Vendor Preference may only be granted upon written request and only in accordance with the West Virginia Code § 5A-3-37 and the West Virginia Code of State Rules. A Resident Vendor Certification form has been attached hereto to allow Vendor to apply for the preference. Vendor's

failure to submit the Resident Vendor Certification form with its bid will result in denial of Vendor Preference. Vendor Preference does not apply to construction projects.

22. **SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES:** For any solicitations publicly advertised for bid on or after July 1, 2012, in accordance with West Virginia Code §5A-3-37(a)(7) and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women-owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. Va. CSR § 148-22-9 prior to submission of its bid to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority-owned business shall be applied in accordance with W. Va. CSR § 148-22-9.
23. **TAXES:** The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
24. **CANCELLATION:** The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-7.16.2.
25. **WAIVER OF MINOR IRREGULARITIES:** The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.
26. **TIME:** Time is of the essence with regard to all matters of time and performance in this Contract.
27. **APPLICABLE LAW:** This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code or West Virginia Code of State Rules is void and of no effect.
28. **COMPLIANCE:** Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendors acknowledge that they have reviewed, understand, and will comply with all applicable law.
29. **PREVAILING WAGE:** On any contract for the construction of a public improvement, Vendor and any subcontractors utilized by Vendor shall pay a rate or rates of wages which shall not be less than the fair minimum rate or rates of wages (prevailing wage), as established by the West Virginia Division of Labor under West Virginia Code §§ 21-5A-1 et seq. and available at <http://www.sos.wv.gov/administrative-law/wagerates/Pages/default.aspx>. Vendor shall be responsible for ensuring compliance with prevailing wage requirements and determining when prevailing wage

requirements are applicable. The required contract provisions contained in West Virginia Code of State Rules § 42-7-3 are specifically incorporated herein by reference.

30. **ARBITRATION:** Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.
31. **MODIFICATIONS:** This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary, no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). **No Change shall be implemented by the Vendor until such time as the Vendor receives an approved written change order from the Purchasing Division.**
32. **WAIVER:** The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.
33. **SUBSEQUENT FORMS:** The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.
34. **ASSIGNMENT:** Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments. Notwithstanding the foregoing, Purchasing Division approval may or may not be required on certain agency delegated or exempt purchases.
35. **WARRANTY:** The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.
36. **STATE EMPLOYEES:** State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.
37. **BANKRUPTCY:** In the event the Vendor files for bankruptcy protection, the State of West Virginia may deem this Contract null and void, and terminate this Contract without notice.

38. [RESERVED]

39. CONFIDENTIALITY: The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/default.html>.

40. DISCLOSURE: Vendor's response to the Solicitation and the resulting Contract are considered public documents and will be disclosed to the public in accordance with the laws, rules, and policies governing the West Virginia Purchasing Division. Those laws include, but are not limited to, the Freedom of Information Act found in West Virginia Code § 29B-1-1 et seq.

If a Vendor considers any part of its bid to be exempt from public disclosure, Vendor must so indicate by specifically identifying the exempt information, identifying the exemption that applies, providing a detailed justification for the exemption, segregating the exempt information from the general bid information, and submitting the exempt information as part of its bid but in a segregated and clearly identifiable format. Failure to comply with the foregoing requirements will result in public disclosure of the Vendor's bid without further notice. A Vendor's act of marking all or nearly all of its bid as exempt is not sufficient to avoid disclosure and WILL NOT BE HONORED. Vendor's act of marking a bid or any part thereof as "confidential" or "proprietary" is not sufficient to avoid disclosure and WILL NOT BE HONORED. In addition, a legend or other statement indicating that all or substantially all of the bid is exempt from disclosure is not sufficient to avoid disclosure and WILL NOT BE HONORED. Vendor will be required to defend any claimed exemption for nondisclosure in the event of an administrative or judicial challenge to the State's nondisclosure. Vendor must indemnify the State for any costs incurred related to any exemptions claimed by Vendor. Any questions regarding the applicability of the various public records laws should be addressed to your own legal counsel prior to bid submission.

41. LICENSING: In accordance with West Virginia Code of State Rules §148-1-6.1.7, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

42. ANTITRUST: In submitting a bid to, signing a contract with, or accepting a Purchase Order from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired

by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

- 43. VENDOR CERTIFICATIONS:** By signing its bid or entering into this Contract, Vendor certifies (1) that its bid was made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity submitting a bid for the same material, supplies, equipment or services; (2) that its bid is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this RFQ in its entirety, understands the requirements, terms and conditions, and other information contained herein. Vendor's signature on its bid also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency.

The individual signing this bid on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his or her knowledge, the Vendor has properly registered with any State agency that may require registration.

- 44. PURCHASING CARD ACCEPTANCE:** The State of West Virginia currently utilizes a Purchasing Card program, administered under contract by a banking institution, to process payment for goods and services. The Vendor must accept the State of West Virginia's Purchasing Card for payment of all orders under this Contract unless the box below is checked.

☐

Vendor is not required to accept the State of West Virginia's Purchasing Card as payment for all goods and services.

- 45. VENDOR RELATIONSHIP:** The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, *etc.* and the filing of all necessary documents, forms and returns pertinent to all of the foregoing. Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

- 46. INDEMNIFICATION:** The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered

by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

- 47. PURCHASING AFFIDAVIT:** In accordance with West Virginia Code § 5A-3-10a, all Vendors are required to sign, notarize, and submit the Purchasing Affidavit stating that neither the Vendor nor a related party owe a debt to the State in excess of \$1,000. The affidavit must be submitted prior to award, but should be submitted with the Vendor's bid. A copy of the Purchasing Affidavit is included herewith.
- 48. ADDITIONAL AGENCY AND LOCAL GOVERNMENT USE:** This Contract may be utilized by and extends to other agencies, spending units, and political subdivisions of the State of West Virginia; county, municipal, and other local government bodies; and school districts ("Other Government Entities"). This Contract shall be extended to the aforementioned Other Government Entities on the same prices, terms, and conditions as those offered and agreed to in this Contract. If the Vendor does not wish to extend the prices, terms, and conditions of its bid and subsequent contract to the Other Government Entities, the Vendor must clearly indicate such refusal in its bid. A refusal to extend this Contract to the Other Government Entities shall not impact or influence the award of this Contract in any manner.
- 49. CONFLICT OF INTEREST:** Vendor, its officers or members or employees, shall not presently have or acquire any interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.
- 50. REPORTS:** Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:
- ☐ Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.
 - ☐ Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at purchasing.requisitions@wv.gov.
- 51. BACKGROUND CHECK:** In accordance with W. Va. Code § 15-2D-3, the Director of the Division of Protective Services shall require any service provider whose employees are regularly employed on the grounds or in the buildings of the Capitol complex or who have access to sensitive or critical information

to submit to a fingerprint-based state and federal background inquiry through the state repository. The service provider is responsible for any costs associated with the fingerprint-based state and federal background inquiry.

After the contract for such services has been approved, but before any such employees are permitted to be on the grounds or in the buildings of the Capitol complex or have access to sensitive or critical information, the service provider shall submit a list of all persons who will be physically present and working at the Capitol complex to the Director of the Division of Protective Services for purposes of verifying compliance with this provision.

The State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check.

Service providers should contact the West Virginia Division of Protective Services by phone at (304)558-9911 for more information.

52. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

- a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
- b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process.

The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:

- a. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
- b. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

53. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a “substantial labor surplus area”, as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products.

This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

ADDITIONAL TERMS AND CONDITIONS (Construction Contracts Only)

1. **CONTRACTOR'S LICENSE:** West Virginia Code § 21-11-2 requires that all persons desiring to perform contracting work in this state be licensed. The West Virginia Contractors Licensing Board is empowered to issue the contractor's license. Applications for a contractor's license may be made by contacting the West Virginia Division of Labor.

West Virginia Code § 21-11-11 requires any prospective Vendor to include the contractor's license number on its bid. Failure to include a contractor's license number on the bid shall result in Vendor's bid being disqualified. Vendors should include a contractor's license number in the space provided below.

Contractor's Name:_____

Contractor's License No._____

The apparent successful Vendor must furnish a copy of its contractor's license prior to the issuance of a purchase order/contract.

2. **DRUG-FREE WORKPLACE AFFIDAVIT:** W. Va. Code § 21-1D-5 provides that any solicitation for a public improvement contract requires each Vendor that submits a bid for the work to submit at the same time an affidavit that the Vendor has a written plan for a drug-free workplace policy. To comply with this law, Vendor must either complete the enclosed drug-free workplace affidavit and submit the same with its bid or complete a similar affidavit that fulfills all of the requirements of the applicable code. Failure to submit the signed and notarized drug-free workplace affidavit or a similar affidavit that fully complies with the requirements of the applicable code, with the bid shall result in disqualification of Vendor's bid.

2.1 DRUG-FREE WORKPLACE POLICY: Pursuant to W. Va. Code § 21-1D-4, Vendor and its subcontractors must implement and maintain a written drug-free workplace policy that complies with said article.

The awarding public authority may cancel this contract if: (1) Vendor fails to implement and maintain a written drug-free workplace policy described in the preceding paragraph, (2) Vendor fails to provide information regarding implementation of its drug-free workplace policy at the request of the public authority; or (3) Vendor provides to the public authority false information regarding the contractor's drug-free workplace policy.

3. **DRUG FREE WORKPLACE REPORT:** Pursuant to W. Va. Code § 21-1D-7b, no less than once per year, or upon completion of the project, every contractor shall provide a certified report to the public authority which let the contract. For contracts over \$25,000, the public authority shall be the West Virginia Purchasing Division. For contracts of \$25,000 or less, the public authority shall be the agency issuing the contract. The report shall include:

- (1) Information to show that the education and training service to the requirements of West Virginia Code § 21-1D-5 was provided;
- (2) The name of the laboratory certified by the United States Department of Health and Human Services or its successor that performs the drug tests;
- (3) The average number of employees in connection with the construction on the public improvement;
- (4) Drug test results for the following categories including the number of positive tests and the number of negative tests: (A) Pre-employment and new hires; (B) Reasonable suspicion; (C) Post-accident; and (D) Random.

Vendor should utilize the attached Certified Drug Free Workplace Report Coversheet when submitting the report required hereunder.

4. **AIA DOCUMENTS:** All construction contracts that will be completed in conjunction with architectural services procured under Chapter 5G of the West Virginia Code will be governed by the AIA A101-2007 and A201-2007 or the A107-2007 documents, as amended by the Supplementary Conditions for the State of West Virginia, in addition to the terms and conditions contained herein.
5. **SUBCONTRACTOR LIST SUBMISSION:** In accordance with W. Va. Code § 5-22-1, The apparent low bidder on a contract for the construction, alteration, decoration, painting or improvement of a new or existing building or structure valued at more than \$250,000.00 shall submit a list of all subcontractors who will perform more than \$25,000.00 of work on the project including labor and materials. This provision shall not apply to any other construction projects, such as highway, mine reclamation, water or sewer projects. Additionally, if no subcontractors who will perform more than \$25,000.00 of work are to be used to complete the project, it will be noted on the subcontractor list.
 - a. **Required Information.** The subcontractor list shall contain the following information:
 - i. Bidder's name
 - ii. Name of each subcontractor
 - iii. License numbers as required by W. Va. Code § 21-11-1 et. seq.
 - iv. Notation that no subcontractor will be used to perform more than \$25,000.00 of work, when applicable
 - b. **Submission.** The completed subcontractor list shall be provided to the Purchasing Division within one business day of the opening of bids for review. Failure to submit the subcontractor list within one business day after the deadline for submitting bids shall result in disqualification of the bid.
 - c. **Substitution of Subcontractor.** Written approval must be obtained from the State Spending Unit before any subcontractor substitution is permitted. Substitutions are not permitted unless:

- i. The subcontractor listed in the original bid has filed for bankruptcy,
- ii. The subcontractor in the original bid has been debarred or suspended; or
- iii. The contractor certifies in writing that the subcontractor listed in the original bill fails, is unable, or refuses to perform his subcontract.

6. GREEN BUILDINGS MINIMUM ENERGY STANDARDS: In accordance with § 22-29-4, all new building construction projects of public agencies that have not entered the schematic design phase prior to July 1, 2012, or any building construction project receiving state grant funds and appropriations, including public schools, that have not entered the schematic design phase prior to July 1, 2012, shall be designed and constructed complying with the ICC International Energy Conservation Code, adopted by the State Fire Commission, and the ANSI/ASHRAE/IESNA Standard 90.1-2007: *Provided*, That if any construction project has a commitment of federal funds to pay for a portion of such project, this provision shall only apply to the extent such standards are consistent with the federal standards.

GSD146426 Building - 11 HVAC EXCHANGER SERVICE and UPGRADE

SPECIFICATIONS

- 1. PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of General Services Division to establish a contract to provide HVAC Services and repairs as specified in the attached documents in Building 11 located at Piedmont Road/California Avenue Charleston, West Virginia. This document is intended to supplement information provided in the standard "Request for Quotation" and "General Terms and Conditions" issued by the Purchasing Division for this project. Vendors should carefully review all documents.
- 2. DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.
 - 2.1 "Contract Services"** means providing all labor, materials and equipment necessary to provide HVAC Services and repairs as specified in the attached documents in Building 11.
 - 2.2 "Bid Form"** means the pages upon which Vendor should list its proposed price for the Contract Services. The Bid Form is either included on the last page of this RFQ or attached hereto as **Attachment "A"**.
 - 2.3 "RFQ"** means the official request for quotation published by the Purchasing Division and identified as GSD146426.
 - 2.4 "Agency Representative"** means the person designated by the Director of the General Services Division as having authority to act on behalf of the General Services Division.
 - 2.5 "Testing"** shall be defined as a function test upon the completion of ordered services to ensure equipment is returned to normal operating mode or to determine if additional repairs are required.
- 3. QUALIFICATIONS:** Vendor shall have the following minimum qualifications:
 - 3.1** The Vendor must provide references for at least three (3) distinct contracts documenting the successful completion of repair and warranty services of the type specified in the enclosed bid specifications (**use Attachment "A"**). References should include the name, location of the building in addition to the name, address and telephone number of a contact person with the building's owner familiar with the work
 - 3.2** Work under this Contract may only be performed by a mechanic who has first provided documentation of certifications and or licensure for the following:
 - 3.2.1** Electricians-WV Master Electricians License (current)

GSD146426 Building - 11 HVAC EXCHANGER SERVICE and UPGRADE

3.2.2 Plumbers- WV Master Plumbers License (current)

3.2.3 HVAC-EPA 608 Certification and Apprentice Certification or Completion of
HAC Vocational Program prior to January 1, 2006.

4. MANDATORY REQUIREMENTS: Contract services must meet or exceed the mandatory requirements listed.

4.1 The work consists of providing all labor and materials to provide a service cleaning of all exchanger plates contained in unit #1 and #2 per factory service, expanding the current plate configuration to the maximum design rating specifications for installation, removal, testing and returning unit to normal operation mode as monitored by the TRACER System.

4.2 Contractor shall use Accu-Therm plate heat exchangers from Paul Mueller Company, or equal. Plate heat exchangers shall be compatible with Mueller 80M H/HV/B-20.

4.3 Contractor shall increase plate count to maximum 346 up from the current 214, installed per factory sequencing of plates. (**See Attachment "C"**) The vendor should anticipate replacing up to 5 gaskets and 2 plates in total for both units.

4.4 Contractor will furnish, in addition to new plates and gaskets, new plate bolts of proper length complete with safety end caps, new resized plate cover-stainless, new enlarged drip pans-stainless, rework drainage lines from pans to insure proper drainage slope.

4.5 Head plates will be cleaned, scraped and sanded to remove corrosion. Vendor shall also treat head plates with corrosion resistant primer and paint them blue.

4.6 Care will be utilized to insure no damaged to gaskets or plates during individual cleaning process per section 4.0 of factory manual and section 4.7 (**Attachment "B"**.)

4.7 Floor mounting bolts will be replaced with new stainless steel bolts and secure to concrete pad.

4.8 Contractor shall furnish all materials, labor, and equipment necessary to complete all work as indicated by these specifications. The intent is that the completed work returns units to full operation mode. Contractor shall furnish any incidental work, materials, labor and equipment that are necessary to complete the work, even is such incidental work is not explicitly included in the contract documents.

5. CONTRACT AWARD:

5.1 Contract Award: The Contract is intended to provide Agency with a purchase price for the Contract Services. The Contract shall be awarded to the Vendor that provides the Contract Services meeting the required specifications for the lowest overall total cost as shown on the Bid Form.

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5.2 Bid Form: Vendor should complete the Bid Form (**Attachment “A”**) by providing a lump sum bid for all labor, materials and necessary equipment needed to complete the work. The Vendor shall furnish any incidental work, materials, labor and equipment that are necessary to complete the work, even if such incidental work is not explicitly included in the contract documents. Vendor should complete the Bid Form in full as failure to complete the Pricing Page in its entirety may result in Vendor’s bid being disqualified.

Notwithstanding the foregoing, the Purchasing Division may correct errors as it deems appropriate.

6. PERFORMANCE:

6.1 Vendor and Agency shall agree upon a schedule for performance of Contract Services and Contract Services Deliverables, unless such a schedule is already included herein by Agency.

6.2 The Vendor shall provide the Agency Project Manager with an overall project schedule within **seventy-two (72) hours** of Award of the Contract. The proposed project schedule shall indicate areas to be worked. Where coordination or disruption of office workspaces or occupants may be required, provide at least one week’s advance notice prior to conducting work in those areas. Vendor shall adhere to schedule provided and coordinate through the Agency Project Manager.

6.3 Work shall be conducted as a single project. The work schedule shall be reviewed and approved by the Agency Project Manager prior to commencement of the work. The Vendor shall coordinate the schedule around the Agency’s work requirements.

7. PAYMENT:

7.1 Agency shall pay flat fee as shown on the Bid Form, for all Contract Services performed and accepted under this Contract. Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia.

7.2 Invoices shall be submitted for payment (in arrears) and must include the following information:

7.2.1 Invoice must include invoice date, service dates, FEIN number, complete address of vendor and Master Contract number.

7.2.2 Invoices shall be emailed to GSDInvoices@wv.gov or mailed to the following address:

General Services Division
1900 Kanawha Blvd. E.
Building 1, Room MB-12
Charleston, WV 25305

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7.2.3. Any equipment or material contracted for prior to receipt of the signed purchase order and written Notice to Proceed letter shall be at the Bidder's risk.

8. TRAVEL: Vendor shall be responsible for all mileage and travel costs, including travel time, associated with performance of this Contract. Any anticipated mileage or travel costs may be included in the flat fee or hourly rate listed on Vendor's bid, but such costs will not be paid by the Agency separately.

9. FACILITIES ACCESS: Performance of Contract Services may require access cards and/or keys to gain entrance to Agency's facilities. In the event that access cards and/or keys are required:

9.1 Vendor must identify principal service personnel which will be issued access cards and/or keys to perform service. Vendor shall provide a list of personnel that includes a copy of their valid driver's license or other legal identification and date of birth. Under no circumstances shall personnel be assigned to this project without first submitting employee information to the General Services Division and subsequent approval given to the Vendor.

9.2 Vendor will be responsible for controlling cards and keys and will pay replacement fee, if the cards or keys become lost or stolen.

9.3 Vendor shall notify Agency immediately of any lost, stolen, or missing card or key.

9.4 Anyone performing under this Contract will be subject to Agency's security protocol and procedures.

9.5 Vendor shall inform all staff of Agency's security protocol and procedures.

9.6 Vendor employees shall carry valid photo ID badges to be worn when working in the building.

10 VENDOR DEFAULT:

10.1 The following shall be considered a vendor default under this Contract.

10.1.1 Failure to perform Contract Services in accordance with the requirements contained herein.

10.1.2 Failure to comply with other specifications and requirements contained herein.

10.1.3 Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.

10.1.4 Failure to remedy deficient performance upon request.

GSD146426 Building - 11 HVAC EXCHANGER SERVICE and UPGRADE

10.2 The following remedies shall be available to Agency upon default.

10.2.1 Cancellation of the Contract.

10.2.2 Cancellation of one or more release orders issued under this Contract.

10.2.3 Any other remedies available in law or equity.

11 MISCELLANEOUS:

11.2 Contract Manager: During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: _____

Telephone Number: _____

Fax Number: _____

Email Address: _____

11.3 Permits: The Vendor shall procure all necessary permits and licenses to comply with all applicable Federal, State, or Municipal laws, along with all regulations, and ordinances of any regulating body.

11.4 Project Closeout:

11.3.1. Final cleanup shall be completed prior to final inspection.

11.3.2. Vendor shall submit warranty documents to Agency Project Manager at final inspection.

11.3.3 Perform final inspection with the Agency Project Manager.

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- 11.5 Final Inspection:** The Final Inspection will be conducted by a Project Manager from the Agency. Work found to be in accordance with the Contract Documents will be accepted as complete for final acceptance. Unacceptable work, or work not in accordance with the Contract Documents shall be removed, replaced, changed or cleaned as required to meet requirements of Contract Documents prior to final acceptance. Final Acceptance does not waive or release Vendor to conform to the Contract Documents.
- 11.6 Use of Facilities:** Work areas will be limited to those spaces required for access to the building. Some interior space may be utilized for temporary (overnight) storage of equipment and tools. Storage needs can be coordinated with the Agency Project Manager. Agency facilities shall remain in use during this contract. Vendor shall work with the Agency Project Manager and Protective Services to coordinate the temporary access to work areas. Vendor shall minimize disruption to building work areas and loading dock access. Vendor shall be permitted reasonable use of building utilities including power, water and sanitary sewage disposal as required for conducting the work. Vendor shall coordinate the location of service connections or use of receptacles with the Agency Project Manager to avoid overloading existing circuits.
- 11.6 Work Restrictions:** Work shall be generally performed inside the existing building between normal business hours of 7:00 am to 5:00 pm, Monday through Friday, except state recognized holidays. Weekends may be permitted when pre-arranged with the Agency Project Manager. Vendor shall not leave open doors unattended and shall close doors when not in use. This is a non-smoking building. Smoking is not permitted within the building or near entrances, operable windows or outdoor air intakes.
- 11.7 Parking:** No parking is available on the project site. Parking in non-designated areas is not permitted. Parking is the responsibility of the Vendor. With prior approval, Vendor's vehicles may be brought on-site for loading & unloading or to provide equipment necessary for conducting the work. Use of loading dock areas or sidewalk areas for parking is strictly prohibited.
- 11.8 Codes:** All work is to be performed in compliance with applicable Federal and State codes including but not limited to the International Building Code, International Mechanical Code, Life Safety Code, NEC, OSHA, UL, ANSI, ASME and related standards.
- 11.9 Safety:** All applicable local safety and OSHA rules and guidelines shall be met by the Vendor. Work shall be subject to verification and inspection by GSD Safety representatives. Such verification shall not relieve the Vendor from meeting all applicable safety regulations and inspection by other agencies. Notify Owner if suspected hazardous materials are encountered. Any areas requiring abatement will be provided by the GSD under separate contract.

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11.10 Hot Work Permit: Vendor shall obtain Owner's permission prior to performing any work that requires an open flame, creates sparks, use's equipment that creates combustible temperatures, or performs any work that could result in a fire hazard. Owner will review work area and issue a 'Hot Work Permit' prior to Vendor commencing work. Note that the Vendor must take proper precautions and may be required to provide a Fire Watch as a condition of the permit.

11.11 Workmanship: Vendor shall complete all work in a neat and workmanlike manner. All work shall be done using new materials in a manner that meets commercial quality standards. Work shall be neat, true, plumb and square as applicable. Vendor shall verify all dimensions.

11.12 Warranty: A one (1) year warranty on labor and materials or the manufacturer's warranty, whichever is greater, are required.

GSD146426 Attachment A: Bid Form

Name of Bidder: _____

We, the bidder, having examined the site and being familiar with the local conditions affecting the cost of the work and also being familiar with the general conditions to bidders, drawings, and specifications, hereby propose to furnish all materials, equipment, and labor to complete all work in a workmanlike manner, as described in the Bidding Documents.

TOTAL CONTRACT BID

(\$ _____)

Total to be written in figures and words. In the event that the written amount and the numerical amount differ, the written amount shall prevail.

References

Reference Name: _____
Position: _____
Address: _____
Telephone Number: _____
Project Name: _____
Project Description: _____

Reference Name: _____
Position: _____
Address: _____
Telephone Number: _____
Project Name: _____
Project Description: _____

Reference Name: _____
Position: _____
Address: _____
Telephone Number: _____
Project Name: _____
Project Description: _____

Accu-Therm[®] Instructions

Installation • Operation • Maintenance



Part No. 9804186

Effective January 1, 1999

Revised May 1, 2000

MUELLER[®]
HEAT TRANSFER PRODUCTS



ACCU-THERM® **INSTALLATION, OPERATION, AND MAINTENANCE INSTRUCTIONS**

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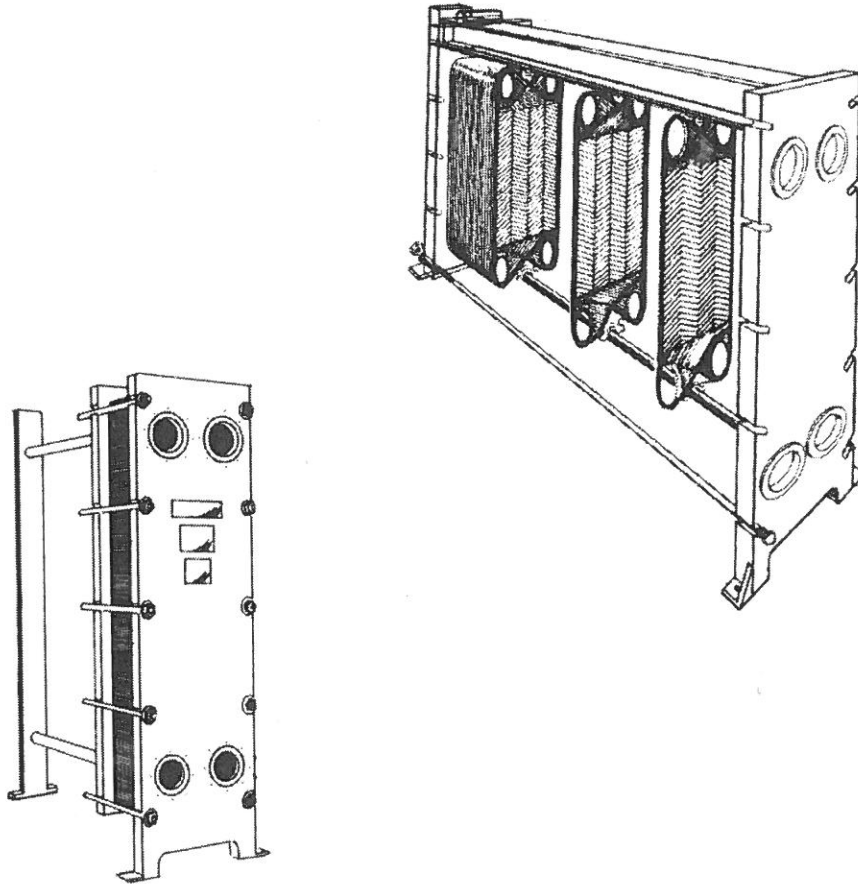
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INTRODUCTION

1.0 Introduction

This Accu-Therm® Installation, Operation, and Maintenance Manual is intended as an instruction booklet for the newer user as well as providing new and helpful hints for previous users of plate-and-frame heat exchangers.



SECTION 2.0 - GENERAL INFORMATION

2.1 Accu-Therm General Description

The Accu-Therm system is based on the modular-unit concept. This consists of standardized components such as frames, terminals, plates, and connections which can be assembled into compact, highly efficient compact plate heat exchangers that are custom-tailored to the customer's requirements. An Accu-Therm has the added feature that plate capacity may be expanded or deleted for reasonable changes in capacity demand (see Figures 1A and 1B).

NOTE: Typical maximum operating pressures range from 75 psig to 300 psig (contact Paul Mueller Company for higher pressure applications).

2.2 Plates

Accu-Therm plates are available in seven corrugation styles to better handle your heat transfer needs for high efficiency with various solutions and pressure-drop requirements.

- ▲ H = Horizontal
- ▲ V = Vertical
- ▲ P = High Pressure
- ▲ F = Fine Pattern, Horizontal
- ▲ G = Fine Pattern, Vertical
- ▲ FF = Free-Flow
- ▲ M = High Pressure

The plates are formed from most cold workable metals or alloys between two-piece hardened dies. This minimizes metal thinning which can occur with other forming methods. Pressed into the plates are grooves into which the gaskets fit, and corrugations or ribs. These corrugations or ribs tend to reinforce the plate, direct the flow, and increase heat transfer by inducing turbulence within the media flowing across the surface. The perimeter of plates and the porthole areas are bounded by a one-piece elastomeric gasket which is attached to the plate.

The plates are then assembled into a pack according to the flow arrangement and suspended from an upper guide rail or supported from lower guide bar. Compression bolts which draw the movable end frame to the fixed end frame are then used to tighten the plate pack to a measurement which is between the "A" minimum and the "A" maximum (located on flow chart and data sheets shipped with the unit) but never tighter than the "A" minimum. The minimum dimension is located on the data plate on the front of the Accu-Therm unit. The "A" dimension must be changed if plates are added or removed from the heat exchanger (see Figure 2A).

Figure 1A - Sanitary Frame Design

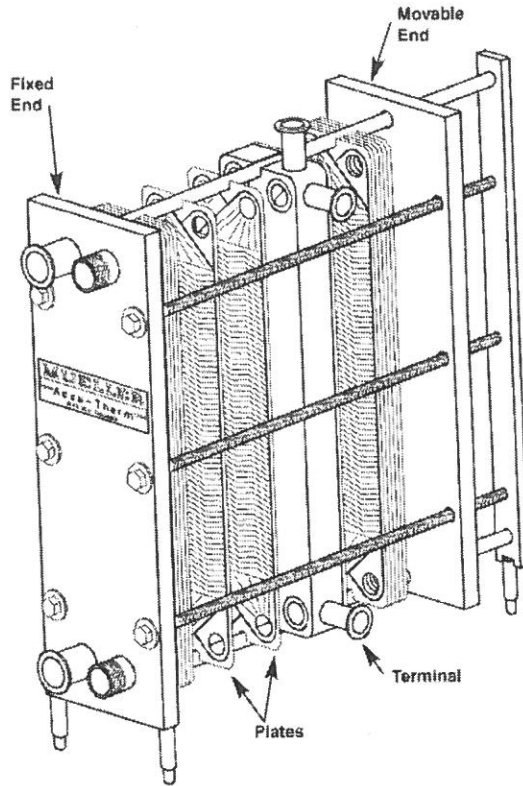


Figure 1B - Industrial Frame Design

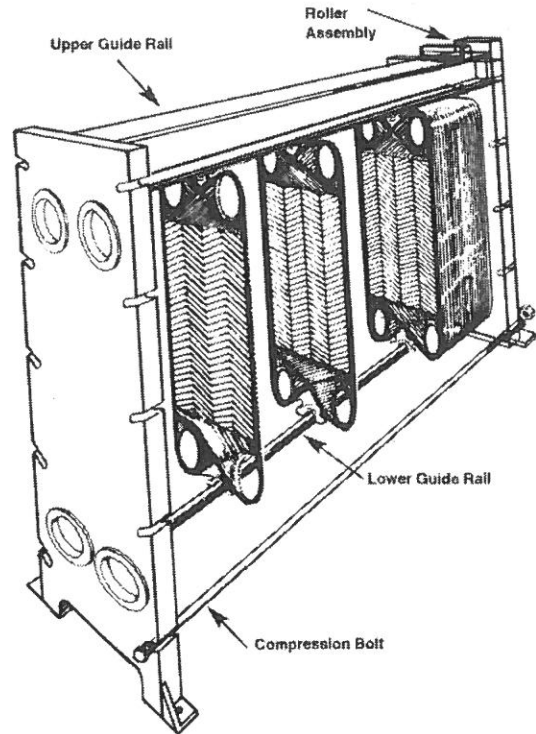


Figure 2A - "A" Dimension

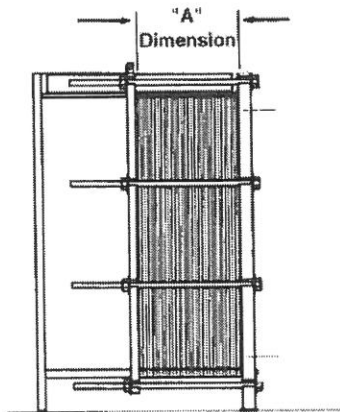
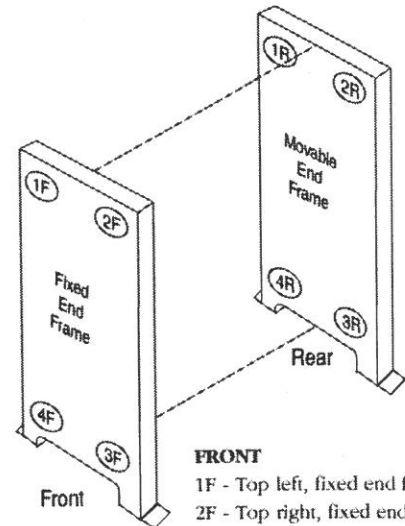


Figure 2B - Port Configuration

**FRONT**

- 1F - Top left, fixed end frame
- 2F - Top right, fixed end frame
- 3F - Bottom right, fixed end frame
- 4F - Bottom left, fixed end frame

REAR

- 1R - Top right, movable end frame
- 2R - Top left, movable end frame
- 3R - Bottom left, movable end frame
- 4R - Bottom right, movable end frame

Table 1 - Plate Specifications

Listed below are various Mueller Accu-Therm plate heat exchanger nominal specifications.

Model	Height (in)	Width (in)	Typical Length* (in)	Typical Conn. Size	Normal Surface Range (ft²)	Typical Max. Flow GPM H ₂ O**
AT4	23	8	12-22 ⁷ / ₈	1	15-50	50
AT10	37	14	14 ¹ / ₂ -50 ¹ / ₂	2	13-273	200
AT20	56	24	20-159 ³ / ₈	2 ¹ / ₂ /3	28-1,279	450
AT402	39 ¹ / ₄	27	20 ¹ / ₂ -159 ¹ / ₂	4/6	16-106	1,150
AT405	56	27	20 ¹ / ₂ -159 ⁷ / ₈	4/6	48-1,495	1,150
AT40	70 ¹ / ₄	27	33 ⁷ / ₈ -159 ⁷ / ₈	4/6	99-2,292	1,150
AT805	63	36	34 ⁵ / ₈ -160 ⁵ / ₈	6/8	105-2,440	2,600
AT80	85	36	34 ⁵ / ₈ -160 ⁵ / ₈	6/8	181-4,186	2,600
AT1306	84 ³ / ₄	43	50 ³ / ₄ -176 ³ / ₄	10/12	262-6,209	6,600
AT1309	99 ¹ / ₂	43	50 ³ / ₄ -176 ³ / ₄	10/12	363-8,622	6,600
AT130	106 ³ / ₄	43	50 ³ / ₄ -176 ³ / ₄	10/12	413-9,804	6,600
AT180	126	56	160-250	14	*	**
AT2508	120	57	65-245	16/20	860-15,308	17,300
AT250	134	57	65-245	16/20	972-17,309	17,300
AT161FF	70 ³ / ₄	29	33 ⁵ / ₈ -159 ⁵ / ₈	3/4	57-1,579	650
AT184FF	91	36	34 ⁵ / ₈ -160 ⁵ / ₈	8	165-2,734	3,000

*Actual length of a PHE depends on model, frame, and number of plates.

**Actual maximum flow depends on port nozzle construction and varies from 13 to 30 FPS with titanium.

2.3 Plate Materials

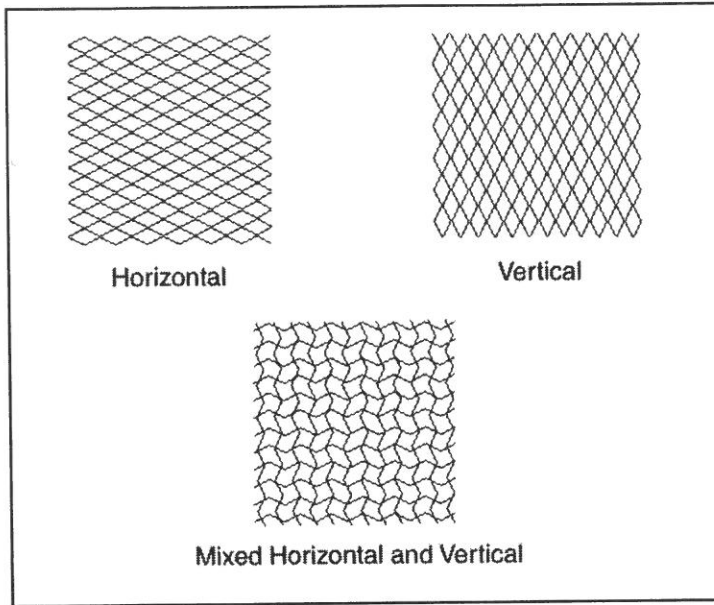
- ▲ 304 Stainless Steel
- ▲ 316 Stainless Steel
- ▲ Titanium
- ▲ Hastelloy® C-276

(Other materials may be available on a special-order basis.)

2.4 Mixed Plate Design

The Accu-Therm system combines two different plate embossings (see Figure 3), a vertical and a horizontal embossing, to provide a varying thermal optimization that can fall anywhere between the two. One plate has high heat transfer coefficients with higher pressure drops while the other has lower pressure drops with correspondingly lower heat transfer values. By combining the use of these plates, the thermal length of the plate pack can be varied to suit the customer's requirements and can provide a unit which is lower in cost.

Figure 3 - Plate Patterns



2.5 Plate Sequence and Flow Diagrams

A plate sequence and flow diagram are supplied with every Accu-Therm plate heat exchanger to describe plate arrangement and flow path through the unit.

Looking at the fixed end frame (see Figure 2B), the portholes are numbered clockwise from the top left porthole as 1F, 2F, 3F, and 4F. Looking at the movable end frame from the outside, the portholes are numbered counterclockwise from the upper right-hand porthole as 1R, 2R, 3R, and 4R.

Gaskets on all plates except the AT161FF plates face the fixed end frame. On the AT161FF they face the movable end frame. When looking at the gasketed side of all plates except the AT402 and AT161FF, if the non-gasketed ports are on the right-hand side, the plate is called a right-hand plate. Rotating the plate 180 degrees on the vertical plane puts the non-gasketed ports on the left-hand side and makes the plate a left-hand plate (see Figure 4). The pattern used on the AT402 and AT161 require a totally separate plate to make right-hand and left-hand configurations.

Figure 5 shows a typical plate sequence and flow diagram. The top double-dotted line indicates the fixed end frame while the bottom double-dotted line indicates the movable end frame. Each numbered line in the flow diagram indicates a plate. The open spaces in the numbered lines indicate the portholes for that plate. The style and openings are indicated to the right of the numbered lines. R indicates a right-handed plate; L indicates a left-handed plate. The numbers to the right of the Rs and Ls indicate the ports that need to be open in the plates. **Example:** R/1 2 3 4 indicate all four ports are punched out. RF or LF indicates right- or left-hand full-gasket plate which faces against the fixed end frame or terminal on non-free-flow units and the movable end frame or terminal on free-flow units.

Figure 4 - Right-Hand to Left-Hand Plate

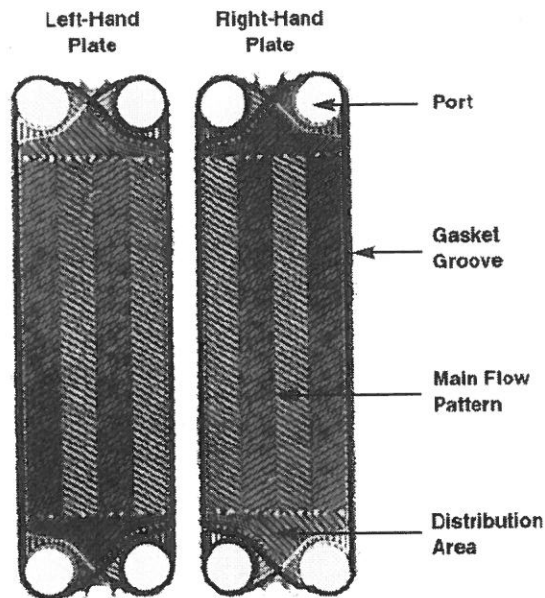


Figure 5 - Typical Plate Sequence and Flow Diagram

II	-----	I
II	3F 4F	2F 1F I
II	-----	-----
1.	.. ..	----- RF / 1 2 3 4
2.	.. ..	----- L / 1 2 3 4
3.	.. ..	----- R / 1 2 3 4
4.	.. ..	----- L / 1 2 3 4
5.	.. ..	----- R / 1 2 3 4
6.	.. ..	----- L / 1 2 3 4
7.	.. ..	----- R / 1 2 3 4
8.	.. ..	----- L / 1 2 3 4
9.	.. ..	----- R / 1 2 3 4
10.	.. ..	----- L / 1 2 3 4
11.	.. ..	----- R / 1 2 3 4
12.	.. ..	----- L / 1 2 3 4
13.	.. ..	----- R / 1 2 3 4
14.	.. ..	----- L / 1 2 3 4
15.	.. ..	----- R / 1 2 3 4
16.	.. ..	----- L / 1 2 3 4
17.	.. ..	----- R / 1 2 3 4
18.	.. ..	----- L / 1 2 3 4
19.	.. ..	----- R / 1 2 3 4
20.	-----	-----
I	-----	I
I	3R 4R	2R 1R I
	-----	-----

2.6 Plate Order and Arrangement

Most plates are bounded on the perimeter and porthole areas by a one-piece elastomeric gasket as shown in Figure 4. Most plates are punched with portholes in all four corners. The two non-gasketed ports will both be on one side of the plate (except 402 and 161 free-flow). This flow pattern created by the gasketed/non-gasketed ports is the mechanical feature which differentiates a left-hand from a right-hand plate.

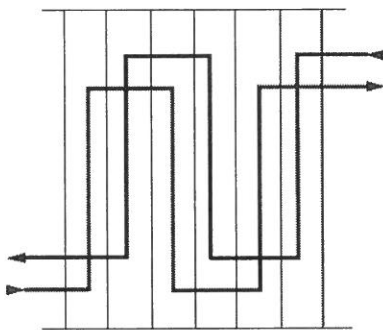
When the plates are loaded into the frame in an alternating left-hand/right-hand configuration as depicted in the typical flow diagram (Figure 5), one of the fluids is allowed full access to the face of a plate. Since each plate contacts two fluids, hot and cold on opposite sides, the very next plate in the plate pack will have non-gasketed ports on the opposite side to allow access to the second fluid. True counterflow is made possible in this manner.

2.7 Multiple-Pass and Fluid Arrangements

For certain applications, a thermal length longer than that of one plate is required. This can be done through the use of multiple passes to increase the thermal length. By not punching portholes at predetermined locations, any number of passes can be formed as shown by Figure 6.

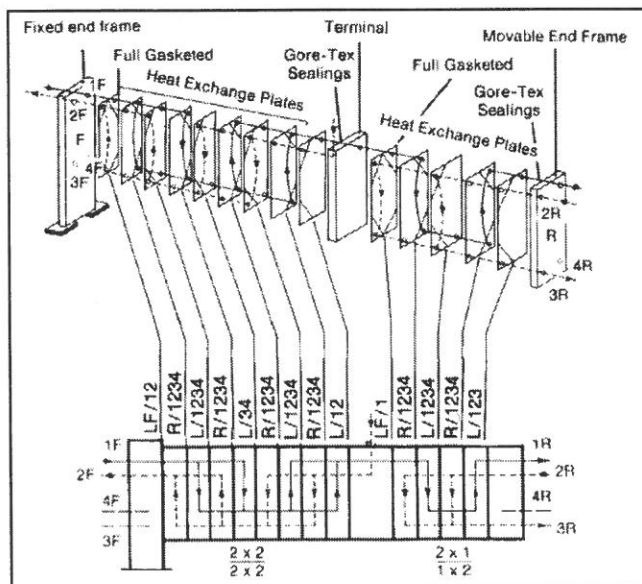
Units operating on more than two fluids are also possible by varying plate punching and through the use of terminal plates as shown in Figure 7.

Figure 6 - Multiple-Passes



NOTE: On multiple-pass units, it is possible to design fluid passage portions of the plate pack that could not be drained upon shutdown. In these instances, a small drainage hole is put through the bottom of the circular porthole area in non-punched plates. This has little if any effect upon heat transfer or flow performance of the unit.

Figure 7 - Terminal Plates



2.8 Frames

Accu-Therm frames are available in carbon steel and stainless steel and in a "C" or cantilevered frame and a "B" or "F" frame with upper and lower guide beam for larger quantities of plates. All carbon steel frames are sandblasted and painted with a chemical-resistant finish which is suitable for outdoor use. The compression bolts, nuts, and washers are zinc-plated; and shrouds are standard with units to help protect plates and gaskets and provide for ease of maintenance. Movable end frames and terminals are suspended from the top with a roller assembly to facilitate moving during opening. The upper guide beam or bar is used to mount the plate support channel and carry the movable end frame and terminals. The lower round guide bar acts as a locator for plates (see Figures 9A, 9B, and 9C). Some small-size Accu-Therm units are available with wall-mount "C" frames. Frame designs which meet 3A and FDA requirements are available on some Accu-Therm units.

Most Accu-Therm frames are available with elastomeric-clad (rubber boot), stud-mounted connections as standard. Alloy-clad, stud-mounted connections and ANSI lap joint with alloy-clad ports are also available. The standard connection for the smaller size Accu-Therm is 316L stainless steel pipe thread-one-end (TOE) NPT. Sanitary connections are clamp-type gasketed fittings (see Figure 8).

Figure 8 - Connection Types

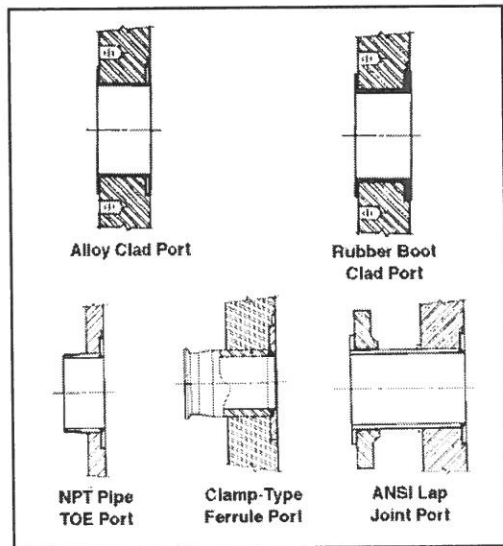


Figure 9A - "C" Frame

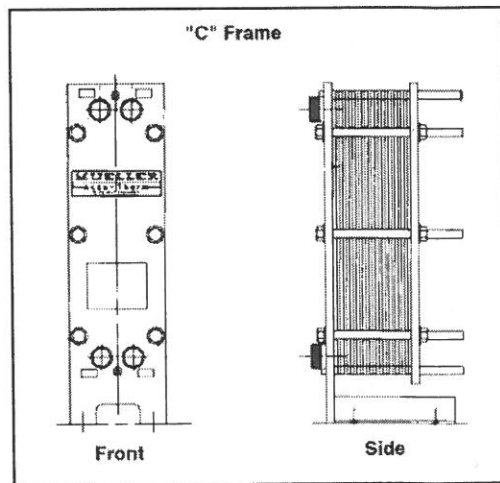


Figure 9B - "B" Frame

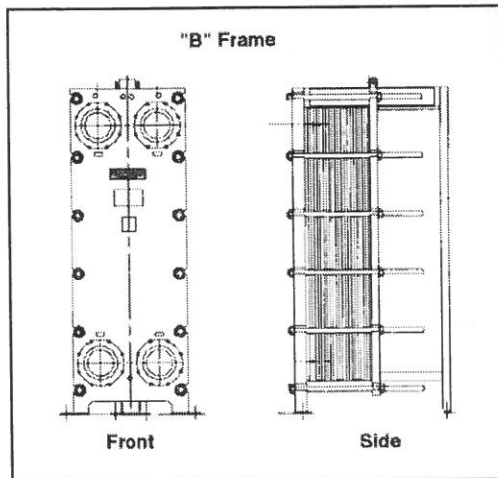
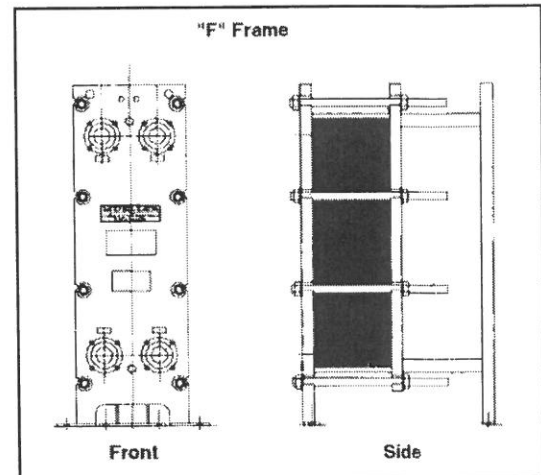


Figure 9C - "F" Frame



2.9 Gaskets

Paul Mueller Company will assist in selecting gaskets for your application but cannot guarantee the compatibility with your process.

Temperature limits are approximate and may vary with application and type of fluid. Optimum gasket life is obtained when operating temperatures are somewhat below these limits.

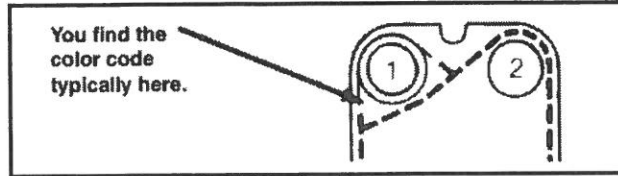


Table 2 - Gasket Material List

Type	Color Code
NBR (nitrile)	Black with one yellow code
EPDM	Black with one white code
EPDM (high-temp)	Black with one grey code
Butyl (resin-cured)	Black with one red code
Hypalon	Black with two white codes
Viton	Black with one silver and one red code
Viton G (acid)	Black with one silver & one green code or one grey & one red code
Silicone (FDA)	Red with non-code
NBR (FDA)	Black with one blue code
EPDM (FDA)	Grey with non-code or two grey codes
Viton (FDA)	Black with one silver and one blue code or one grey and one blue code

NOTE: The durometer of the gasket materials is 75 to 85. Please contact factory for process application assistance.

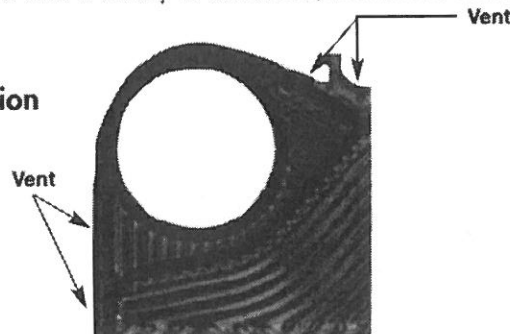
2.10 Gasket General Description

All gaskets are one piece and molded from various elastomers. Gaskets are designed with separate portions confining the hot and cold fluids with the interspace between the two vented to atmosphere (see Figure 10). This eliminates the possibility of mixing fluids. Most gaskets have been designed with positioning devices to ensure correct installation. All Accu-Therm gaskets are secured with either Loc-In or glue-in procedures.

The Loc-In feature is a custom-designed addition to the plate and gasket that holds the gasket in position without any glue. This is accomplished by a series of pinch points placed around the perimeter and through the appropriate gasket grooves. These pinch points coincide with indentations molded into the gasket.

Glue-in gaskets are secured with a variety of adhesives, selected to ensure optimum material compatibility.

Figure 10 - Vent Location



2.11 Gasket Materials

Accu-Therm gaskets are available in the following materials:

- ▲ Nitrile (NBR)
- ▲ Ethylene Propylene Rubber (EPDM)
- ▲ Viton*
- ▲ EPDM (FDA)
- ▲ Viton (FDA)
- ▲ NBR (FDA)
- ▲ Silicone
- ▲ Butyl (resin-cured)
- ▲ Hypalon*

Care should be exercised when selecting elastomers for fluid and temperature compatibility. Where there are some questions as to compatibility, Paul Mueller Company can furnish gasket samples for actual field testing by customers.

2.12 Gasket Removal

Loc-In gaskets are simply lifted from groove. Care should be taken if the gasket is to be reused. Excessive stretching of the material during removal will prevent reinstallation.

Gaskets glued with epoxy adhesive may be removed by prying up the gasket (use caution so plates are not scratched) and pulling the gasket off the plate. Remove the adhesive residue by using a nylon or stainless steel wire brush or by immersing the plates in hot caustic for 12 to 24 hours or longer. Then brush lightly and rinse with hot water. The brush must be compatible with the plate material, as iron particles rubbed into the surface of stainless steel will cause accelerated rusting (do not use any steel brush on electropolished plates). After all old adhesive has been removed, but before new adhesive is applied, the gasket groove must be cleaned with a solvent which will remove any oils. Be sure to read Section 2.15, "Gasket Replacement," before proceeding with the regasketing process.

2.13 Adhesives

The adhesives used on Accu-Therm plate-and-frame heat exchanger gaskets vary due to the type of gasket material and temperatures required. Some adhesives have an upper temperature limit of 450°F.

The gasket's adhesive is used to hold the gaskets in place while installing the plates in the frame during assembly.

Some PHEs may have been assembled using contact adhesive, epoxy, or synthetic-rubber contact adhesive such as 3M 1099 or similar types of adhesive. These adhesives are of relatively low temperature; they are not recommended for higher temperature applications.

Adhesives may be removed with the use of a hot-air gun at 250°F, commercial liquid paint strippers, or a stainless steel wire brush and MEK solvent.

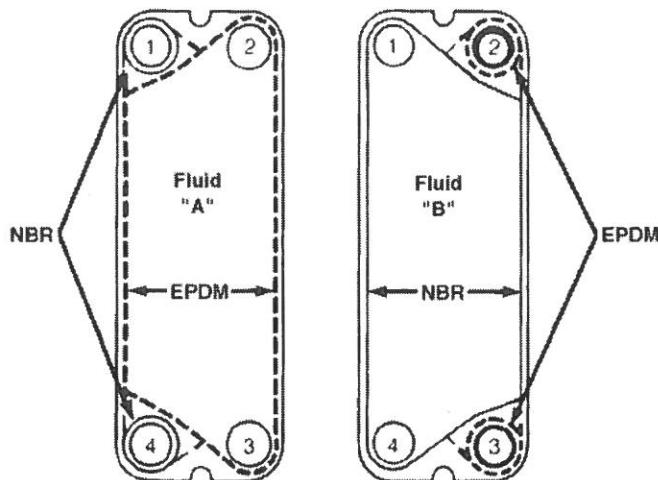


CAUTION: When using commercial solvents and contact adhesives, follow the manufacturer's recommendations carefully, as many of these materials are hazardous!

2.14 Dual Gasketing

Occasionally it becomes necessary to use two gasket materials to ensure fluid compatibility with both liquids. This is done by the alternating use of different elastomers for the porthole and face-gasketing areas as shown on Figure 11.

Figure 11 - Dual Gasket Example



2.15 Gasket Replacement

The plates and gaskets are the core of any Accu-Therm plate heat exchanger, so it's important to observe the gasket replacement procedures.

Installation of Loc-In gaskets is easily accomplished without any additional tools. Place the gasket over the groove, taking care to ensure proper alignment. Begin with the port areas by depressing the gasket into the pinch points built into the plate. After securing the port areas, move down the perimeter of the plate until the entire gasket is secured.

Large quantities of gaskets may be more easily handled, if a wooden tool is used to press the gaskets in place. Care should be used not to damage the plate or gasket with any sharp points or corners of the tool.

1. The adhesive remains in the gasket groove after gasket removal; so when replacing the gasket in a plate pack, it is important to remove the old adhesive and any oils or grease that may cause the new adhesive not to bond. Use a clean cloth soaked with a solvent to wipe the gasket groove. When possible, it is better to soak the plates in a caustic bath at 180°F to 200°F for 12 to 24 hours. This will help remove the adhesive and any oils and grease from plates. The gasket grooves will need to be wiped out with a good solvent before applying new adhesive.
2. Before applying the adhesive, determine the areas of the gasket groove that need to be bonded. You may use one of the last plates to be reworked or one not requiring rework for a pattern to determine the proper way the new adhesive and gasket should be applied. Two pieces of plywood slightly larger than the plates being reworked will be needed (approximately 1/2" thick). These pieces of plywood will be used to "sandwich" the regasketed plates. As the new gaskets are applied to the plates, they will be placed between the pieces of plywood for curing. Your pattern plate or another plate not requiring rework should always be the top or cover plate on the stack of freshly regasketed plates. Additional weight will also be necessary on the top piece of plywood to assure good adhesion. (See "C" below for more details on the amount of added weight necessary.) A large, clean, flat area is required for regasketing plates. Lay each clean gasket out flat prior to placing it on the plate. You will find this process makes it easier to properly install the gasket on the plate. Also, regasket only four or five plates at a time; then place them between the weighted pieces of plywood. By doing this, any excess adhesive will be forced out of the bottom of the groove before it begins to cure.

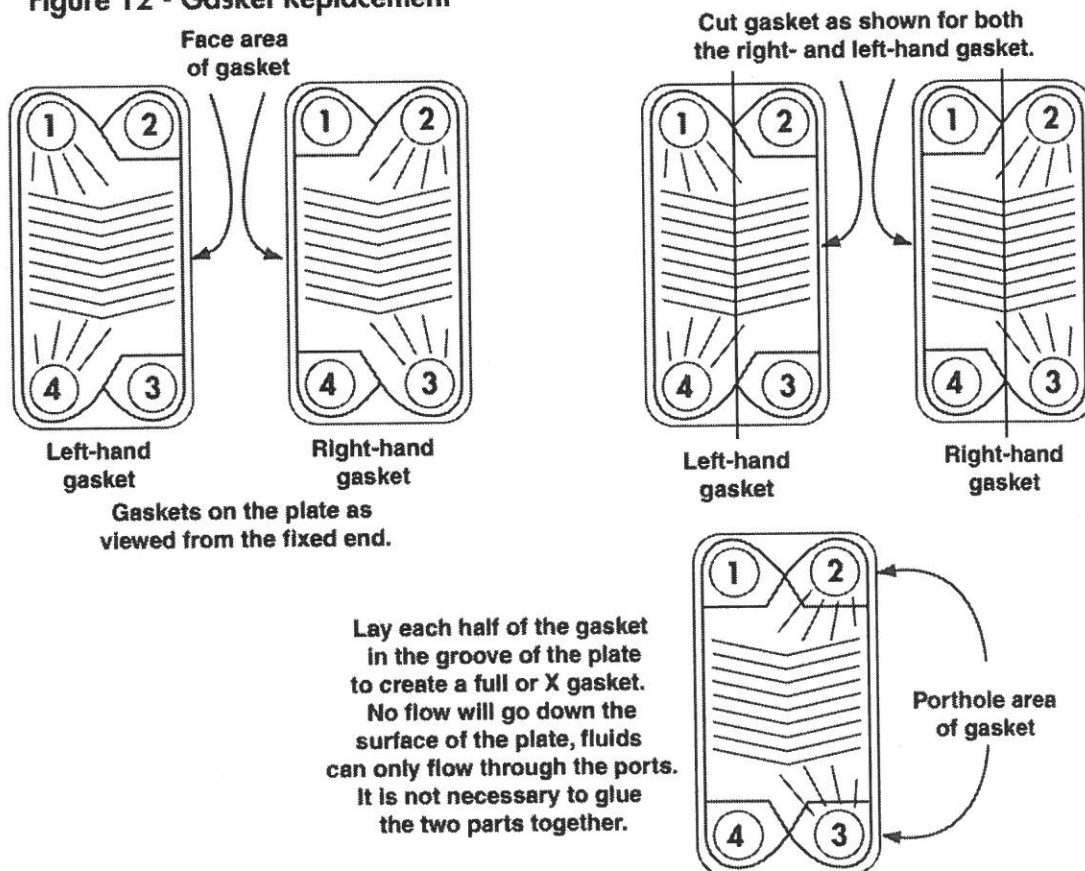
NOTE: This process is very important as excess cured adhesive in the bottom of the groove will cause damage to the plate pack and/or leakage when the plate pack is tightened in the frame.

3. Apply the adhesive in the gasket groove using $\frac{1}{16}$ " to $\frac{1}{8}$ " bead of new adhesive; then smooth the adhesive out with finger or tool to help ensure an even layer of adhesive between the plate and gasket. Using fingertip pressure, make certain all areas of the gasket fit into the gasket groove (pay special attention to the port areas of the gasket). Then move the completed plates under the weighted plywood.

NOTE: Do not allow the adhesive to dry or skin over before applying the gasket. The amount of weight required for a specific plate pack will vary with the size and number of plates. A typical AT4 plate pack requires about 50 pounds and a typical AT130 plate pack may require as much as 1,500 pounds to achieve good gasket adhesion. If you are in doubt, contact the Paul Mueller Company service department for a recommended weight. There is no need to apply any adhesive to the gasket itself before applying it to the plate. Press the gasket into the gasket groove by hand and wipe off any excess adhesive with a cloth. If excess adhesive appears repeatedly, reduce the amount of adhesive being used.

4. If a quantity of plates are to be regasketed, stack plates one on top of the other in a left-hand/right-hand manner to help compress the gaskets and adhesive evenly under the weighted plywood. Allow a four-hour setup time for immediate use or 24 hours for a full cure under typical room temperatures.
5. When reinstalling the plates in unit, be sure to follow the flow chart to ensure the correct flow and thermal length. Make sure that the first plate has a full gasket on it. This means that there should be a gasket in all gasket grooves and that the porthole areas should have ring gasket or port gasket cut from standard gasket. This holds true for all units (see Figure 12). This ring at the nozzle's location prevents fluids from flowing against the frame, and the ring at non-port locations acts as support for the gasket groove channel. All gaskets should face toward the fixed end frame except AT161FF units which face movable end frame.

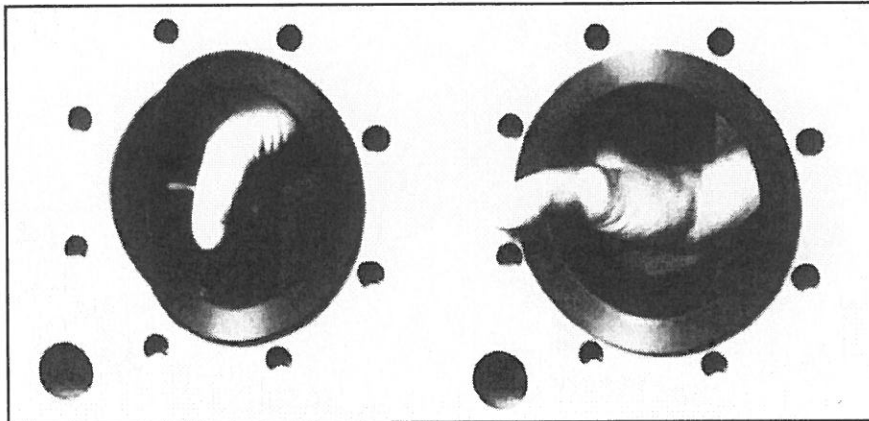
Figure 12 - Gasket Replacement



2.16 Elastomeric Port-Liner Replacement

On an Accu-Therm with elastomeric port liners, it is possible to change the port liners. When this is necessary, the worn liner can be removed with a flat-blade screwdriver or similar tool. The replacement port liner can then be installed. Care should be taken to prevent tearing or puncturing the replacement port liner during installation (see Figure 13).

Figure 13 - Elastomeric Port-Liner Replacement



2.17 Gasket Storage

The following procedures should be observed for properly storing elastomeric gaskets:

1. Gaskets should be stored loosely in a manner which will not crease them.
2. Sealed plastic bags are recommended for storage containers.
3. Keep gaskets out of direct sunlight.
4. Gasket storage areas should not be located near motors, welders, or other sources of ozone.
5. Storage temperatures should be within the 60°F to 90°F range. Low temperatures may cause crystallization in some elastomers.
6. Gaskets should be used on a first-in, first-out basis.
7. Store all gasket materials separately to ensure proper gasket replacement and fluid compatibility when changing.

SECTION 3.0 - INSTALLATION

3.0 Installation

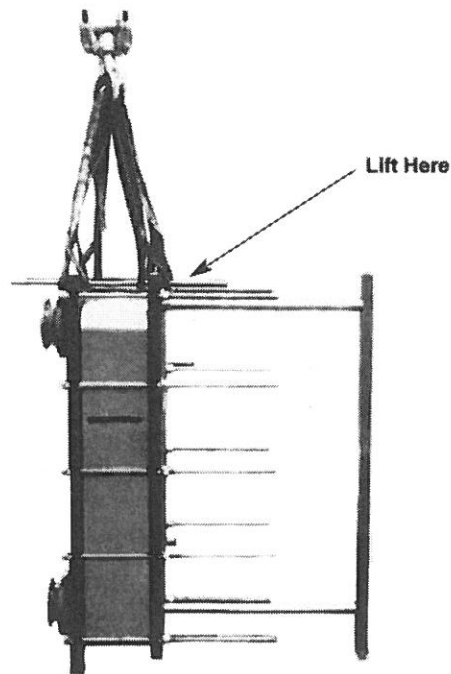
All units should be installed level and with ample room to allow for opening with wrenches and to add or remove heat exchanger plates. For maintenance of the plate pack, allow a space equal to the width of the exchanger on the right-hand side as you face the exchanger. This will permit removal and installation of the plates or plate pack. Adequate room for piping should also be allowed. Piping supports should be provided, especially with designs like the loose-flange, lap-joint type, as these nozzles can take no pipe or stress loadings. Flexible piping should be utilized where units are subjected to vibration or coupled to pumps, and pumps should always be located a minimum of six pipe diameters from nozzle connections. Piping, valving, pumps, and controls must be designed and installed so that the heat exchanger will never be subjected to a negative pressure (vacuum). Vacuum on a standard-design plate heat exchanger will cause plate and gasket damage and result in leakage. Necessary pressure-relief and vacuum-breaker valves must be a part of every installation. Some Accu-Therm units can be used in a vacuum application but these units are of special design. Units may or may not be grouted to foundations depending upon customer preference.

3.1 Lifting Instructions (for Skid-Mounted Units)

The Accu-Therm is shipped mounted to a skid in a vertical position. It must not be laid down. The skid may be lifted by a fork lift or crane of sufficient capacity, or the Accu-Therm may be lifted by cables attached to the fixed and movable frame. Two rods of sufficient strength to support the plate heat exchanger may be slipped through the two lift holes at the top of the frame and sling loops placed over these rods, or standard anchor or chain shackles may be placed in the lift holes at the top of the frame. Usual good rigging practices must be observed when lifting an Accu-Therm as when lifting any heavy piece of equipment.

NOTE: Never lift an Accu-Therm by the nozzle connections (see Figure 14).

Figure 14 - Lifting Instructions for Skid-Mounted Units



3.2 Piping

Piping practices must be used that will create a no-load connection at the Accu-Therm nozzle. If the nozzle connection is subjected to load forces, bending movements, or vibration, leaks could result. Standard, good pipe-fitting practices must be used. These practices are standard with industry and as such will not be addressed in detail in these instructions.

All piping must be flushed clean prior to attaching the heat exchanger. The exchanger performance will be restricted by any contaminants left in the piping.

NOTE: Pipes should not be permanently installed in the opening space between the movable rear plate and the rear support beam. Connections to the movable plate should be provided with detachable pipe bends at the side or pointed upward so that opening the unit is not impeded by the permanently fitted pipe.

3.3 Start-Up

During initial start-up, both fluids should be admitted into the unit simultaneously and slowly. Be sure that all air is bled out of the heat exchanger to avoid pressure shock. Unit should be observed for leaks. If leaking, remove all pressure within unit and tighten "A" to a shorter dimension. Refer to data plate on the plate heat exchanger for "A" dimension. Plate-pack tightening should follow the sequence described on the following page. The plate pack must never be tightened beyond the "A" minimum dimension. If it is, the plates may be damaged to an extent that they will no longer be suitable for use.

Air-vent valves should be installed in the piping as required to eliminate trapped air from the Accu-Therm. Surges (pressure spikes) of fluids due to quick-action valves should be avoided. Piston-type pumps should be fitted with dampers. Some applications require a special start-up procedure.

3.4 Plate-Pack Assembly and Tightening Sequence

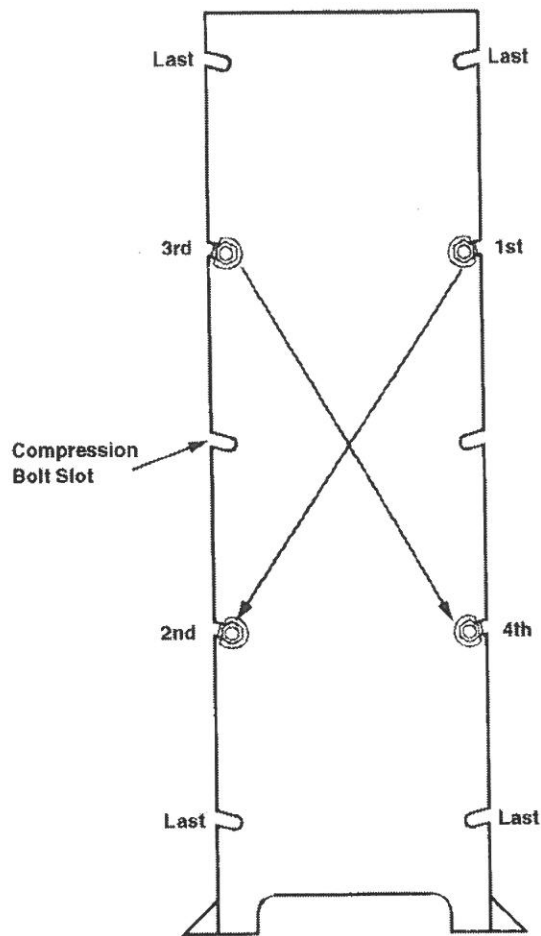
Plates are supported by the upper and lower guide rails and installed by tilting the plate and then rotating it until it is parallel to the stationary frame. Starting at the fixed end, install the plates in sequential order (follow flow diagram), making sure that the plates nest together properly. After all plates are installed, the movable end frame is moved by hand against the plate pack. Two pairs of compression bolts are inserted into frame bolt slots, one pair two slots from the top and one pair two slots from the bottom (see Figure 15).

These bolts are then tightened small amounts each in a diagonal pattern until the "A" maximum dimension is reached (see Figure 15 below and Figure 2A on page 2). The remaining bolts should be added during the tightening process. This helps maintain parallel positioning of the fixed and movable frames and makes final tightening easier. The unit should be tightened to a final dimension less than the "A" maximum but never less than the "A" minimum dimension. At this point, the plate heat exchanger should be hydrostatically tested. If further tightening of the unit is required, all internal pressure must be relieved.

The plate pack may be tightened in the same manner, using care to maintain parallel positioning of the fixed and movable end frames and being sure that the plate pack is never tightened tighter than the "A" minimum dimension. If a seal cannot be attained by tightening the plate pack to the "A" minimum dimension, the plate heat exchanger should be relieved of all internal pressures and cooled to below 100°F before being opened for inspection.

NOTE: After unit is run at elevated temperatures for a period of time and then allowed to cool, gaskets may harden. Hardened gaskets may leak when cold. This problem can normally be alleviated by gradually bringing the hot side back up to normal operating temperatures. One of the best ways to do this is by circulating warm water through the unit and continually increasing its temperature. As the temperature of the gaskets rise, they will tend to soften and reseal. Leaks should diminish and finally end as the original operating temperature is reached.

Figure 15 - Plate-Pack Assembly and Tightening Sequence



3.5 Precautions During Start-Up

During start-up and operation, avoid pressure spikes. Locate all shut-off valves on the inlet connections; do not use rapid-closing valves. If unit is to be mounted above a process tank and pump, provide with a check valve to avoid water hammer upon starting with drained piping.

NOTICE: The designs and specifications in this manual are subject to change without notice.

SECTION 4.0 - MAINTENANCE

4.1 Unit Shutdown

Cool the unit to below 100°F and drain it of all fluid. If unit is to remain unused for long periods of time, the plate pack should be loosened until all compression pressure is off the gaskets. Shrouds should be left on units during operation and storage to prevent particles which may collect on the plates from dropping onto gaskets upon opening.

4.2 Unit Disassembly

Using all of the compression bolts, begin to loosen each bolt (in a diagonal pattern) one turn at a time until any trapped fluid drains from the unit. Remove the bottom set of bolts and proceed to loosen the remaining bolts until the unit is completely uncompressed. At this time, the movable end frame is manually moved toward the rear.



CAUTION: To avoid injury to workers or damage to plates, exercise care when removing compression bolts, rolling the movable end frame, or unloading plates to prevent plates from falling from the unit.

4.3 Removal of Plates

Plates may be removed by tilting the bottom of the plate toward the movable end until it clears the lower guide bar and then rotating the plate until it disengages the upper guide rail. Gloves should be worn for this procedure, and enough hand support should be used to prevent dropping of the plate. Care should be taken to prevent damage to gaskets with plate edges. When plates are removed, stack them on a clean, flat surface to prevent iron particles or dirt from being embedded in gasket surfaces.

NOTE: After unit has been exposed to elevated temperatures for a period of time, gaskets may tend to adhere to the adjacent plate. This condition will be apparent when the unit is opened for servicing. If this occurs and servicing requires that the seal be broken, the plates which are adhered should be carefully pried apart using a putty knife, straight-edge screwdriver blade, or similar thin, flat device. Each time a unit is opened, there is a chance for gasket damage to occur; therefore, the number of times a unit is opened should be held to a practical minimum.

4.4 Replacing Plates

When replacing plates with spares in stock, simply remove and replace the old plate with one of the same size, porthole configurations, and gasket material. If no spares are available, a damaged plate punched 1-2-3-4 may be removed along with an adjacent plate that is similarly punched. This will only slightly, if even noticeably, reduce overall heat transfer of the unit. If this method is used, reduce the "A" dimension by the multiplier stamped on data plate times number of plates removed.

4.5 Replacement Plate and Gasket Ordering

When ordering replacement parts, include the unit serial number, part number, and quantity of parts to be ordered. This information is permanently attached to the fixed end frame.

4.6 Back Flushing

As Accu-Therm units contain many contact points to withstand pressure differentials, particulates and especially fibers can build up at this point. This problem can be greatly reduced and sometimes eliminated by simply reversing the flow on the fouled side. In some applications, the flows can be simultaneously reversed on the hot and cold sides thus preserving true counterflow heat transfer. This allows continuous process operation while simultaneously cleaning the unit.

4.7 Manual Cleaning Instructions

Plates may be individually cleaned while still hanging in the unit or when removed. A high-pressure water wand may be used as long as the steam is "not" directed at or under a plate gasket.

Iron particles embedded in stainless steel plates will accelerate rusting and corrosion. It is recommended that a fiber bristle or wire brush of the same alloy as the plates be used to clean plates.

4.8 Frame Maintenance

Painted steel frames should be touched up or repainted as necessary to prevent rusting. A coating of suitable lubricant should be kept on the thread-use area of the frame compression bolts, the upper and lower guide rails, and any bearing surfaces to facilitate ease of opening and closing the Accu-Therm when maintenance is required.

4.9 Storage Procedures

The following steps should be taken with units that are to be in storage three months or longer:

1. Completely drain the unit.
2. Loosen compression bolts until they are no longer under tension.
3. Place gasketed blind flanges on all nozzles and plug all other openings.
4. Leave shroud in place.
5. Store unit in a location that is above freezing. Extremely low temperatures can alter gasket properties by elastomeric crystallization.
6. Coat bolt threads and unpainted carbon steel parts with light grease or oil.
7. Store unit away from electric motors and welding areas, as high levels of ozone are very destructive to gaskets.

4.10 Corrosive Media and Their Potency

The corrosion resistance of a piece of equipment is dependent not only on the selection of the most suitable alloy but also upon the correct treatment of the material during welding, cold working, and subsequent mechanical and chemical treatments of the surface.

Even with ideal selection and proper handling of plate materials, chemical resistance is not assured. Under certain conditions, an alloy may react with its environment causing a measurable change in the material which can lead to corrosion damage.

The objective of this section is to inform the equipment operator of the limitations of chemical cleaning and sterilizing agents in order to avoid localized spot and crevice corrosion.

The main cause of crevice and spot corrosion of stainless steel is the absorption of chloride ions into the passive area of the steel. Chloride ions gain access to plate surfaces by:

- ▲ Product contact
- ▲ Process water
- ▲ Cooling media
- ▲ Detergents and sterilizing agents

The corrosive action of chloride ions is enhanced by:

- ▲ Concentration
- ▲ Duration
- ▲ Temperature
- ▲ Pressure
- ▲ Reduced pH values
- ▲ Positive-drop redox potential

The effect of the above factors below a critical level can rarely be determined on a microscale. With concentration and local reductions of the pH value in crevices, local overheating with the buildup of lime deposits, etc., it is essential that all gaskets are properly seated and glued and that a provision is made to thoroughly rinse the equipment so that penetration of the cleaning solutions behind the gaskets cannot occur.

- ▲ Above a critical level, which is detectable with a test electrode, the passivity of the steel breaks down and local spot corrosion occurs.
- ▲ Redox potential means the equilibrium potential in an electrolytic reaction when ion migration occurs in a conductive media.

NOTE: Warranty does not cover corrosion of plates.

4.11 Clean-In-Place (CIP) Systems

Clean-in-place systems have come into broad use due to a number of advantages:

- ▲ Timesaving
- ▲ Cost savings resulting from the use of less chemical solution
- ▲ Elimination of unit openings on hazardous duties, etc.

4.12 Detergents and Sterilizing Agents

The corrosive action of detergents and sterilizing agents is mainly attributable to the action of chloride ions and can be avoided if the materials are used in the proper manner. Besides the detergents and sterilizers, a major source of chloride ions may be the water used to dilute concentrates of the above.

In order to avoid corrosion, it is suggested that the following concentrations, temperatures, and duration not be exceeded. Because of the nature of cleaning solutions used in CIP systems and the fact that they are used solely under the customer's control, the following procedures are offered as guidelines with no liability passing onto Paul Mueller Company as a result of their use. Supplier's recommendations and instructions should be followed closely.

1. Cleaning with a caustic-based detergent:

Concentration:	Up to 5 percent
Temperature:	Up to 185°F

Contact time may be maintained for as long as three hours with a chloride content as high as 500 ppm, as alkaline solutions tend to inhibit corrosion caused by chlorides. Surface discoloration may occur, but this does not indicate corrosion.

2. Combined detergent and sterilizer (based upon sodium hydroxide and sodium hypochlorite): It is essential that a pH of 11 is maintained during the cleaning phase when using this mixture.

Concentration:	Up to 5 percent
Temperature:	Up to 160°F

Due to the rapid degradation of the hypochlorite, the upper-limit contact time of one hour is very critical. Continually monitor the cleaning process and discontinue as soon as plates are clean.

3. Acid cleaning based on phosphoric and/or nitric acid:

Concentration:	Up to 5 percent
Temperature:	Up to 195°F
Duration:	Up to 1 hour

Nitrate ions only inhibit chloride ions when used in high concentrations. Care must be taken, however, in maintaining the flooding of the unit during the cleaning phase, as nascent hydrochloric-acid gas above the liquid level can cause corrosion.

4. Sterilization using sodium hypochlorite:

Concentration:	Up to 300-ppm active chlorine
Temperature:	Up to 70°F, 2 hours maximum
Duration:	Up to 140°F, 30 minutes maximum

5. Sterilization using acetic acid: The corrosive action is determined by the chloride content of the diluting water which is 300 ppm maximum.

1. Cold sterilizing:

Concentration (volume):	Up to .15 percent*
Temperature:	Up to 70°F
Duration:	Up to 24 hours

2. Hot sterilizing:

Concentration (volume):	Up to .0075 percent*
Temperature:	Up to 195°F
Duration:	Up to 30 minutes

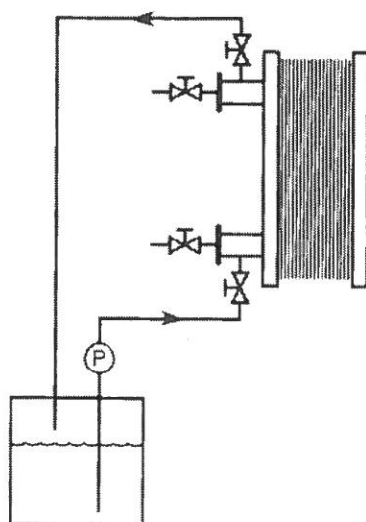
*100% acetic acid.

6. Sterilization using iodophor: For use with dilution water with up to 300-ppm chlorides:
- | | |
|----------------|--------|
| Concentration: | 50 ppm |
| Temperature: | 85°F |

Final rinsing with cold water should follow all CIP procedures and be continued until all detergent or sterilant residues have been removed. The unit may now be drained of rinse water and put back into service.

Most CIP systems utilize inexpensive plastic pumps for cleaning. These pumps are generally of a capacity much less than the process pumps. For this reason, it is extremely important to pump cleaning solution in a bottom-to-top flow so as to totally flood the unit. In multiple-pass units, it will be necessary to pump the solution through one nozzle for half the time and then to reverse the flow for the remainder. This will guarantee the wetting of all plate surfaces by the cleaning solution (see Figure 16).

Figure 16 - Cleaning Solution Flow



4.13 Precautions

Cleaners using a hydrochloric or hydrofluoric-acid base, including inhibited grades, may never be used. Avoid the use of an acid cleaner after using a detergent which may contain active chlorine compounds, as hydrochloric acid may be produced as a result of interaction left in crevices and behind gaskets. This promotes rapid crevice corrosion in these areas. When using nitric and phosphoric acids, caustic soda, or hypochlorite solutions in the food industry, these should be approved food-grade compounds. Manufacturer's recommendations for the storage and use of proprietary compounds should be followed closely. Care must be taken when using these products as many are hazardous.

SECTION 5.0 - TROUBLESHOOTING

5.1 Excessive Temperatures

The normal maximum operating temperature for a plate heat exchanger is approximately 150°F. Higher temperatures may be reached with special gasket and adhesive materials. Operating any plate heat exchanger at temperatures above the design temperature of the gasket material will result in accelerated gasket and adhesive failure. Excessive temperature gasket failures are indicated by a hard, shiny-surfaced gasket face. Quite often, these gaskets are so brittle they can be crumbled with the fingers. Points to look for are:

- ▲ Excessive hot-side fluid or steam temperatures
- ▲ Unit being operated under conditions for which it was not designed
- ▲ Superheated steam
- ▲ Cold fluid stoppage on units operating at upper gasket temperatures

Corrective measures should include checking for excessive operating temperatures and lowering where needed or replacing with higher temperature gaskets. If the unit is being used for services other than those for which it was designed, the necessary adjustments or gasket replacement should be done to ensure gasket compatibility with the operating temperature.

Quite often high pressure steam is put through a reducing station without going through a de-superheater. The steam is now at a lower pressure while still retaining much of its previous high-pressure temperature. This, of course, has a very detrimental effect upon gaskets and greatly reduces the overall performance of the heat exchanger because of the decreased availability of latent heat while steam is in the superheated state.

Plates and gaskets will generally be at a temperature between the hot and cold fluids. Intermittent cold-flow conditions can cause problems in units operating at borderline temperature conditions. As the cold flow is interrupted, the unit will begin to come up to the temperature of the hot fluid and damage gaskets if upper temperatures are exceeded. This can be alleviated by ensuring a constant cold-side flow or by throttling down the hot side during flow interruption.

5.2 Excessive Pressure and Spikes

The normal maximum operating pressure for a plate heat exchanger is 150 psig for ASME*-code units and 100 psig for non-code units. ASME units require ASME relief devices per UG-125 of ASME Code, Section VIII, Div. I, Preventing Excessive Pressure. However, plate heat exchangers which can operate at pressures up to 300 psig or more are available.

Operating a plate heat exchanger above its design pressure will result in gasket sealing problems. These problems vary depending on the type of plate being used but are most often indicated by protruding gaskets which will extrude between plates and be visible on the perimeter of the plate pack. Leakage may or may not be present; but in either case, steps must be taken to correct the situation. Excessive pressure must be reduced to limits within the design pressure of the unit. All regulating and throttling valves are to be placed on the inlet sides of the exchanger. Excessive lengths of piping being stopped by valves on nozzle outlets can cause tremendous pressure on gaskets, and this is to be avoided at all times.

Pressure spikes can also cause extremely high pressures. Some of the causes are totally closed systems without allowances for expansion, booster-pump start-up, and rapid-acting control valves. When these conditions exist, they should be handled with vented closed systems, slow-acting control valves, and accumulators whenever possible.

Negative pressure (vacuum) on a standard-design plate heat exchanger may also result in gasket leakage problems. A plate heat exchanger must never be subjected to vacuum (unless designed for vacuum application) during normal operations or during start-up and shut-down procedures.

5.3 Fluid Incompatibility

This is evidenced by swelling of gaskets upon unit opening, tacky or liquid surface to gaskets, and gaskets falling off plates. Advice should be obtained from factory personnel whenever these conditions are encountered. Quite often, minute quantities of tramp contaminants in the fluid can have a large effect upon some elastomers. Fluid sample testing and gasket coupon testing of various elastomers in the customer's process fluid can determine the proper compound to use. In extremely difficult cases, a dual-gasketing system using two different gasket materials on the fluids may solve the problem.

5.4 Leak Detection and Elimination

Because of vented area between portholes and plate faces, barring corrosion completely through plates, fluids cannot cross within the Accu-therm unit. If any leakage does occur, it will be to the outside of the unit and observed as a puddle.

If a unit happens to start leaking, check operating temperatures, pressures, and the "A" dimensions. When pressures and/or temperatures are in excess of design conditions, take measures to correct them and restart the unit. If the above are within design conditions, allow the unit to cool to ambient temperature and relieve the pressure on all fluid circuits within the unit. At this time, begin tightening the compression bolts in the prescribed manner but do not go below the "A" dimension. If the unit still continues to leak, it may contain damaged or worn-out gaskets. Open the unit and individually examine gaskets for particulates or damage and wear. Remove those gaskets which appear to be bad and replace with new gaskets.

If there appears to be a problem with fluid crossing—that is, internal leakage—this indicates a condition that has been favorable for corrosion, causing pinholes through the plates. The damaged plate or plates may be located by two methods for single-pass units:

1. Unit is shut down and all pressure within it is relieved. The piping on one side of the unit is now removed to allow viewing of the portholes for the length of the plate pack. At this time, pressure is again turned on to the piped side, and leakage may be observed by shining a flashlight into the porthole to view and locate the leak.
2. With multiple-pass units, the above procedure will only allow partial viewing of the plate pack because of the non-punched portholes in some locations. In this case, the unit is opened and all plates are either wiped dry or allowed to air dry. The compression bolts are then replaced, and the unit is retightened to the "A" minimum dimension. One side only is now pressurized for approximately 15 minutes. Pressure is then relieved and the unit is now reopened. Carefully separate the plates one at a time, going from movable frame to fixed frame. It will be noticed that every other flow channel is wet with a dry channel in between. When you find two adjacent wet channels, you have located the bad plate. It will be one of the two plates in the center.

Once the suspected leaking plate is located, you may confirm with visual inspection or dye-penetrant techniques.

If the plate at fault is punched 1-2-3-4, the unit may be rapidly put back on line by removing an adjacent plate with the same punching. Heat transfer will be reduced only to a minor extent. If this punching arrangement is other than above, you will have to remove and replace the faulty plate(s) before restart. Always reduce the "A" dimension when removing plates by the thickness of the gasketed plates. The amount of reduction in the "A" dimension necessary for each plate removed may be obtained by using the multiplier shown on the data plate.

5.5 Pipe Loading

Accu-Therm offers a variety of port arrangements to suit customer requirements. The alloy-clad studded port is offered as standard with elastomeric liners, and ANSI lap-joint loose flange connections offered as alternates. The loose flange connection cannot withstand external loading, and all piping must be supported and preferably connected to the unit with flexible connections. While it is always considered good engineering practice to support all piping, the clad and lined ports can take considerably more load as the frame takes the support rather than a nozzle.

In all port configurations, pumps should be mounted a minimum of six pipe diameters from nozzle flanges.

5.6 Assistance and Field Service

Paul Mueller Company maintains a large in-house group of highly specialized engineering and service personnel to deal with questions and problems related to Accu-Therm. These groups are at your disposal at all times to help with and answer questions pertaining to:

- ▲ Design
- ▲ Gasket Compatibility
- ▲ Maintenance
- ▲ Engineering
- ▲ Plate Compatibility
- ▲ Field Service
- ▲ Systems
- ▲ Installation
- ▲ Applications
- ▲ Operation
- ▲ In-House Servicing and Regasketing

If you have questions pertaining to the above or have a request for quotation, contact the Mueller Service Department, Paul Mueller Company, P.O. Box 828, Springfield, Missouri 65801-0828. Call 1-800-MUELLER (1-800-683-5537) or fax 417-831-6642.

SECTION 6.0 - ACCU-THERM FACTORY REFURBISHING PROGRAM

Paul Mueller Company offers a variety of service levels to keep your Accu-Therm unit operating at peak performance.

6.1 Loose Plates Only (not a pack)

1. Clean, dye penetrant leak check, and install gasket.

NOTE: Loose plates and gaskets are warranted for materials and workmanship only.

6.2 Complete Plate Packs Only (not a unit)

1. Clean, dye penetrant leak check, and install gaskets.
2. Clean, dye penetrant leak check, install gaskets, and assemble into plate pack.
3. Clean, install gaskets, assemble into plate pack, and pressure test (in PMC test frame).

NOTE: Plate packs that are tested in PMC test frame are warranted for 60 days from the date of shipment. Plate packs not tested are warranted for materials and workmanship only.

6.3 Complete Units

Clean, install gaskets, assemble into plate pack, and pressure test. Blast and repaint frame, replace or repair ports and other parts as applicable. Frame labor for touch-up work only will be on a time and material basis. Maximum (not to exceed) values can be established prior to start of any work.

NOTE: Refurbished complete units are warranted for a period of one year from the date of shipment.

6.4 Notes

1. Some tinting may remain on certain plates after cleaning, depending upon their type and length of service. This tinting does not impact the heat transfer performance of the plate.
2. No surface deposits or fouling will remain on the finished, cleaned plate.
3. Gaskets that are removed from plates for cleaning will not be reused or returned unless specifically arranged prior to order.
4. Components that are replaced on a complete unit will not be returned to the customer unless specifically arranged prior to order.
5. All items to be returned for refurbishing must first be approved in writing by PMC. An MSDS (Material Safety Data Sheet) must be submitted prior to consideration for approval. Tagging information will be provided by PMC upon approval.
6. A Certificate of Cleanliness must accompany all shipments.

Contact the factory for your refurbishing needs.

SECTION 7.0 - SUPPLEMENTS

7.1 Gaskets for the Multipass Accu-Therm

Gore-Tex® joint sealant is now used on many industrial Accu-Therm plate heat exchangers in place of the conventional rubber port ring gasket. This composition of TFE fluorocarbon material meets or exceeds the stringent requirements of industrial plate-and-frame applications.

Specifications and characteristics:

Size: 1/4 inch (Mueller Part No. 9813259) or 1/2 inch (Mueller Part No. 9813260)

Temperature range: -450°F to 600°F

Pressure rating: 3,000 psi

Application: Compatible with corrosive chemicals, food, beverage, steam, pharmaceutical, and dairy products.

FDA-approved.

No age deterioration.

Easy installation: Soft, pliable texture which conforms to proper configuration with a self-adhesive strip. The ends are overlapped to complete the gasket. See drawing for details.

Gore-Tex joint sealant: Normally used on the last plate against the movable end plate. It may be used on divider plates within the plate pack. Gore-Tex joint sealant is a one-time gasket. It should be replaced if the plate pack is opened for any reason. Ports with rubber boots do not require Gore-Tex.

Figure 17 - Gore-Tex Installation

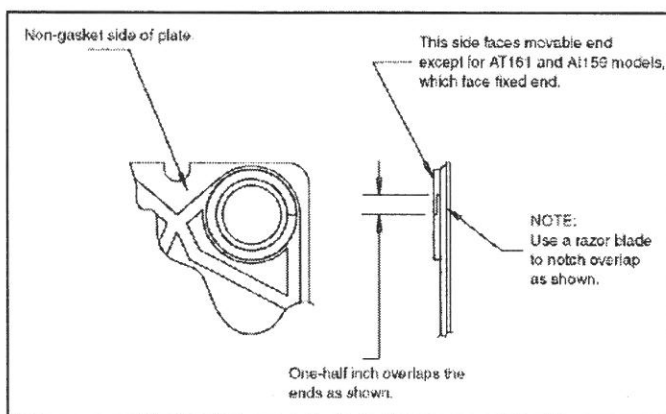


Table 3 - Gasket Material Required Per Port

PHE Model	Port Size (in)	Gore-Tex per Port (in)
AT4	1	7 1/4
AT10	2	9 1/4
AT20	2 1/2	13 1/4
AT402	4	18 1/4
AT405	4	18 1/4
AT40	4	18 1/4
AT805	6	26 1/2
AT80	6	26 1/2
AT1306	10	41 1/2
AT1309	10	41 1/2
AT130	10	41 1/2
AT180	14	54 1/2
AT161FF	3	13 1/4
AT184FF	6	23 1/2

NOTES:

1. Gore-Tex joint sealant should be used on all plates that seal against the movable (fixed for AT161FF and AT159FF) divider plate or terminals with its non-gasket side.
2. Clean both sealing surfaces of dirt and scale.
3. Remove the tape backing from the adhesive strip on Gore-Tex joint sealant with the adhesive side down on the center line of the sealing area as shown in detail.

7.2 Removal of Alignment Tabs on Replacement Plate Packs

Most production Accu-Therm plates have alignment tabs which help align the plate pack and prevent the plates from shifting. The tabs project beyond the gasket face and cause a sealing problem on the first plate as it tries to seal against the fixed end frame of the exchanger. The tabs are generally located near the ports, either on the outside edge or on the top and bottom center of the plate. These tabs must be removed on the first plate, or the fixed end frame must be countersunk to accommodate the tab projection beyond the gasket face.

Recent production plate heat exchangers have this modification made in the factory. Replacement plates used in existing frames need to be modified prior to installation.

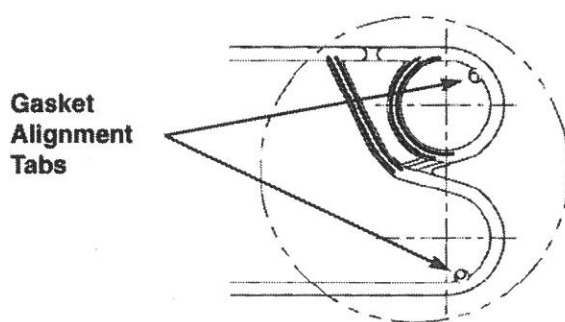
To accomplish this modification, locate the alignment tabs and grind them flush with the other high points on the plates. The tabs are always located in an area which is external to the gasketed surfaces. Grinding will not cause a leak between plates. Most model Accu-Therm plates have external tabs around the perimeter of the plate. The tabs are generally located across from the ports, as with the Model AT4 plate. Some models have "bent" locking tabs which are approximately 1" by 1" and are located in the top and bottom center of the plate. The tabs project forward to lock with the plates in front. For this alignment tab, the first 3-4 plates must have the tabs removed because the projection is more than one plate deep. Earlier design Model AT40FF and AT130 have these bent tabs for alignment.

Many Accu-Therms have been produced with countersunk end frames to accommodate the alignment tabs, so always check the frame before grinding the plates. Rarely will Models AT20, AT40, and AT80 have countersunk frames. We now remove alignment tabs from first plate.

Gaskets have similar tab projections which are designed to interlock the plates. These gasket tabs project beyond the normal gasket surface and must be cut off the first gasket only. Some gaskets also have an embossment or irregularity on the front face and this too must be removed. A razor blade is used to trim the gaskets. Please see Figure 18, "Gasket Detail for Model AT4" which illustrates the tabs and their location.

When divider plates are used within a plate pack, the tabs must be removed on the plate and gasket which seal against the divider plate in the same manner used for the end frame.

Figure 18 - Gasket Detail for Model AT-4



GLOSSARY

- "A" Dimension**—The inside measurement between the fixed end frame and the movable end frame. The plate pack is compressed to this dimension to seal from leaks. If plates are added or removed from the heat exchanger the "A" dimension must be recalculated.
- "A" Maximum**—Typically the largest "A" dimension that will prevent leaks from the heat exchanger.
- "A" Minimum**—The smallest "A" dimension that will prevent leaks from the heat exchanger. This dimension must never be exceeded or plate damage is probable.
- Adhesive**—Used to hold the gaskets in place. The adhesive type used depends on gasket material and exchanger design conditions.
- Alignment Tabs**—Small projections stamped into the plate that help align the plate pack and prevent plates from shifting during operation.
- B Frame**—Heavy frame utilizing steel beams for support of large moveable frame and plate pack.
- C Frame**—Compact, cantilever-type frame for use in limited space. Used for the smaller size designs, up to AT405.
- Clamp-Type Ferrule Connection**—A port made by welding a clamp-type ferrule into the appropriate port on the exchanger.
- Compression Bolts**—Bolt and nut assemblies which draw the moveable end frame to the fixed end frame to tighten the plate pack.
- Counterflow**—Fluids flow in the opposite direction in the plate heat exchanger resulting in the greatest effective temperature difference and the least heat transfer area.
- Distribution Area**—Area of the plate between and immediately after the ports that the product or heating and cooling medium contact. The distribution area spreads the media across the full width of the plate.
- Divider Plate**—A heavy plate that does not serve as a heat transfer surface, but only to divide the plate pack into different zones. Typically used when substantially different plate types are used in one plate pack.
- Double-Wall Plate**—Two identical plates nested together and fully welded at the ports, creating a two-layer heat transfer wall. Used to provide product isolation and positive leak detection should failure occur in a plate. Any leaks are then directed to the outside perimeter of the plate.
- Dual Gasket**—When it is necessary to use two gasket materials for fluid compatibility, a dual gasket is used. Each fluid contacts a separate gasket material only. A dual gasket is cut and assembled from two other gaskets of differing composition.
- Expansion**—Mueller frames are designed to accommodate a minimum of 20% increase in plate number beyond the original design.
- F Frame**—Intermediate size frame. Available up to size AT40.
- Fixed End Frame**—A metal plate used along with the moveable end frame to compress the plate pack. The fixed end frame usually contains inlet or outlet ports.
- Flow Diagram**—Describes the flow path of the heating or cooling medium and the product through the exchanger. Included with each new unit shipment and upon request.
- Frame**—The basic supporting structure of the heat exchanger.

Full Gasket Plate—A plate with all gasket grooves filled and facing against the fixed frame, moveable frame, or terminal plate.

Gasket Groove—Track formed for retaining the gasket when the plate is pressed.

Gasket—Gaskets fit into grooves pressed into the plate and provide the seal between adjacent plates. All gaskets are one piece and molded from various elastomers.

Glued-In Gasket—Gaskets are glued into place with various adhesives depending on gasket materials and temperature. This provides the ultimate holding power for units that require frequent opening.

Industrial Frame Design—Non-food grade design frame.

Lap-Joint Connection—A connection formed by a flanged pipe and slip on flange.

Left-Hand Plate—When facing the plate with the gasket toward you (except AT402 and AT161FF), if the nongasketed port is on the left side, the plate is called a left-hand plate.

Lift Holes—Exchangers that are skid mounted for shipment are provided with lift holes in the fixed and moveable end frames. Accu-Therm plate heat exchangers are not to be lifted by nozzle connections.

Locked-In Gasket—A gasket held in the plate gasket groove by mechanical tension.

Lower Guide Rail—A locator for plates and the moveable end frame installed at the lower portion of the frame.

Moveable End Frame—A metal plate that combines with the fixed end frame to compress the plate pack. The moveable end frame may contain inlet or outlet ports.

Multipass—To increase the thermal length required for a process, multiple passes can be formed by not punching plate ports at predetermined locations.

Non-Punched Plate—A plate with no ports punched in it.

Plate Hanger—A stainless steel formed channel that supports the plates in the frame, installed under the upper guide rail.

Plate Pack—The number of plates to be compressed between fixed and moveable end frames.

Plate Sequence—Describes the arrangement of plates in an exchanger.

Plate Type—Each pressed plate has a unique pattern which creates the heat transfer characteristics for that type:

F Type— This plate has a fine, horizontal pattern.

FF Type— A Free-Flow heat transfer plate designed to be used in exchangers with fluids containing fibers or particles that can block flow paths in conventional exchangers.

G Type— This plate has a fine, vertical pattern.

H Type— Horizontal embossing develops higher heat transfer rates and greater pressure drop.

M Type— This plate is designed for high heat transfer rates and high-pressure applications.

P Type— This plate is designed for high-pressure applications.

V Type— Vertical embossing develops lower heat transfer rates and lower pressure drop.

Plate—Sheets of various metals pressed between two hardened dies that form a heat transfer surface. Hardened dies prevent uneven thinning of the material. Grooves are pressed into the plates for gaskets and corrugations that create the highly efficient heat transfer surface.

Port Liner—Pressed or inserted into studded ports to protect against erosion and corrosion of frame material. These linings are made out of different elastomers, stainless steel, or other alloys.

Port—Inlet or outlet connections located on the fixed or moveable frame or terminal plate to allow flow of product and heating or cooling medium. This also refers to the circular punched area of the plate.

Punched Plate—A plate that has ports punched in it according to the flow diagram.

Right-Hand Plate—When facing the plate with the gasket toward you (except AT402 and AT161FF), if the non-gasketed port is on the right side, the plate is called a right-hand plate.

Roller Assembly—Mounted on top of the larger moveable end frames and terminals to facilitate ease of moving.

Sanitary Frame Design—Sanitary designed exchangers have stainless steel frames, clamp-type sanitary ferrules, and FDA-approved gaskets.

Shroud—A lightweight metal jacket surrounding the plate area of the exchanger. The shroud protects gaskets and plates from accumulation of debris and provides OSHA-approved personnel protection from leaks.

Single Pass—The product flows down the length of the plate only once before going into the outlet.

Studded Port Connection—A port that accepts a standard ANSI flanged pipe. Standard connection on all but the smallest Accu-Therm unit. All ports can be fully lined for protection of frame and plates.

Terminal Plate—Heavy divider plate in plate pack that divides the Accu-Therm into multiple units. Allows fluids to enter or leave the exchanger through special ports oriented perpendicular to the axis of the exchanger.

Thread One End—316 stainless steel pipe Threaded on One End. This is one type of connection used on the Accu-Therm unit.

Tightening Sequence—The order that compression bolts are tightened until the plate pack is compressed to the "A" dimension.

Upper Guide Rail—Supports and guides the plates and the moveable end frame.

NOTES

Model:

Spec. No.:

Serial No.:

Plate Material:

Gasket Material:

Date Installed:

NOTES

Model:

Spec. No.:

Serial No.:

Plate Material:

Gasket Material:

Date Installed:

NOTES

Model:

Spec. No.:

Serial No.:

Plate Material:

Gasket Material:

Date Installed:

MUELLER

1600 West Phelps Street • Springfield, Missouri 65802, U.S.A.
Phone: (417) 575-9000 • 1-800-MUELLER • Fax: (417) 575-9885
www.paulmueller.com • E-mail: heattransfer@paulmueller.com

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(5/00) Part No. 9804186

Attachment "C"

PAGE 1 OF 5

**
** ACCU-THERM PLATE HEAT EXCHANGER **
**
** FLOW DIAGRAM **
** V/RS6000 1.0 **

CUSTOMER: WEST VA. STATE HOSPITAL
LOCATION: CHARLESTON WV INQUIRY NUMBER : 43584-01.02
DATE : 11/17/98 SALES ORDER NO.: 220181-01:02

TYPE ACCUTHERM 80M H/HV /B -20

MEDIUM HOT : WATER 1440.0 GPM FROM 58.0 DEG F TO 48.0 DEG F PRESS. DROP 6.10 PSI
MEDIUM COLD: WATER 1800.0 GPM FROM 46.0 DEG F TO 54.0 DEG F PRESS. DROP 9.30 PSI

DESIGN PRESS : 100 PSI GAGE DESIGN TEMP : 150 DEG F TEST PRESS: 150 PSI GAGE

FRAME IS DESIGNED PER ASME SECTION VIII, DIV. 1

PLATE MATERIAL : .50 MM 316 S/S

PACK LENGTH MAX : 32.40 INCH

GASKET MATERIAL: NBR

VOLUME : 155.88 GALLONS

PACK LENGTH MIN : 30.32 INCH

GUIDE LENGTH : 84.0 INCH

BOLT LENGTH : 60.0 INCH

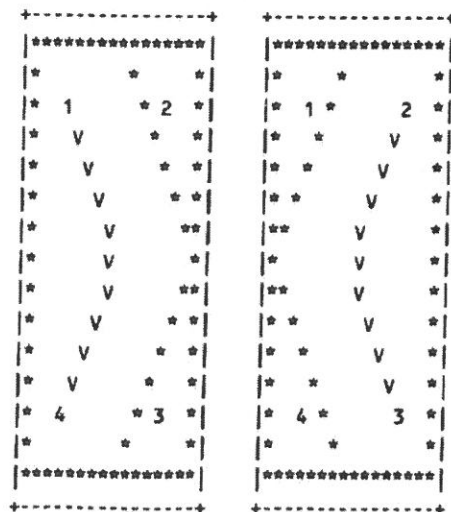
HOT-SIDE FLOW PATH : 1 X 106

COLD-SIDE FLOW PATH: 1 X 107

CONNECTIONS	TYPE	MATERIAL	SIZE	POSITION
HOT IN	STUDD	NBR	6.00	1F
OUT	STUDD	NBR	6.00	4F
COLD IN	STUDD	316L S/S	6.00	3F
OUT	STUDD	316L S/S	6.00	2F

PICTORIAL VIEW AND TERMINOLOGY FOR PLATES AND GASKETS

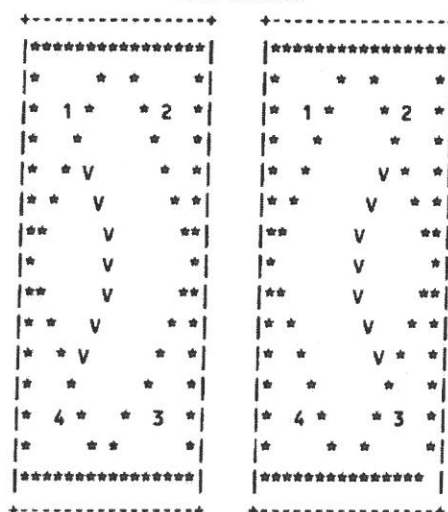
NORMAL GASKETS



80M HV-L

80M HV-R

FULL GASKETS



80M HV-LF

80M HV-RF

V = FLOW PATH * = GASKET -- = PLATE L = LEFT HAND R = RIGHT HAND

PLATES AS VIEWED FROM FIXED END FRAME

GASKETED SIDE OF PLATE FACES FIXED END FRAME

II===== == ===== == ==

II I FIXED END FRAME

II 3F 4F 2F 1F 1

II===== == ===== == ==

STYLE / OPENINGS

1 - **	**	*****	**	**	----->	80M H-LF/ 1 2 3 4	
2 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
3 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
4 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
5 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
6 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
7 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
8 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
9 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
10 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
11 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
12 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
13 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
14 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
15 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
16 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
17 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
18 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
19 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
20 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
21 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
22 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
23 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
24 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
25 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
26 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
27 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
28 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
29 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
30 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
31 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
32 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
33 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
34 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
35 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
36 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
37 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
38 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
39 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
40 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
41 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
42 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
43 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
44 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
45 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
46 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
47 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
48 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
49 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
50 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
51 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	
52 - **	**	*****	**	**	----->		80M H-R / 1 2 3 4
53 - **	**	*****	**	**	----->	80M H-L / 1 2 3 4	

[illegible]

[illegible]

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170 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
171 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
172 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
173 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
174 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
175 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
176 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
177 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
178 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
179 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
180 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
181 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
182 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
183 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
184 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
185 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
186 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
187 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
188 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
189 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
190 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
191 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
192 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
193 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
194 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
195 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
196 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
197 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
198 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
199 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
200 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
201 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
202 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
203 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
204 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
205 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
206 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
207 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
208 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
209 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
210 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
211 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
212 - ** ** ***** ** ** -----> 80M V-R / 1 2 3 4
213 - ** ** ***** ** ** -----> 80M H-L / 1 2 3 4
214 - ***** -----> 80M V-R /

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I 3R 4R          2R 1R I

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I                      I

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MOVABLE END FRAME

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**
 ** ACCU-THERM PLATE HEAT EXCHANGER **
 **
 ** P L A T E U S A G E S U M M A R Y **
 **

CUSTOMER: WEST VA. STATE HOSPITAL
 LOCATION: CHARLESTN WV INQUIRY NUMBER : 43584-01.02
 DATE : 11/17/98 SALES ORDER NO.: 220181-01:02

NUMBER HX-PLATES	MATERIAL		STYLE / OPENINGS	PLATE NUMBER
	PLATE	GASKET		
1.	316 S/S	FULL NBR	80M H-LF/ 1 2 3 4	1.
41.	316 S/S	NBR	80M H-R / 1 2 3 4	
65.	316 S/S	NBR	80M V-R / 1 2 3 4	
106.	316 S/S	NBR	80M H-L / 1 2 3 4	
1.	316 S/S	NBR	80M V-R /	214.

NOTE: ALL PLATES NUMBERED FROM 1 TO 82 ARE "H" TYPE
 ALL PLATES NUMBERED FROM 83 TO 214 ARE "HV" TYPE



State of West Virginia

PURCHASING DIVISION

Construction Bid Submission Review Form

This list has been provided for informational purposes only and is not to be construed as a complete list of request for quotation or bidding requirements for any individual construction project. This list does not and cannot include every item, mistake or oversight that could cause a contractor's bid to be disqualified. Rather, this list is intended to draw attention to some of the most common problems that the Purchasing Division encounters in the bidding process for construction projects. All potential bidders must read the request for quotation, all additional documents, and all instructions relating thereto ("Bid Documents") in their entirety to identify the actual request for quotation and bidding requirements. Failure to read the Bid Documents in their entirety and comply with the stated requirements contained therein may result in bid disqualification.

Errors That Shall Be Reason for Immediate Bid Disqualification

1. Failure to attend a mandatory pre-bid meeting
2. Failure to sign the bid
3. Failure to supply West Virginia contractor's license # on bid
4. Failure to supply a signed drug free workplace affidavit with the bid
5. Failure to supply a valid bid bond or other surety approved by the State of West Virginia
6. Failure to meet any mandatory requirement of the RFQ
7. Failure to acknowledge receipt of Addenda (only if stipulated as mandatory)
8. Failure to submit bid prior to the bid opening date and time
9. Federal debarment
10. State of West Virginia debarment or suspension

Errors that May Be Reason for Bid Disqualification Before Contract Award

1. Uncontested debt to the State exceeding \$1,000.00 (must be cured prior to award)
2. Workers' Compensation or Unemployment Compensation delinquency (must be cured prior to award)
3. Not registered as a vendor with the State (must be cured prior to award)
4. Failure to obtain required bonds and/or insurance
5. Failure to provide the sub-contractor listing within 1 business day of bid opening.
6. Failure to use the provided RFQ form (only if stipulated as mandatory).



State of West Virginia
DRUG FREE WORKPLACE CONFORMANCE AFFIDAVIT
West Virginia Code §21-1D-5

STATE OF WEST VIRGINIA,

COUNTY OF _____, TO-WIT:

I, _____, after being first duly sworn, depose and state as follows:

1. I am an employee of _____; and,
(Company Name)
2. I do hereby attest that _____
(Company Name)

maintains a valid written drug free workplace policy and that such policy is in compliance with **West Virginia Code §21-1D**.

The above statements are sworn to under the penalty of perjury.

By: _____

Title: _____

Company Name: _____

Date: _____

Taken, subscribed and sworn to before me this _____ day of _____, _____.

By Commission expires _____

(Seal)

(Notary Public)

THIS AFFIDAVIT MUST BE SUBMITTED WITH THE BID IN ORDER TO COMPLY WITH WV CODE PROVISIONS. FAILURE TO INCLUDE THE AFFIDAVIT WITH THE BID SHALL RESULT IN DISQUALIFICATION OF THE BID.

BID BOND PREPARATION INSTRUCTIONS

AGENCY (A) _____
RFQ/RFP# (B) _____

- (A) WV State Agency
(B) Request for Quotation Number (upper right corner of page #1)
(C) Your Business Entity Name (or Individual Name if Sole Proprietor)
(D) City, Location of your Company
(E) State, Location of your Company
(F) Surety Corporate Name
(G) City, Location of Surety
(H) State, Location of Surety
(I) State of Surety Incorporation
(J) City of Surety's Principal Office
(K) Minimum amount of acceptable bid bond is 5% of total bid. You may state "5% of bid" or a specific amount on this line in words.
(L) Amount of bond in numbers
(M) Brief Description of scope of work
(N) Day of the month
(O) Month
(P) Year
(Q) Name of Business Entity (or Individual Name if Sole Proprietor)
(R) Seal of Principal
(S) Signature of President, Vice President, or Authorized Agent
(T) Title of Person Signing for Principal
(U) Seal of Surety
(V) Name of Surety
(W) Signature of Attorney in Fact of the Surety

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned, _____ (C) of _____ (D), _____ (E) as Principal, and _____ (F) of _____ (G), _____ (H), a corporation organized and existing under the laws of the State of _____ (I) with its principal office in the City of _____ (J), as Surety, are held and firmly bound unto The State of West Virginia, as Obligees, in the penal sum of _____ (K) (\$ _____ (L)) for the payment of which, well and truly to be made, we jointly and severally bind ourselves, our heirs, administrators, executors, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Purchasing Section of the Department of Administration a certain bid or proposal, attached hereto and made a part hereof to enter into a contract in writing for _____

(M)

NOW THEREFORE

(a) If said bid shall be rejected, or
(b) If said bid shall be accepted and the Principal shall enter into a contract in accordance with the bid or proposal attached hereto and shall furnish any other bonds and insurance required by the bid or proposal, and shall in all other respects perform the agreement created by the acceptance of said bid then this obligation shall be null and void, otherwise this obligation shall remain in full force and effect. It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated

The Surety for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of time within which the Obligees may accept such bid: and said Surety does hereby waive notice of any such extension.

WITNESS, the following signatures and seals of Principal and Surety, executed and sealed by a proper officer of Principal and Surety, or by Principal individually if Principal is an individual, the _____ (N) day of _____ (O), 20 _____ (P).

Principal Seal

(R)

(Name of Principal)

By _____ (S)
(Must be President, Vice President, or
Duly Authorized Agent)

Title

Surety Seal

(U)

(Name of Surety)

Attorney-in-Fact

NOTE 1: **Dated Power of Attorney with Surety Seal must accompany this bid bond.**

IMPORTANT – Surety executing bonds must be licensed in West Virginia to transact surety insurance, must affix its seal, and must attach a power of attorney with its seal affixed.

Agency _____
 REQ.P.O# GSD146426

BID BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned, _____
 _____ of _____, _____, as Principal, and _____
 _____ of _____, _____, a corporation organized and existing under the laws of the State of _____
 _____ with its principal office in the City of _____, as Surety, are held and firmly bound unto the State
 of West Virginia, as Obligee, in the penal sum of _____ (\$ _____) for the payment of which,
 well and truly to be made, we jointly and severally bind ourselves, our heirs, administrators, executors, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Purchasing Section of the
 Department of Administration a certain bid or proposal, attached hereto and made a part hereof, to enter into a contract in writing for

NOW THEREFORE,

- (a) If said bid shall be rejected, or
 (b) If said bid shall be accepted and the Principal shall enter into a contract in accordance with the bid or proposal
 attached hereto and shall furnish any other bonds and insurance required by the bid or proposal, and shall in all other respects perform
 the agreement created by the acceptance of said bid, then this obligation shall be null and void, otherwise this obligation shall remain in
 full force and effect. It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no
 event, exceed the penal amount of this obligation as herein stated.

The Surety, for the value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no
 way impaired or affected by any extension of the time within which the Obligee may accept such bid, and said Surety does hereby
 waive notice of any such extension.

WITNESS, the following signatures and seals of Principal and Surety, executed and sealed by a proper officer of Principal and
 Surety, or by Principal individually if Principal is an individual, this _____ day of _____, 20____.

Principal Seal

 (Name of Principal)

By _____
 (Must be President, Vice President, or
 Duly Authorized Agent)

 (Title)

Surety Seal

 (Name of Surety)

 Attorney-in-Fact

**IMPORTANT – Surety executing bonds must be licensed in West Virginia to transact surety insurance, must affix its seal, and
 must attach a power of attorney with its seal affixed.**

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: GSD146426

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

☐

Addendum No. 1

☐

Addendum No. 6

☐

Addendum No. 2

☐

Addendum No. 7

☐

Addendum No. 3

☐

Addendum No. 8

☐

Addendum No. 4

☐

Addendum No. 9

☐

Addendum No. 5

☐

Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Company

Authorized Signature

Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

RFQ No. GSD146426STATE OF WEST VIRGINIA
Purchasing Division**PURCHASING AFFIDAVIT**

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code §61-5-3*) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: _____

Authorized Signature: _____ Date: _____

State of _____

County of _____, to-wit:

Taken, subscribed, and sworn to before me this ____ day of _____, 20____.

My Commission expires _____, 20____.

AFFIX SEAL HERE**NOTARY PUBLIC** _____

CERTIFICATION AND SIGNATURE PAGE

By signing below, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

(Company)

(Authorized Signature)

(Representative Name, Title)

(Phone Number)

(Fax Number)

(Date)