

UNLESS OTHERWISE SPECIFIED FOR A PARTICULAR DOWNCOMER & FEEDER HEADER, TOLERANCES SHALL BE IN ACCORDANCE WITH THE LATEST ADDENDA OF THE ASME BOILER AND PRESSURE VESSEL CODE, SECTION 1, AND THE REQUIREMENTS LISTED BELOW.

- (A) ALL LONGITUDINAL LOCATING DIMENSIONS SHALL BE MEASURED FROM A REFERENCE LINE. THE REFERENCE LINE SHALL COINCIDE WITH THE DOWNCOMER CENTERLINE; FOR FEEDER HEADERS WITHOUT DOWNCOMERS THE REFERENCE LINE WILL COINCIDE WITH BEVELED END OF THE FEEDER HEADER.
- (B) ALL VERTICAL LOCATING DIMENSIONS SHALL BE MEASURED FROM A REFERENCE LINE. THE REFERENCE LINE SHALL COINCIDE WITH THE  $\phi$  OF THE FEEDER HEADER.

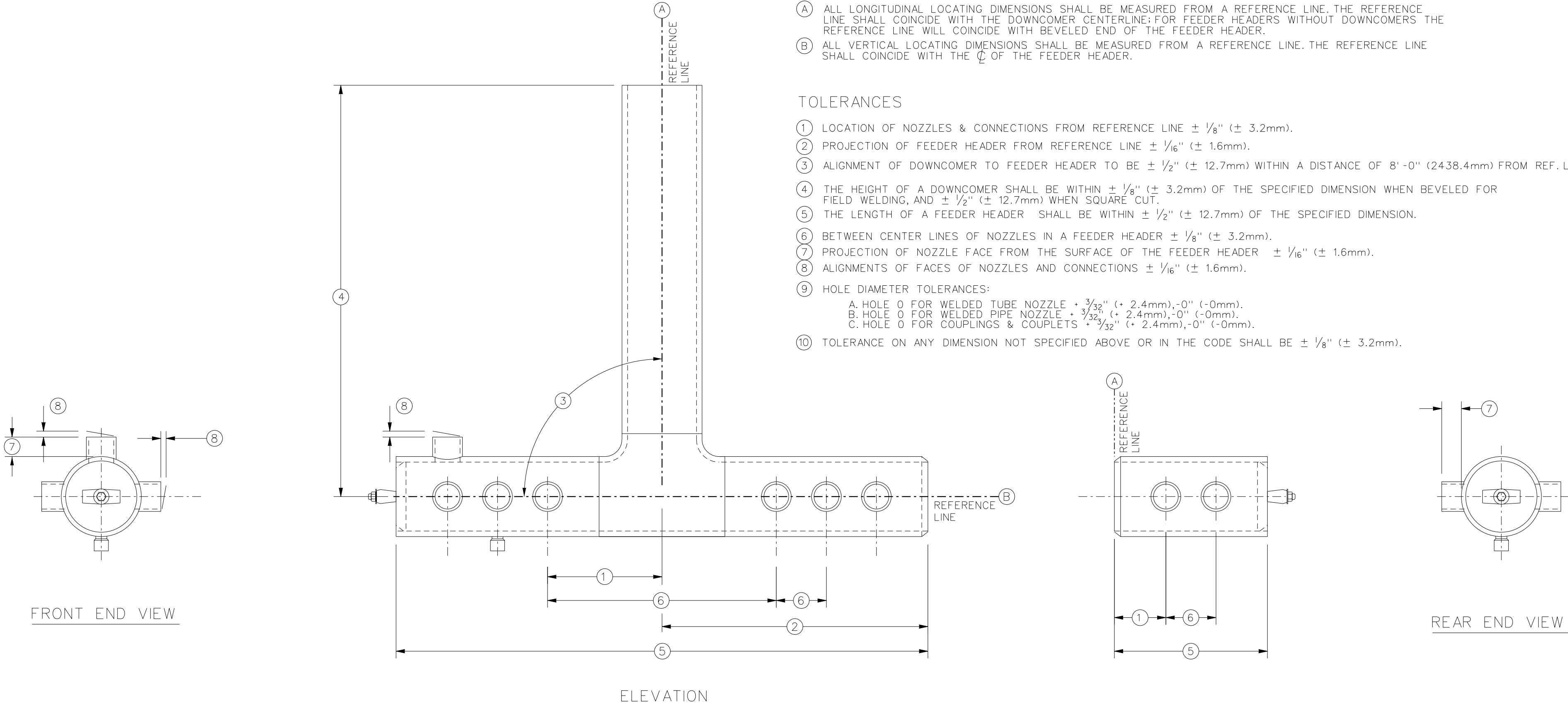
TOLERANCES

- (1) LOCATION OF NOZZLES & CONNECTIONS FROM REFERENCE LINE  $\pm 1/8"$  ( $\pm 3.2\text{mm}$ ).
- (2) PROJECTION OF FEEDER HEADER FROM REFERENCE LINE  $\pm 1/16"$  ( $\pm 1.6\text{mm}$ ).
- (3) ALIGNMENT OF DOWNCOMER TO FEEDER HEADER TO BE  $\pm 1/2"$  ( $\pm 12.7\text{mm}$ ) WITHIN A DISTANCE OF 8' -0" (2438.4mm) FROM REF. LINE B.
- (4) THE HEIGHT OF A DOWNCOMER SHALL BE WITHIN  $\pm 1/8"$  ( $\pm 3.2\text{mm}$ ) OF THE SPECIFIED DIMENSION WHEN BEVELED FOR FIELD WELDING, AND  $\pm 1/2"$  ( $\pm 12.7\text{mm}$ ) WHEN SQUARE CUT.
- (5) THE LENGTH OF A FEEDER HEADER SHALL BE WITHIN  $\pm 1/2"$  ( $\pm 12.7\text{mm}$ ) OF THE SPECIFIED DIMENSION.
- (6) BETWEEN CENTER LINES OF NOZZLES IN A FEEDER HEADER  $\pm 1/8"$  ( $\pm 3.2\text{mm}$ ).
- (7) PROJECTION OF NOZZLE FACE FROM THE SURFACE OF THE FEEDER HEADER  $\pm 1/16"$  ( $\pm 1.6\text{mm}$ ).
- (8) ALIGNMENTS OF FACES OF NOZZLES AND CONNECTIONS  $\pm 1/16"$  ( $\pm 1.6\text{mm}$ ).
- (9) HOLE DIAMETER TOLERANCES:

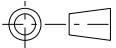
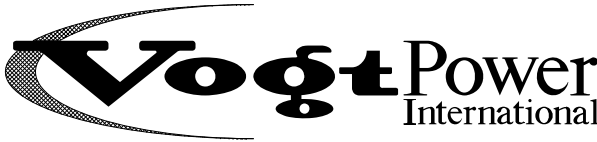
A. HOLE  $\phi$  FOR WELDED TUBE NOZZLE  $+ 3/32"$  ( $+ 2.4\text{mm}$ ), -0" (-0mm).

B. HOLE  $\phi$  FOR WELDED PIPE NOZZLE  $+ 3/32"$  ( $+ 2.4\text{mm}$ ), -0" (-0mm).

C. HOLE  $\phi$  FOR COUPLINGS & COUPLETS  $+ 3/32"$  ( $+ 2.4\text{mm}$ ), -0" (-0mm).
- (10) TOLERANCE ON ANY DIMENSION NOT SPECIFIED ABOVE OR IN THE CODE SHALL BE  $\pm 1/8"$  ( $\pm 3.2\text{mm}$ ).



NOTE:  
TOLERANCES ARE FOR FINISHED WELDED PRODUCT WHICH MAY NOT BE APPLICABLE FOR FIT-UP TOLERANCES PRIOR TO WELDING.

|   |               |           |                                 |  |   |            |
|---|---------------|-----------|---------------------------------|--|---|------------|
|   |               |           |                                 |  |   |            |
|   |               |           |                                 |  |   |            |
|   |               |           |                                 |  |   |            |
|   |               |           |                                 |  |   |            |
| 00  | INITIAL ISSUE | 22-SEP-15 | DR                              | REEVES   |   | FRY        |
| Rev.  | Description   | Date      | Drawn                           | Chkd.<br>1   | Chkd.<br>2  | Appr.      |
| Revisions   |               |           |                                 |  |   |            |
| This drawing contains Vogt Power International's confidential and proprietary information and cannot be used, duplicated or disclosed in whole or in part, except with the express written permission of Vogt Power International. EXCEPT AS EXPRESSLY STATED IN ANY WRITTEN CONTRACT - ALL WARRANTIES RELATING TO THIS DRAWING, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS, ARE DISCLAIMED. |               |           |                                 |  |   |            |
| ©Vogt Power International, Inc. all rights reserved as an unpublished work.   |               |           |                                 |  |   |            |
| MIDDLETOWN ENERGY CENTER<br>and<br>KINGS MOUNTAIN ENERGY CENTER<br>for<br>NTE ENERGY and GEMMA POWER SYSTEMS<br>VOGT POWER PROJECTS V17494 & V17495   |               |           |                                 |  | 3rd ANGLE PROJECTION<br><br><br>Scale:<br><br>NONE |            |
| Title   |               |           |                                 |  |   |            |
| STANDARD FABRICATION TOLERANCES<br>FOR<br>FEEDER/RISER HEADERS & DOWNCOMERS   |               |           |                                 |  |   |            |
|    |               |           |                                 | 13551 Triton Park Blvd<br>Suite 2000<br>Louisville, Ky. 40223 USA<br>www.VogtPower.com |   |            |
| Internal Drawing Status<br>FOR RECORD   |               | Size<br>C | Drawing No.<br>V17494-EBND-0110 |  |   | Rev.<br>00 |

APPLIES TO:  
V17494 MIDDLETOWN PROJECT  
V17495 KINGS MOUNTAIN PROJECT