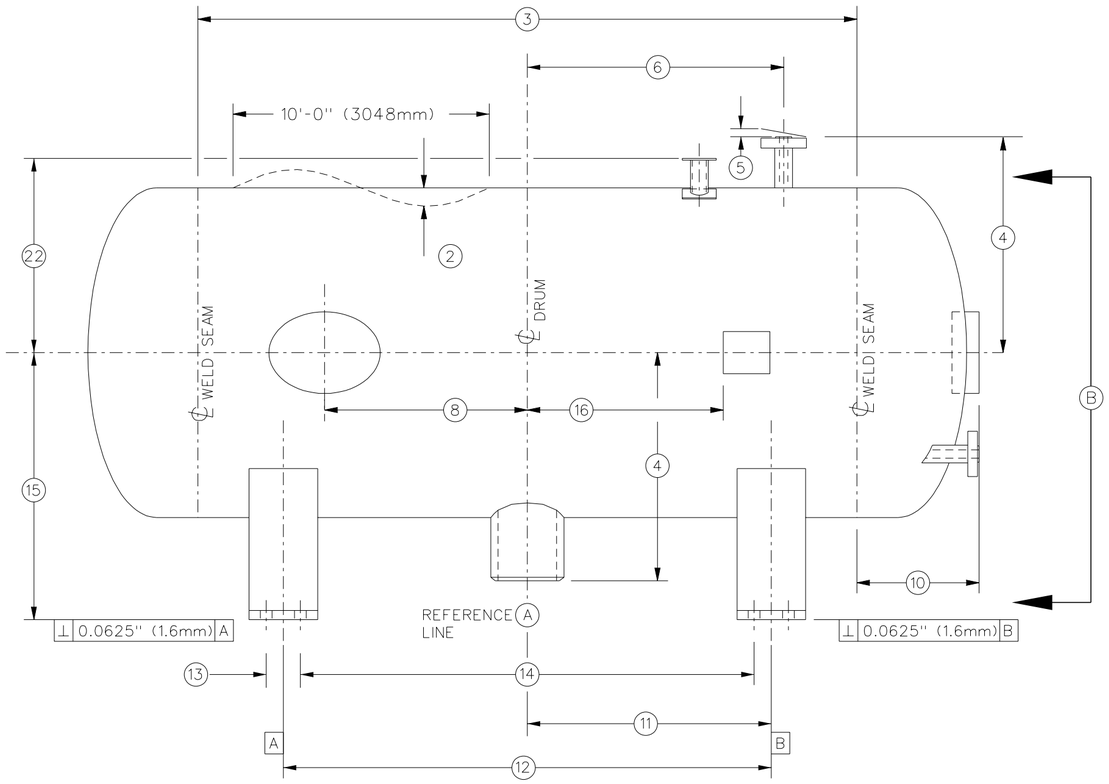
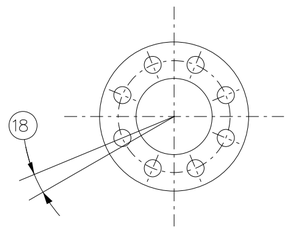
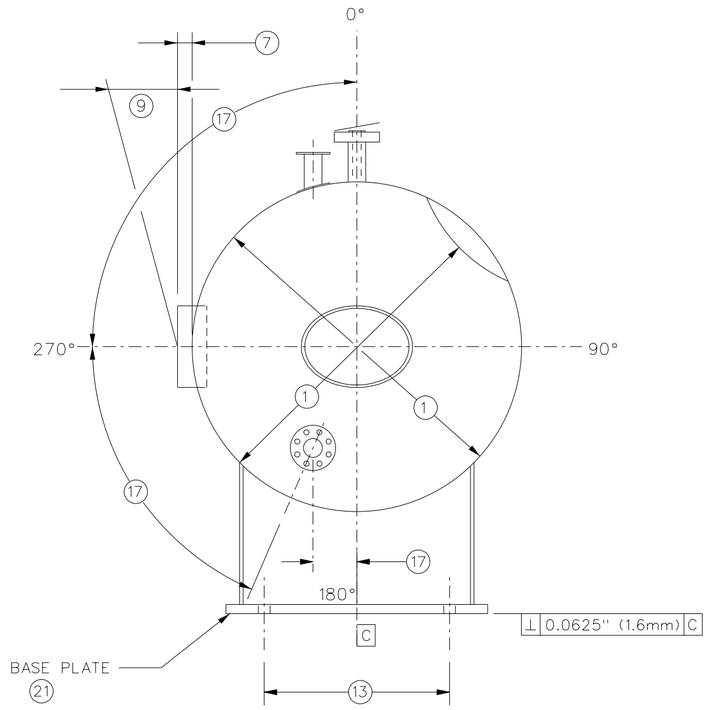


ELEVATION



ROTATIONAL TOLERANCE
ON NOZZLE FACE



END VIEW

UNLESS OTHERWISE SPECIFIED FOR A PARTICULAR VESSEL, 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 BE MARKED ON THE STRAIGHT CYLINDER OF THE VESSEL AND, SHALL COINCIDE WITH THE CENTERLINE OF THE VESSEL.

(B) UNLESS OTHERWISE SPECIFIED ON THE VESSEL DRAWING, ALL ORIENTATION VIEWS WILL BE TAKEN AS AN "END VIEW" WITH A "VIEW ARROW" LOCATED AT THE APPROPRIATE END OF THE VESSEL TO INDICATE THE DIRECTION OF THE VIEW. THE ORIENTATION "DIAGRAM" WILL START WITH 0° LOCATED AT THE TOP OF THE DIAGRAM, AND CONTINUE IN A CLOCKWISE DIRECTION AROUND THE DIAGRAM.

TOLERANCES

(1) THE (OUT-OF-ROUNDNESS) DIFFERENCE BETWEEN THE MAXIMUM AND MINIMUM INSIDE DIAMETERS AT ANY SECTION OF THE SHELL SHALL NOT EXCEED 1% OF THE MEAN DIAMETER OR 3" (76mm), WHICHEVER IS SMALLER.

(2) MAXIMUM DEVIATION FROM STRAIGHT APPLIED TO SHELL SHALL BE 3/16" (4.8mm) AT ANY POINT ALONG A STRAIGHT LINE 10'-0" (3048mm) LONG.

(3) LENGTH OF VESSEL SHALL BE WITHIN 1/2" (12.7mm) OF THE SPECIFIED DIMENSION OR ± 1/64" (± 0.4mm) PER 12" (304.8) OF LENGTH, WHICHEVER IS GREATER.

(4) PROJECTION OF NOZZLE FACE FROM THE CENTERLINE OF VESSEL SURFACE ± 1/8" (± 3.2mm).

(5) ALIGNMENT OF FACES OF FLANGED NOZZLES, BW NOZZLES, AND/OR SW CONNECTIONS (2" (50.8mm)- 5" (127mm) INCLUSIVE ± 1/16" (± 1.6mm)),(6" (152.4mm)- 12" (304.8mm) INCLUSIVE ± 3/32" (± 2.4mm), (14" (355.6mm) AND ABOVE ± 1/8" (± 3.2mm)).

(6) LOCATION OF NOZZLE FROM REFERENCE LINE ± 1/8" (± 3.2mm).

(7) PROJECTION OF MANWAY FLANGE FACE FROM VESSEL O.D. ± 1/4 (± 6.4mm)".

(8) LOCATION OF MANWAY FROM REFERENCE LINE ± 1/2" (± 12.7mm).

(9) DEVIATION OF MANWAY FLANGE FACE FROM PLANE INDICATED ± 1°.

(10) FLANGE FACE OF A NOZZLE IN A HEAD OF EITHER END OF VESSEL TO WELD SEAM ± 1/8" (± 3.2mm); FOR MANWAYS LOCATED IN HEAD ± 1/2" (± 12.7mm) TO WELD SEAM.

(11) CENTER OF VESSEL SUPPORT CLOSEST TO REFERENCE LINE ± 1/4" (± 6.4mm).

(12) BETWEEN VESSEL SUPPORT CENTERLINES ± 1/8" (± 3.2mm).

(13) BETWEEN BOLT HOLES IN ONE SUPPORT; LONGITUDINAL DIMENSION ± 1/16" (± 1.6mm).; TRANSVERSE DIMENSION (RIGHT ANGLE TO VESSEL CENTERLINE) ± 1/8" (± 3.2mm).

(14) BETWEEN BOLT HOLES IN BOTH SUPPORTS ± 1/8" (± 3.2mm).

(15) BOTTOM OF VESSEL SUPPORTS TO VESSEL CENTERLINE ± 1/4" (± 6.4mm). SUPPORT BASE PLATES SHALL NOT BE MORE THAN ± 1/8" (± 3.2mm) OUT OF LEVEL.

(16) CLIPS, BRACKETS AND SIMILAR STRUCTURAL ATTACHMENTS TO REFERENCE LINE ± 1/4" (± 6.4mm).; BETWEEN BOLT HOLES IN THESE ATTACHMENTS ± 1/8" (± 3.2mm).

(17) ORIENTATION OF NOZZLES AND OTHER ATTACHMENTS SHALL BE WITHIN ± 1/8" (± 3.2mm), EXCEPT MANWAYS TO BE ± 1/2" (± 12.7mm); TUBE HOLES AND RISER NOZZLES TO BE ± 1/16" (± 1.6mm).

(18) FLANGE BOLT HOLES ± 1° MAX. OUT OF POSITION (ROTATION). UNLESS OTHERWISE SPECIFIED ON THE DRAWING, ALL FLANGE BOLT HOLES TO STRADDLE NORMAL VESSEL CENTERLINES.

(19) HOLE DIAMETER TOLERANCES:
A. HOLE 0 FOR ROLLED TUBE +.003" (± 0.08mm)
B. HOLE 0 FOR WELDED TUBE NOZZLE AND WELDED PIPE NOZZLE + 3/32" (± 2.4mm),-0" (0mm).

(20) TOLERANCE ON ANY DIMENSION NOT SPECIFIED ABOVE OR IN THE CODE SHALL BE ± 1/4" (± 6.4mm).

(21) ALL BASE PLATES ARE TO BE FLAT AND SMOOTH, WITH A TOLERANCE OF 1/16" (± 1.6mm) ACROSS ENTIRE

(22) TOP OF SUPPORT STANCHION TO VESSEL CENTERLINE ±1/4" (± 6.4mm). TOP PLATE SHALL NOT BE MORE THAN ± 1/8" (± 3.2mm) OUT OF LEVEL.

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

APPLIES TO:
V17494 MIDDLETOWN PROJECT
V17495 KINGS MOUNTAIN PROJECT

Rev.	Description	Date	Drawn	Chkd. 1	Chkd. 2	Appr.
00	FIRST ISSUE	22-SEP-15	SP	REEVES		FRY

Revisions

MIDDLETOWN ENERGY CENTER
and
KINGS MOUNTAIN ENERGY CENTER
for
NTE ENERGY and GEMMA POWER SYSTEMS

VOGT POWER PROJECTS V17494 & V17495

3rd ANGLE PROJECTION

Scale: NONE

Title
STANDARD FABRICATION TOLERANCES
FOR
HORIZONTAL VESSELS

Vogt Power International
13551 Triton Park Blvd
Suite 2000
Louisville, Ky. 40223 USA
www.VogtPower.com

Internal Drawing Status	Size	Drawing No.	Rev.
FOR RECORD	C	V17494-EBND-0101	00