



1. TANGENTIAL LINE INTERVAL :  
(MEASURED AT 4 POSITIONS OR MORE ON CIRCUMFERENCE)  
A. FOR  $L < 4000$   $\pm 6$   
B. FOR  $L \geq 4000$   $\pm 1.5$  PER 1000 BUT NOT EXCEED  $\pm 25$
2. ORIENTATION OF NOZZLES AND ATTACHMENTS : MAX.  $0.5^\circ$  AND MAX. 10 ALONG SHELL EXTERNAL SURFACE.
3. INCLINATION OF NOZZLE FLANGE FACES :  $0.5^\circ$  FROM SPECIFIED FACE.
4. FROM SHELL EXTERNAL SURFACE TO NOZZLE FLANGE FACE :  $\pm 3$
5. FROM TANGENTIAL LINE TO TOP AND BOTTOM FLANGE FACE :  $\pm 6$
6. FROM TANGENTIAL LINE TO NOZZLE CENTER :  $\pm 6$ , BUT WHEN NOZZLE IS SPECIFIED FROM DECK :  $\pm 3$
7. INCLINATION OF MANHOLE FLANGE FACE :  $1^\circ$  FROM SPECIFIED FACE
8. FROM SHELL EXTERNAL SURFACE TO MANHOLE FLANGE FACE :  $\pm 6$
9. FROM TANGENTIAL LINE TO MANHOLE FLANGE CENTER :  $\pm 10$ , BUT WHEN MANHOLE IS SPECIFIED FROM DECK :  $\pm 3$
10. FROM TANGENTIAL LINE TO THROUGH TYPE NOZZLE :  $\pm 6$
11. FROM TANGENTIAL LINE TO SUPPORT :  $\pm 6$
12. WHEN THESE ARE MEASURED 4 POSITIONS OR MORE ON CIRCUMFERENTIAL  
A. FROM TANGENTIAL LINE TO BASE PLATE : DESIGN IN DIA. (D) TOLERANCE  
 $D ? 2000$   $\pm 3$   
 $2000 < D ? 4000$   $\pm 6$   
 $4000 < D ? 6000$   $\pm 9$   
B. DIFFERENCE OF MAX. AND MIN DISTANCE FROM TANGENTIAL LINE TO UNDER FACE OF BASE PLATE :  
DESIGN IN DIA(D) TOLERANCE  
 $D ? 2000$  MAX.3  
 $2000 < D ? 4000$  MAX.6  
 $4000 < D ? 6000$  MAX.7  
 $6000 < D ? 7000$  MAX.8  
 $7000 < D ? 10000$  MAX.10  
 $10000 < D$  MAX.15
13. BOLT HOLE SITUATION AND DIAGONAL INTERVAL :  $\pm 9$
14. INSIDE DIAMETER AND ROUNDNESS OF SHELL.  
A. IN DIA CALCULATED FROM VALUE MEASURED OUTSIDE CIRCUM.  
DESIGN IN-DIA. (D) TOLERANCE  
 $2000 < D ? 4000$  MAX.6  
 $4000 < D ? 6000$  MAX.7  
 $6000 < D ? 7000$  MAX.8  
 $7000 < D ? 10000$  MAX.10  
 $10000 < D$  MAX.15  
B. ROUNDNESS : 1% OF DESIGN IN-DIA BUT NOT EXCEED 70  
C. IN DIA. OF TOWER WITH TRAY  $\pm 0.5\%$  BUT NOT EXCEED  $\pm 20$  FOR  $D < 7500$  AND  $\pm 30$  FOR  $D \geq 7500$

15. CAMBER OF VESSEL : 3 PER 3000 AND 15 PER 10000 IN LENGTH BUT NOT EXCEED.  
 $19$  FOR  $L < 30000$   
 $25$  FOR  $L \geq 30000$
16. MUTUALLY RELATED NOZZLES : FOR EXAMPLE : NOZZLES OF LIQUID LEVEL GAUGE AND CONNECTED TO REBOILER  
A. DIFFERENCE OF HEIGHT MAX.1  
B. INTERVAL  $\pm 1$   
C. DISCREPANCY OF ORIENTATION MAX.1  
D. INCLINATION OF FACE MAX.  $0.25^\circ$
17. DISTANCE BETWEEN CENTER AND CENTER OF RISER OF BUBBLE CAP :  $\pm 1$
18. BOLT PITCH OF ALL INTERNAL BOLTED TO DECK :  $\pm 2$
19. DIFFERENCE OF MAX. AND DISTANCE FROM TANGENTIAL LINE TO TRAY SUPPORT : DESIGN IN DIAMETER(D) MAX.  
 $D ? 1200$   $\pm 3$   
 $1200 < D ? 2400$   $\pm 5$   
 $2400 < D ? 4000$   $\pm 6$   
 $4000 < D ? 6000$   $\pm 8$   
 $6000 < D$   $\pm 12$   
MEASURED POINTS ARE 8 POSITIONS OR MORE AS SAME DISTANCE AND ONE POSITION OR MORE PER 2000 AT CIRCUMFERENCE.
20. DEFLECTION OF TRAY INCLUDING TRAY SUPPORT :  $\pm 2$
21. DISTANCE OF TRAY SUPPORT :  $\pm 8$
22. FROM END OF DOWNCOMER TO TOP OF DECK :  $\pm 3$
23. HEIGHT OF WEIR FROM UPPER FACE OF TRAY :  $\pm 1.5$
24. LENGTH OF DOWNCOMER SEAL :  $\pm 3$
25. LENGTH OF WEIR :  $\pm 6$
26. FROM CENTER LINE TO DOWN COMER :  $\pm 5$
27. FROM BOTTON TANGENTIAL LINE TO LOWEST TRAY :  $\pm 5$
28. FROM CENTER LINE TO SUPPORT :  $\pm 3$
29. FROM TANGENTIAL LINE TO SUPPORT :  $\pm 6$
30. BOLT HOLE SITUATION AND DIAGONAL INTERVAL :  $\pm 8$
31. ALL LIKE PARTS OF TRAYS ARE TO BE COMPLETELY INTERCHANGEABLE WITH LIKE PARTS OF OTHER TRAYS AND SHOULD CARRY A DIMENSIONAL TOLERANCE OF  $\pm 2$
32. TRAYS SHALL BE LEVEL TO WITHIN 3 mm WHEN FULLY ASSEMBLED. ON LARGE TRAYS THIS MAY BE ACCOMPLISHED BY USING AN INITIAL CAMBER ON SUPPORT MEMBERS TO COMPENSATE FOR DEAD LOADS. (i.e TRAY SELF WEIGHT)
33. THE NOMINAL DIAMETER OF ASSEMBLED TRAY TO BE VESSEL INSIDE DIAMETER MINUS (1% OF VESSEL INSIDE DIAMETER  $\pm 19$  mm)

34. THE ACCEPTABLE TOLERANCE OF ASSEMBLED TRAY DIMETER(D) TO BE  
 $D ? 2000$   $+3$  TO  $-5$   
 $D > 2000$   $+5$  TO  $-7$
35. TRAY SUPPORT RINGS ACROSS THE DIAMETER AND THE TOP OF WEIR SHOULD BE LEVELLED WITHIN THE FOLLOWING LIMITS.  
i.e DIFFERENCE BETWEEN HIGH AND LOW POINT.  
 $D ? 1200$  MAX.3  
 $1200 < D ? 2400$  MAX.5  
 $2400 < D$  MAX.6

VOGT POWER INTERNATIONAL  
V17494-BDXD-5008-00  
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## NOTES

1. ALL UNIT SHALL BE IN mm.
2. THESE TOLERANCES SHALL NOT APPLIED TP THOSE INDICATED IN VESSEL DRAWINGS.
3. LEAKAGE TEST OF BUBBLE CAP TRAY AT FIELD BY FILLING THE DECK AND DECREASE OF LEVEL IN 20 MIN. SHAL NOT EXCEED 25.
4. THE TEST OF TEMPORARY ASSEMBLY OF TRAY SHALL BE CARRIED OUT IN THE MANUFACTURER'S SHOP.
5. TOLERANCES SHOWN HEREIN ARE ADDITIONAL TO THOSE STATED IN THE APPLICABLE CODE OF CONSTRUCTION.

ASME (U)

TITLE OF PROJECT

MIDDLETOWN

CLIENT

VOGT POWER INTERNATIONAL INC.

SGC SungGwang Company

ITEM NO./ ITEM NAME			REQ'D NO.
BLOWDOWN TANK (FABRICATION TOLERANCE)			1 SET
SCALE	JOB NO.	MANUFACTURE SERIAL NO.	
NONE	V17494	1BD-T3001	
MANU. DWG. NO.	SGC-V17494 BD-DWG-006		REV.
W/O NO.	SGC-F160003		0

4					
3					
2					
1					
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