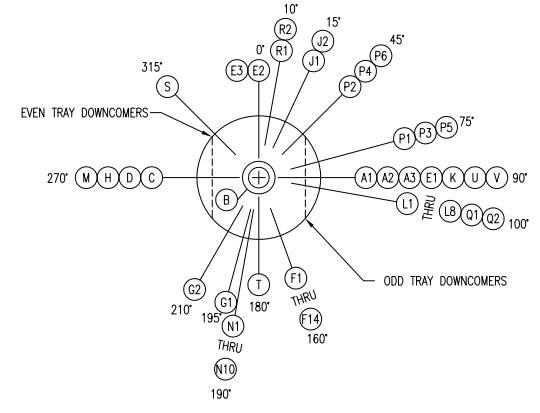


ELEVATION

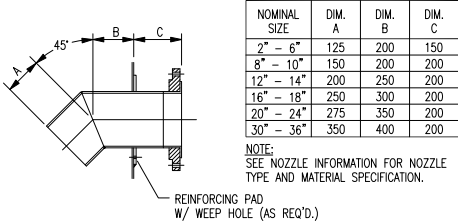
NOZZLE SIZE	NOZZLE ** EXTENSION
1 1/4"-6"	150
8"-24"	200

** - UNLESS OTHERWISE SPECIFIED



ORIENTATION

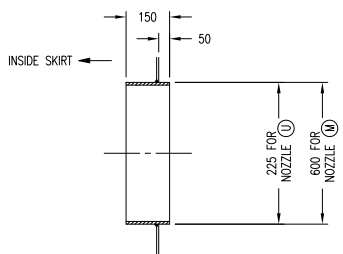
VAPOR INLET NOZZLE INTERNAL PIPING



NOMINAL SIZE	DIM. A	DIM. B	DIM. C
2" - 6"	125	200	150
8" - 10"	150	200	200
12" - 14"	200	250	200
16" - 18"	250	300	200
20" - 24"	275	350	200
30" - 36"	350	400	200

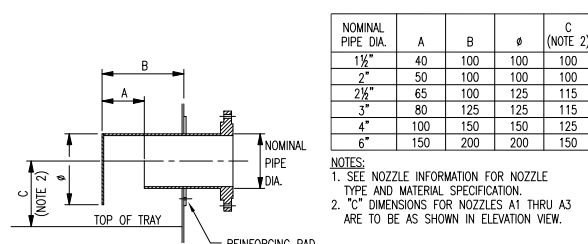
NOTE: SEE NOZZLE INFORMATION FOR NOZZLE TYPE AND MATERIAL SPECIFICATION.

NOZZLE (D)
NO SCALE



SKIRT PENETRATION DETAIL
NO SCALE

LIQUID INLET NOZZLE INTERNAL PIPING

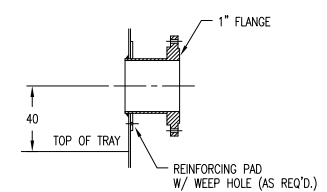


NOMINAL PIPE DIA.	A	B	φ	C (NOTE 2)
1 1/2"	40	100	100	100
2"	50	100	100	100
2 1/2"	65	100	125	115
3"	80	125	125	115
4"	100	150	150	125
6"	150	200	200	150

NOTES:
 1. SEE NOZZLE INFORMATION FOR NOZZLE TYPE AND MATERIAL SPECIFICATION.
 2. "C" DIMENSIONS FOR NOZZLES A1 THRU A3 ARE TO BE AS SHOWN IN ELEVATION VIEW.

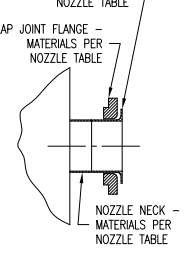
NOZZLES (A1), (A2), (A3), (K)
NO SCALE

LIQUID OUTLET NOZZLE

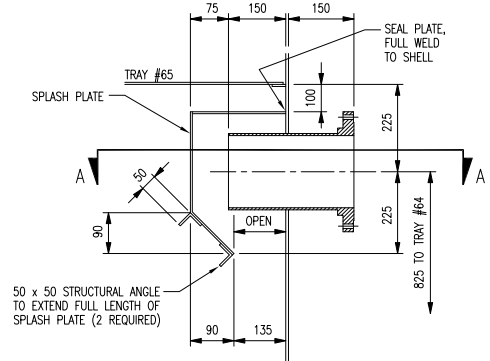


NOZZLES (L1) THRU (L8) AND (Q1), (Q2)
NO SCALE

STUB END MSS TYPE A - MATERIALS PER NOZZLE TABLE



TYPICAL NOZZLE DETAIL
WHERE LAP JOINT FLANGES ARE CALLED FOR IN NOZZLE TABLE
NO SCALE



NOZZLE (H)
NO SCALE

SPECIFICATION - TOWER

GENERAL
 ITEM NO.: T-533 SERVICE: STRIPPER/RECTIFIER
 TYPE: PERFORATED NO. OF TRAYS: 70 SPACING-IN (mm): 350

MECHANICAL DATA
 SHELL DIAMETER-IN (mm): 1800 SECTION HEIGHT: AS SHOWN
 HEIGHT ABOVE TOP TRAY-IN (mm): AS SHOWN HEIGHT OF BASE SECTION: AS SHOWN
 STRAIGHT SIDE HEIGHT-IN (mm): AS SHOWN SKIRT HEIGHT: AS SHOWN
 CODE: ASME SECTION VIII STAMP: ASME WELDING: ASME
 DESIGN PRESSURE-PSIG (MPa): 150 (1035) INTERNAL/E. V. TEMP.-F (°C): 366 (186)
 EST. WT. EMPTY-LB (kg): BY FAB. FULL WATER: BY FAB. OPERATING: BY FAB.
 WIND VEL.-MPH (km/hr): SEE NOTE #12 EARTHQUAKE ZONE: BY OWNER

MATERIAL & THICKNESS-IN (mm)
 SHELL: A240 TP-304L STAINLESS STEEL
 TOP HEAD: A240 TP-304L STAINLESS STEEL
 BOT. HEAD: A240 TP-304L STAINLESS STEEL
 INSULATION: 80mm INSULATION (BY OTHERS)
 SUPPORTS: CARBON STEEL SKIRT
 BOLTS: A193 B7 W/A194 2H HEX NUTS, GASKETS: 2mm NON-ASBESTOS
 NOZZLES: IN (mm) - COUPLINGS FOR 1" (25) & UNDER CONNECTIONS (UNLESS NOTED)
 FLANGE: A105 FORGED STEEL 150# LAP JOINT (EXCEPT AS NOTED BELOW)
 COUPLING: A182 E-304L STAINLESS STEEL 3000# THREADED FULL
 CORROSION ALLOWANCE: NONE, EXCEPT CARBON STEEL SURFACES = 2mm

MARK	SERVICE	IN (mm) SIZE	NOTE
A1, A2, A3	FEED	3"/φ	(3) REQ'D - 300# FLANGE RATING
B	VAPOR OUT	12"/V	W/DEFLECTOR PLATE
C	LIQUID OUT	10"/φ (D)	-
D	VAPOR INLET	18"/φ (C)	W/INTERNAL PIPE
E1, E2, E3	MANWAY	24"/V	(3) REQ'D W/DAVIT
F1-F14	TEMP. CONN.	1"/φ	COUPLING - (14) REQ'D
G1, G2	PRESS. CONN.	1"/V	COUPLING - (2) REQ'D
H	VAPOR PRODUCT	6"/φ	W/INTERNAL BARELE - SEE DETAIL
I, J, K	LEVEL GAUGE	1"/φ	COUPLING - (2) REQ'D
L1-L8	REFLUX	4"/φ	W/DEFLECTOR PLATE
M	F.O. DRAW	1"/φ	FLANGED W/BLIND - (8) REQ'D
N1-N10	SKIRT ACCESS	600/V	-
P1-P6	PRESS. CONN.	1"/φ	COUPLING - (10) REQ'D
Q1, Q2	SIGHT GLASS	(4 3/4") LD./φ	COUPLING - (6) REQ'D
R1, R2	SAMPLE	1"/φ	FLANGED W/BLIND - (2) REQ'D
S	LEVEL CONN.	3"/φ	(2) REQ'D
T	PRESS. RELIEF	6"/V	300# FLANGE RATING
U	CAUSTIC	1"/φ	COUPLING (PLUGGED)
V	OUTLET	3"/V	-
W	OUTLET	6"/φ	W/BLIND COVER

MISCELLANEOUS
 LADDER:
 PAINT: ALL EXTERNAL CARBON STEEL SURFACES TO BE CLEANED AND OTHERWISE PROPERLY PREPARED PRIOR TO APPLICATION OF ONE COAT OF CORROSION PROTECTION PRIMER PER SHOP STANDARD. FINAL PAINTING PER OWNER'S REQUIREMENTS.
 FABRICATION STANDARDS:
 KATZEN TOWER AND TRAY FABRICATION TOLERANCES
 DWG. No. MSD-M1004

NOTES:
 1. SEE DWG. 05-216 FOR TRAY DETAILS.
 2. FABRICATOR TO PROVIDE VACUUM SUPPORT RINGS AND INSULATION SUPPORT RINGS AS REQUIRED.
 3. OPERATING TEMPERATURE 336° F (169° C), OPERATING PRESSURE = 95 PSIG (655 kPa) (TOP).
 4. ANCHOR BOLTS AND BOLT CIRCLES TO BE DESIGNED BY FABRICATOR.
 5. FOR TRAY SUPPORT RINGS AND DOWNCOMERS, SEE FABRICATION DETAIL DWG. BY TRAY VENDOR.
 6. ALL DIMENSIONS MARKED * * * ARE BY VENDOR.
 7. SUPPLY WITH GROUNDING LUGS.
 8. ASME MAMP TO BE STAMPED AT MAXIMUM CALCULATED ALLOWABLE PRESSURE FOR THE THICKNESS OF THE SHELL AT THE STATED TEMPERATURE.
 9. FINAL NOZZLE ORIENTATION TO BE DETERMINED UPON FINAL PIPING DESIGN.
 10. FABRICATOR TO PROVIDE LADDERS AND PLATFORMS.
 11. FABRICATOR TO PROVIDE PIPE SUPPORT PADS.
 12. 160 km/h PER URUGUAYAN NORMATIVES: UNIT 50-84.

13. 304L MAY BE SUBSTITUTED WITH DUAL GRADE 304/304L STAINLESS STEEL.
 14. FINAL SIZING AND LOCATION OF VACUUM AND INSULATION SUPPORT RINGS BY FABRICATOR.

ORIENTATION NOTES:
 (FINAL LOCATION TO BE DETERMINED BY DETAIL PIPING AND LAYOUT DESIGNERS).
 I. LOCATE INSIDE ARC OF EVEN NUMBERED DOWNCOMERS.
 II. LOCATE INSIDE ARC OF ODD NUMBERED DOWNCOMERS.
 III. LOCATE OUTSIDE OF DOWNCOMER ARCS.
 IV. LOCATE ON CENTERLINE OF TOWER.
 V. NO PROCESS CONSTRAINTS ON ORIENTATION.
 VI. NOZZLES TO BE IN LINE WITH EACH OTHER.
 VII. OPPOSE SIGHTGLASS PAIRS AT A 30° ANGLE. LOCATE OUTSIDE OF DOWNCOMER ARCS.

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Rev.	Date	Description	Drawn By	Ckd By	Appd By
1	4/19/13	REV. 1 ISSUE	WLB	AAA	AAA
0	12/19/12	REV. 0 ISSUE	RLM	JDC	JDC

 UTE ABENER TEYMA PAYSANDÚ	 TECHNOLOGY • ENGINEERING CINCINNATI, OHIO, U.S.A.	Scale: NONE 211,200 LITERS/DAY MOTOR FUEL GRADE ETHANOL PLANT EQUIPMENT SPECIFICATION	NF Form: 0003-PLN-KAT-05-62-0215 Sheet: 1 of 1 Dwg No: 05-215
		Item: T-533 STRIPPER/RECTIFIER	Client No: 1132-01