



- NOTES:**
- ALL BOLT HOLES TO STRADDLE CENTERLINES UNLESS OTHERWISE SPECIFIED.
 - PROVIDE PLATINUM SPOTS ON ALL TANTALUM LINERS (2 SPOTS 1/2" DIA EACH LINER).
 - HELIUM LEAK TEST ALL TA JOINT WELDS PER TT-QA-003.
 - HYDROSTATIC TEST PER TITAN TT-QA-004.
 - DYE PENETRANT TEST ALL TANTALUM WELDS PER TT-QA-005.
 - PROVIDE PROTECTIVE COVERS ON ALL FLANGE FACES FOR SHIPMENT.
 - SAFETY RELIEF DEVICE SET IN THE PROCESS SYSTEM.
 - FOR INSTALLATION, OPERATION AND MAINTENANCE REFER TO TITAN MAINTENANCE MANUAL.
 - BLAST AND COAT ALL EXTERNAL CARBON STEEL SURFACES : ZINK-ETHYLIS PRIMER AND ANTI-CORROSIVE TOP COAL RAL5007.
 - ALL SHELL SIDE GASKET SURFACES TO BE 125-250μ"RA.
 - THE WELDS COVERED BY THE SUPPORT PLATE SHALL BE GROUND FLUSH FOR THE PORTION OF THE WELD TO BE COVERED.
 - ALL DIMENSIONS ARE MM, ALL WELD SIZES ARE MM.
 - SHIPPING NOTE:
1) PLACE TAG FOR CUSTOMER TO REMOVE PLASTIC PLUGS OVER TELLTALES PRIOR TO OPERATION.
2) PLACE TAG FOR CUSTOMER TO REMOVE EXPANSION JOINT SUPPORT BOLTS PRIOR TO OPERATION.

NOZZLE SCHEDULE					
MK	SIZE	RATING	TYPE	SERVICE	REMARK
N1	DN200	150#	FF SO	PICKLING SOLUTION OUTLET	ASME B16.5-2020
N2	DN200	150#	FF SO	PICKLING SOLUTION INLET	ASME B16.5-2020
N3	DN65	150#	RF SO	STEAM OUTLET	ASME B16.5-2020
N4	DN150	150#	RF SO	STEAM INLET	ASME B16.5-2020
V	DN10	G 3 / 8 "		VENT	WITH PLUG
D	DN10	G 3 / 8 "		DRAIN	WITH PLUG

ALL DIMENSIONS ARE MM
ALL WELD SIZES ARE MM

TOLERANCES
(UNLESS OTHERWISE SPECIFIED)
TOLERANCES ARE NOT ACCUMULATIVE

MACHINE:
DECIMAL: 0.8
FRACTION: 1.6
ANGLE: 1/2°

GENERAL:
DECIMAL: 3
FRACTION: 3.2
ANGLE: 1°

REV	DESCRIPTION	BY	DATE	APRVD
A	CUSTOMER REVIEW	XJY	03/20/24	MC
B	CUSTOMER REVIEW	XJY	03/21/24	MC
C	CUSTOMER REVIEW	XJY	03/22/24	MC
D	CUSTOMER REVIEW	XJY	06/05/24	MC

WELD PROCEDURES		
WPS	MATERIALS	WELD WIRE
CS.1	CS STEEL	ER70S-2
SS.2	CS STEEL TO SS STEEL	ER309L
IS.2	CS STEEL TO ALLOY 625	ERNiCrMo-3
IN.1	N06625 TO N06625	ERNiCrMo-3
TA.1	TANTALUM	N/A
AGTA.1	TANTALUM TO CARBON STEEL	SILVER

DESIGN CONDITIONS

DESIGNED AND STAMPED PER ASME CODE SECTION VIII, DIVISION 1, 2023 EDITION AND TEMA TENTH EDITION

		TUBE SIDE	SHELL SIDE
DESIGN PRESSURE	MPa	1.0	1.0
MAWP	MPa	1.0	1.0
DESIGN TEMPERATURE	°C	190	190
MDMT	°C	0	0
CORROSION ALLOWANCE	MM	0 (HEAD/SHELL)	1.6 (SHELL)
RADIOGRAPHY		SPOT	SPOT
JOINT EFFICIENCY		0.85	0.85
HEAT TREATMENT		NONE	NONE
HYDRO TEST PRESSURE	MPa	1.3	1.3
OPERATING TEMP.(INLET/OUTLET)	°C	155.61 / 154.95	69.69 / 77
OPERATING PRESSURE	MPa	0.55	0.3
EXCHANGE AREA	M ²		7.3
HEAT LOAD	KCAL/H		2001290
WEIGHT EMPTY	KG		~1000
WEIGHT FULL OF WATER	KG		~1255

IMPACT TESTING NOT REQUIRED PER: UG-20(f), UCS-66(b,c).

	TUBE SIDE	SHELL SIDE
TUBES (47) 25.4 OD X 0.5 AW, SEAMLESS	B-521 R05252 (Tantalum)	
TUBESHEETS / LINERS	SA-266-2 / B-708 R05252 (Tantalum)	
HEAD/SHELL	CS WITH PTFE	SA-106-B
EXPANSION JOINT	-	SB-443-N06625
BODY FLANGE	SA-105 / PTFE	-
NOZZLE NECKS	-	SA-106-B/SA-234 WPB
NOZZLE FLANGES	SA-105 / PTFE	SA-105
BAFFLES	25% G.F. PTFE	
SUPPORTS	SA-516-70	
GASKETS	-	
STUDS / NUTS	SA-193-B7 / SA-194-2H	

TANTALUM HEAT EXCHANGER			
TEMA TYPE :	BEM	TEMA CLASS :	B
CUSTOMER :	POSCO		
LOCATION :	KOREA		
MODEL# :	SM14C27		
CONTRACT #:	-		
CUSTOMER TAG #:	-		
MANUFACTURER# :	XXX-1-1		

TITAN TITAN METAL FABRICATORS (WUXI) CO., LTD.
NO. 61 HONGXIANG ROAD
WUXI XINWU DISTRICT, JIANGSU PROVINCE
214028 PEOPLE'S REPUBLIC OF CHINA

DRAWN: DATE: MATERIAL: FINISH: HEAT TREAT:

CHECKED: DATE: TITLE: **PICKLING HEAT EXCHANGER**

APPROVED: DATE: **DN350 2000000 Kcal/hr**

SCALE: 1:2 SIZE: B DWG #: **XX-1-1-01** SHEET: 01 of XX REV: D