



CODES & STANDARDS	ASME VIII Div. 1 2021 Ed.+Tema "R" 10 EDITION+NACE MRO175(*)	ASME II Part A Ed.2021	CLIENT
MATERIALS	ASME II Part A Ed.2021		
INSPECTION	CLIENT		
NATIONAL BOARD REGISTRATION	NO	---	---
ASME STAMP	YES "U"	YES "U"	---
SERVICE	---	---	---
FLUID	COMBINED FEED	EFFLUENT	---
No. PASSES	1	2	---
INSULATION (BY OTHER)	50	50	mm
JOINT EFFICIENCY	1	1	---
RT/UT EXAMINATION	FULL (RT-1)	FULL (RT-1)	---
IMPACT TEST	YES	YES	SEE BOM(s)
WELD COUPONS	YES	YES	---
P.W.H.T	YES	YES	---
P.F.H.T	NO	NO	---
TEST PRESSURE	330	330	kg/cm2
TEST PRESSURE DIFFERENTIAL	38.6	---	kg/cm2
M.A.W.P. @ DESIGN TEMPERATURE	210@432	200@468	kg/cm2@°C
M.D.M.T. @ M.A.W.P.	-15	-15	°C
CORROSION ON C.S. PARTS	0 (WELD OVERLAY)	0 (WELD OVERLAY)	mm
WORKING TEMPERATURE OUT	371	386	°C
WORKING TEMPERATURE IN	304	440	°C
WORKING PRESSURE	196.8	186.6	kg/cm2
DESIGN TEMPERATURE	432	468	°C
DESIGN PRESSURE	210	200	kg/cm2
TUBESHEET DESIGN DIFFERENTIAL PRESSURE	21.1	---	kg/cm2
EXTERNAL DESIGN PRESSURE	FV	FV	kg/cm2
EXTERNAL DESIGN TEMPERATURE	432	468	°C
DESIGN DATA	SHELL SIDE	TUBE SIDE	UNITS NOTES

Special Requirements
 ASME U-Stamp
 ASME Authorized Inspector
 Professional Engineer Stamp
 Shell Shall Be Made From Forged Material In 1 Piece
 And Cladding With S.S. 347
 Shell Side Design Pressure: 210 Kg/cm²
 Tube Side Design Pressure: 200 Kg/cm²
 Shell Side Design Temperature: 432 °C
 Tube Side Design Temperature: 468 °C
 Hydrogen Service
 Breech Lock Type
 Manufacturer Relevant Reference List

THREADING/CLOSURE/COVER	SA 336 F22 CL.3
REDUCER/VENT/DRAIN	SA 965 F321
CHANNEL/NOZZLES	SA 336 F22 CL.3 + S.S.347 WO
INTERNAL BOLTING	S.S. 321
INTERNAL BOLTING	SA 193 GR.8T/SA 453 GR.660 CL.B
EXTERNAL BOLTING	SA 193 B7/SA 193 B16/SA 193 GR.8T
ELASTIC DIAPHRAGM/GASKET	SA 240 321/S.W. S.S. 321 GRAPHITE FILLER/CARBON FIBER AND GRAPHITE
PACKING	CARBON FIBER
RING JOINT	S.S. 321
MATERIALS TUBE SIDE	
PACKING	CARBON FIBER
INTERNAL BOLTING	---
EXTERNAL BOLTING	SA 193 GR.8T
RING JOINT	S.S. 321
SADDLES	SA 387 GR.22 CL.2
TUBES	SA 213 TP 321
BAFFLES	SA 240 321
NOZZLES	SA 336 F22 CL.3 + S.S.347 WO/SA 965 F321
TUBESHEET/VENT/DRAIN	SA 965 F321
SHELL AND HEADS	SA 336 F22 CL.3 + S.S.347 WO
MATERIALS SHELL SIDE	

MARK	DN	CLASS	TYPE-FACING	SERVICE
N23	1 1/2"	2500#	LWN-RTJ	VENT
N21	1 1/2"	2500#	LWN-RTJ	VENT
N19	1 1/2"	2500#	LWN-RTJ	VENT
N17	1 1/2"	2500#	LWN-RTJ	VENT
N15	1 1/2"	2500#	LWN-RTJ	VENT
N13	1 1/2"	2500#	LWN-RTJ	VENT
N12	8"	---	STUB END #1173.1x23	COMBINED FEED OUTLET
N11	8"	---	STUB END #158.2x42.9	COMBINED FEED INLET
N10	8"	---	STUB END #158.2x42.9	COMBINED FEED OUTLET
N9	8"	---	STUB END #1173.1x23	COMBINED FEED INLET
N8	8"	---	STUB END #1173.1x23	COMBINED FEED OUTLET
N7	8"	---	STUB END #1173.1x23	COMBINED FEED INLET
N6	8"	---	STUB END #1173.1x23	EFFLUENT OUTLET
N5	10"	---	STUB END #199.5x36.75	EFFLUENT INLET
N4	10"	---	STUB END #199.5x36.75	EFFLUENT OUTLET
N3	10"	---	STUB END #199.5x36.75	EFFLUENT INLET
N2	10"	---	STUB END #199.5x36.75	EFFLUENT OUTLET
N1	8"	---	STUB END #1173.1x23	EFFLUENT INLET

REV	DESCRIPTION	DATE	DRAWN	DATE	CHECKED	DATE	APPROVED

CO: SERVICE :
 ITEM: E-630-A/B/C
 E-631-A/B/C
 E-632-A/B/C
 DIM: -
 TEMA TYPE: DEU
 SURF. MQ: 390 m²
 SCALA: 1:18

GENERAL LAYOUT DWG.
 REDESIGN COMBINED EFFLUENT HEAT EXCHANGERS
 INTO BREECH LOCK HEAT EXCHANGERS TYPE

DRAWING NUMBER
 SHEET 1 OF 1