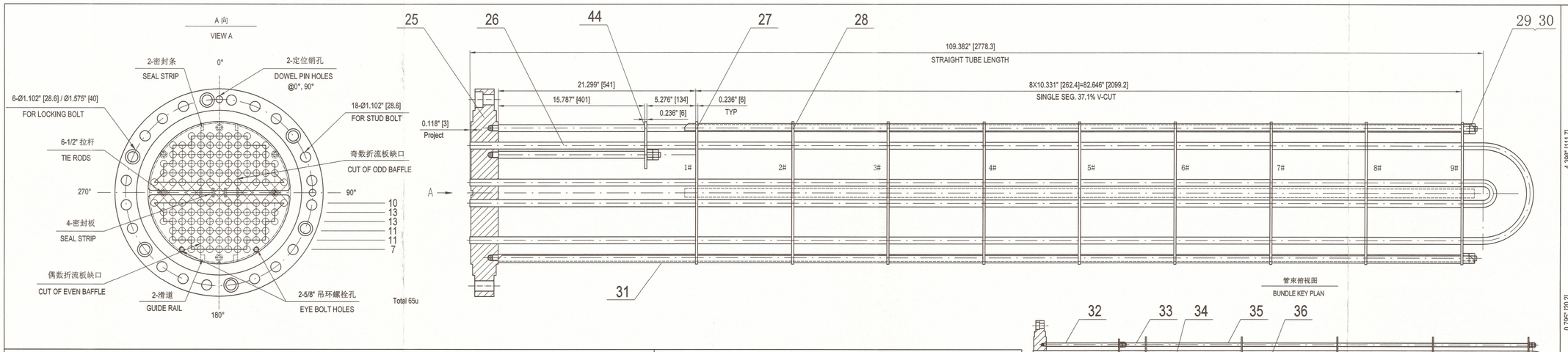

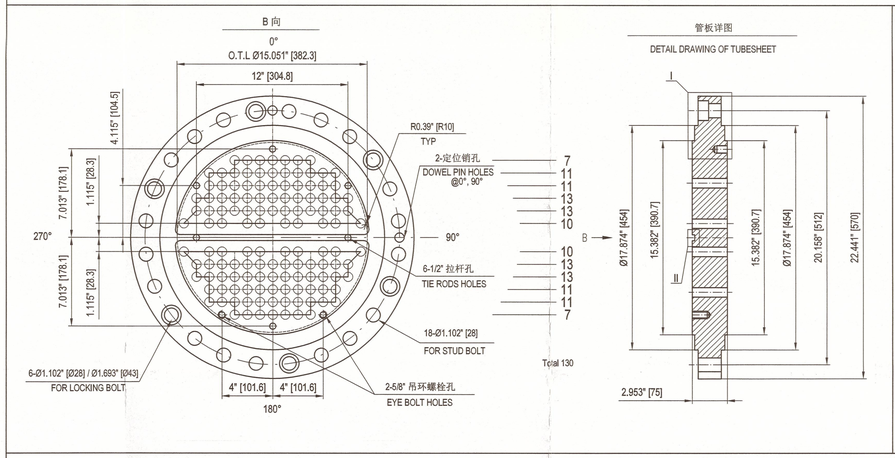

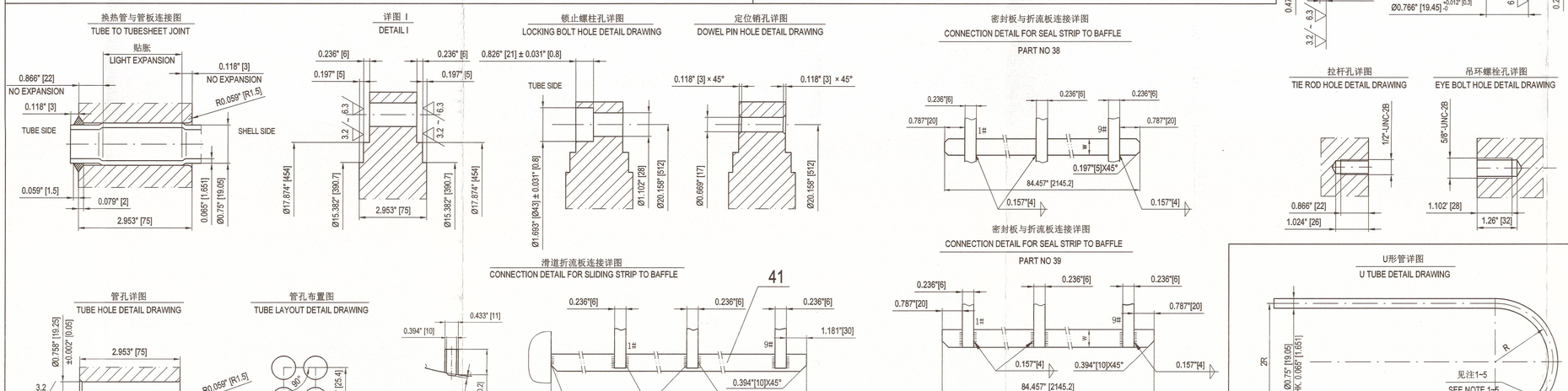

注/NOTE:

1.换热管应按照SA-789/SA-789M逐根水压试验，还需按SA-1016/SA-1016M进行涡流检测。电测试验应覆盖换热管整个体积，钢管厂提供的试验报告应能证明对换热管进行的所有无损检测类型和范围。

Tubes shall be subject to hydrostatic test one by one in accordance with SA-789/SA-789M, and eddy current testing shall be conducted in accordance with SA-1016/SA-1016M. Electric test shall cover the entire metal volume of the tube. Mill test reports shall verify the type and extent of the all NDE tests applied to tubes.

2.弯管后，U形管将100% PT检测。

After bending, the U-tube shall be subject to 100% PT.

3.U形管弯曲后应逐个进行水压试验，试验压力不应低于换热器管侧和壳侧试验压力的较大值。

After bending, the U-tube shall be subject to hydrostatic test one by one, and the test pressure shall not be lower than the larger value of the test pressure of the tube side and shell side of the heat exchanger.

4.弯管的扁平度不应超过管子公称外径的10%。

Flattening at the bend shall not exceed 10% of the nominal tube outside diameter.

5.换热管应为无缝钢管，每根U形管应由整根管子制成。

The tubes shall be seamless, U-tubes shall be of one piece construction.

6.U型管弯制后其弯管部分加150mm长直管段应进行固溶退火热处理。热处理应使用电夹方法，程序应提交买方批准。不允许进行炉内热处理。

Tube u-bends shall receive post bend solution annealing heat treatment. Heat treatment shall use electric clamp methods, and the procedure shall be submitted to Buyer for approval. Furnace heat treatments are not allowed.

U型换热管数据表/DATA TABLES OF U TUBES

序号 ITEM.	直管段L(mm) STRAIGHT LENGTH	弯曲半径R(mm) BENDING R(mm)	换热管展开长度 TUBE LENGTH (mm)	管数 QTY.	单重(Kg) UNIT WEIGHT	总重(Kg) TOTAL WEIGHT	弯管段消应力 BR FOR BENDING AREA
1	108" [2743.2]	1.5" [38.1]	220.713" [5606.1]	5	4.1	20.2	YES/需要
2	109" [2768.6]	1.5" [38.1]	222.713" [5656.9]	5	4.1	20.4	YES/需要
3	109.382" [2778.3]	2.114" [53.7]	225.406" [5725.3]	13	4.1	53.3	YES/需要
4	109.382" [2778.3]	3.114" [79.1]	228.547" [5805.1]	13	4.2	54.6	YES/需要
5	109.382" [2778.3]	4.114" [104.5]	231.689" [5884.9]	11	4.2	46.2	YES/需要
6	109.382" [2778.3]	5.114" [129.9]	234.83" [5964.7]	11	4.3	47.3	YES/需要
7	109.382" [2778.3]	6.114" [155.3]	237.972" [6044.5]	7	4.4	30.8	YES/需要

件号 PART NO.	图号或标准号 DWG.NO.OR STD.NO.	名称 DESIGNATION	数量 QTY.	材料 MATERIAL	单 EACH 重量 (kg) WEIGHT	总 TOTAL 重量 (kg) WEIGHT	备注 REMARKS
44		防震板 PARTIAL SUPPORT PLATE	1	SA-240 316L		1.1	
43		螺塞 PLUG	2	SA-182 F60	/	/	
42	REFER TO CROSBY S-279	吊环螺栓 5/8"-UNC L=28 EYE BOLT	2	SA-182 F60	/	/	
41		滑道 t=10 SLIDING STRIP	2	SA-240 316L	4.5	9.0	
40		拉杆 Ø13 L=460 TIE ROD	2	SA-479 316L	0.5	1.0	
39		密封板 t=6 SEAL STRIP	2	SA-240 316L	2.1	4.2	W=17.6
38		密封板 t=6 SEAL STRIP	4	SA-240 316L	2.5	10.0	W=25
37		拉杆 Ø13 L=2440 TIE ROD	1	SA-479 316L		2.6	
36		定距管 Ø19.05×1.651 L=256.4 SPACER	16	SA-213 TP316L	0.2	3.2	
35		定距管 Ø19.05×1.651 L=518.8 SPACER	7	SA-213 TP316L	0.4	2.8	
34		定距管 Ø19.05×1.651 L=803.4 SPACER	1	SA-213 TP316L		0.6	
33		定距管 Ø19.05×1.651 L=134 SPACER	1	SA-213 TP316L		0.1	
32		定距管 Ø19.05×1.651 L=401 SPACER	3	SA-213 TP316L	0.3	0.9	
31		定距管 Ø19.05×1.651 L=541 SPACER	2	SA-213 TP316L	0.4	0.8	
30		拉杆 Ø13 L=2700 TIE ROD	3	SA-479 316L	2.9	8.7	
29	ASME B18.2.2-2022	六角螺母 1/2" HEX NUT	12	SA-194 8	/	/	
28		偶数折流板 t=6 EVEN BAFFLE	4	SA-240 316L	8.5	34.0	
27		奇数折流板 t=6 ODD BAFFLE	5	SA-240 316L	8.5	42.5	
26		U形换热管 Ø19.05×1.651(AVG) U TYPE TUBE	65U	SA-789 S32205 (Seamless)		280	
25		管板 TUBE SHEET	1	SA-182 F60		112	

AIR PRODUCTS　FLUOR　As Built

Air Products Project Number	EN207123	Fluor Project Number	A8KM
Project Name	World Energy Renew Utilities US7L	RFQ No.	A8KM-4-403-RQ
Purchase Order Number	4505600575	PO/Contract No	A8KM-4-403-PO-6
Air Products Open Text document number	EN207123-WUXI-9V3-00029	Project Area	Utilities
Client	WORLD ENERGY PARAMOUNT	Client Doc No:	

版次 REV.	版次说明/DESCRIPTION	设计/PREPARED	审核/REVIEWED	批准/APPROVED	日期/DATE
05	竣工图/ AS BUILT	Mei Xinyao	Shengfang Zhao	Kevin Yang	03-Apr-23
04	供批准/ ISSUED FOR APPROVAL	Mei Xinyao	Shengfang Zhao	Kevin Yang	17-Nov-22
03	供批准/ ISSUED FOR APPROVAL	Mei Xinyao	Shengfang Zhao	Kevin Yang	16-Sep-22
02	供批准/ ISSUED FOR APPROVAL	Mei Xinyao	Shengfang Zhao	Kevin Yang	12-Aug-22
01	供批准/ ISSUED FOR APPROVAL	Mei Xinyao	Shengfang Zhao	Kevin Yang	09-Jun-22

本图纸版权为无锡化工装备股份有限公司财产,未经本公司许可不得转让或复制给第三方.
The copyright of this drawing is the property of China Wuxi Chemical Equipment Co.,Ltd.(WCE),unauthorized disclosure or duplication to the third party is not permitted.

WCE 无锡化工装备股份有限公司 WUXI CHEMICAL EQUIPMENT CO.,LTD.

设计 PREPARED	2023.4.3	设计项目 DESIGN ITEM	World Energy Renewables Project
审核 REVIEWED	2023.4.3	设计阶段 DESIGN PHASE	详细设计 Detail Design
批准 APPROVED	2023.4.3	设备位号 ITEM NO.	18-X-1800
		图号 DWG. NO.	WXCE6714-02
比例: SCALE 1:6	版次: REV. 05	第 2 页 共 6 页 PAGE 2 OF 6	

T-100001 Recirculating Exchanger
BUNDLE DETAIL DRAWING