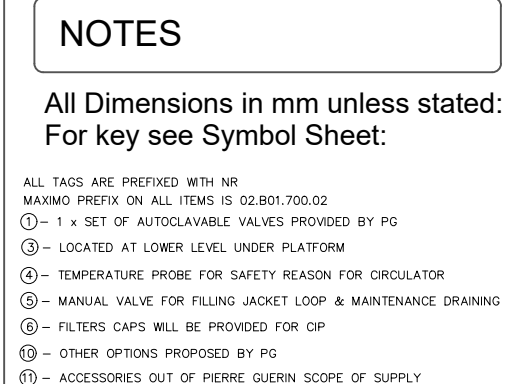




ISSUE	REMARKS	DATE	DRAWN
1	Modified by C120971 and C0047610	04JAN11	KJH
2	Modified by C120971 and CAD job C11 0098	22MAR11	KJH
3	Modified by C0104511 and CAD job C11 0098	31AUG11	LS
4	Amended by CAD job C14 0196, C022071 C14 0197, C020610	29DEC14	KJH
	Amended by CAD job C15 0165 and C015315	14DEC15	KJH



DWG No
FPP-427-PID
EXT DWG:

Piping class			
	1A	1D	2
	Process fluids		Service fluids
Fluids	WT, anhydrous, nutrient, acid, alkali, incandescent, harvest, sampling, gas, liquid, oil – sterile parts, clean steam, cleaning liquids In accordance with level 3 of PG SOP (note 6) and in accordance with BPE requirements (Note 1) including 100 % documented biotopic inspections of welds with $\geq 0.38 \mu\text{m}$ maximum roughness of austenitic welds (weld positions selected by HPA) and 100 % of manual welds 100 % documented leaktightness tests of piping	Gas inlet / outlet – non sterile parts	Chilled water, plant steam condensates, process waste
Design, construction & inspection		In accordance with level 1 of PG SOP (note 6), including 100 % documented leaktightness tests of piping	In accordance with level 1 of PG SOP (note 6), including 100 % documented leaktightness tests of piping
Norm & dimensions	ASTM – Imperial	ASTM – Imperial	ISO
Material	Stainless steel grade EN 14404 - 316 Ls minimum	Stainless steel grade EN 14404 - 316 Ls minimum	Stainless steel grade EN 14404 and/or 14307 and/or 14306 and/or 1.4307 - 304L (316) Ls
Internal finish	Surfaces Ra $\leq 0.38 \mu\text{m}$ electropolished (ASME ST174), welds & surfaces are cleaned and passivated according to level 3 of PG SOP	Surfaces Ra $\leq 1.6 \mu\text{m}$ electropolished (Note 4), welds & surfaces are cleaned and passivated according to level 1 of PG SOP	Welds & surfaces are cleaned and passivated according to level 1 of PG SOP
Traceability (material and finish identification)	In accordance with level 3 of PG SOP (note 6) including full material traceability for product-contact parts	In accordance with level 1 of PG SOP (note 6) including supply of a global certificate of conformity 2.1	In accordance with level 1 of PG SOP (note 6) including supply of a global certificate of conformity 2.1

- NOTES:**
1. For the exception of Sulphur content and dimensions
 2. For the exception of a few components which may be made of plastic
 3. For the exception of a few components which may be made of bronze or nickel brass
 4. For the exception of a few components which may have a higher Ra finish
 5. Cleaning and passivation operations are performed by pulviseration or immersion depending on specified treatment and SOP level
 6. Or equivalent procedure