

ITEM #	TAG #	MANUFACTURER	MANUFACTURER PART #	SERIAL # / LOT #	SMI PART #	DESCRIPTION	MATERIAL	ACTUATION	RANGE	ELEC. SPEC.	CONN. TYPE	SIZE	LOCATION
1	AIT-020 / AE-104 / AE-019	Rosemount Analytical	1056-02-21-30-AN-JUL / 4600007-LC	L19-21487579-001	051676	Analyzer, panel mount unit, dual input toroidal and contacting conductivity measurement, ul approval	316L SS	N/A	N/A	24VDC	N/A	N/A	Panel
			225-08-56-99CB25-99SQ8889	L19-21486827-001		Sensor, toroidal, unfilled usp class VI peek with 25 ft cable	PEEK		0 - 100 mS/CM		TC	2.0"	Separator Tank
			403-11-21-99CB25-99SQ8889	L19-21428171-001		Sensor, contacting, 0.01/cm cell constant with 25 ft cable, 16Ra EP finish (Mtr's & loop calibration cert. with analyzer req'd)	316L SS		0 - 10 uS/CM		TC	2.0"	CIP Return
2	CV-016	Dixon	YB45BY-R300	N/A	046145	Y-Ball check valve, 316L SS, 3.0" TC, PTFE ball, EPDM gasket, 25Ra max internal finish (Material CofC and Surface Finish Certs Req'd)	316L SS	N/A	N/A	N/A	TC	3.0"	CIP Return
3	CV-107	DFT	215EBA4A3EPQC (Was: 2114EPQC)	N/A	044772	Valve, check, horizontal mount, 0.36 psig cracking pressure, EPDM elastomers, 15 Ra max internal finish, electropolished (MTR's and Surface Finish Certs Req's)	316L SS	N/A	N/A	N/A	TC	1.0"	Vent
4	CV-108	DFT	215KBA4A3EPQC (Was: 2119EPQC)	N/A	044294 w/ (054597 Spring)	Valve, check, horizontal mount, 2 psig cracking pressure, EPDM elastomers, 15 Ra max internal finish, electropolished (MTR's and Surface Finish Certs Req's)	316L SS	N/A	N/A	N/A	TC	3.0"	Overflow
5	CV-204	Swagelok	SS-CHS88235-10	0002319394	021353	Check valve, 10 psi cracking pressure, Fluorocarbon FKM O-ring (MTR's Req'd)	316L SS	N/A	N/A	N/A	TC x Comp	0.50"	Chem 1 - Alkaline
6	CV-304	Swagelok	SS-CHS88235-10	0002319394	021353	Check valve, 10 psi cracking pressure, Fluorocarbon FKM O-ring (MTR's Req'd)	316L SS	N/A	N/A	N/A	TC x Comp	0.50"	Chem 2 - Acid
7	EDU-007	Sani-Matic	240510	N/A	240510	Eductor, Teflon encapsulated Viton O-Ring, 25 Ra internal finish / 32 Ra external finish, 110 GPM (415 LPM) maximum return (Material and Surface Finish Certs Req'd)	316L SS	N/A	N/A	N/A	TC (Motive) TC (In) TC (Out)	2.0" 3.0" 2.5"	Circulation Line



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8	EH-004 TE-004	Glo-Quartz	D4SB-15QQ38-E3X-KTC	N/A	045097	Heater, electric, 38" long 316L SS electropolished elements, SS electrical box, retaining ring, 15 KW, type K thermocouple with 19" well (Material Certs Req'd)	316L SS	N/A	N/A	460 VAC 3 Ph 60 Hz	TC	4.0"	CIP Supply
9	FCV-003	Saunders	1.500-GC065-SPT5-PR	479423-001 (Lot serial number)	-	Diaphragm valve, forged body, 25 Ra max ID, as-cast external finish, modified PTFE / EPDM backed diaphragm, S360 Power SS pneumatic actuator (Material, Surface Finish, & Diaphragm Certs Req'd)	316L SS	F.C.	N/A	N/A	BW x TC	1.5"	CIP Supply
10	FCV-004	Saunders	1.500-GC065-SPT5-PR	479423-001 (Lot serial number)	-	Diaphragm valve, forged body, 25 Ra max ID, as-cast external finish, modified PTFE / EPDM backed diaphragm, S360 Power SS pneumatic actuator (Material, Surface Finish, & Diaphragm Certs Req'd)	316L SS	F.C.	N/A	N/A	BW x TC	1.5"	Potable Water Supply
11	FCV-006	Saunders	2.000 x 0.750-ZW0301X-8/8/0-5-SLT5-PR	4-66235-1-1	048661	Zero deadleg diaphragm valve, back outlet, forged body, 25 Ra internal finish, modified PTFE / EPDM backed diaphragm, S360 Lite SS pneumatic actuator (Material, Surface Finish, & Diaphragm Certs Req'd)	316L SS	F.C.	N/A	N/A	BW	2.0"	Circulation Line
12	FIT-010	Hoffer	HO3A2X2A-11-150-C1-1(RPR51P12)X-2TRI-SP / HRT1-3-R-W-5-X-X-X	184599 184560	045639	Flowmeter, turbine, 316L SS body with 15Ra electropolished finish, 17-4 SS rotor, hard carbon bearing, remote mount transmitter with display, explosion proof housing (Material, Surface Finish, and Calibration Certs Req'd)	316L SS	N/A	4-20 mA = 0 - 150 GPM	24 VDC	TC	2.0"	CIP Supply
13	FLT-109	Allegheny Bradford	US-I-01-5-R21-XXT-X	048816-1-1-1	047684	Filter housing, In-Line, 1 cartridge x 5" high, type 226 code 7 cartridge socket, rated for 150 PSIG/FV @ -20/300° F, 20 Ra max ID, 32 Ra OD, class VI PTFE encapsulated EPDM gasket, no vent, no drain (Pharmaceutical Documentation Req'd)	316L SS	N/A	N/A	N/A	TC	1.0"	Vent
14	FLT-109A	Global Filter	PPTFE0.2A5C6S	N/A	051957	Filter element, 5" hydrophobic, 0.2 micron, Silicone O-ring, Code 7	Hydrophobic PTFE	N/A	N/A	N/A	Code 7	Code 7	Air Blow Filter Housing



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15	FY-003	Saunders	Mounting Adapter: WPL157969KMTGKIT (Modified)	N/A	238878 / 238875	Mounting adapter (Modified - 048793) for 1.5" & 2" Saunders S360 actuator with mounting hardware	N/A	N/A	4-20 mA = 0-100%	24 VDC	N/A	N/A	CIP Supply
		Burkert	Positioner: 00307045	20081	040345	Positioner, digital electropneumatic with display, Type 8692, single acting							
16	FY-004	Saunders	Mounting Adapter: WPL157969KMTGKIT (Modified)	N/A	238878 / 238875	Mounting adapter (Modified - 048793) for 1.5" & 2" Saunders S360 actuator with mounting hardware	N/A	N/A	4-20 mA = 0-100%	24 VDC	N/A	N/A	Potable Water Supply
		Burkert	Positioner: 00307045	20080	040345	Positioner, digital electropneumatic with display, Type 8692, single acting							
17	FY-006	Saunders	Mounting Adapter: WPL156963KMTGKIT	N/A	048793	Mounting adapter for 0.75" & 1" Saunders S360 actuator with mounting hardware	N/A	N/A	4-20 mA = 0-100%	24 VDC	N/A	N/A	Drain
		Burkert	Positioner: 00307045	20071	040345	Positioner, digital electropneumatic with display, Type 8692, single acting							
18	HV-203	Swagelok	SS-43GS4	0002576071	032434	Valve, ball, 2-way, S.S. ball/stem, modified PTFE packing	316 SS	Manual	N/A	N/A	Comp.	0.25"	Chem 1 - Alkaline
19	HV-303	Swagelok	SS-43GS4	0002576071	032434	Valve, ball, 2-way, S.S. ball/stem, modified PTFE packing	316 SS	Manual	N/A	N/A	Comp.	0.25"	Chem 2 - Acid
20	LSH-101	Endress & Hauser	FTL51H-ATC2CD4E4B-6"	PC005315029	041605	Vibration level switch, Liquiphant M, 15Ra electropolished finish, relay DPDT contacts, polyester NEMA 4X housing, 1/2" NPT conduit connection, 6" Insertion (Material and Surface Finish Certs Req'd)	316L SS	N/A	N/A	24V DC	TC	1.5"	Separator Tank Top
21	LSL-105	Endress & Hauser	FTL51H-AEE2CD4E4B-9"	PC005115029	041579	Vibration level switch, Liquiphant M, 15Ra electropolished finish, flush mount connection, relay DPDT contacts, polyester NEMA 4X housing, 1/2" NPT conduit connection, 9" insertion (Material and Surface Finish Certs Req'd)	316L SS	N/A	N/A	24V DC	Spud	N/A	Separator Tank Bottom
22	LSL-201	IFM Efector	KI5083 / EVT446	N/A	028332 / 053375	Level switch, 30 mm proximity type / Cable, M12 Connectors, 4M Long	Polypropylene	N/A	N/A	24 VDC	N/A	N/A	Chem #1



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23	LSL-301	IFM Efector	K15083 / EVT446	N/A	028332 / 053375	Level switch, 30 mm proximity type / Cable, M12 Connectors, 4M Long	Polypropylene	N/A	N/A	24 VDC	N/A	N/A	Chem #2
24	LSM-110	Endress & Hauser	FTL51H-ATC2CD4E4B-6"	PC005215029	041605	Vibration level switch, Liquiphant M, 15Ra electropolished finish, relay DPDT contacts, polyester NEMA 4X housing, 1/2" NPT conduit connection, 6" Insertion (Material and Surface Finish Certs Req'd)	316L SS	N/A	N/A	24 VDC	TC	1.5"	Separator Side Wall
25	P-001	Fristam Baldor	FPX-1742 - 170 1207387954-000010	FPX17421906756 C1912040392	053986 w/ 054389 Impeller	Centrifugal pump, 170mm impeller, USP Class VI EPDM elastomers, Split Center Seal, Silicon Carbide / Carbon, vertical discharge, 3/4" TC horizontal elbow right case drain, 25 Ra internal finish, 25 Hp Baldor motor, TEFC - Baldor IEEE 841XL Severe Duty (IP56), 1.15 service factor, F2 Floor Mount w/ Conduit Box on Right, 3500 RPM, 284TSC frame size (Material, Surface Finish, and Elastomer Certs Req'd)	316L SS	N/A	Pump sized for 200 gpm @ 100 psig	230/460 VAC 3 Phase 60 Hz	TC	2.5" (Inlet) 2.0" (outlet)	Circulation Line
26	P-202	Wilden	P.025/PZPPP/TNL/TF/PTV	0030697003	900028	Pump, diaphragm air operated, PTFE w/Neoprene back-up, PTFE valve ball, polypropylene valve seat and PTFE encap. Viton valve seat O-ring	Polypropylene PTFE	N/A	1.5 GPM @ 40 PSIG (3 SCFM Supply)	N/A	FNPT	0.25"	Chem 1 - Alkaline
27	P-302	Wilden	P.025/PZPPP/TNL/TF/PTV	0030656922	900028	Pump, diaphragm air operated, PTFE w/Neoprene back-up, PTFE valve ball, polypropylene valve seat and PTFE encap. Viton valve seat O-ring	Polypropylene PTFE	N/A	1.5 GPM @ 40 PSIG (3 SCFM Supply)	N/A	FNPT	0.25"	Chem 2 - Acid
28	PIT-009	Rosemount	3051CG4A22A1AS1M5 Q4Q8Q16 1199WNA93SSCW50L A00H	0147271	046802	Pressure transmitter, coplanar, HART protocol, epoxy coated aluminum housing, single integral mounted diaphragm seal, LCD display, 316L SS with 20 Ra finish (Material, Surface Finish, & Calibration Certs Req'd)	316L SS	N/A	4-20 mA = 0-100 PSIG	24 VDC	TC	2.0"	CIP Supply Line
29	PSE-106	Sani-Matic	207321	N/A	207321	Rupture Disk Holder, 3" TC, 20 Ra Internal Finish (Material and Surface Finish Certs Req'd)	316L SS	N/A	N/A	N/A	TC	3.0"	Separator Vent



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30	PSE-106A PSH-106	Fike	3" AXIUS SC-BI	1965967	047180	Rupture disk, +15 psig/FV, 0% manufacturing design range, +/-2 psig burst tolerance, 80°C design temp, 316L SS disk with 15Ra EP finish, Class VI EPDM gasket, integral 24V DC burst sensor (MTR's, Surface Finish Certs, & Burst Test Report Req'd) Burst indicator cable, 25ft, quick connector	316L SS	N/A	+15 PSIG	24V DC	TC	3.0"	Separator Vent
31	SG-100	L.J. Star	METACLAMP-2.5S	551737/87281	047043	Sight glass, 2205 Duplex SS, borosilicate glass, 10Ra finish (Material and Surface Finish Certs Req'd)	SS Borosilicate	N/A	N/A	N/A	TC	2.5"	Separator Tank
32	SV-011	ITT Pure-Flo	SV-W-0.5-419-0.5-X19-EPDM	434194	022142	Sample valve, EPDM O-ring/seal, Polyphenylsulfone handwheel, 15 Ra electropolish ID finish (Material, Surface Finish, & Gasket Certs Req'd)	316L SS EPDM	Manual	N/A	N/A	TC	0.50"	Sample Valve
33	TK-100	Sani-Matic	223901	N/A	223901	Separator tank, Ø10" x 35" S.W., non-ASME, atmospheric, 25 Ra internal finish / 32 Ra external finish with welds ground smooth & polished ID/OD, Class VI Viton elastomer Fittings: (N1) 1.0" TC Top Head: PW (N2) 1.0" TC Top Head: Spare (N3) 1.5" TC Top Head: Level - High (N4) 0.5" TC Top Head: Chem #2 - Alkaline (N5) 0.5" TC Top Head: Chem #1 - Acid (N6) 2.0" TC Top Head: Overflow/Vent (N7) 2.5" TC Side Wall: Circulation (N8) 2.5" TC Side Wall: Inspection Port (N9) 2.0" TC Side Wall: Conductivity (N10) 2.5" TC Side Wall: Outlet (N11) Spud Bottom Head: Level - Low (N12) 1.5" TC Side Wall: Level - Mid (Material Certs, Surface Finish Certs, and Heat Map Req'd)	316L SS	N/A	N/A	N/A	See Fittings List	13 Gal.	CIP Tank
34	TK-200 CV-206	Sani-Matic	184538	N/A	184538	Chemical jug with diptube & foot valve assembly	Polyethylene	N/A	N/A	N/A	N/A	5 Gal.	Chem 1 - Alkaline



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35	TK-300 CV-306	Sani-Matic	184537	N/A	184537	Chemical jug with diptube & foot valve assembly	Polyethylene	N/A	N/A	N/A	N/A	5 Gal.	Chem 2 - Acid
36	TE/TT-005	Pyromation	R5T185L483-01(1/2)-CIPZZ-2-5-63,T-440-385U-S(0-100)C,(Z013, Z858)	DDAEB0	039406	RTD and transmitter, single element RTD, +/- 0.1% accuracy, 100 Ohm, 1 1/2" insertion, 316L SS with 15Ra max finish, polypropylene head (Calibration, Material, and Surface Finish Certs Required)	316L SS	N/A	4-20 mA = 0-100° C	24 VDC	TC	2.0"	Circulation Line
37	TE/TT-017	Pyromation	R5T185L483-01(1/2)-CIPZZ-2-5-63,T-440-385U-S(0-100)C,(Z013, Z858)	DDAEB2	039406	RTD and transmitter, single element RTD, +/- 0.1% accuracy, 100 Ohm, 1 1/2" insertion, 316L SS with 15Ra max finish, polypropylene head (Calibration, Material, and Surface Finish Certs Required)	316L SS	N/A	4-20 mA = 0-100° C	24 VDC	TC	2.0"	CIP Return
38	TE/TT-018	Pyromation	R5T185L483-01(1/2)-CIPZZ-2-5-63,T-440-385U-S(0-100)C,(Z013, Z858)	DDAEB3	039406	RTD and transmitter, single element RTD, +/- 0.1% accuracy, 100 Ohm, 1 1/2" insertion, 316L SS with 15Ra max finish, polypropylene head (Calibration, Material, and Surface Finish Certs Required)	316L SS	N/A	4-20 mA = 0-100° C	24 VDC	TC	2.0"	Drain - Cooling
39	XV-002	Saunders	0.750-G0065-SLT5-PR	4-86225-4-1	044360	Diaphragm valve, forged body, 25 Ra max ID, as-cast external finish, modified PTFE / EPDM backed diaphragm, S360 Lite SS pneumatic actuator (Material, Surface Finish, & Diaphragm Certs Req'd)	316L SS	F.C.	N/A	N/A	TC	0.75"	Supply Pump Casing Drain
40	XV-018	Saunders	0.750-G0065-SLT5-PR	4-86225-4-2	044360	Diaphragm valve, forged body, 25 Ra max ID, as-cast external finish, modified PTFE / EPDM backed diaphragm, S360 Lite SS pneumatic actuator (Material, Surface Finish, & Diaphragm Certs Req'd)	316L SS	F.C.	N/A	N/A	TC	0.75"	CIP Return Low Point Drain
41	XV-030	Saunders	2.000-GC065-SLT5-PR	4-86192-2-1	052513	Diaphragm valve, forged body, 25 Ra max ID, as-cast external finish, modified PTFE / EPDM backed diaphragm, S360 Lite SS pneumatic actuator (Material, Surface Finish, & Diaphragm Certs Req'd)	316L SS	F.C.	N/A	N/A	BW x TC	2.0"	Drain - Cooling



SANI-MATIC

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SMI PROJECT # 107657

CUSTOMER: Aphena Pharma Solutions

ULTRAFLOW 1.0 CIP SYSTEM
MECHANICAL BILL OF MATERIALS

JUL 20
Rev. D

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42	XV-031	Saunders	2.000-GC065-SLT5-PR	4-86192-2-2	052513	Diaphragm valve, forged body, 25 Ra max ID, as-cast external finish, modified PTFE / EPDM backed diaphragm, S360 Lite SS pneumatic actuator (Material, Surface Finish, & Diaphragm Certs Req'd)	316L SS	F.C.	N/A	N/A	BW x TC	2.0"	Drain - Tote
43	XV-103	Saunders	1.000-G0065-SLT5-PR	4-86225-5-1	044356	Diaphragm valve, forged body, 25 Ra max ID, as-cast external finish, modified PTFE / EPDM backed diaphragm, S360 Lite SS pneumatic actuator (Material, Surface Finish, & Diaphragm Certs Req'd)	316L SS	F.C.	N/A	N/A	TC	1.0"	PW Supply
44	XV-205	Saunders	0.500-G0065-EC5FP-PR	4-86225-9-1	050734	Diaphragm valve, forged body, 25 Ra max ID, as-cast external finish, modified PTFE / EPDM backed diaphragm, EC5P black plastic shell pneumatic actuator (Material, Surface Finish, & Diaphragm Certs Req'd)	316L SS	F.C.	N/A	N/A	TC	0.50"	Chem 1 - Alkaline
45	XV-305	Saunders	0.500-G0065-EC5FP-PR	4-86225-9-2	050734	Diaphragm valve, forged body, 25 Ra max ID, as-cast external finish, modified PTFE / EPDM backed diaphragm, EC5P black plastic shell pneumatic actuator (Material, Surface Finish, & Diaphragm Certs Req'd)	316L SS	F.C.	N/A	N/A	TC	0.50"	Chem 2 - Acid
46	XV-401	Saunders	2.000-GC065-SLT5-PR	4-86192-2-3	052513	Diaphragm valve, forged body, 25 Ra max ID, as-cast external finish, modified PTFE / EPDM backed diaphragm, S360 Lite SS pneumatic actuator (Material, Surface Finish, & Diaphragm Certs Req'd)	316L SS	F.C.	N/A	N/A	BW x TC	2.0"	CIP Supply - Zone 1
47	XV-402	Saunders	2.000-GC065-SLT5-PR	4-86192-2-4	052513	Diaphragm valve, forged body, 25 Ra max ID, as-cast external finish, modified PTFE / EPDM backed diaphragm, S360 Lite SS pneumatic actuator (Material, Surface Finish, & Diaphragm Certs Req'd)	316L SS	F.C.	N/A	N/A	BW x TC	2.0"	CIP Supply - Zone 2



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Rev. A: 3 Dec 2019

- Released for Customer Approval

Rev. B: 20 Dec 2019

- Updated per GA and CHG-001

Rev. C: 20 Apr 2020

-Replace XV-205 & XV-305 w/ EC5P series actuator

-Per FAT

Rev. F: 20 July 2020

-Per additional testing