



Inspection Documents for Type 2.1 Coverage:

Python Chemical Injection Pumps

Date: September 8th, 2017

Size: 19 (3/16" Plunger)

Description: PCI-xxx-19x-xx-x

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Test Certification
Graco XRF Material Verification(s)

Graco Inc. certifies that the above product be manufactured by Graco Inc. and tested to meet all applicable Graco engineering/manufacturing/quality standards and specifications.

Graco manufacturing and product development facilities are certified to ISO 9001:2008.

A handwritten signature in black ink that reads 'Sarah J. Bergstrom'.

Sarah J. Bergstrom
Quality Engineer
Graco Inc.



Test Certificate

Product Family: Python Chemical Injection Pumps

Size: 19 (3/16" Plunger)

Description Reference: PCI-xxx-19x-xx-x

Manufacturing Test Frequency: 100%

Test results:

Low pressure startup check: Pass Fail

Stall pressure validation: Pass Fail

Pump operation at maximum pressure: Pass Fail

External fluid leak check: Pass Fail

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A handwritten signature in black ink that reads 'Sarah J. Bergstrom'.

Sarah J. Bergstrom

Quality Engineer

Graco Inc.



Certificate of Material

Date: September 8, 2017

Product Family: Python Chemical Injection Pumps

Size: 19 (3/16" Plunger)

Description Reference: PCI-xxx-19x-xx-x

Part Number	Wetted Part Description	Material Description
17G512	Cylinder,Fluid,188	316 SST
17H599	Plunger,Fluid,Chromex,188	17-4 SST (Chromex Coated)
17K802	Plunger,Coated,Ceramic,19,Python	17-4 SST (CERAMIC COATED)
17G111	Bearing,Plunger,Cip 19,Peek	PEEK
17L128	Nut,Packing,Plunger,25,Python	316 SST
17K196	Needle,Bleed,Pressure,High	316 SST
17K191	Housing,Front,Check,Inlet,2pc,Hp	316 SST
17K192	Housing,Back,Check,Inlet,2pc,Hp	316 SST
17K193	Housing,Front,Check,Outlet,2PC,Hp	316 SST
17K194	Housing,Back,Check,Outlet,2PC,Hp	316 SST
17K195	Piston,Valve,Check,High Pressure	316 SST
17K234	Retainer,Valve,Check,NPT,Small	316 SST
17K245	Spring,Valve,Check,Pressure,High	316 SST

Graco Inc. certifies the above product was manufactured and tested to meet all applicable Graco Engineering/Manufacturing/Quality Standards and Specifications.

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Bradley A. Byron
Quality Manager
Graco Inc.



Graco, Inc.
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Certificate of Verification

XL3-89733

Reading No 916
Mode General Metals
Time 2017-09-08 12:39
Duration 24.64
Units %
Sigma Value 2
Sequence Final
Alloy1 SS-316 : 0.00
Alloy2 No Match : *4.34
Flags
SAMPLE 17G512
HEAT
LOT
BATCH
MISC
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.022	±	0.007
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	2.330	±	0.017
Nb	0.012	±	0.002
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0	:	N/A
Zn	0	:	N/A
Cu	0.558	±	0.038
Ni	10.597	±	0.117
Co	0	:	N/A
Fe	67.993	±	0.156
Mn	1.535	±	0.069
Cr	16.674	±	0.084
V	0.106	±	0.025
Ti	0	:	N/A
Al	0	:	N/A

Supervised By: _____

Sarah Bugstrom



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Reading No 867
Mode General Metals
Time 2017-09-08 11:20
Duration 20.52
Units %
Sigma Value 2
Sequence Final
Alloy1 17-4 PH : *3.38
Alloy2
Flags
SAMPLE 17H599
HEAT
LOT
BATCH
MISC
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.013	±	0.004
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	0.119	±	0.003
Nb	0.178	±	0.004
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0	:	N/A
Zn	0	:	N/A
Cu	2.866	±	0.046
Ni	4.461	±	0.066
Co	0	:	N/A
Fe	76.119	±	0.121
Mn	0.555	±	0.048
Cr	*15.416	±	0.063
V	0.109	±	0.018
Ti	0.064	±	0.021
Al	0	:	N/A

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Reading No 894
Mode General Metals
Time 2017-09-08 12:03
Duration 30.39
Units %
Sigma Value 2
Sequence Final
Alloy1 SS-316 : 0.00
Alloy2 No Match : *5.02
Flags
SAMPLE 17K191
HEAT
LOT
BATCH
MISC
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.015	±	0.003
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	2.029	±	0.008
Nb	0.014	±	0.001
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0.037	±	0.011
Zn	0	:	N/A
Cu	0.418	±	0.019
Ni	10.643	±	0.063
Co	0.178	±	0.045
Fe	68.412	±	0.083
Mn	1.386	±	0.037
Cr	16.723	±	0.045
V	0.118	±	0.013
Ti	0	:	N/A
Al	0	:	N/A

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Reading No 898
 Mode General Metals
 Time 2017-09-08 12:11
 Duration 25.82
 Units %
 Sigma Value 2
 Sequence Final
 Alloy1 SS-316 : 0.00
 Alloy2 No Match : *4.65
 Flags
 SAMPLE 17K192
 HEAT
 LOT
 BATCH
 MISC
 NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.031	±	0.004
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	2.051	±	0.010
Nb	0.016	±	0.001
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0.034	±	0.013
Zn	0	:	N/A
Cu	0.276	±	0.021
Ni	10.663	±	0.073
Co	0.229	±	0.053
Fe	68.185	±	0.097
Mn	1.374	±	0.043
Cr	16.929	±	0.053
V	0.152	±	0.016
Ti	0.041	±	0.018
Al	0	:	N/A

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Reading No 931
Mode General Metals
Time 2017-09-11 09:29
Duration 28.79
Units %
Sigma Value 2
Sequence Final
Alloy1 SS-316 : 0.00
Alloy2 No Match : *4.77
Flags
SAMPLE 17K193
HEAT
LOT
BATCH
MISC
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.015	±	0.003
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Mo	2.040	±	0.009
Nb	0.045	±	0.002
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0.073	±	0.012
Zn	0	:	N/A
Cu	0.403	±	0.019
Ni	10.586	±	0.065
Co	0.222	±	0.047
Fe	68.229	±	0.087
Mn	1.473	±	0.039
Cr	16.727	±	0.047
V	0.137	±	0.014
Ti	0.039	±	0.016
Al	0	:	N/A
Ru	0	:	N/A

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XL3-89733

Reading No 897
Mode General Metals
Time 2017-09-08 12:10
Duration 27.80
Units %
Sigma Value 2
Sequence Final
Alloy1 SS-316 : 0.00
Alloy2 No Match : *3.66
Flags
SAMPLE 17K194
HEAT
LOT
BATCH
MISC
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.018	±	0.004
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	2.033	±	0.009
Nb	0.014	±	0.001
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0.033	±	0.012
Zn	0	:	N/A
Cu	0.483	±	0.022
Ni	10.264	±	0.070
Co	0	:	N/A
Fe	68.268	±	0.095
Mn	1.608	±	0.043
Cr	17.047	±	0.052
V	0.102	±	0.015
Ti	0	:	N/A
Al	0	:	N/A

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Reading No 901
Mode General Metals
Time 2017-09-08 12:14
Duration 22.69
Units %
Sigma Value 2
Sequence Final
Alloy1 SS-316 : 0.00
Alloy2 No Match : *4.83
Flags
SAMPLE 17K195
HEAT
LOT
BATCH
MISC
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.016	±	0.005
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	2.065	±	0.014
Nb	0.025	±	0.002
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0.109	±	0.024
Zn	0	:	N/A
Cu	0.269	±	0.029
Ni	10.718	±	0.103
Co	0.360	±	0.074
Fe	68.226	±	0.138
Mn	1.372	±	0.060
Cr	16.611	±	0.074
V	0.192	±	0.023
Ti	0	:	N/A
Al	0	:	N/A

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Reading No 895
Mode General Metals
Time 2017-09-08 12:07
Duration 22.35
Units %
Sigma Value 2
Sequence Final
Alloy1 SS-316 : 0.00
Alloy2 No Match : *5.02
Flags
SAMPLE 17K196
HEAT
LOT
BATCH
MISC
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.015	±	0.004
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	1.984	±	0.011
Nb	0.035	±	0.002
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0.042	±	0.015
Zn	0.014	±	0.006
Cu	0.529	±	0.026
Ni	10.819	±	0.083
Co	0	:	N/A
Fe	68.275	±	0.110
Mn	1.487	±	0.049
Cr	16.682	±	0.060
V	0.089	±	0.017
Ti	0	:	N/A
Al	0	:	N/A

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Reading No 902
Mode General Metals
Time 2017-09-08 12:16
Duration 24.12
Units %
Sigma Value 2
Sequence Final
Alloy1 SS-316 : 0.00
Alloy2 No Match : *3.89
Flags
SAMPLE 17K234
HEAT
LOT
BATCH
MISC
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.013	±	0.004
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	2.101	±	0.010
Nb	0.010	±	0.001
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0.034	±	0.013
Zn	0	:	N/A
Cu	0.430	±	0.023
Ni	10.326	±	0.076
Co	0.187	±	0.056
Fe	68.247	±	0.102
Mn	1.576	±	0.046
Cr	16.940	±	0.056
V	0.092	±	0.016
Ti	0	:	N/A
Al	0	:	N/A

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XL3-89733

Reading No 909
Mode General Metals
Time 2017-09-08 12:28
Duration 12.94
Units %
Sigma Value 2
Sequence Final
Alloy1 SS-316 : *3.27
Alloy2 No Match : *4.46
Flags
SAMPLE 17K245
HEAT
LOT
BATCH
MISC
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0	:	N/A
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	1.965	±	0.137
Nb	0	:	N/A
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0	:	N/A
Zn	0	:	N/A
Cu	0	:	N/A
Ni	*22.242	±	1.328
Co	0	:	N/A
Fe	*58.486	±	1.801
Mn	1.177	±	0.145
Cr	15.795	±	0.222
V	0.057	±	0.017
Ti	0	:	N/A
Al	0	:	N/A
S	0	:	N/A
P	0	:	N/A
Si	0	:	N/A
Mg	0	:	N/A

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XL3-89733

Reading No 881
Mode General Metals
Time 2017-09-08 11:48
Duration 6.11
Units %
Sigma Value 2
Sequence Final
Alloy1 17-4 PH : *3.05
Alloy2
Flags
SAMPLE 17K802
HEAT
LOT
BATCH
MISC
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0	:	N/A
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	0.113	±	0.005
Nb	0.171	±	0.007
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0	:	N/A
Zn	0	:	N/A
Cu	2.838	±	0.093
Ni	4.425	±	0.132
Co	0	:	N/A
Fe	76.226	±	0.249
Mn	0.690	±	0.098
Cr	*15.361	±	0.126
V	0.099	±	0.036
Ti	0	:	N/A
Al	0	:	N/A

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Certificate of Verification

XL3-89733

Reading No 918
Mode General Metals
Time 2017-09-08 12:41
Duration 29.23
Units %
Sigma Value 2
Sequence Final
Alloy1 SS-316 : 0.00
Alloy2 No Match : *4.84
Flags
SAMPLE 17L128
HEAT
LOT
BATCH
MISC
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.016	±	0.004
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	2.030	±	0.009
Nb	0.025	±	0.001
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0.047	±	0.013
Zn	0	:	N/A
Cu	0.302	±	0.020
Ni	10.747	±	0.071
Co	0.243	±	0.051
Fe	68.318	±	0.094
Mn	1.347	±	0.042
Cr	16.750	±	0.051
V	0.127	±	0.015
Ti	0	:	N/A
Al	0	:	N/A

Supervised By: _____

Sarah Bugstrom