



# Inspection Documents for Type 2.1 Coverage:

Python Chemical Injection Pumps

Date: September 8th, 2017

Size: 19 (3/16" Plunger)

Description: PCI-xxx-25x-xx-x

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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 9001:2015.

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:** 25 (1/4" Plunger)

**Description Reference:** PCI-xxx-25x-xx-x

Manufacturing Test Frequency: 100%

Test results:

Low pressure startup check:	Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>
Stall pressure validation:	Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>
Pump operation at maximum pressure:	Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>
External fluid leak check:	Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>

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. All information provided herein is intended for Graco use and not intended to be duplicated or replicated.

Graco manufacturing and product development facilities are certified to ISO 9001:2015.

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:** 25 (1/4" Plunger)

**Description Reference:** PCI-xxx-25x-xx-x

<b>Part Number</b>	<b>Wetted Part Description</b>	<b>Material Description</b>
17D653	Cylinder,Fluid,250	316 SST
17H600	Plunger,Fluid,Chromex,250	17-4 SST (Chromex Coated)
17K803	Plunger,Coated,Ceramic,25,Python	17-4 SST (Ceramic Coated)
17D943	Bearing,Plunger,Cip 25,Peek	Peek
17L128	Nut,Packing,Plunger,25,Python	316 SST
17F573	Housing,Needle,Bleed	316 SST
17F572	Needle,Bleed	316 SST
17K232	Housing,Valve,Check,Inlet,NPT,Sm	316 SST
17K233	Housing,Valve,Check,Outlet,NPT,Sm	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.

Graco manufacturing and product development facilities are certified to ISO 9001:2015.

Bradley A. Byron  
Quality Manager  
Graco Inc.

Graco Inc. 88-11th Avenue NE Minneapolis MN 55413  
Telephone: 612.623.6000 Fax: 612.623.6273

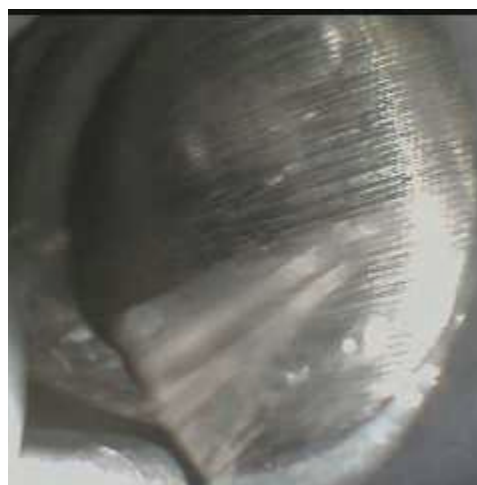


Graco, Inc.  
 88 11th Avenue NE  
 Minneapolis, MN 55413 USA

### Certificate of Verification

XL3-89733

Reading No 914  
 Mode General Metals  
 Time 2017-09-08 12:36  
 Duration 30.78  
 Units %  
 Sigma Value 2  
 Sequence Final  
 Alloy1 SS-316 : 1.36  
 Alloy2 No Match : \*4.41  
 Flags  
 SAMPLE 17D653  
 HEAT  
 LOT  
 BATCH  
 MISC  
 NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.019	±	0.003
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	2.079	±	0.009
Nb	0.035	±	0.001
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0.175	±	0.015
Zn	0	:	N/A
Cu	0.525	±	0.020
Ni	10.147	±	0.064
Co	0.529	±	0.048
Fe	67.743	±	0.087
Mn	1.713	±	0.039
Cr	16.876	±	0.047
V	0.102	±	0.014
Ti	0.043	±	0.016
Al	0	:	N/A

Supervised By: Sarah Bugstam



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### Certificate of Verification

XL3-89733

Reading No 889  
Mode General Metals  
Time 2017-09-08 12:00  
Duration 25.64  
Units %  
Sigma Value 2  
Sequence Final  
Alloy1 SS-316 : 0.00  
Alloy2 No Match : \*4.84  
Flags  
SAMPLE 17F572  
HEAT  
LOT  
BATCH  
MISC  
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.017	±	0.003
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	2.034	±	0.009
Nb	0.031	±	0.001
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0.079	±	0.013
Zn	0	:	N/A
Cu	0.331	±	0.020
Ni	10.646	±	0.069
Co	0.162	±	0.050
Fe	68.169	±	0.093
Mn	1.497	±	0.041
Cr	16.820	±	0.050
V	0.149	±	0.015
Ti	0.050	±	0.017
Al	0	:	N/A

Supervised By: \_\_\_\_\_

*Sarah Bugstrom*



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### Certificate of Verification

XL3-89733

Reading No 888  
Mode General Metals  
Time 2017-09-08 11:58  
Duration 24.04  
Units %  
Sigma Value 2  
Sequence Final  
Alloy1 SS-316 : 0.00  
Alloy2 No Match : \*3.18  
Flags  
SAMPLE 17F573  
HEAT  
LOT  
BATCH  
MISC  
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.019	±	0.004
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	2.080	±	0.010
Nb	0.005	±	0.001
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0.027	±	0.012
Zn	0	:	N/A
Cu	0.384	±	0.021
Ni	10.235	±	0.070
Co	0.200	±	0.052
Fe	68.040	±	0.095
Mn	1.788	±	0.044
Cr	17.117	±	0.052
V	0.069	±	0.014
Ti	0	:	N/A
Al	0	:	N/A

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### Certificate of Verification

XL3-89733

Reading No 809  
Mode General Metals  
Time 2017-09-08 09:40  
Duration 24.03  
Units %  
Sigma Value 2  
Sequence Final  
Alloy1 17-4 PH : \*3.87  
Alloy2 15-5 PH : \*3.89  
Flags  
SAMPLE 17H600  
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	0.098	±	0.004
Nb	0.231	±	0.007
Zr	0	:	N/A
Bi	0.007	±	0.003
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0	:	N/A
Zn	0	:	N/A
Cu	*1.970	±	0.063
Ni	*4.311	±	0.106
Co	0	:	N/A
Fe	77.309	±	0.411
Mn	0.659	±	0.074
Cr	15.111	±	0.095
V	0.109	±	0.012
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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### Certificate of Verification

XL3-89733

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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*Sarah Bugstam*





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### Certificate of Verification

XL3-89733

Reading No 890  
Mode General Metals  
Time 2017-09-08 12:01  
Duration 29.93  
Units %  
Sigma Value 2  
Sequence Final  
Alloy1 SS-316 : 0.00  
Alloy2 No Match : \*4.13  
Flags  
SAMPLE 17K232  
HEAT  
LOT  
BATCH  
MISC  
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.013	±	0.003
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	2.047	±	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	:	N/A
Zn	0	:	N/A
Cu	0.499	±	0.021
Ni	10.074	±	0.066
Co	0.151	±	0.049
Fe	68.745	±	0.089
Mn	1.395	±	0.040
Cr	16.892	±	0.049
V	0.100	±	0.014
Ti	0.045	±	0.017
Al	0	:	N/A

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### Certificate of Verification

XL3-89733

Reading No 892  
Mode General Metals  
Time 2017-09-08 12:04  
Duration 22.33  
Units %  
Sigma Value 2  
Sequence Final  
Alloy1 SS-316 : 0.00  
Alloy2 No Match : \*4.34  
Flags  
SAMPLE 17K233  
HEAT  
LOT  
BATCH  
MISC  
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.017	±	0.004
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	2.124	±	0.011
Nb	0.004	±	0.001
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	0.327	±	0.022
Ni	10.291	±	0.077
Co	0.116	±	0.057
Fe	68.474	±	0.105
Mn	1.777	±	0.048
Cr	16.710	±	0.057
V	0.092	±	0.016
Ti	0.044	±	0.019
Al	0	:	N/A

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### Certificate of Verification

XL3-89733

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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### Certificate of Verification

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

Supervised By: \_\_\_\_\_

*Sarah Bergstrom*

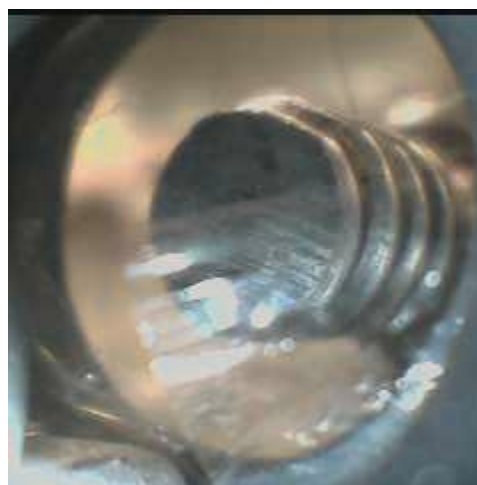


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88 11th Avenue NE  
Minneapolis, MN 55413 USA

### Certificate of Verification

XL3-89733

Reading No 1384  
Mode General Metals  
Time 2018-03-08 14:18  
Duration 30.78  
Units %  
Sigma Value 2  
Sequence Final  
Alloy1 17-4 PH : 1.33  
Alloy2 No Match : \*1.83  
Flags  
SAMPLE 17K803  
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	0.123	±	0.007
Nb	0.240	±	0.010
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	3.406	±	0.125
Ni	4.077	±	0.160
Co	0	:	N/A
Fe	75.902	±	0.327
Mn	0.964	±	0.125
Cr	15.161	±	0.157
V	0.104	±	0.044
Ti	0	:	N/A
Al	0	:	N/A

Supervised By: \_\_\_\_\_

*Sarah Bugstrom*



Graco, Inc.  
88 11th Avenue NE  
Minneapolis, MN 55413 USA

### 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*