



Inspection Documents for Type 2.1 Coverage:

Python Chemical Injection Pumps

Date: September 8th, 2017

Size: 50 (1/2" Plunger)

Description: PCI-xxx-50x-xx-x

Table of contents: Certificate of Material
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: 50 (1/2" Plunger)

Description Reference: PCI-xxx-50x-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

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 9001:2008.

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

Sarah J. Bergstrom

Quality Engineer

Graco Inc.



Certificate of Material

Date: September 8, 2017

Product Family: Python Chemical Injection Pumps

Size: 50 (1/2" Plunger)

Description Reference: PCI-xxx-50x-xx-x

Part Number	Wetted Part Description	Material Description
17D662	Cylinder,Fluid,500	316 SST
17H602	Plunger,Fluid,Chromex,500	17-4 SST (Chromex Coated)
17K805	Plunger,Coated,Ceramic,50,Python	17-4 SST (Ceramic Coated)
17D941	Bearing,Plunger,Cip 50,Peek	Peek
17L134	Nut,Packing,Plunger,50,Python	316 SST
17F573	Housing,Needle,Bleed	316 SST
17F572	Needle,Bleed	316 SST
17G005	Housing,Check,Inlet,CI Pump	316 SST
17G006	Housing,Check,Outlet,CI Pump	316 SST
17G130	Piston,Check, CIP	316 SST
17G131	Retainer,Check	316 SST
17G132	Spring,Compression,CIP Outlet	302 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 9001:2008.

A handwritten signature in black ink that reads 'Bradley A. Byron'.

Bradley A. Byron
Quality Manager
Graco Inc.



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

Certificate of Verification

XL3-89733

Reading No 912
 Mode General Metals
 Time 2017-09-08 12:34
 Duration 28.13
 Units %
 Sigma Value 2
 Sequence Final
 Alloy1 SS-316 : 0.00
 Alloy2 No Match : *5.01
 Flags
 SAMPLE 17D662
 HEAT
 LOT
 BATCH
 MISC
 NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.012	±	0.004
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	2.063	±	0.009
Nb	0.044	±	0.002
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0.075	±	0.014
Zn	0	:	N/A
Cu	0.449	±	0.022
Ni	10.695	±	0.071
Co	0.317	±	0.052
Fe	68.069	±	0.095
Mn	1.404	±	0.042
Cr	16.702	±	0.052
V	0.132	±	0.015
Ti	0	:	N/A
Al	0	:	N/A

Supervised By: Sarah Bugstrom



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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

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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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XL3-89733

Reading No 891
Mode General Metals
Time 2017-09-08 12:03
Duration 24.26
Units %
Sigma Value 2
Sequence Final
Alloy1 SS-316 : 0.00
Alloy2 No Match : *5.27
Flags
SAMPLE 17G005
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	2.091	±	0.010
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	:	N/A
Zn	0	:	N/A
Cu	0.857	±	0.027
Ni	11.192	±	0.076
Co	0.291	±	0.054
Fe	66.584	±	0.100
Mn	1.760	±	0.046
Cr	16.961	±	0.055
V	0.151	±	0.017
Ti	0.043	±	0.019
Al	0	:	N/A

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XL3-89733

Reading No 893
Mode General Metals
Time 2017-09-08 12:05
Duration 24.24
Units %
Sigma Value 2
Sequence Final
Alloy1 SS-316 : 0.00
Alloy2 No Match : *5.29
Flags
SAMPLE 17G006
HEAT
LOT
BATCH
MISC
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.011	±	0.004
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	2.085	±	0.010
Nb	0.026	±	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	±	0.013
Zn	0	:	N/A
Cu	0.856	±	0.026
Ni	11.199	±	0.074
Co	0.267	±	0.053
Fe	66.607	±	0.097
Mn	1.751	±	0.044
Cr	16.956	±	0.053
V	0.175	±	0.017
Ti	0	:	N/A
Al	0	:	N/A

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XL3-89733

Reading No 896
 Mode General Metals
 Time 2017-09-08 12:09
 Duration 30.71
 Units %
 Sigma Value 2
 Sequence Final
 Alloy1 SS-316 : 0.00
 Alloy2 No Match : *5.18
 Flags
 SAMPLE 17G130
 HEAT
 LOT
 BATCH
 MISC
 NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.010	±	0.003
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	2.024	±	0.009
Nb	0.058	±	0.002
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0.065	±	0.012
Zn	0	:	N/A
Cu	0.288	±	0.019
Ni	10.746	±	0.066
Co	0.262	±	0.048
Fe	68.490	±	0.088
Mn	1.333	±	0.039
Cr	16.556	±	0.048
V	0.119	±	0.014
Ti	0.033	±	0.016
Al	0	:	N/A

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XL3-89733

Reading No 900
Mode General Metals
Time 2017-09-08 12:13
Duration 25.84
Units %
Sigma Value 2
Sequence Final
Alloy1 SS-316 : 0.00
Alloy2 No Match : *4.96
Flags
SAMPLE 17G131
HEAT
LOT
BATCH
MISC
NOTE



	%	±	Error
Sb	0	:	N/A
Sn	0.014	±	0.004
Cd	0	:	N/A
Pd	0	:	N/A
Ag	0	:	N/A
Ru	0	:	N/A
Mo	1.983	±	0.010
Nb	0.058	±	0.002
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0.065	±	0.014
Zn	0.011	±	0.005
Cu	0.295	±	0.021
Ni	10.788	±	0.074
Co	0.305	±	0.054
Fe	68.454	±	0.098
Mn	1.302	±	0.043
Cr	16.546	±	0.053
V	0.132	±	0.016
Ti	0	:	N/A
Al	0	:	N/A

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Certificate of Verification

XL3-89733

Reading No 903
Mode General Metals
Time 2017-09-08 12:17
Duration 28.45
Units %
Sigma Value 2
Sequence Final
Alloy1 SS-302 : 0.08 No
Alloy2 Match : *1.84
Flags
SAMPLE 17G132
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	0.128	±	0.013
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	0.221	±	0.108
Ni	8.377	±	0.384
Co	0	:	N/A
Fe	71.622	±	0.907
Mn	1.235	±	0.219
Cr	18.102	±	0.286
V	0	:	N/A
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 Bugstrom

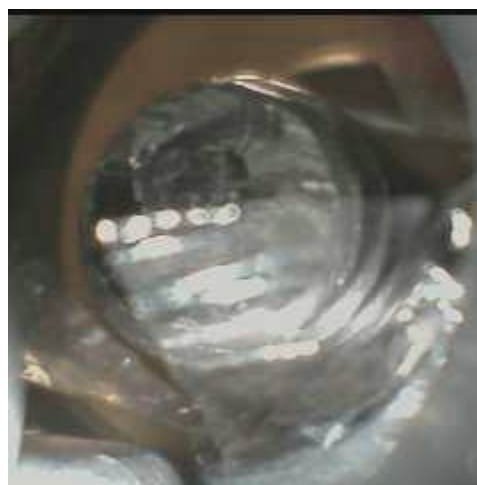


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Certificate of Verification

XL3-89733

Reading No 883
Mode General Metals
Time 2017-09-08 11:51
Duration 12.70
Units %
Sigma Value 2
Sequence Final
Alloy1 17-4 PH : *3.38
Alloy2
Flags
SAMPLE 17H602
HEAT
LOT
BATCH
MISC
NOTE



	%	±	Error
Sb	0.015	±	0.005
Sn	0.018	±	0.005
Cd	0	:	N/A
Pd	0.010	±	0.004
Ag	0	:	N/A
Ru	0	:	N/A
Mo	0.120	±	0.003
Nb	0.234	±	0.005
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	2.792	±	0.052
Ni	4.355	±	0.074
Co	0	:	N/A
Fe	76.421	±	0.148
Mn	0.600	±	0.055
Cr	*15.268	±	0.071
V	0.117	±	0.020
Ti	0	:	N/A
Al	0	:	N/A

Supervised By: _____

Sarah Bugstrom

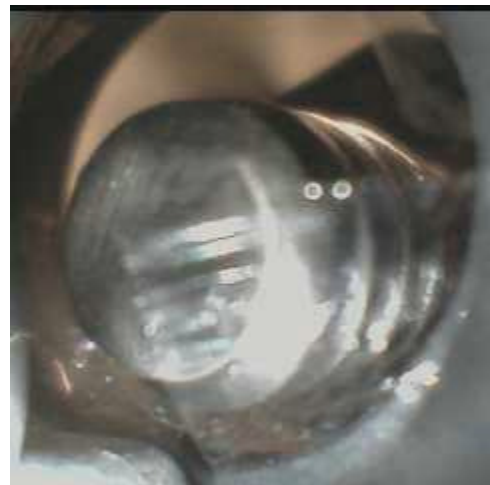


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 88 11th Avenue NE
 Minneapolis, MN 55413 USA

Certificate of Verification

XL3-89733

Reading No 930
 Mode General Metals
 Time 2017-09-11 09:24
 Duration 22.55
 Units %
 Sigma Value 2
 Sequence Final
 Alloy1 17-4 PH : *3.38
 Alloy2
 Flags
 SAMPLE 17K805
 HEAT
 LOT
 BATCH
 MISC
 NOTE



	%	±	Error
Sb	0.010	±	0.004
Sn	0.015	±	0.004
Cd	0	:	N/A
Pd	0.007	±	0.003
Ag	0	:	N/A
Mo	0.126	±	0.002
Nb	0.192	±	0.003
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	2.793	±	0.039
Ni	4.067	±	0.054
Co	0	:	N/A
Fe	75.266	±	0.103
Mn	0.517	±	0.042
Cr	*16.759	±	0.056
V	0.081	±	0.015
Ti	0.063	±	0.018
Al	0	:	N/A
Ru	0	:	N/A

Supervised By: *Sarah Bugstrom*

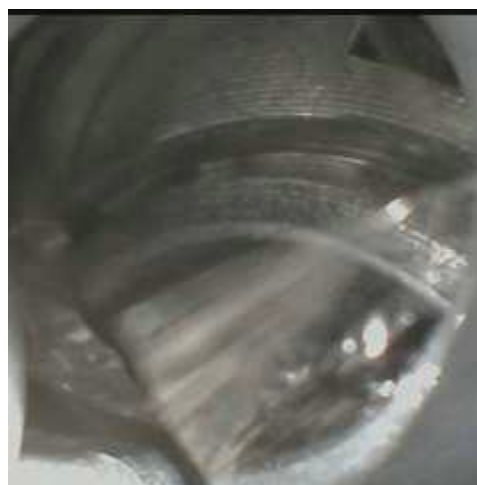


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Minneapolis, MN 55413 USA

Certificate of Verification

XL3-89733

Reading No 921
Mode General Metals
Time 2017-09-08 12:46
Duration 26.13
Units %
Sigma Value 2
Sequence Final
Alloy1 SS-316 : 0.00
Alloy2 No Match : *4.85
Flags
SAMPLE 17L134
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	2.003	±	0.011
Nb	0.026	±	0.002
Zr	0	:	N/A
Bi	0	:	N/A
Pb	0	:	N/A
Se	0	:	N/A
Au	0	:	N/A
W	0.059	±	0.016
Zn	0	:	N/A
Cu	0.293	±	0.024
Ni	10.811	±	0.082
Co	0.247	±	0.059
Fe	68.230	±	0.109
Mn	1.363	±	0.048
Cr	16.748	±	0.059
V	0.125	±	0.018
Ti	0.066	±	0.021
Al	0	:	N/A

Supervised By: _____

Sarah Bugstrom