



Duhlwiesen 32, 55413 Weiler bei Bingen - Germany
Tel. +49-6721-9886710, Fax. +49-6721-9886719

Technical Note

TN0001

Save 452 Euro on Waters Alliance Wash Seals



| | | | |
|-------------------------------|----------------|-------------------------------|-------------------|
| <i>fischer analytics GmbH</i> | <i>TN 0001</i> | <i>Valid from: 01.03.2012</i> | <i>Page 2 / 6</i> |
|-------------------------------|----------------|-------------------------------|-------------------|

Titel

Save 404 Euro on Waters Alliance Wash Seals

Editor

Oliver Mueller / Parts Engineer

Version

1.00

Updated

11.06.2009

Instruments

Waters Alliance 2690/95, 2790/95

| | |
|---|--|
| TN0001 Save 452 Euro on Waters Alliance Wash Seal | |
|---|--|



Contents

1 Introduction.....4

2 What we do.....5

3 Saving calculation.....6

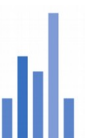


1 Introduction

We noticed that the Waters wash tube and face seals became quite expensive in Germany. Now we found a solution how to save money by replacing these parts with precision O-Rings made from high performance rubber.



Figure 1: left fischer analytics seals / right Waters seals



2 What we do



Figure 2:

We replaced the white Waters face wash seal with a green O-ring. This seal is not pressurized under normal conditions. It is only used as a second barrier in case of a leaking plunger seal. If you look closer to the Waters design, you notice the spring loaded seal. The spring is located at the outside and there is no liquid that can expand the seal lips. Therefore the Waters design is useless.



Figure 3:

Our seals are made out of high performance rubber, very flexible and inert against most solvents like acetonitrile, methanol, acidic water. It is a simple and effective solution. The O-rings are tested under laboratory conditions. On the left picture you see the orientation of the green wash face seal and the black O-ring that seals the wash tubes. We found that O-rings give a much better seal compared to the Waters parts. The reason is that rubber is more flexible than plastic.



Figure 4:

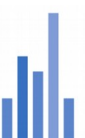
The pressure in the seal wash chamber is quite low, less than 10 psi. Good for an O-ring application. The O-rings can't fall off the wash block, because they are fixed between the block and the housing. They have a tight fit to the wash tube. We noticed that Waters



Figure 5:

engineers use spring loaded seals for all pump seal applications, whether it makes sense or not.

3 Saving calculation



What would be the benefit of our solution? The answer is, you will have a reliable seal for your instrument and you save quite a lot of money. How much is shown in the calculation below.

Parts needed:

Waters Corp

| | |
|--------------------------------------|---------|
| 1 x WAT270940 Wash tube seal (4/Pkg) | € 280,- |
| 2 x WAT271017 Wash face seal (1/Pkg) | € 190,- |
| Sum | € 470,- |

fischer analytics

| | |
|--------------------------------------|--------|
| 4 x WAT270940 Wash tube seal (1/Pkg) | € 8,- |
| 2 x WAT271017 Wash face seal (1/Pkg) | € 10,- |
| Sum | € 18,- |

Waters vs. fischer analytics € 470 - € 18 = € 452,-

You are saving € 452,- per instrument!

**You can save much more money by using
other parts from fischer analytics
<http://shop.fischer-analytics.com>**

